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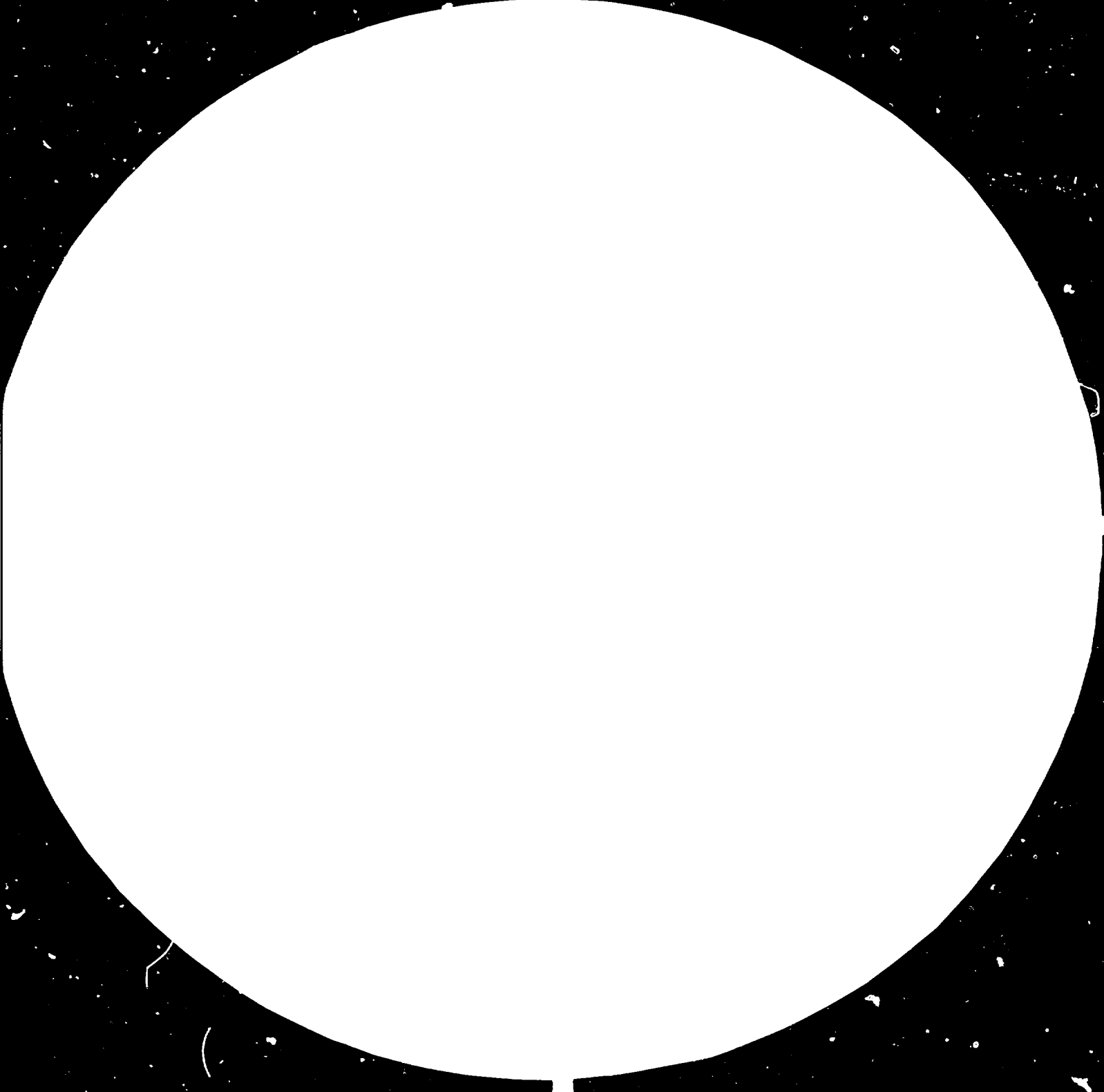
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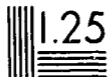
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CHINESE CONVENTIONAL FURNITURE *

by

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




TABLE OF CONTENTS

	Page
A. Introduction	1
B. Hardwood	4
1. Tzú t'an	4
2. Huali (flower pear)	5
3. Ormosia (jichimu)	6
4. Ferrous mesua (Mesua ferrea)	7
5. Red sandalwood	8
C. Lacquer furniture	9
D. Main types and forms of conventional furniture	11
a. Stools and chairs	11
b. tables	22
c. Couches and beds	33
d. Cabinets and shelves	38
e. Others	46
E. Mortise-and-tenon joints in conventional furniture	56
1. Basic joining of timber of various shapes	56
I. Thin board joining	56
II. Flat-board angle joining	57
III. "T" shaped jointing	57
IV. Straight timber right angle joining	59
V. Joining curved timber	
2. Mitre, mortise-and-tenon frame, and floating flush panel construction	61
3. Joining of legs to the corresponding upper parts	63
I. Joining of furniture without recessed waists with their upper parts	63
II. Two types of joining for long narrow tables - mouth-like and shoulder-like joints	64

	III. Joining of legs with apron strips, recessed waists and table-tops	67
	IV. Joining of legs of furniture with aprons having high recessed waists, "tuosai", ornamented panels, recessed waists and tops	68
	V. "Zongjiaosun" construction	69
	VI. "Bawangzhang" (giant's arm stretcher) construction	70
	VII. Joining of chair legs with aprons and seat frames	71
4.	Joining legs of furniture with their lower components	72
	I. Joining of square furniture with square bottom frames	72
	II. Joining round furniture with round bottom frames	72
	III. Joining legs with base supports on long tables	72
	IV. Construction of "base block" embedded with posts	73
F.	Decorative arts of conventional furniture	74
	1. The natural beauty of the hardwood	74
	2. Mouldings.	74
	3. Joining and assembling processes	77
	4. Carving	79
	I. Linear carving in intaglio	79
	II. Relief	79
	III. Hollowed-out carving	80
	IV. Round carving	82
5	5. Inlaid work	83

A. Introduction:

China is one of the oldest countries in the world and has a long history of civilization. The history of Chinese furniture is also very long. A brief account of the most important things related to ancient furniture is given hereunder.

Among the earliest hieroglyphic characters China used about 3,000 years ago during the Shang Dynasty, we find the character for "sickness" which, engraved on the oracle bones, is , and sometimes designed vertically, such as . This depicts a person laying on a bed because he is very ill, the lower part of the character  being a bed with legs. Today, the character bed is  and one can still find traces of the ancient "bed" .

An old book entitled Hsun Tza mentions, at the time of Warring States (4th century B.C.) the invention of the technique of stabilizing wood to keep its form. The wood was steamed and put in an installation similar to a mould. It would keep the form desired after being dried.

A bed produced around the 4th century B.C. was excavated from a tomb of the Chu Kingdom at Hsin Yang in the southern part of Honan. This bed was made of wood and lacquered. It measures 218 x 139 cm, having a height of 61 cm. The frame is supported by six curved legs with a snake motif. Low bamboo rails surround the bed. These rails are mounted by bronze work and winded by silk fibres. There are openings at the two long sides. The mattress was made from bamboo strips which is presumed to have been quite comfortable. This was of course a bed for nobles. Today, it is still considered a luxurious piece of furniture.

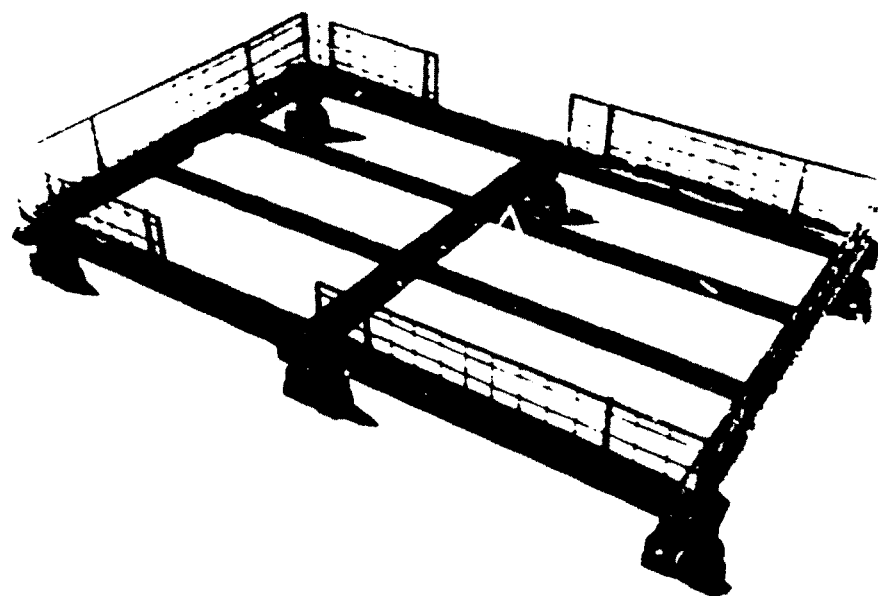


Fig. 1: Bed excavated from Chu tombs, 4th century B.C.

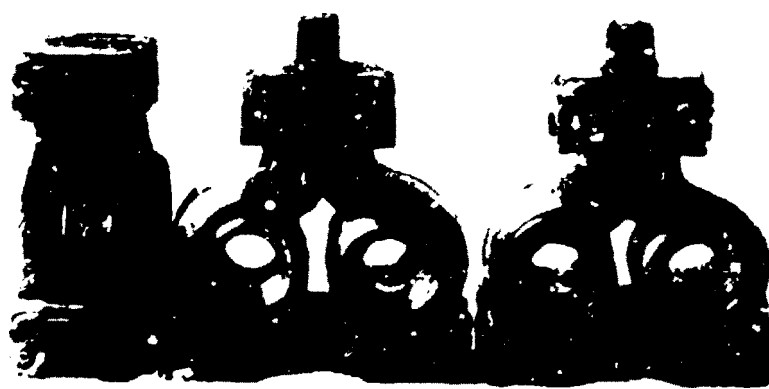


Fig. 2: Bed legs

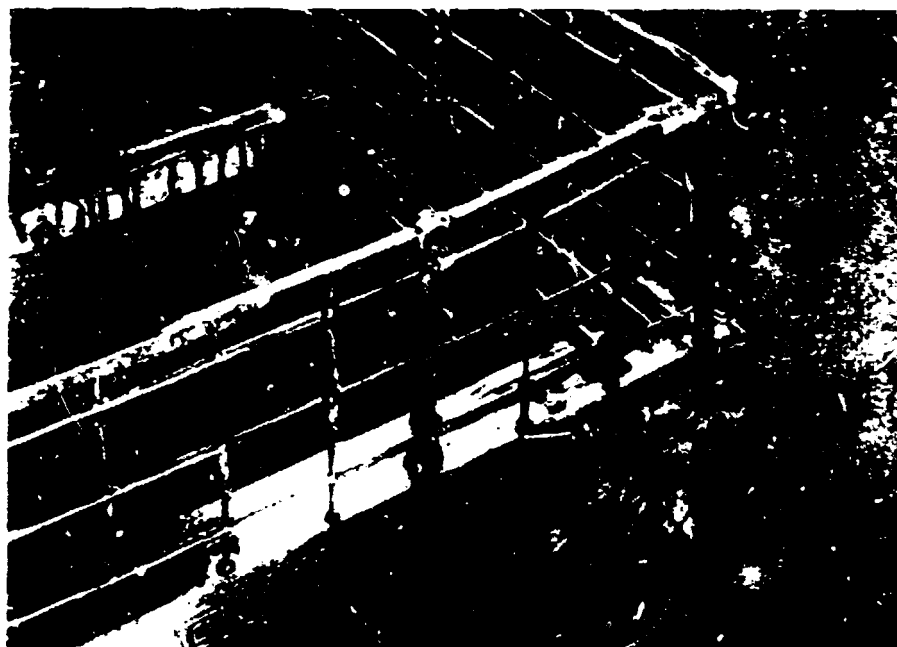


Fig. 3: Corner of the bed

With changes of habits in life - changes from kneeling on the floor to sitting in high seats - furniture also experienced a course of transformation from the low to the higher shapes. Chairs and stools as well as high tables and desks gradually came into use in the Sui and Tang Dynasties (589 - 907). The designs of high shaped furniture were fundamentally finalized in the Northern Sung Dynasty (10th century). With the continuous development of another five or six hundred years, they had reached, in the Ming Dynasty, their peak in history. The products of this period not only have a very high artistic value, being loved by the Chinese people, but also thought of highly by various other countries in the world and exerted a distinct influence on the designing of modern furniture. The plastic arts of "Ming style furniture" became a common wealth of the world.

B. Hardwood:

"Hardwood furniture", which has its name from the timber used, occupies a very significant position in the Chinese conventional furniture.

Hardwood possesses many advantages which ordinary timber is short of, such as compactness of texture, stability of performance, dimensional stability, and possibilities for making precise and complicated joints, practical and beautiful mouldings, delicately carved patterns, and brightly polished lustre. Generally, they are deep, thick and refined in lustre and colour, natural gorgeous and pretty in texture. Good hardwood furniture can fully display the above stated advantages and combine the natural and artificial beauty together to form an artistic object. Hardwood is comparatively rare, expensive and difficult to form into products, therefore the hardwood furniture has become a synonym for valuable furniture. Most of the conventional ancient furniture handed down to us today are made of hardwood.

The main varieties of hardwood are as follows:

1. Tzú t'an:

Tzú t'an has been recognized as one of the most precious timbers since ancient times; its texture is heavy and compact, and varies from reddish-purple to dark colours. It seldom grows to big trees, therefore large tzu t'an furniture pieces are rather scarce.

Tzú t'an is often called red sanders or rosewood in foreign countries. There are many different species of sandalwood. According to E. H. Schafer ^{1/}, there is narra (Pterocarpus

^{1/} Edward H. Schafer: Rosewood, Dragon's blood and Lac. Journal of the American Oriental Society, Vol.77, No. 2, pp. 129-136

echinatus) in the Philippines, the Tzú t'an (Pterocarpus dalbergoides) in the Andaman Islands, the blood wood (Pterocarpus angolensis) in South Africa, the dragon's blood (Pterocarpus draco) in Latin America, and the rosewood in Indo-China and Indonesia, the latter had been imported in great quantities into our country, particularly in the past. We believe that there are many tzu t'an furniture pieces in our country which are made with material imported from South-eastern Asian countries.

2. Huali (flower pear):

Huali, or written as "hualu", had already been recorded into "Scraps of Materia Medica" by Chen Zangqi of the Tang Dynasty (A.D. 793) who praises:

"Palmwood (huali) is produced in Annam and the South Seas; it is similar to the sandalwood, red in hue, compact in texture and can be used for making beds and tables". It is also mentioned in "The Essential Criteria of Antiquities" (14th century). It is produced in Guangdong, is reddish-purple in hue, and similar to "jiangzhenxiang" (Indonesian lakewood) having a fragrance too. The one with a fancy grain is the most liked, while that with a coarse pattern and light colour is less inviting.

The huali is divided into two kinds by Beijing craftsmen. One of them is called the yellow huali or huang huali, the colour of which is from light yellow to reddish-purple. It has a compact texture, beautiful grain and sweet smell. It is a very large material, some tables made from it measure approximately upto two chi (1 chi = 1/3 metre) in width, and upto 12 or 13 chi in length; it was the main material for exquisite furniture pieces in the Ming Dynasty. It seems nevertheless to have been

seldom used after the middle part of the Ching Dynasty, thus it is obvious that there had developed a shortage of this raw material. It is reported that there exists a yellow huali in Hainan Island which is called "jiangxianmu" by the locals, most of it however, is small timber. Growing in deep mountain areas, the big trees cannot be shipped out without difficulties. Referring to the production in "Annals of the Qongzhou Prefecture", one will find that the first item under the sub-title of trees is huali: "reddish-purple in hue, similar to 'jiang-zhenxiang', a little sweet in smell, and produced in mountain areas". The answer to the origin of the name "jiangxianmu" can be obtained from this item.

The other one is called the huali or new huali and was widely used in the Ching Dynasty to make furniture. Beside being produced in our own country presently, it is also imported from Burma and other countries. It is reddish-yellow in hue, coarser in texture when compared with the yellow huali, dull in grain with little variation, and does not have the pleasant smell. There is a great difference between the new and yellow huali, they are definitely not the same species, and the hualu or huali mentioned in ancient documents can undoubtedly be determined as the yellow huali.

According to "Flora of Guangdong" by Hou Kuanzhao (1956) the Latin name of the yellow huali is Dalbergia hainansis and its other name is Hainan sandalwood.

3. Ormosia (jichimu):

Ormosia, or written "jichimu" (the Chinese characters for ormosia), also recorded in "The Essential Criteria of Antiquities", is produced in Xifan. The wood is half purplish brown with a crabclaw pattern and half pure black, similar to ebony.

The higher priced pieces are those with spurs, which can be occasionally seen in sheaths made from it, but never the bigger ones. There are also two kinds of jichimu - the old and the new. The old one is compact in texture, intertwined with light and dark purplish-brown colours, delicate and floating especially in the longitudinal section, giving one the impression of the brilliance of feathers on a bird's neck and wings. The new one is coarse in texture, inter-mingled purple with black, with mixed grains and stiff without any trend of spiraling or turning. Furniture made with old jichimu were already rare in the middle part of the Ching Dynasty while the new jichimu has been commonly used even until recent years.

The Latin name of the old jichimu is rather difficult to determine, however, it could possibly be a species of the Caesat piniacea class. As for the new jichimu, it is ordinarily considered as being the love pea in Northern Hubei, its Latin name being Ormosia hosiei.

4. Ferrous mesua (Mesua ferrea):

"The Essential Criteria of Antiquities" states: "The ferrous mesua is produced in Guangdong. It is purple in hue. heavy and hard in structure. It is widely used by the Dongwan people to build their houses". Chen Ron's "Taxology of Trees in China" also states: "Another name of ferrous mesua is tielimu (iron chestnut wood) and its Latin name is Mesua ferrea. It is a big evergreen tree having a straight trunk about ten or more zhang (1 zhang = 3 1/3 metres) high and one or more zhang in diameter. It was originally produced in East-India, however, according to "General Annals of Guangxi" it is also produced at Rong and Tang counties in that province. It has a durable

rigid texture, dark-red heartwood, and delicate pith rays. It is often used in building construction in sub-tropical zones, and it is also used in Guangdong to make furniture with a long durability".

Ferrous mesua is certainly the tallest among the several hardwood species. A considerable amount of modern large furniture is made from ferrous mesua. Because of its slight similarity in lustre and texture with jichimu and its being less expensive, the wood-ware shops before liberation had passed tielimu furniture off as jichimu furniture.

5. Red sandalwood:

There is also a difference between the old and the new red sandalwood. The old sandalwood is very similar to tzu t'an but with a less bright lustre, a lighter colour and a less compact texture. Though it also has a sweet smell, it does not possess such a fragrance as that of the yellow huali. The new red sandalwood has a reddish-yellow colour and artistic patterns, and is sometimes very much like the yellow huali. Botanists often mistake the peacock bean (Adenanthera) as the sandalwood, however, some species in the classes of Dalbergia and Pterocarpus are considered as red sandalwood too.

The old and the new red sandalwood definitely do not belong to the same species. When examining chips cut from samples taken from different furniture pieces, it is quite possible to find that there are several species of trees in both the old and the new red sandalwood. An accurate and precise resolution will depend on further investigation, analysis, and research made by personnel in the field of tree taxonomy.

To sum up, the following points can be mentioned: there are many kinds of hardwoods. Though some materials have only one commercial name, they do not actually belong to the same family or class. Hardwood has a very wide distribution in the world, most of which are produced in the tropical and subtropical zones. The representatives present at the meeting come from some twenty countries, and many of participants' countries produce various kinds of hardwoods, not only the few species mentioned above, but perhaps there are some new varieties to be discovered which may as well be fine materials for making hardwood furniture. There is a great potential for exploring the hardwood resources. It is not only beneficial to the domestic furniture-making to have the job well done, but it will also give support to other countries. Of course, at the time of felling, attention must be paid to the regeneration of the forest thus combining the reasonable felling with planned reforestation.

C. Lacquer furniture:

Another large category of Chinese furniture is the lacquer furniture, or to put it more concretely, the type of furniture having a body of wood material covered by lacquer. Thanks to the various decorative talents possessed by lacquer craftsmen, there is a significant amount of varieties and colours of lacquer furniture from one colour to a blaze with many colours too numerous to mention one by one.

Wood materials of a soft and light texture and straight grain with little variations such as white pine, Chinese catalpa, tung and nanmu are used for producing bodies of lacquer furniture. The process of production mainly involves two steps: carcass-making by carpenters first and then the application of lacquer by the lacquerers.

It is a work which is done by carpenters and lacquerers co-operatively.

Whatever the technique adopted by the lacquerers in their final decoration is, the first few processes are usually the same; that is, the basic lacquer layer should be prepared first, then the decoration required applied.

The basic layer of lacquer-work or the first few processes are:

1. A lacquer putty is used to fill the cracks in the wood carcass.
2. Natural lacquer or a thin putty is used for pasting cloth or spreading hemp on bodies. This process may be repeated two to several times as required.
3. Apply the lacquer putty on the surface pasted with cloth; when a layer is applied and dried, it is then spread and polished into a smooth surface. Three layers of putty should be respectively applied on exquisite furniture made from coarse, medium and finely ground materials. The finished layer should be polished very smoothly.
4. At least two layers of lacquer should be applied over the polished lacquer putty surface, generally natural lacquer is applied for the first layer whereas prepared lacquer (a very lustrous refined lacquer) is used for the second layer.

It may then be considered that the basic layer is completed; the next step will be to make the different decorations.

The following are some of the common lacquer decorations provided with concrete examples:

1. Monochrome lacquer-ware: black, red and gold;
2. Gold painted lacquer-ware;
3. Polychrome lacquer-ware;
4. Incised and coloured lacquer-ware;

5. Mother-of-pearl inlaid lacquer-ware;
6. Carved and painted lacquer-ware; and
7. Carved red lacquer-ware.

Each of the above decorations will have to be completed by undergoing certain processes which cannot be discussed here in detail because of the limit of time. Essentials should be grasped through combining special study and practice in order to learn each of the technical processes.

D. Main types and forms of conventional furniture:

The Chinese conventional furniture can be classified into five main categories:

- a. Stools and chairs;
- b. tables;
- c. couches and beds;
- d. cupboards and shelves; and
- e. others

There are many different types in each category and again many forms in each type. The main types and their common forms are discussed here. Furthermore, since the Ming type furniture has the highest artistic value and is the greatest help in modern furniture design, more Ming furniture are mentioned in the following examples:

a. Stools and chairs:

I. Stools:

Stools are ordinarily square or rectangular in shape. Their most two common forms are respectively the straight-legged stool without recessed waist and horse-hoof legged stool with recessed waist. The former originates from the beam frame of building construction while the source of the latter is often considered as a popular Tang platform structure bed with cusped and

ogeed arch. Examples of each of the two types are given in the pictures hereunder.



Fig. 4: Straight-legged stool without recessed waist

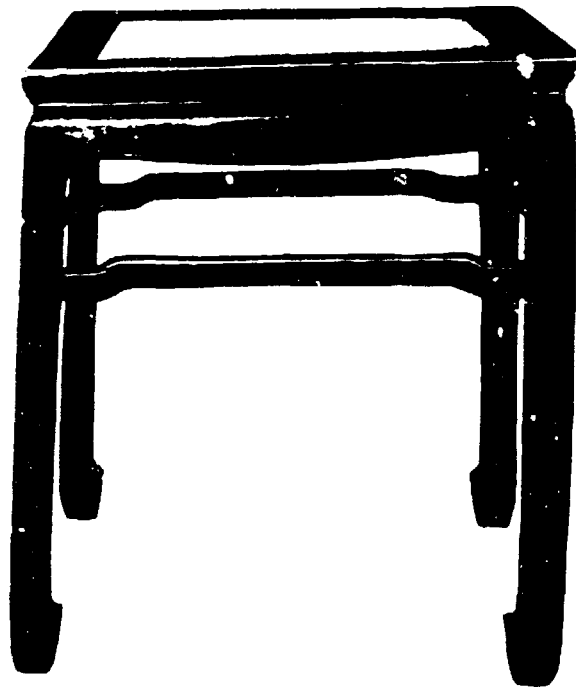


Fig. 5: Horse-hoof legged stool with recessed waist

Round timber or round legs with square corner inside are mostly used for the straight-legged stools without recessed waist. An inclined leg structure is adopted for all the four legs, or the lower parts of legs are splayed out like the four columns of an ancient building tapered upwardly to increase its feeling of stability. The stretchers under the stool top function as beams to unite. Most of them are straight and have a cross-section approaching an ellipse. They are pure and simple but not dull or clumsy in appearance.

Horse-hoof legged stools with recessed waists usually have square legs and beams, the recessed parts under stool tops are called "recessed waists". The bottoms of the legs which protrude are called horse-hooves. Generally, all furniture with recessed waists have horse-hooves at the bottom of the legs, this may be considered as a "code" of the conventional furniture. The horse-hoofs are comparatively larger in Ming furniture to give them a pretty and charming appearance; whereas the horse-hooves of the Ching period were transformed into square shapes to make them look dull and vulgar. Forms of horse-hooves are often the basis for determining the age of the products, i.e. whether they are Ming or Ching furniture.

We consider the waists with and without recesses as the main forms of stools, not only because they are the most common stools but also the most common types of other furniture such as "kang" tables, square tables and side tables. We might as well say, there are two main types among all the square and rectangular structure furniture, therefore they are of universal significance.

II. Round stools:

Like ordinary stools, the round stool is also a seating article without a back, nevertheless it is considered an individual type of seating. Most round stools have large bellies and small ends. They



Fig. 6: Round table made after the design of a round stool

are like the ancient drums in shape, and are thus also called "drum stools". A motif of two strings and some drum nails is made on the body to retain the traces of leather covering and nailing. Again, because round stools had been made with rattan, bamboo, etc. since very ancient times, by preparing them into round frames joined up to form the walls of the stools, the round openings process is adopted for this type of stools.

Some of the round stool mouldings are very complicated, most were produced in the Ching Dynasty.

III. Chairs:

Chairs are seats with backs. They are classified into four kinds: back chair, arm chair, horseshoe chair, and folding chair.

(a) Back chair:

All those chairs only with backs and with no arm rests belong to this category. They can be very numerous and varied

in form, because the back can be either broad or narrow, high or low, simple or complex, and because of the different construction methods used. However, the most common and most typical among the Ming furniture is the one with a narrow and high back either made with a single board or segmentally constructed. This chair is called "dengguayi" (lamp hanger chair) because it looks like the hanger of a southern lamp. Most such chairs are very simple in making without any carvings or decorations. Only a medallion might be carved on the back board to add a bit of grace. It is narrow and portable. There are no hindrances on the sides and it is easy to stand up from and sit down on; therefore, most of the modern dining hall chairs adopt this form.

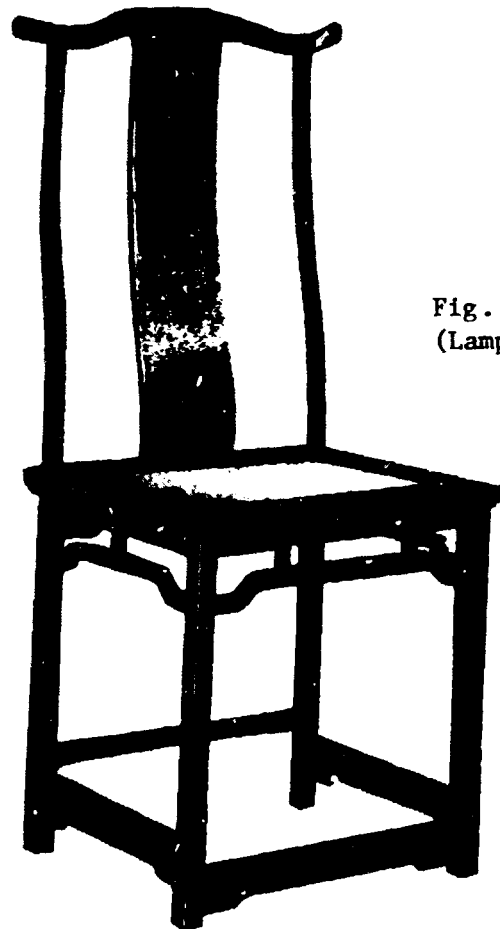


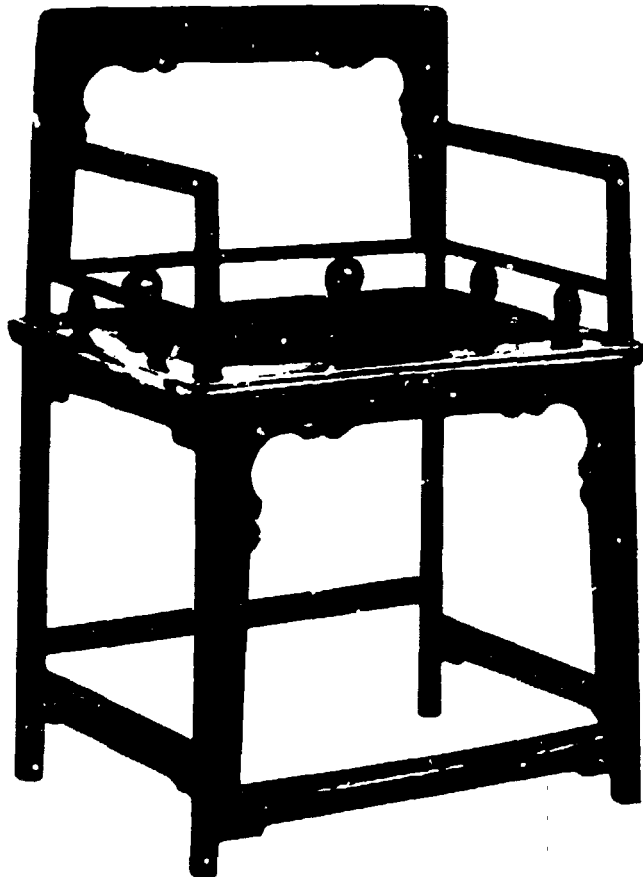
Fig. 7: "Dengguayi"
(Lamp hanger chair)

(b) Armchairs:

These are chairs with a back and arm-rests. They have three common forms: meiguiyi (rose chair), guamaoyi (official headgear armchair) with four projecting parts, and nangongmaoyi (southern official headgear armchair) with no projecting parts.

Rose chair: This is a relatively small and low type of chair; its back and armrests are generally straight and the height of the back is insignificant. It is lighter and material-saving, short and small but strong and firm, not obstructing the landscape outside the windows nor any hindrance to one's line of vision; however, it also has the defects of a low back, small inclination, and is unc cosy when leaning on it. One of its common forms is the one installed with three-faced, arch-like pieces in both the back and the armrests settled down on a horizontal stretcher, under which there are short pillars or small pieces of ornamented wood blocks. There is also a more complicated method of making it, i.e. with a piece of open work board inserted in the arm rests in the back.

Fig. 8: Rose chair.



Guanmao armchairs with four projecting parts: The so-called four projecting parts are the projections on the two ends of the top rail (the highest horizontal piece on the chair back) and the projections of the two armrests. Some of them are of very large size, they will give people a stately and open feeling again with the projections extending outwards. Their typical construction is a backing board set up at the back with a stile on each side to connect the arm rests and the seat of the chair. Variations may be made on this basis with a high or low back, with one piece of backing board, or segmentally constructed with added carvings.

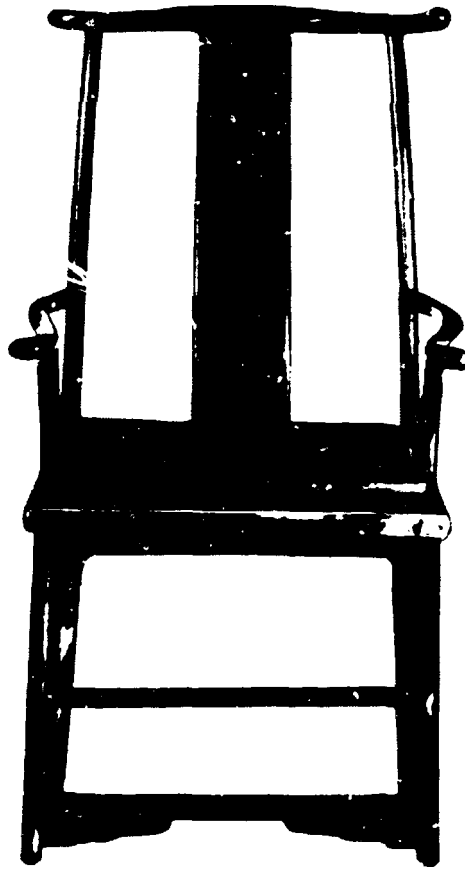


Fig. 9: Guanmao armchair with four projecting parts.

Nanguanmao armchair: It is the same as the armchair with the four projecting parts, except that there is no projection of the top rail and armrests. Let us give an example of a variant of the nanguanmao armchair, the hexagon armchair. The front edge of the seat is often widened in variants to form it into a fan-shaped style. Most of the variants adopt the nanguanmao type of construction. Since the front has been widened, there is no longer the need to project the armrests.

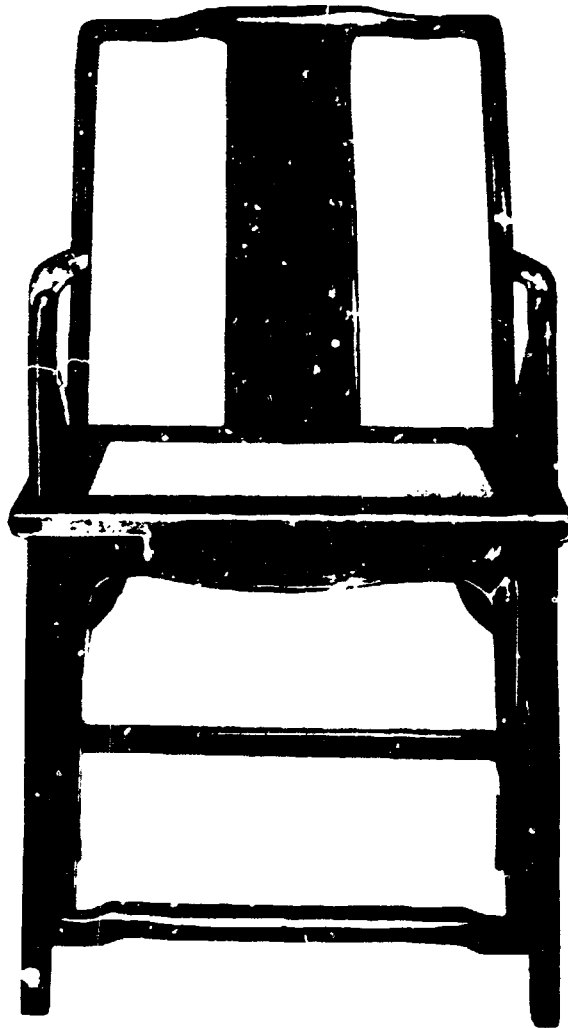


Fig. 10: Nanguanmao armchair

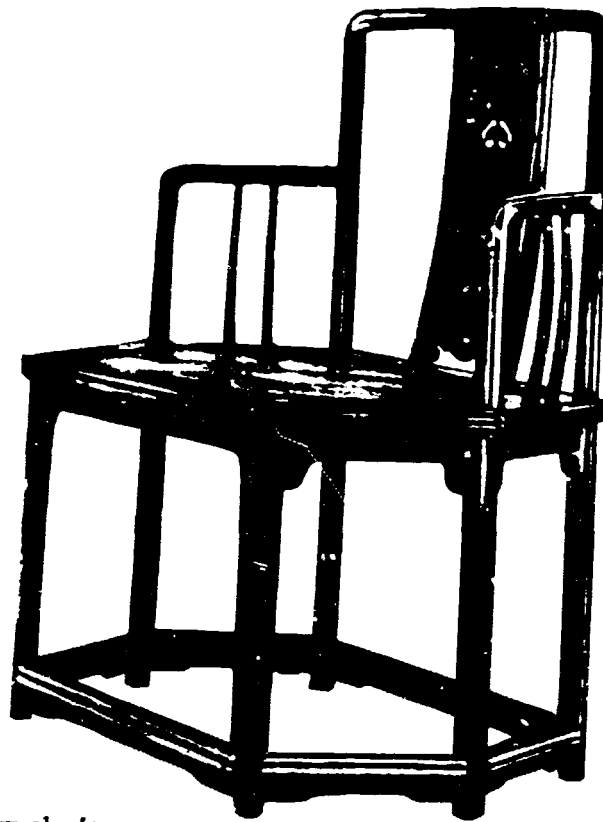


Fig. 11: Hexagon armchair

(c) Horseshoe armchair:

Horseshoe armchairs are chairs with circular rests and round backs. Its back and armrests are combined in one uninterrupted curve, thus when one sits in it not only do the elbows have something to lean upon, but the arms below the armpits have some sort of support too. This will no doubt give one a very good rest. In addition, it also has a smooth and satisfactory moulding which should be a valuable reference for modern furniture.

Fig. 12: Horseshoe armchair

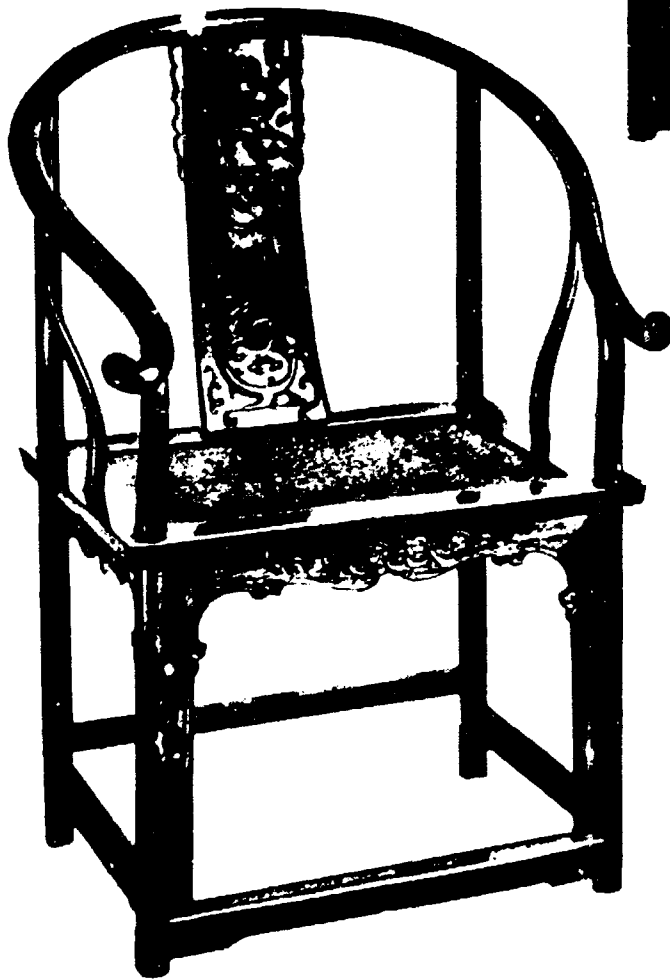
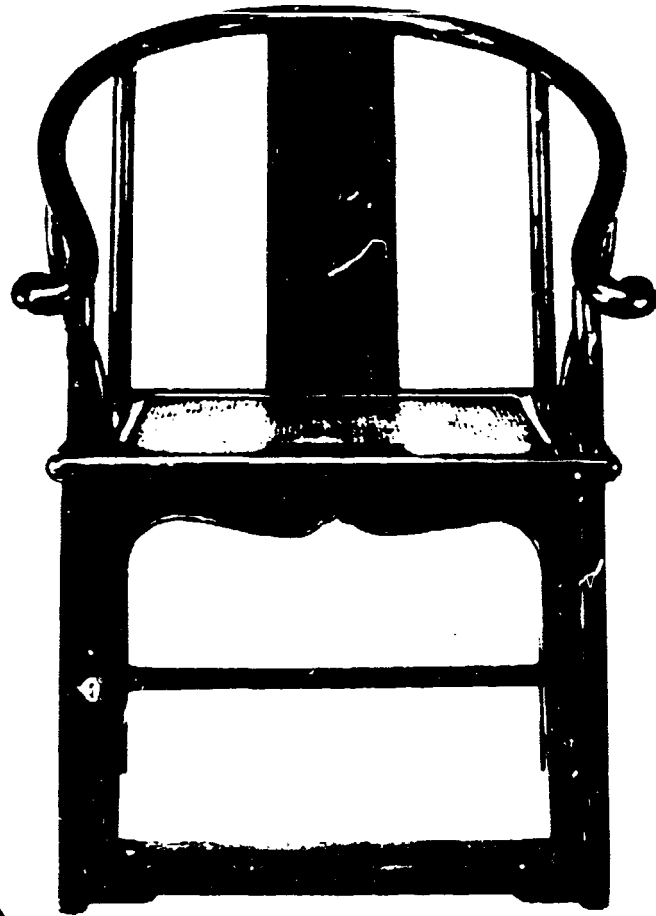


Fig. 13: Horseshoe armchair
(decorated).

The parts above the seats of horseshoe armchairs are all made from round timber and all the armrests are projecting out. The ones made from square beams with corners softened and armrests with no projecting parts are only very few.

(d) Folding chairs (cross leg chairs):

These are chairs with front and rear legs crossing and they can thus be folded. They have been imported into China from the West since the second century, turning from a nomadic object into an ordinary household furniture piece. There are two kinds of folding chairs: one with a straight back and one with a round back. The former is similar to "dengguayi" (lamp hanger chair) and the latter is very much like the horseshoe armchair. They generally have some sort of carvings or decoration especially the round back folding chair, since it had been a seat to show dignity and honour for hundreds of years; their carvings and decorations are more complicated and refined, moreover, at the points where two component parts are joined together, metal decorative pieces are often applied to offer both a decoration and support.

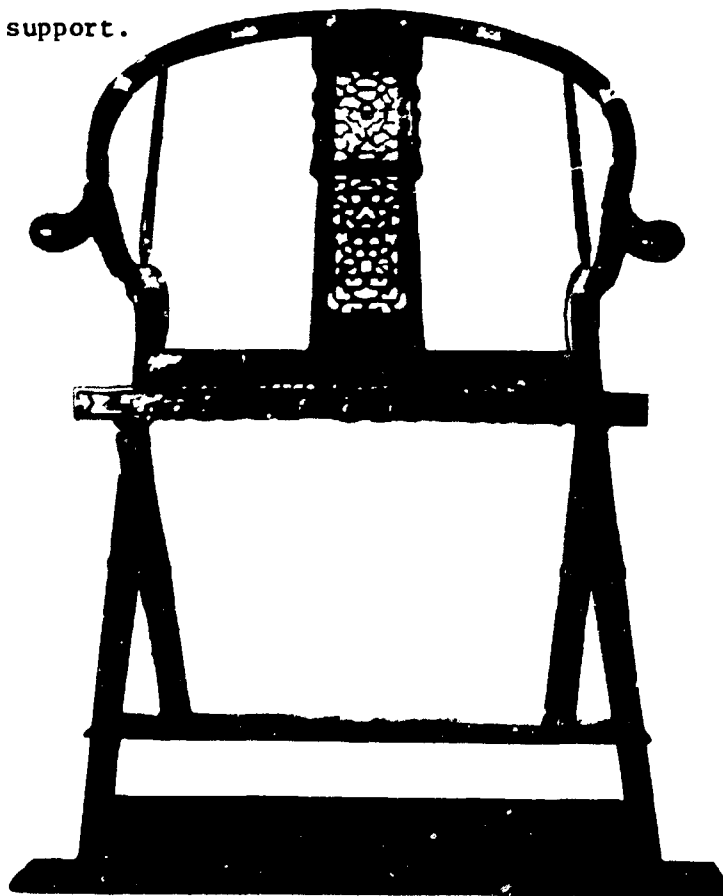


Fig. 14: Round-back folding chair

b. Tables:

Six common kinds of tables will be introduced here for discussion: (1) Kang tables, (2) small rectangular tables, (3) large rectangular tables, (4) square tables, (5) side table and long narrow table, and (6) incense-burner stand.

(1) Kang tables:

The Kang table is a kind of low table. It is usually rectangular in shape with exceptionally very few square ones. It can either be put on the kang (bed built into the room) or transferred on to the floor for use. Comparing with modern furniture, it is close to the sofa-tables (low tables placed in front of the sofa) but a little lower, thus there are often people who will use the kang table to take the place of the sofa-table, so that the currently designed sofa-tables can naturally use its moulding as reference.



Fig. 15: Kang table with recessed waist.

The basic forms of kang tables can be divided into two kinds: with or without recessed waists. This paper only covers the two other types of kang tables with recessed waists: the one with legs bending outwards and the other with legs bending inwards. The former is called the "projecting leg and apron" type since the leg and the apron must project out, and the end of the leg thus can be bent inwards; whereas the latter is called the three-bend leg since the "S" shaped leg has actually been bent three times to get into its form. These two types of legs are also to be often seen among other kinds of furniture.

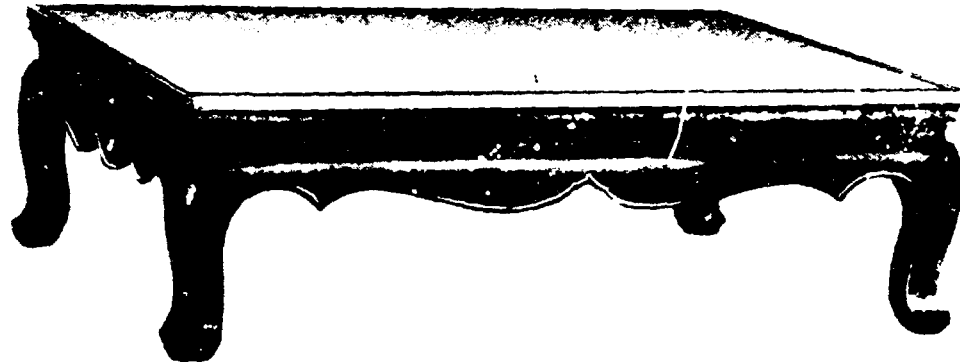


Fig. 16: Kang table with three-bend leg.

(2) Small rectangular tables:

The rectangular tables referred to here are those that have a ratio of length to width of 3 : 2; not including the long narrow

rectangular tables which are called by another name such as side tables.



Fig. 17: Wine table ("an" shaped rectangular table)

There are again two kinds of small rectangular tables. The comparatively lower one is called the wine table whereas the large one is called "jiezhuo" (prolonged table). In ancient times, they were both used for dining and drinking, because, according to the habits and customs before the Ching Dynasty, the host and his guests would each have to occupy an individual small rectangular table. The large round table for many people to sit around was something which developed and became popular much later.



Fig.18: "jiezhuo" ("zhuo" shaped rectangular table with recessed waist).

There are two different constructions of rectangular tables. One is called "zhuo" (table with four legs vertically in line with the four corners) shaped construction and the other is called "an" (table with legs recessed under the top of the table) shaped construction.

The "zhuo" shaped construction may again be divided into two kinds, the one with recessed waists and the other with no recessed waists.

Some joints of the "an" shaped construction are "mouth-like joints" while the others are "shoulder-inserted joints"; they are also somewhat different in appearance. For the mouth-like joints, the notch is made on the upper end of the leg to fix the apron

piece (apron strip and apron head); the surface of the leg is above the apron piece. The other construction is called the "shoulder-inserted joints", a notch is also cut on the upper end of the leg to insert the apron strip, however, a slanting shoulder must be made out to insert the groove chiseled out on the apron strip, both their surfaces must be in the same plane. These two methods will be further discussed in the following section under the sub-title of "joint construction".

(3) large rectangular table:

Its moulding and construction are similar to the small rectangular table, but its size is much larger, being used to write and paint. All those belonging to the "zhuo" shaped construction are called "painting table in 'zhuo' form" while those belonging to the "an" shaped construction are called "painting table in 'an' form". An example of each will be given hereunder:

Tzǔ t'an painting table in the "zhuo" form: It adopts the type with no recessed waist, its stretcher is thickened and placed tightly close under the side frame of the table top, so as to increase the utilizable space under the table. Inside the legs four arm-like construction parts called "bawangzhang" (mighty stretcher or the giant's arm) are set up to support the table top above and transmit the weight evenly onto the four legs. It is a reasonable construction in conformity with the physical dynamics.

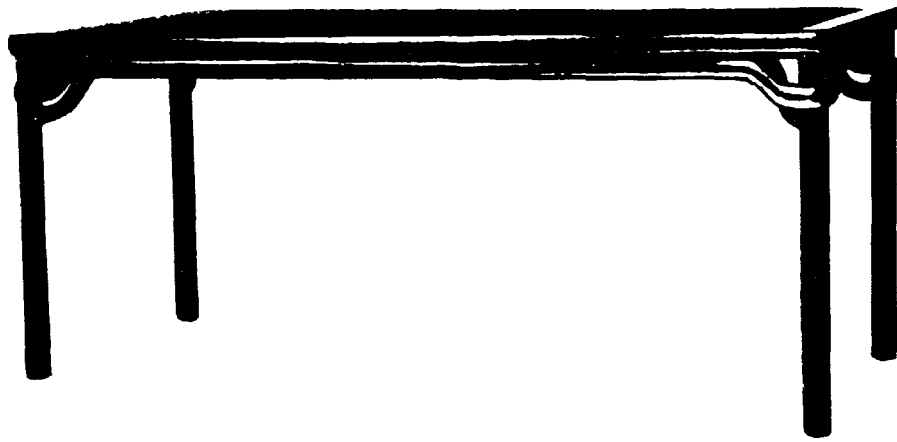


Fig. 19: Painting table in "zhuo" form.

Large tzu t'an painting table in "an" form: It adopts the "bare-faced tenon" type of construction. "Because of its size, and weight, it is made up of seven parts, enabling assembly or dismantling and thus easy movement".

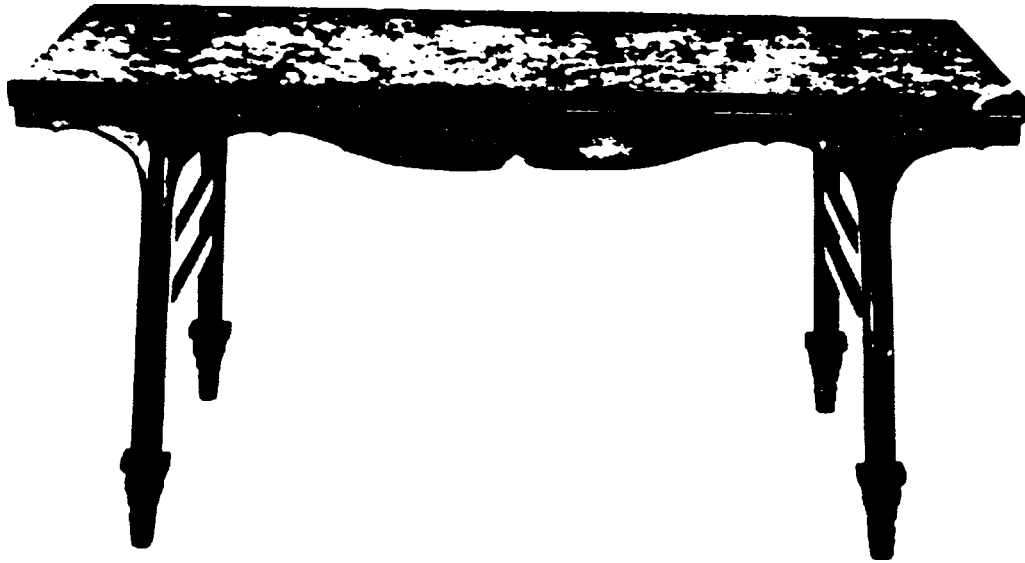


Fig.20: Painting table in "an" form (shoulder inserted method)

The writing desk in modern furniture may refer to the moulding of the Ming painting table in the "zhuo" or "an" form. A more common application is utilizing the external form of the painting table in the "zhuo" form to design modern dining tables which would provide quite comfortable seating for six or eight persons. It is suitable for using in the dining room of an ordinary family.

There are also large Ming rectangular tables with drawers, but they are seldom seen; even though they have drawers, their number is limited. There is only one line of drawers (usually three in number) fixed below the table top. The type of rectangular tables with drawers is called "study table". With the advance of times, the number of drawers are increasing ever since the middle of the Ching Dynasty. The number of drawers of the study table have been ever-increasing until they attained the number of the modern desks.

(4) Square tables:

Generally they are found in two sizes: the large and the small square tables; the large one is called the "eight-immortal table" (or large square table) about 3.3 chi (110 cm) square accomodating eight people and the small one is called the "six-immortal table" (or small square table) about 2.6 chi (86,6 cm) square. Let us give a common form called "yi-tui san-ya" (one leg intersecting with three aprons) type for example. It is noted for its special construction with the small middle apron, unlike the long apron strips

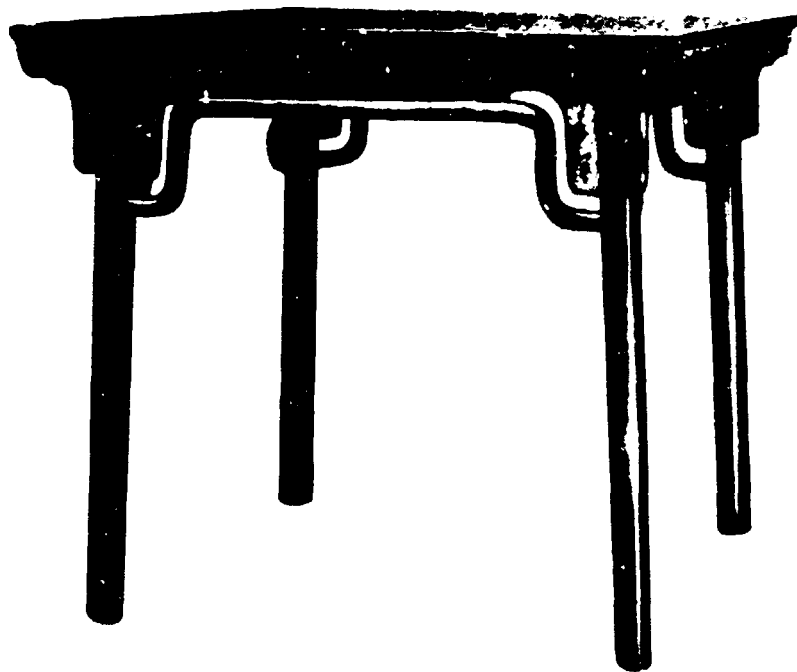


Fig. 21: "Yi-tui san-ya" square table

on the sides, located at the corner. With the lower parts of the table legs splaying outwards while the upper parts set inwards, room is properly left for fixing the small corner aprons. It has a compact construction and a beautiful and stable moulding.

(5) Side tables and long narrow tables:

We describe here the long and narrow tables, their length often being three or four times their width. All those in the "zhuo"

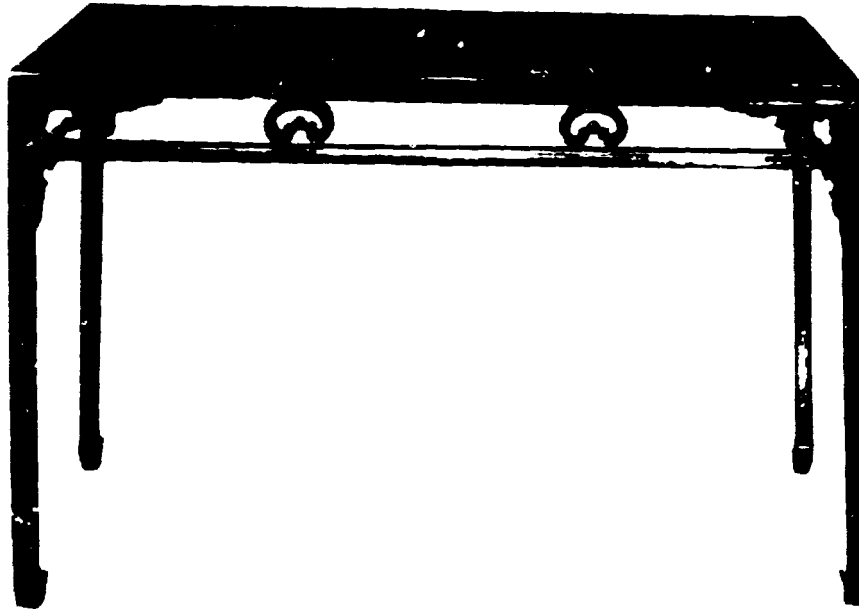


Fig. 22: Side table

shaped construction style are called "side tables" whereas those

"an" shaped are called "long narrow tables". Though the side tables vary in size, generally they do not exceed 7 or 8 chi (233 or 266 cm)

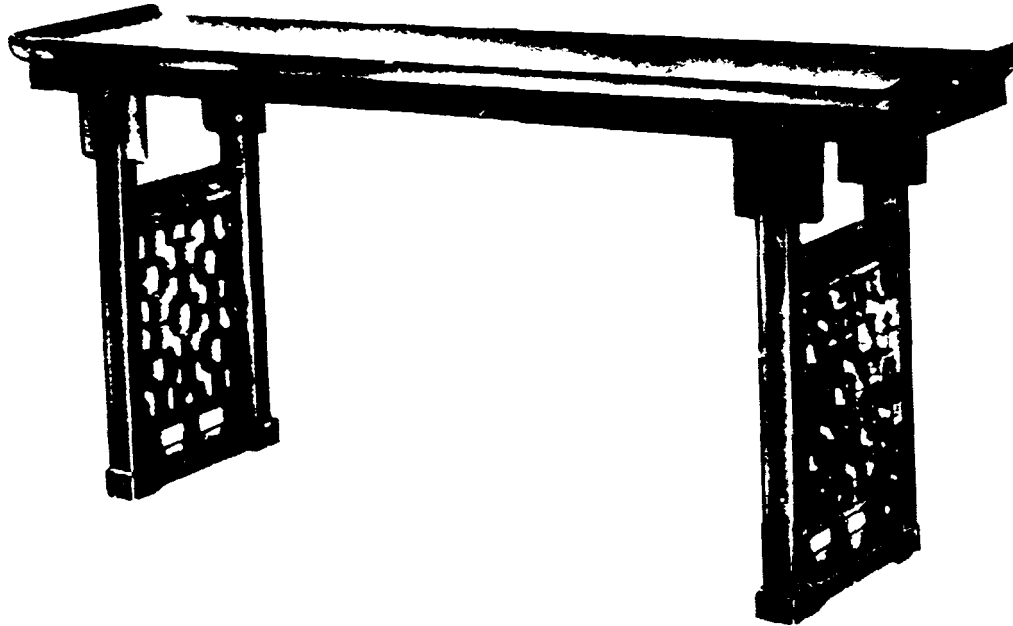


Fig. 23: Long narrow table ("an" form)

in length while there are some very big ones among the long narrow tables which measure upto 1.2 to 1.3 zhang (400 to 433 cm) in length and are often made for placing in front of the back wall or screen door in the middle of a three-bay or five-bay hall. They are sometimes also placed against the gable-walls. The long narrow tables also use the same methods of the mouth-like joints and shoulder-inserted joints. As for the mouth-like joints method,

sometimes a transverse piece called "base support" is added under the two adjacent legs functioning as a support to the legs of the tables thus preventing them from touching the ground so as to avoid getting damp and rotten. All you have to do is to change transverse pieces when the base support rots. An open-work or a relief panel may be inserted in the space formed between the base support and the two legs and the stretcher above it; furthermore, a collecting type of connection may be used to form into an open lattice-work of geometrical figures. Here we can learn some decorative methods from the ancient furniture. The following is an example of an actual long narrow table with an open work panel.

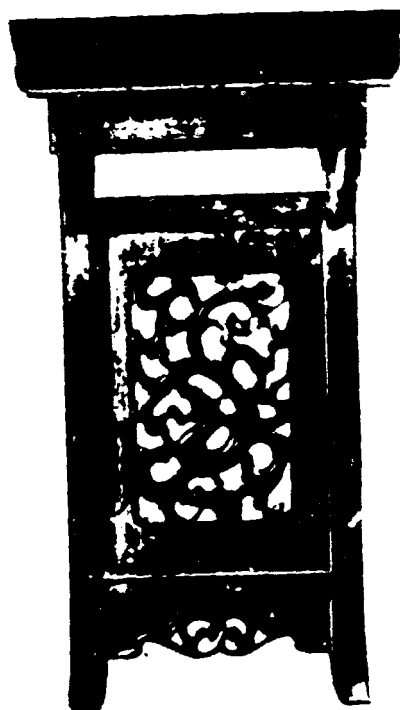


Fig. 24: Side-view of long narrow table (open work panel)

(6) Incense-burner stand:

The incense-burner stand is a kind of small and higher furniture piece and it is usually round in shape. It was used to support the incense-burner from about the eleventh century to the seventeenth century, so that it is called the incense-burner stand. It has been used as tea tables since the seventeenth century and its mouldings have also changed from the round into square or rectangular shapes.

The Ming incense-burner stands generally have recessed waists, most of their legs are "s" shaped with a wooden "bottom frame" under the legs. Some incense-burner stands also have very high recessed waists with hollowed-out floral panels (ornamental panels) inserted in their middle portion. Some incense-burner stands have three legs; some have five. Their mouldings are generally slender and exquisite, giving a slim and graceful impression. Today, the moulding of the incense-burner stands may be adopted to make the flower-pot table or museum and exhibition tables.

c. Couches and beds:

Couches and beds are mainly divided into three kinds: (1) "ta", or couches; (2) luohanchuang (arhat couches), and (3) testered bedsteads.

(1) Couches:

The bed with a plain top is called "ta" or couch. As far as the size is concerned, it is much larger than the kang table but it has a shape and construction similar to the kang table; it could be said that the couch has all the characteristics of the kang table. However, the top surface of the kang table is mostly made of wooden boards, while that of the couches is woven with rattan. This is done by first punching a number of holes in the framework then

weaving a palm rope into a mesh, and again a rattan mesh over it. The weaving of rattan mesh is an independent technique which still exists in the south whereas it is nowadays rather rare in the north. Therefore, all the top surface of couches and beds produced in the north are made with wooden boards and straw mattresses. While repairing old furniture, the broken rattan top surface is often cast off and replaced by wooden-boards or straw mattress tops. Rattan is generally produced in most tropical and sub-tropical countries, thus it is recommended that these countries should make a study on the rattan work technique and combine it with the furniture techniques.



Fig. 25: Couch

(2) Luohanchuang (arhat couches):

All beds with low rails on three sides are called "luohanchuang", a name commonly used among the Beijing artisans. Variations of different kinds of "luohanchuang" are mainly recognized in the form of rails; besides there are differences in width, some have recessed waists and some not. As far as the most simple type is concerned, only three full-panels are used with the middle one higher than the ones on both sides. Simple or complicated relief patterns are added to some of the full panels. The rails of another type have the frame on all four sides with the middle part broken down into geometrical figures, such as a cross plus interlinked squares, a swastika, etc. Rails with the most complicated patterns are assembled first by assembling a set of figures with four small hollowed-out floral pieces or more ornamental units, then building up these into a large pattern with the same figures. An example of each will be given hereunder.

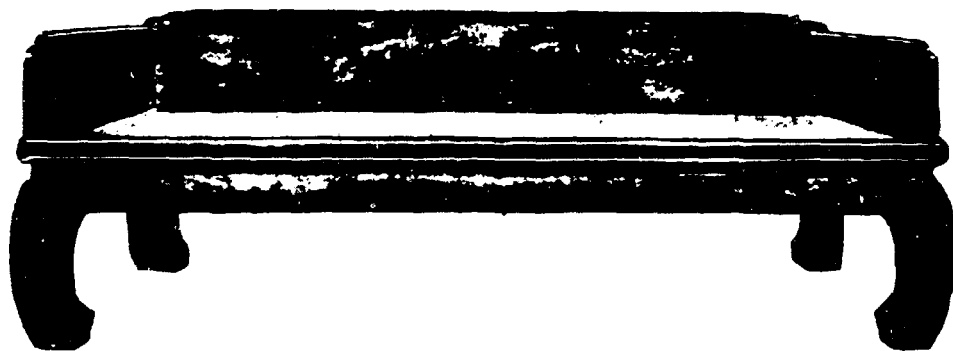


Fig. 26: "Luohanchuang" (full-panel rail)

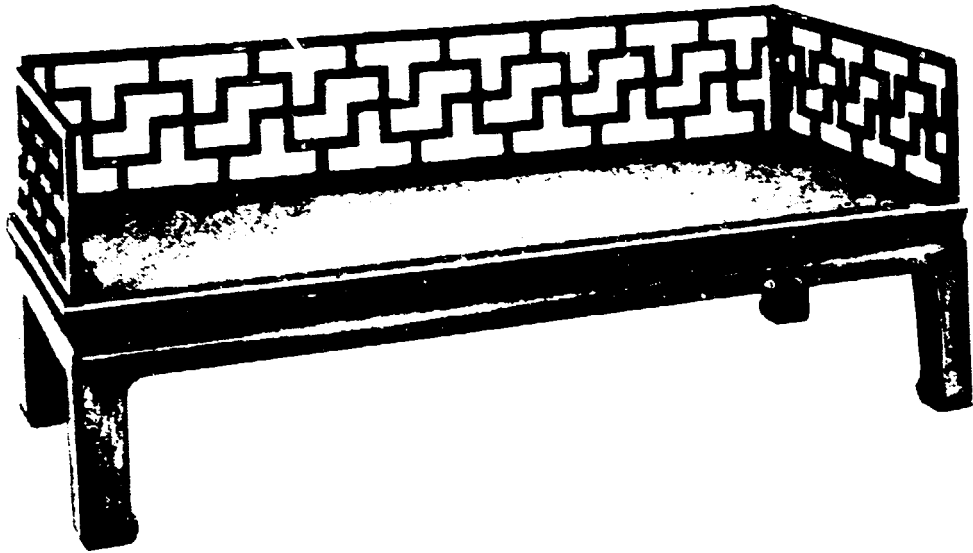


Fig. 27: "Luohanchuang" (with rails made by joining process)



Fig. 28: "Luohanchuang" (with rails made by assembling Process)

(3) Testered bedstead:

Beds which are called testered bedsteads are those with posts on the four corners and low rails between the posts; while the upper ends of posts directly support the bed-tops, and the parts under the tops are surrounded by hanging panels (or lintels).

Some testered bedsteads have front rails, which are two additional standing posts with two square rail-like installations placed at the sides of the front. Looking at the paintings handed down from ancient times, one can see most ancient testered bedsteads had hanging bed-curtains. The general situation is that the bed-curtain is hanging outside the testered bedstead without front rail (i.e. the bed-top is covered with the curtain) while the curtain is hanging in the frame for those with front panels to show the decorative figures on the bedrails; with the contrast of the light coloured bed curtain, it looks beautiful. Here we see that the conventional furniture may utilize the contrast of fabrics to increase its charms.



Fig. 29: Testered bedstead with front rails

One of the largest tested bedsteads is the "babuchuang" (alcove bedstead). It has a low wooden platform under the bed and a veranda of two to three chi (66 to 100 cm) is left in front of the bedstead. One must step on the veranda before getting into the bed. A footstool (a low narrow stand), as well as other small furniture pieces, such as stools, small square stand, etc. can be placed on it. The entire bedstead is just like a small room.

d. Cabinets and shelves:

These can be mainly divided into four kinds: (1) shelves; (2) cabinets with open shelves; (3) round-corner cabinets, and (4) square-corner cabinets:

(1) Shelves:

A shelf is a piece of furniture with four legs made with standing timber and separated into several compartments with lateral panels for displaying or storing books.

The simplest shelf has only four legs and lateral panels with probably an apron strip placed under the lowest compartment.

A type of more complicated shelves has a panel on the back and an arch-like piece or "enclosure piece" both in front and on the sides. The so-called "arch-like piece" is a wooden lathe lined on three sides (the top and the two sides) whereas the "enclosure piece" is a wooden lathe encircling the four sides. Figures may be made on both the arch-like and the enclosure pieces to add decorations on the shelf.

An example of each will be given hereunder: Although the mother-of-pearl inlaid black lacquer furniture made in Kangxi is a lacquer furniture, its shape does not differ greatly from hardwood furniture. It is a kind of furniture separated by lateral panels into four compartments without any backing panel and arch-like or enclosure pieces. In spite of its simple construction, it has a surprisingly exquisite inlaid mother-of-pearl pattern.

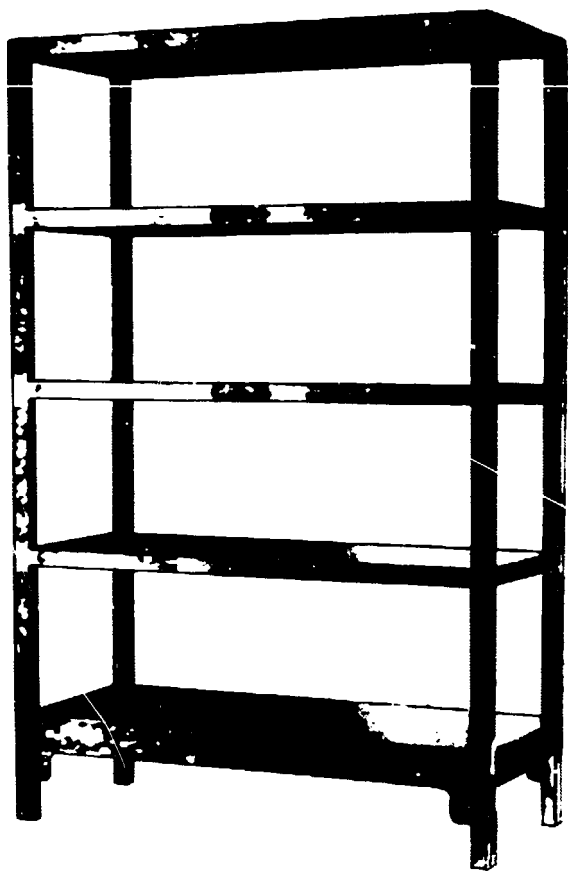


Fig. 30: Black lacquer shelf with mother-of-pearl inlay.



Fig. 31: Shelf with back panel and arch-like pieces at both sides (gold motif on lacquer)

Another example is a three-compartment shelf with an arch-like piece with a cusped and ogeed arch on the front and two sides. It is a product of huanghuali (yellow floral pear).

(2) Cabinet with open shelf:

A "cabinet with open shelf" is a piece of furniture with both the open shelf having compartments without a door and the cabinet having compartments with a door. The open shelf is for displaying objects while the cabinet is for storing them. The Ming style usually places the open shelf at the highest part, while the Ching style often place the open shelf in the middle part and the drawers in the lower part. Both the Ming and Ching furniture may serve as a valuable reference.

Fig. 32: cabinet with open shelf



(3) Round-corner cabinet:

These are so called because the corners of the cabinet caps (or the projected parts on the cabinet tops) are round in shape. There are two functions for the little projection: one is that because all the four legs are "inclined legs", i.e. the upper parts are slanting inwards, if no cabinet caps are added to the tops, a gap will appear between the upper parts of the two cabinets when they are placed side by side, which will be rather unsightly for the eye. They can only be put close together by providing a proper projection corresponding to the amount of inward slant of the upper parts of the legs. The other is that because the round-corner cabinets mostly use wood-hinge doors without metal hinge, the hinge holes can only be made with the cabinet-caps on the upper hinge of the wood-hinge doors, otherwise nothing can be done unless additional installations are used.

Fig.33: Round-corner cabinet

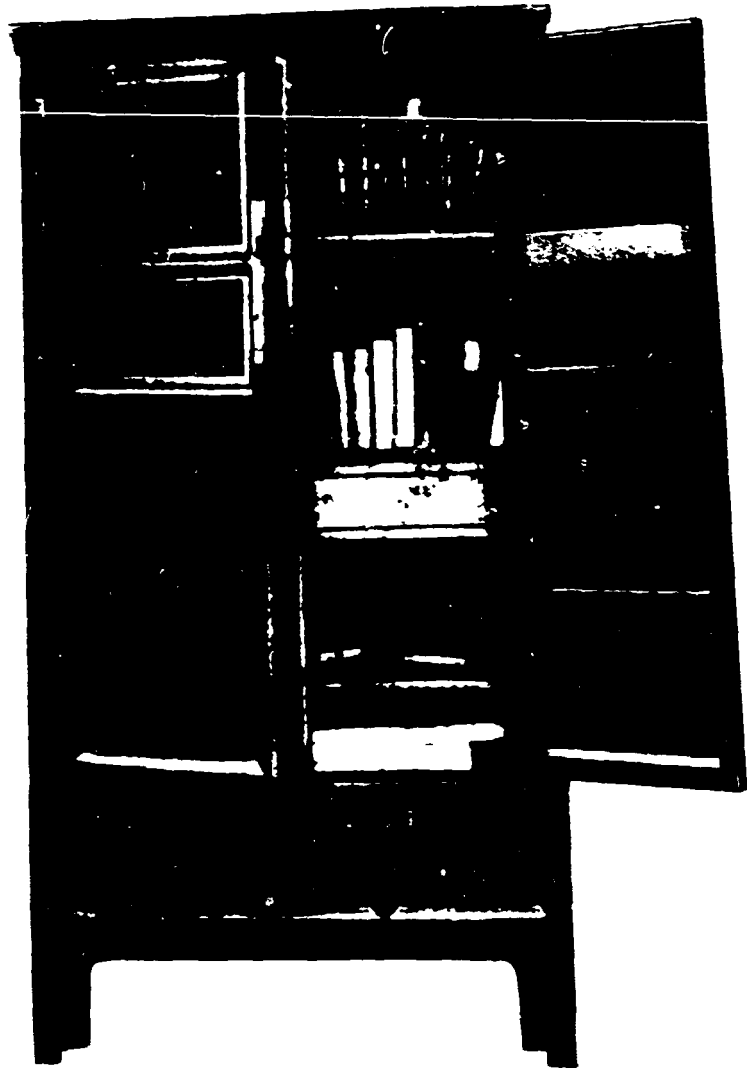


The size of round-corner cabinet is generally narrow. Some of them are made with very simple and plain cabinet-doors in full-panels; others are made with two or three sections separately which may be further decorated. Some have standing columns "latch poles" in the middle of the cabinet-doors; others may go without them. Some of the cabinet doors reach down to the cabinet bottoms, others also have vertical cross partitions under the doors to form the space called "cabinet compartment" for storing objects.

Fig. 34: Round-corner cabinet with latch pole and cabinet compartment



Fig. 35: Round-corner cabinet (doors made in three sections).



(4) Square-corner cabinet:

The top of a square corner cabinet has no cap, nor are its legs inclined, thus its four legs are all vertical from top to bottom and the four corners are all square in shape. They can be divided into two kinds - the large and the small square-corner cabinets. The small one only has a cabinet body with no upper case, therefore it is called "a cabinet in form of a set of Chinese books", because its totally square shape is like a set of Chinese block-printing books, whereas the large one has an upper case upon the cabinet body which is called "compound cabinets in four parts" because the large cabinets are often made in pairs with each pair consisting of four parts. If there are two upper cases on each cabinet for the purpose of facilitating their moving, then each pair of cabinet will be made with six parts so that they are called "compound cabinets in six parts".



Fig.: 36: Square corner cabinet

Fig. 37: Compound cabinet
made in four parts.

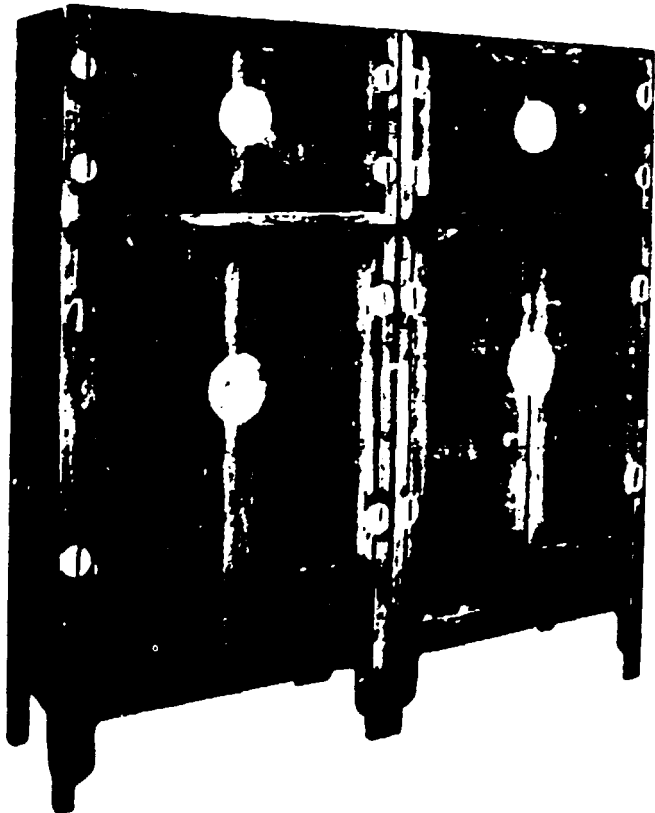
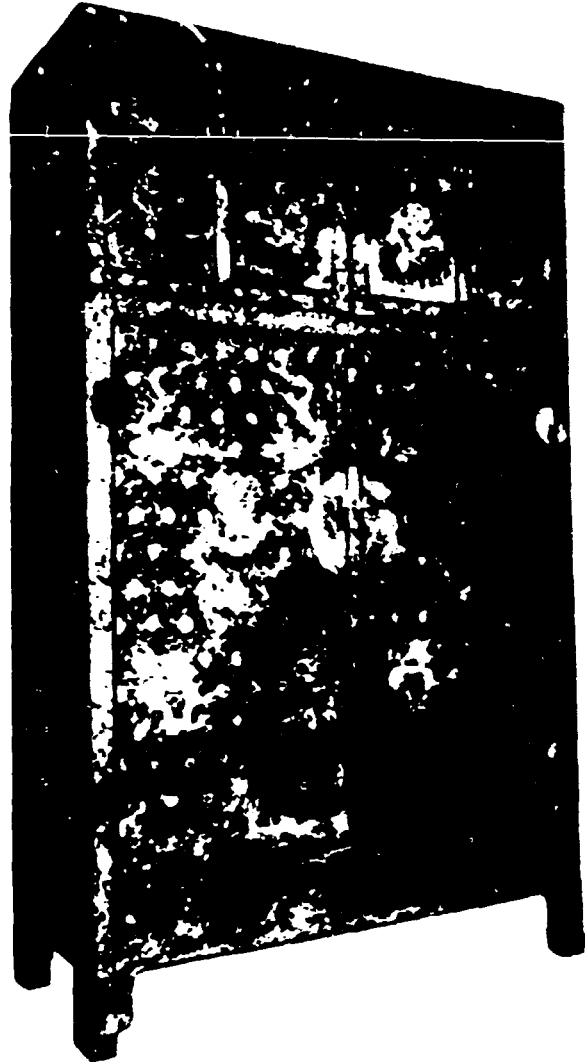


Fig. 38: Compound cabinet in six parts.



Most square corner cabinets are hinged with copper hinges and with latch-poles and cabinet-compartments. There are generally no carvings or decorations on the square corner cabinets, some of them may have relief figures on the apron strips under the front cabinet compartments, however, others may also have full carved figures on the cabinet doors.

Because the large square corner cabinets are too clumsy and not suited for any household use, they do not have much value as references for us to consult with, while the small ones still have some valuable points we could refer to.

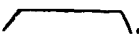
e. Others:

There are six other kinds of furniture which will be introduced here. These are: (1) screens; (2) splay-leg coffer; (3) chest, (4) cloth-rack; (5) washstand, and (6) lantern stand.

(1) Screen:

Screens were used in ancient times as back-drops behind the main seats to show nobility and dignity of their owner, or partitions to separate interior spaces in the building or even the grounds outside it. Of course, if used outdoors, it would not be necessarily made of wood. Screens are still nowadays an indispensable furniture, especially in public places.

There are two kinds of screens: one is the screen with a base (or screen with stand), the other is the folding screen.

One type of the screen with stand is the three-leaf screen, and there is also a five-leaf type screen. Some of the bases of these screens are straight, however the great majority have both ends turning toward the front, like the shape of .

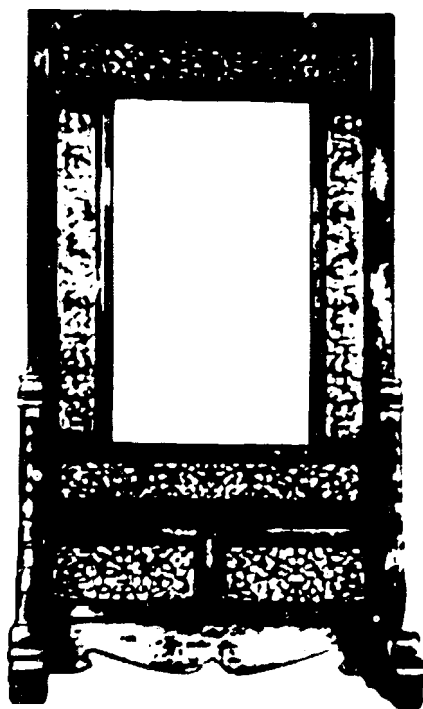


Fig.. 39: Inserted screen with stand

There is also a single-leaf type of screen with stand which is often made with an inserted screen and a stand, the screen of which can be assembled and dismantled as intended. Such screens are called "insert-screen with stand."



Fig.: 40: Three-leaf screen

The three-leaf screen with stand is probably a product of the early part of the Ching Dynasty, it has a more decorative value but an incomplete stand. The insert screen with stand has a hollowed-out dragon pattern ornamented panel surrounding the insert screen. Its moulding is relatively high and narrow. The full-length mirror of the Ching Dynasty was derived from this type of screen.

In order to secure the stability of the screen with stand, the structure is generally adapted to have a post on the base block and "zhanya" (standing apron) at both the front and the back for further support. Some even made the wooden block into the shape of a drum thus preventing the standing-apron from coming off and providing more stability to the post supported by them. Both the standing aprons and the base blocks are parts which can be adorned with hollowed-out decorations.

Something that should be briefly mentioned is a kind of small screen which is placed on the table and used as a sort of decoration. In ancient times, it was probably called "inkstone screen". Its structure is almost identical to the large screen with stand. If its dimensions are not given in a picture, it is very likely to be mistaken as a large screen with stand.

The folding screens are mostly made with screen-leaves in even numbers, such as four, six, eight or even up to twelve. They can either be placed on the ground in a zigzag manner or with both ends turning inwards. As for their construction, their frame may either be made with hardwood plus a screen core in the open work board inserted in the frame instead of the screen core pasted with paper or silk. Recent and modern screens are mostly lacquer-wood ware. Lacquer-work decorations are suitable for screen leaves with large areas, and still better results will be achieved if carved and painted lacquer is used (it is called by modern lacquer workers "dadiaotian", "kehui" or "diaoqi" - a coromandel lacquer). An example of folding screen with flower and birds pattern is given hereunder.

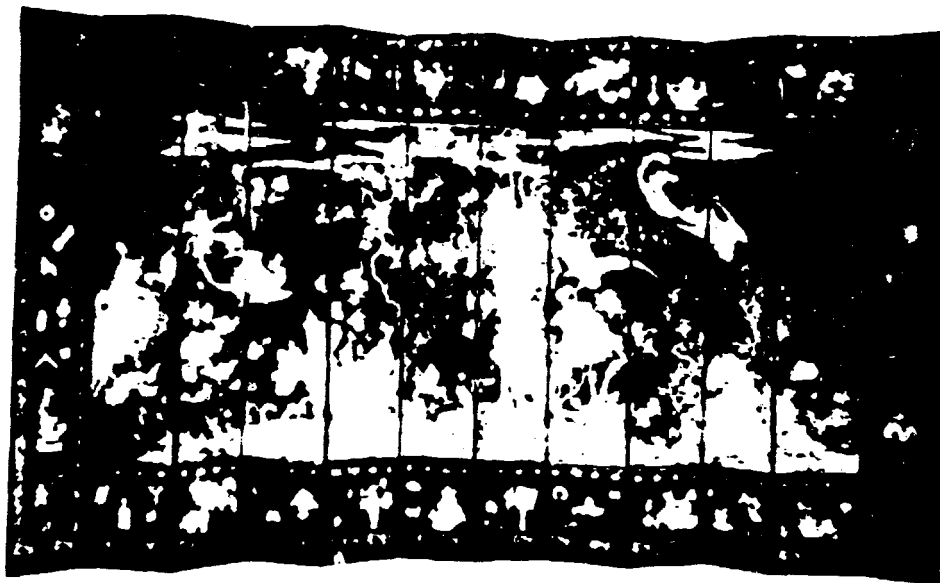


Fig.41: Twelve-leaves folding screen (coromandel lacquer)

(2) Splay-leg coffer:

A splay-leg coffer is a furniture piece which has both the functions of displaying and storing. It looks like a long narrow table that can be used for putting things on, and yet it also has drawers and space underneath the upper surfaces for storing. There is no door to the space itself, when things are to be put in or taken out, the drawers must be pulled out first, it is thus called an "enclosed compartment".

All the splay-leg coffers have "inclined legs". The hanging aprons outside the legs and the apron-strips under the drawers are all component parts that can be decorated with carvings and decorations.

Some of the splay-leg coffer have only one drawer; some of them have two which are called "lian'erchu"(two-drawer coffer) and others have three which are called "liansanchu" (three-drawer coffer). Coffers with more than three drawers are seldom to be found.

Some of the coffer have sophisticated decorations and some are relatively simple and plain. The splay-leg coffer is suitable to be placed close to the wall and pictures and paintings can also be put on the wall above it. It is a furniture piece appropriate for domestic use and we may refer to it for designing modern furniture.

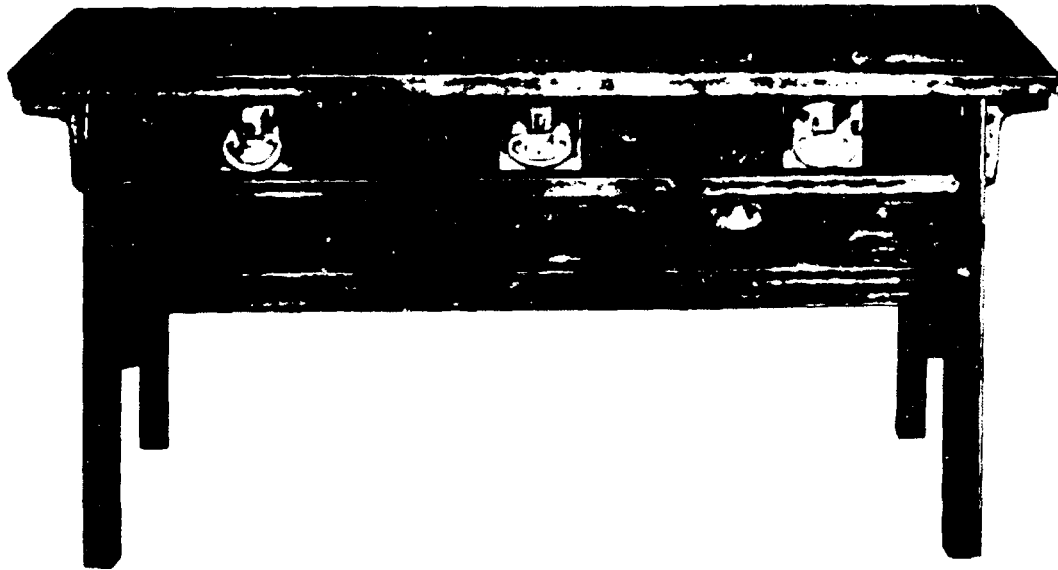


Fig. 42: Three-drawer coffer.

(3) Chests:

There are two kinds of common Ming chests: one is basically similar to the modern chests in shape with a top-lid, copper ornamental pieces and lock-knots in front and hand-rings on both ends; the other is commonly called "guanpixiang" and is developed on the basis of the mirror-chest of the Sung Dynasty. It is opened from the top and a mirror can be placed in the space about 10 cm deep under the lid. Bronze mirrors were used in the ancient times, with the help of a rack, they can be held up and tilted. Under these are the drawers often in three tiers and in front of them there is a two-leafed door, when the lid is down, which will correspond with the notch on the door thus to bolt it. At the bottom there is a base. With the change of habits in daily life, the "guanpixiang" is no longer used as a dressing instrument, however it still has some value for storing other things.

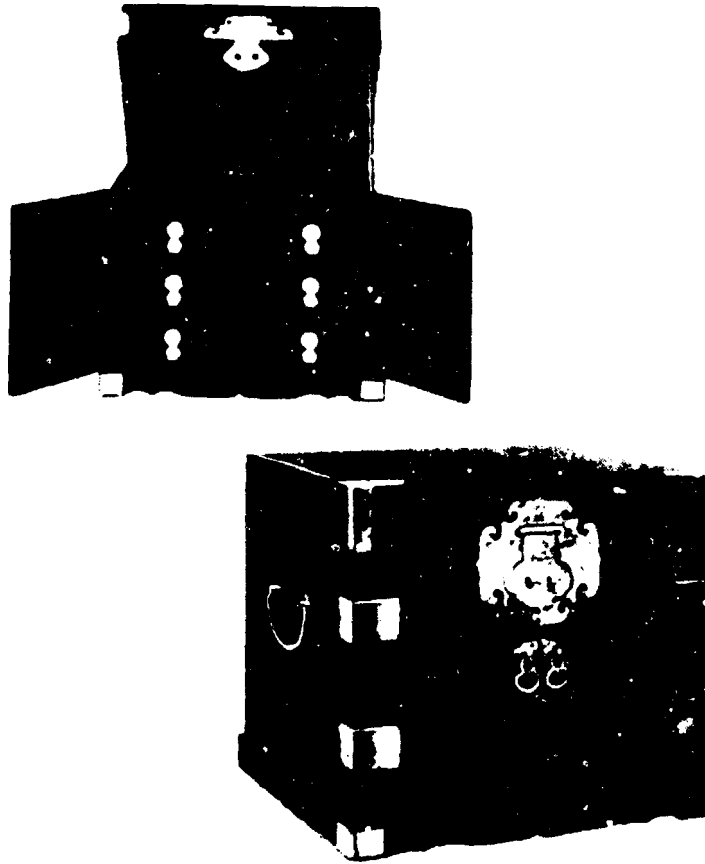


Fig. 43: "Guanpixiang" (chest)

(4) Cloth-rack:

The Ming cloth-rack is composed of two wood blocks with a post fixed up on each of them and then connected with a horizontal beam between them. Its main component parts are more or less like a screen with stand, however the highest horizontal piece (that is the top rail with both ends projecting outwards) and the central panel with very high decorative property are what the screen lacks.

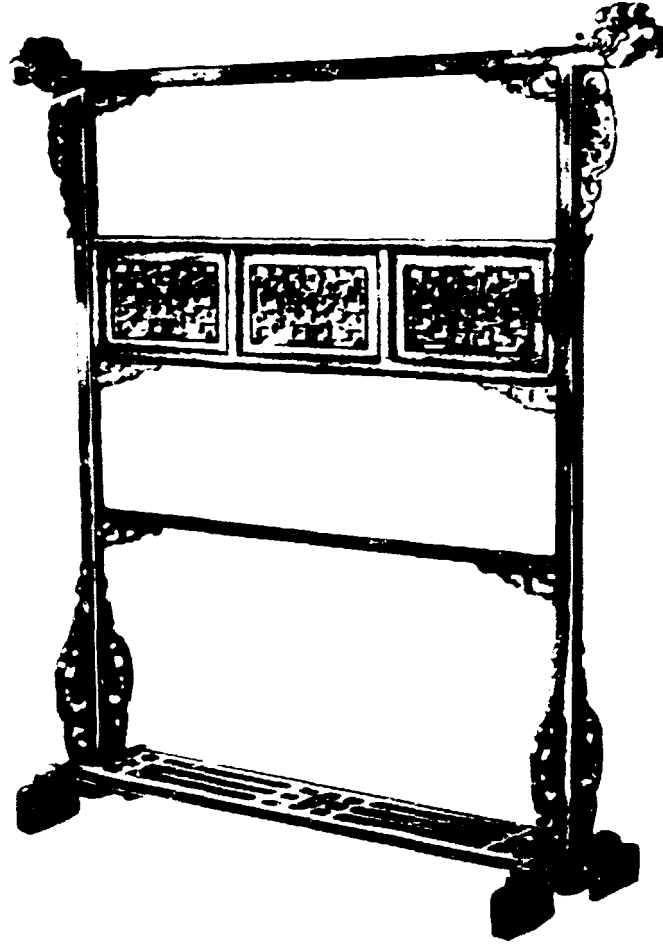


Fig. 44: Cloth rack

Looking at the construction of the Ming cloth-racks, it can be seen that they are used for putting clothes up and not for hanging clothes. When we are designing modern furniture, today we may adopt the moulding of the Ming cloth-rack, however, a clothes' hanger must be added to it otherwise it will not be fit for use.

(5) Washstand:

There are two kinds of washstands: the high and the low types. Generally, the high washstand has six legs with the front four legs lower than the two in the rear. A central panel with carvings on it is fixed between the rear legs and a top rail set at the highest point. These and the cloth-racks also have some points in common. The six legs are connected by two groups of intersecting wooden beams in two rows with three beams in each group.

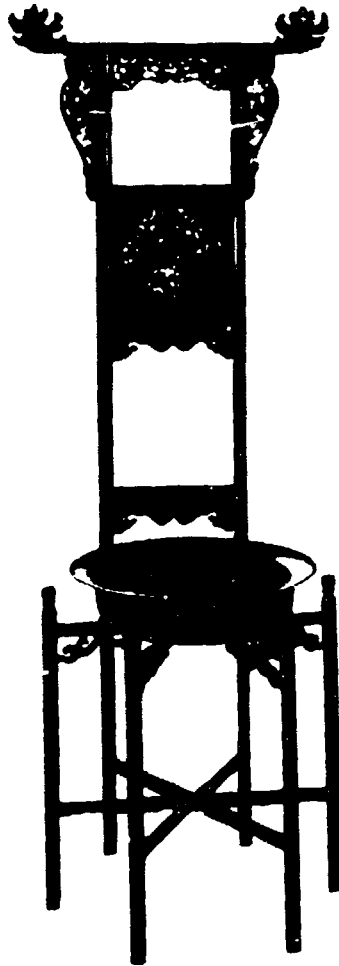


Fig. 45: High washstand with six legs.

There are several kinds of low washstands: the tripod, the four-leg and the six-leg washstands. The common one is a wash-stand with a post top constructed in the shape of a vase or lotus motif. Some of the six-leg low washstands are constructed to be foldable like a conventional drum-stand.



Fig. 46: Six-leg low washstand.

With the changes of modern life, the moulding of the high washstand is no longer of much value to consult with in designing, while the moulding of the low washstands may be adopted to make flower-pot stands.

(6) Lantern-stand:

There are two kinds of lantern-stands: the fixed and the hoist types; some of the fixed lantern-stands have bending post heads for hanging lanterns which are good references for designing modern furniture. However, antique specimens of these are very rare, thus we can only see them in pictures. Some of the lantern posts are straight with the tops made into platforms to support the lantern-shades.

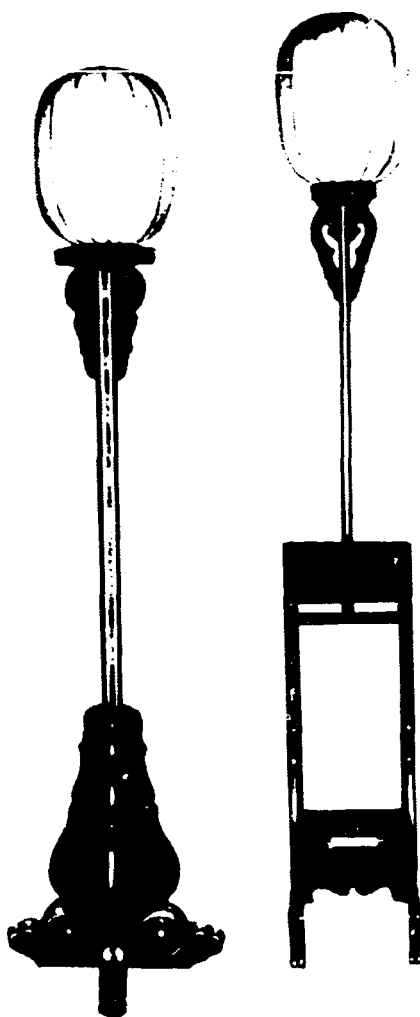


Fig. 47: Fixed and hoist lantern-stands

It is constructed with a base made of a cross-like wood block and a post set up in the middle of the lantern-post which is again supported by four standing apron pieces.

The base of the hoist lantern-stand has the same shape of a screen with stand, there is a transverse piece at the lower part of the lantern-post forming a cross. Both ends of the transverse piece are mortised and channelled into grooves inside the vertical frame of the base. The transverse piece and the lantern post can be slid up and down without any risk of it coming off the long groove. The lantern-post goes out through the round hole on the transverse piece of the wood frame and a wood peg is placed on the side of the hole which can be pushed down to hold the lantern-post in position when it is hoisted to a certain height as required.

E. Mortise-and-tenon joints in conventional furniture:

The various aforementioned shapes and components of conventional furniture are primarily joined with mortise-and-tenon joints. The Ming style furniture specially which has completely done away with nails and even used the fish-glue bonding only as a sort of supplementary measure, have very exquisite mortise-and-tenon joints, ingenious and reasonable in design, clean and sharp in their jointed surfaces, so as to achieve a beautiful and firm result.

The mortise-and-tenon joints of Ming style furniture are introduced here in four groups:

1. Basic joining of timber of various shapes:

The reason why we name the first group "basic joining" is because most of them are making up components which are themselves later assembled.

I. Thin board joining:

Ordinarily, the so-called "thin board" denotes a board approximately one centimetre thick. Such boards are used for the top face of a table, or for the doors or side boards of a cabinet. If one board is not broad enough, two or more boards will then be jointed together for the purpose. In order to joint these securely and avoid warping and splitting, the parts to be joined are made into a tongue and a groove which will be joined up tightly first before applying the glue. Such a type of joint is called the "long-feng joint" (dragon-and-phoenix joint or tongue-and-groove joint).

The above is one of the most common approaches; however, there is also the method of making grooves on both boards and inserting a wooden strip between them to serve as the tongue. This is done when the width of the board is just enough for the purpose and will not be able to meet the requirements if a tongue were to be made from it.


II. Flat-board angle joining:

The joining of two boards at right angles to form the walls of a drawer is called the "flat-board angle joining". The mortise head is generally made into the shape of a half Chinese silver ingot just like the common dovetail tenon of modern furniture, thus preventing it from splitting.


There are several methods of joining flat-board angles for conventional furniture. One of the most coarse methods is the one with exposed tenons on both the front and adjacent sides. It is only used for ordinary furniture among the people. Another one is that with no tenon visible on the front but with tenons seen on the adjacent side. Still another type is the "concealed tenon" or "hidden tenon" where both on the front and the adjacent side no tenons could be seen. Most exquisite hardwood furniture adopt this sort of joining.

III. "T" shaped jointing:

It is also called the "dingzhixin" jointing for "'Ding' letter shaped" jointing for the Chinese character "ding" which is somewhat like the letter "T" in shape. The vertical and transverse lattice jointing on bed rails, and the leg and the stretcher jointing of tables and stools all belong to this type of jointing.

Flat-head jointing is seldom used for transverse and vertical pieces in the Chinese conventional furniture; their heads are mitred or cut into isosceles triangles and fit into their corresponding pieces. They look like the schematic diagram as follows: , however, they are further divided into "large

mitre", "small mitre", "true shoulder", and "false shoulder".

The "large mitre" is just like that shown above in the schematic diagram. The "small mitres" are those where the triangular tips have been cut away. (The schematic diagram is as follows: ). It is easy to see from the schematic drawing that the purpose is no other than to make a vertical piece stronger by cutting off the pointed tip on the transverse piece. The tapered point of the true mitre is solid. The false mitre is also called the "drift mitre" because the part below the tapered point is removed. It is mostly used when the vertical piece is a round timber.

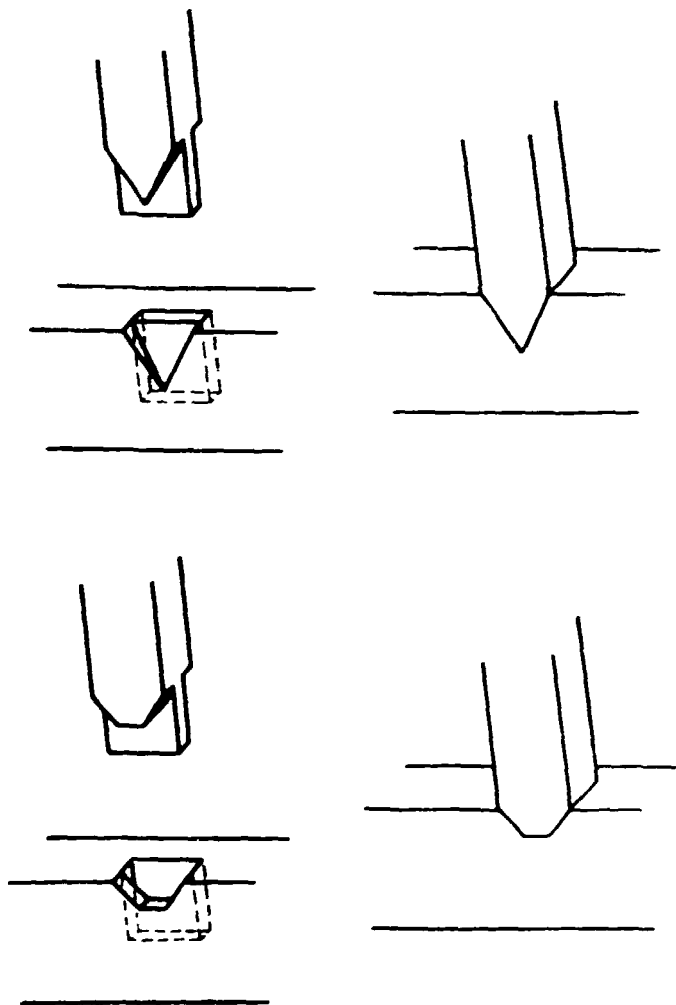


Fig. 48: "T" shaped jointing.

IV. Straight timber right angle joining:

The corners of backs of chair seats and the short transverse and vertical members used to form patterns or bed rails are always done with straight timber right angle joining. Some of them are mitre joints and some of them have the end of the transverse member bent over to join with the vertical piece. The former may either be single hidden tenons or double hidden tenons while the latter are mostly single tenons so that their appearance is more or less like a smoking pipe. Thus they are commonly called "pipe-like joints".

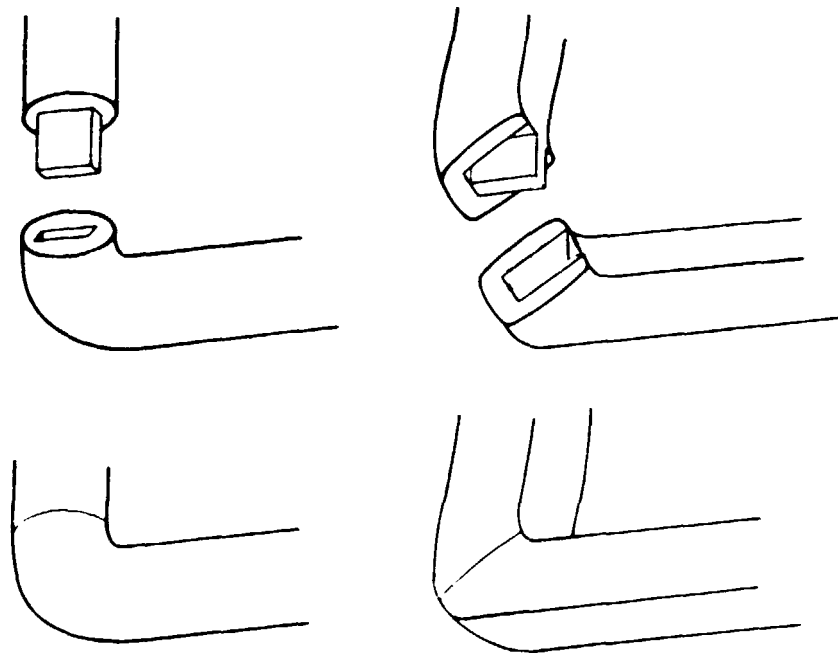


Fig. 49: Straight timber right angle joining.

V. Joining curved timber:

For the rests of round-back armchairs this kind of joining (in the form of very ingenious "cogged-scarf joint") is used. It is made of a tenon with an upper and a lower part held by the tongue to prevent it from swaying left and right and a cog is inserted in the middle to prevent it from moving back and forth. Thus the two round curving pieces are firmly joined into a single piece and in a simple and easy manner.

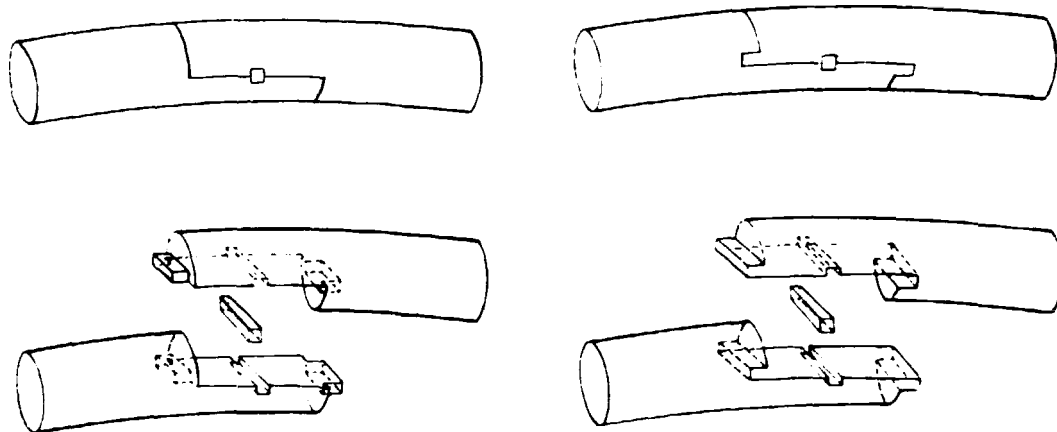


Fig. 50: Joining curved timber.

2. Mitre, mortise-and-tenon frame, and floating flush panel construction:

It is a widely used construction method for the conventional furniture, such as for the top-faces of tables and chairs, cabinet doors and sides. It is not used only when the above components are made from thick boards. One of its advantages is that the inside panel is fixed to the frame formed by four mitred edges thus enabling thin boards to be used side to side with thick boards. Wooden boards can hardly avoid shrinking, particularly transverse shrinking, due to changes in climate. Therefore, when the inside panels are fitted into the grooves of the frame, they should not be pressed close too tight so as to leave some room for expansion and shrinkage. Only one vertical side should be sized; it is also possible to assemble these panels without any sizing. When the wooden frame and its inside panel is assembled, the part to connect with other pieces of the furniture is not the inside panel itself, but the bonding frame made with straight material that has no obvious shrinkage whatsoever. The entire furniture construction will thus not deform through extension or shrinkage. We know that the cross-section of the timber is dark in colour and grainless. By adopting the frame and panel construction, the dark and grainless cross-section of the timber can easily be hidden, and only allow the vertical section with natural patterns and beautiful lustres to be seen externally. The method of fitting panels in frames is therefore a kind of economical, beautiful and scientifically reasonable approach. In order to increase the supporting strength of the inside panel, the panel must have transverse braces dovetailed into it. Both ends of the transverse brace should be joined to the frame by mortise-and-tenon joints. As for the number of transverse braces, they should be determined by the length of the face panel. The two longer frame pieces are called "dabian", while the two short ones are called "motou."

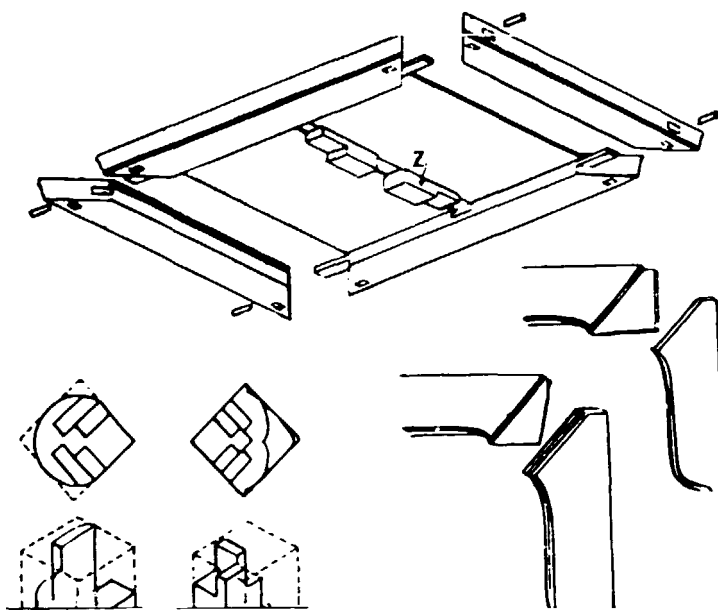


Fig. 51: Frame panel construction

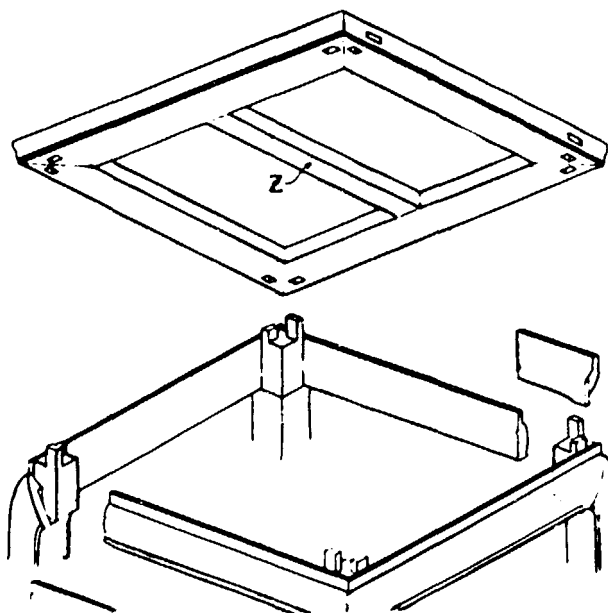


Fig. 52: Frame panel construction

This mortise-and-tenon method consists of making tenons on the ends of the "dabian" and chiseling grooves on the ends of the "motou" (if the furniture is square the "motou" and "dabian" will have no difference in length.) In this way the hollowed-out tenons can be made on the sides instead of the fronts thus making the front look neater. The mortise-and-tenon methods, can be further sub-divided. The most common type, however, is one long tenon only, while in some cases a small triangular tenon close to the corner is added. Externally, all the four corners of the frame are spliced with mitre joints.

3. Joining of legs to the corresponding upper parts:

I. Joining of furniture without recessed waists with their upper parts:-----

The so-called furniture without recessed waists here denote tables, stools, beds and couches, the construction of which is comparatively simple; generally there are both a long tenon and a short tenon made on the top of the leg to join the four pieces of the frame. The frame is either fitted with an inside panel or with woven strips of rattan. Some of them are inserted with an apron piece and a transverse stretcher between the legs, some are installed with straight stretchers or hunchback stretchers, and some have a short post "ailao" ("short fellow") added to support the frame above.

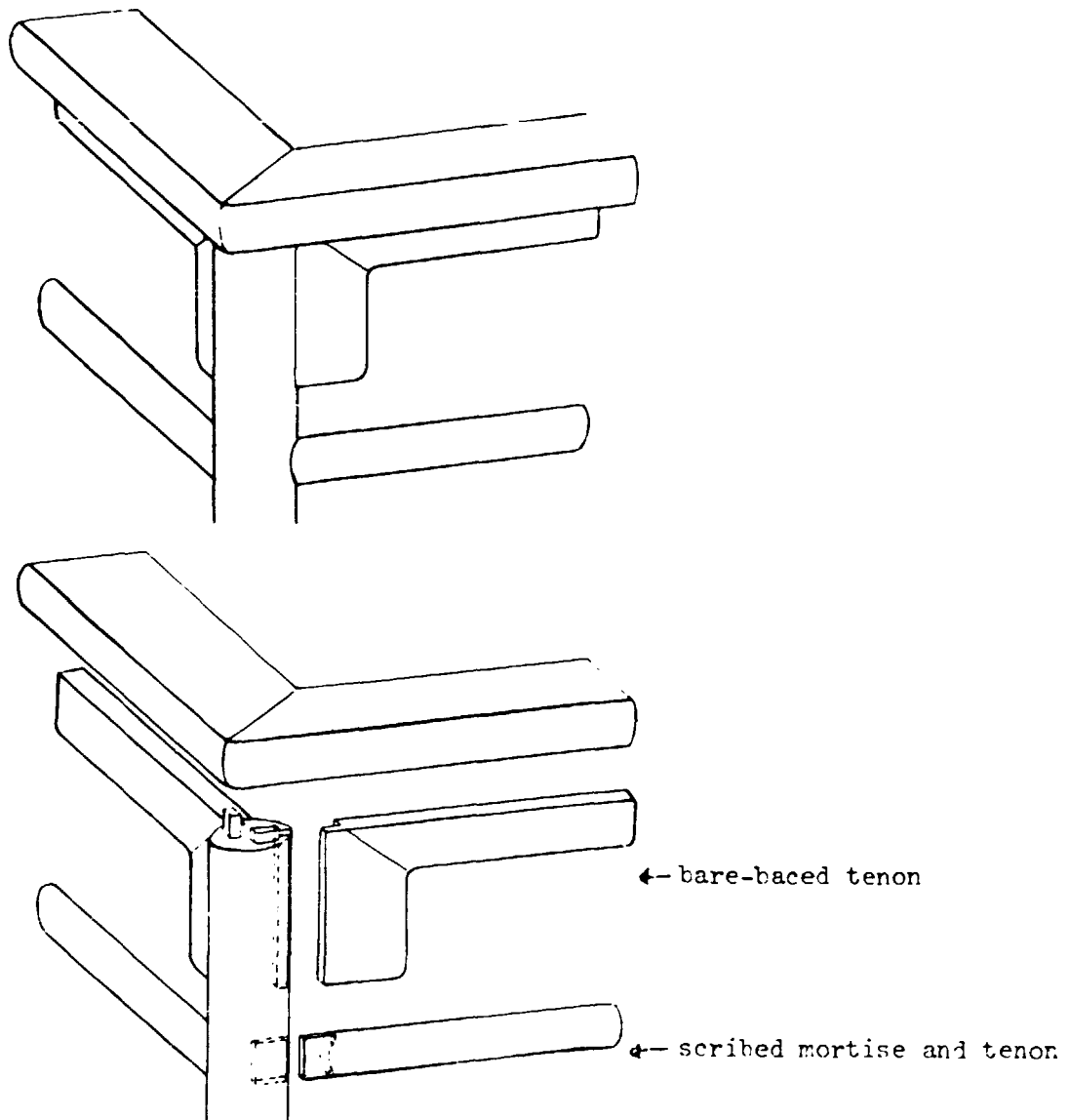


Fig. 53: Joining of furniture with recessed waist (stool)

II. Two types of joining for long narrow tables - mouth-like and shoulder-inserted joints:

The making of a mouth-like joint is to cut out an opening on the top of the leg to fit in the apron strip and the apron head under it. The part of the tenon which comes through above it is inserted into the mortise chiseled on the bottom surface of the frame of the table top. As far as this is concerned, it does not make any difference to the shape of the leg - round or square, their surfaces are all higher than the apron strips and heads.

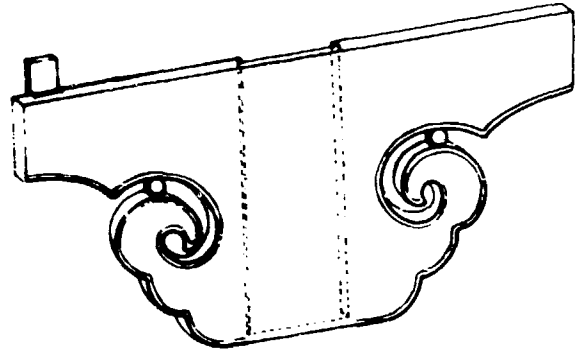
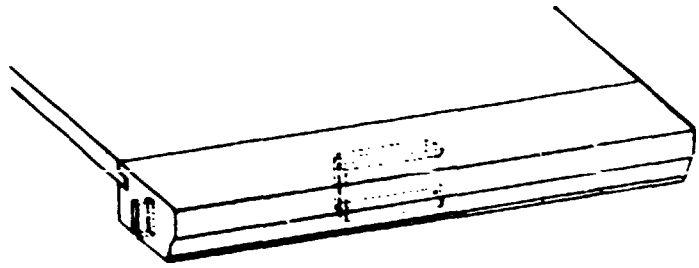


Fig. 54: Mouth-like joint
for "an" shaped tables.

(elongated bridle joint)

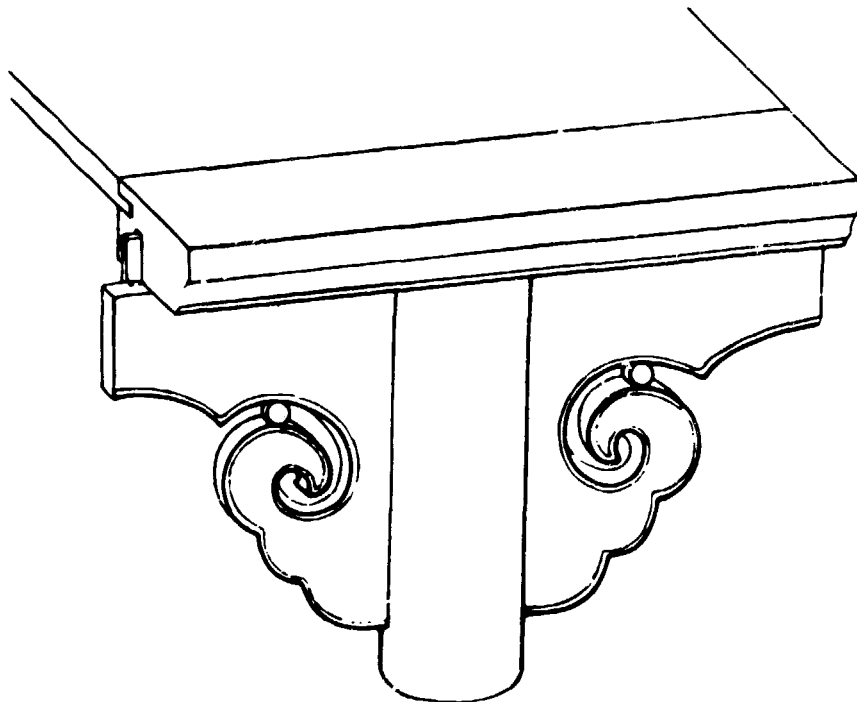
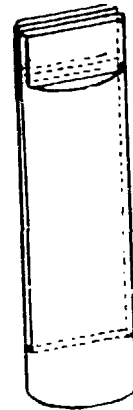


Fig. 55: Mouth-like joint for "an" shaped tables.

Like in the case of the mouth-like joints, the leg tops of the shoulder-inserted joints have also split heads to receive the apron strips of the table tops, but the outer surface of the leg top is cut into a slanting shoulder and a groove is chiseled out on the apron strip at the place where it intersects with the slanting shoulder. When the apron is fitted to the leg, the slanting shoulder is also inserted into it to form a levelled plane. Therefore, the cross-section of shoulder inserted joint legs are rectangular in shape.

In both the above two constructions, the legs are tightly connected to the components such as the apron strips and table tops; the weight of the table top is rationally distributed on the four legs, thus making it a very reasonable construction.

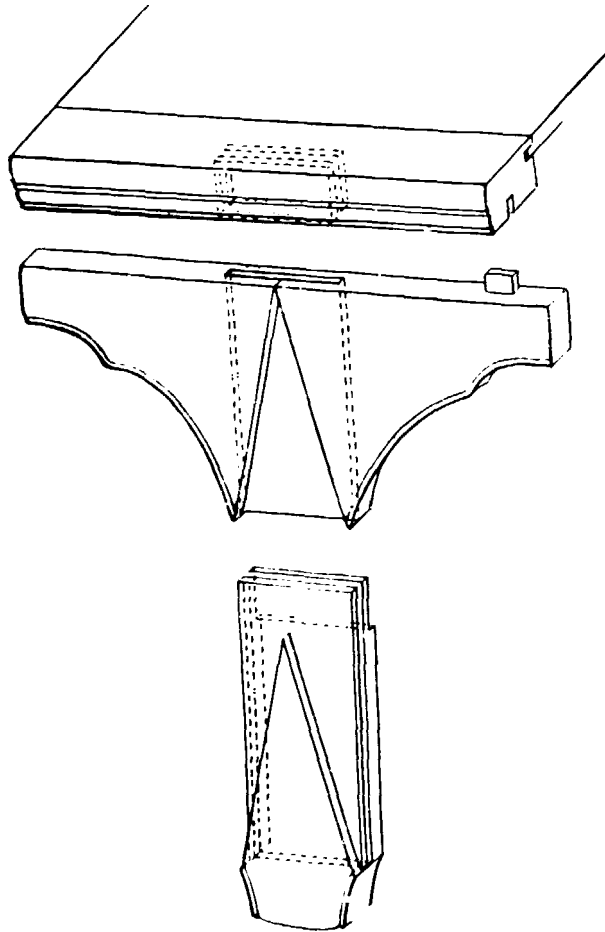


Fig. 56: Shoulder-inserted joints for "an" shaped table. (Elongated bridle joint with mitred shoulder (see also fig.57)).

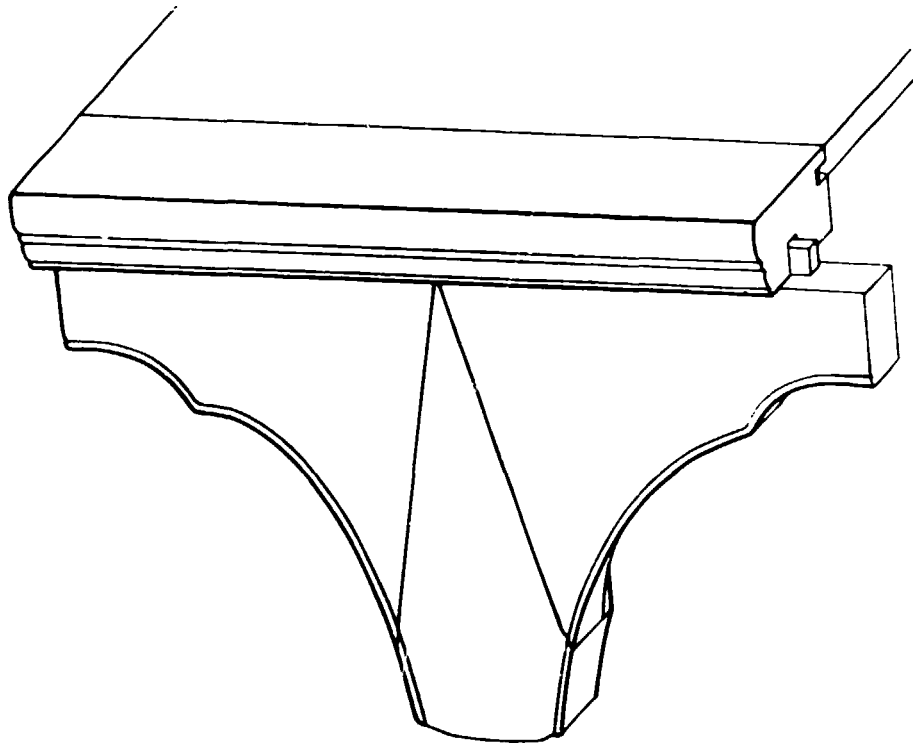


Fig. 57: Shoulder inserted joint for "an" shaped tables.

III. Joining of legs with apron strips, recessed waists and table-tops:

The joints used in this construction method are called "baojiarsun" (shoulder-clasp joint). It is widely used in furniture with recessed waists. There are both a short tenon and a long tenon on the top of each of the legs with the long tenon inserted into the mortise chiseled out on the "dabian" while the short one inserted into the mortise on the "motou". This tenon must be short in order to evade the tenon made on the "dabian". A mitred shoulder is cut out below the recessed waists; a chiseled-out triangular mortise is also cut to fit with the mitres shoulder and the triangular tenon on the apron strips. Some even have vertical link-pins made on the mitre shoulders to insert into the grooves on the aprons thus making the connection of the legs and aprons more tight.

As for the recessed waists, some of them are made at the same time as the aprons, from the same piece of timber, while others are made from separate pieces of timber. The former is obviously the better solution, and most of the Ming style furniture is made from one piece of timber.

IV. Joining of legs of furniture with aprons having high recessed waists, "tuosai", ornamented panels, recessed waists and tops:

The recessed waists of furniture with high recessed waists are two or three times wider than ordinary recessed waists and also often a long narrow component called "tuosai" is added under the recessed waists and above the apron.

The long and the short tenons on the leg tops and the shoulder-clasp joint on the upper part of this construction is similar to the making of the ordinary recessed-waist furniture, only the distance between the two tenons is longer to form a short post. Furthermore, two grooves are made, in preparation for fitting in the tenon tongues on both ends of the high recessed waists. The high recessed waist is often made in segments and each segment may again be made into hollowed-out or relief motifs. Each part of these segmented high recessed waists is also called an "ornamented panel". All their four edges must be inserted into the grooves. Besides being inserted into the above-mentioned grooves, opened on the leg-tops, their top edges should be inserted into the grooves on the bottom surfaces of the frame and their lower edges into the grooves of the "tuosai". Providing it is made in segments, a short post should be added to it and two grooves must be made on the short post so as to insert the edges of the ornamented panels. High recessed waists not only appear among furniture with a square-shaped construction, but are also often used for making furniture of round-shaped construction (such as incense-burner stands).

V. "Zongjiaosun" construction:

"Zongzi" (pyramid-shaped dumpling) is a kind of food made with glutinous rice wrapped up in bamboo or reed leaves. The term "zongjiaosun" implies that this type of joint has an appearance somewhat like a "zongzi". The feature of this joint is that a 45° oblique can be seen from all three sides that are converging to the angle. Most of the upper corner of tables without recessed waists, cabinets, or shelves adopt this type of joint. The long and the short tenons are also

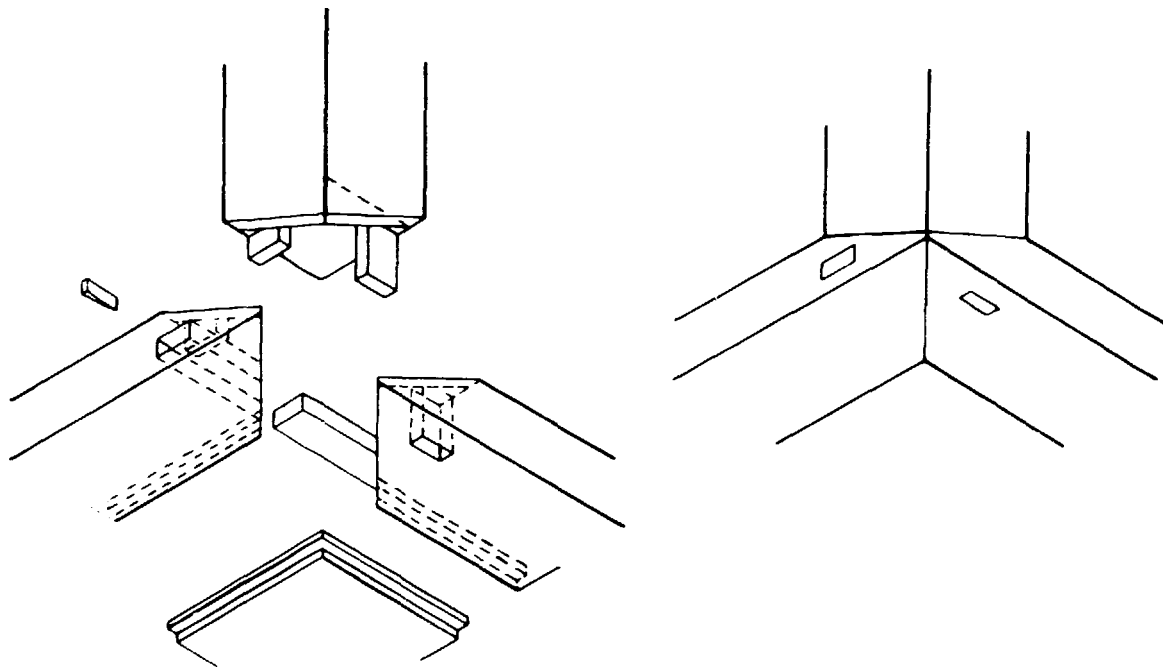


Fig. 58: "Zongjiaosun" (pyramid-joint)

made on the tops of the vertical timber but two triangular standing walls must be made to fit up with the "dabian" and "motou". The "zongjiaosun" is both beautiful, neat and clean, however the joints are too closely concentrated so that the

strength must per force be somewhat affected. Where this construction method is used, a transverse stretcher should be needed to strengthen it.

VI. "Bawangzhang" (giant's arm stretcher) construction:

"Bawang" is a term used to signify that the construction is firm and compact. An oblique stretcher is installed at the inside of the legs with its upper end supporting the top surface of the furniture in a manner just like an arm propping up a load to transfer its weight to the legs. On the lower end of the oblique stretcher is a "gouguadiansun" (hoop-up peg filled joint) that is a tenon cut out like half of an up-turned silver ingot inserted into the bottom part of a tapered mortise. The tenon will be locked by the mortise with the upper part of the smaller opening when the stretcher is pulled upwards. A peg then will be put under the tenon to hold the stretcher in place, thus the stretcher is locked and firmly connected to the legs.

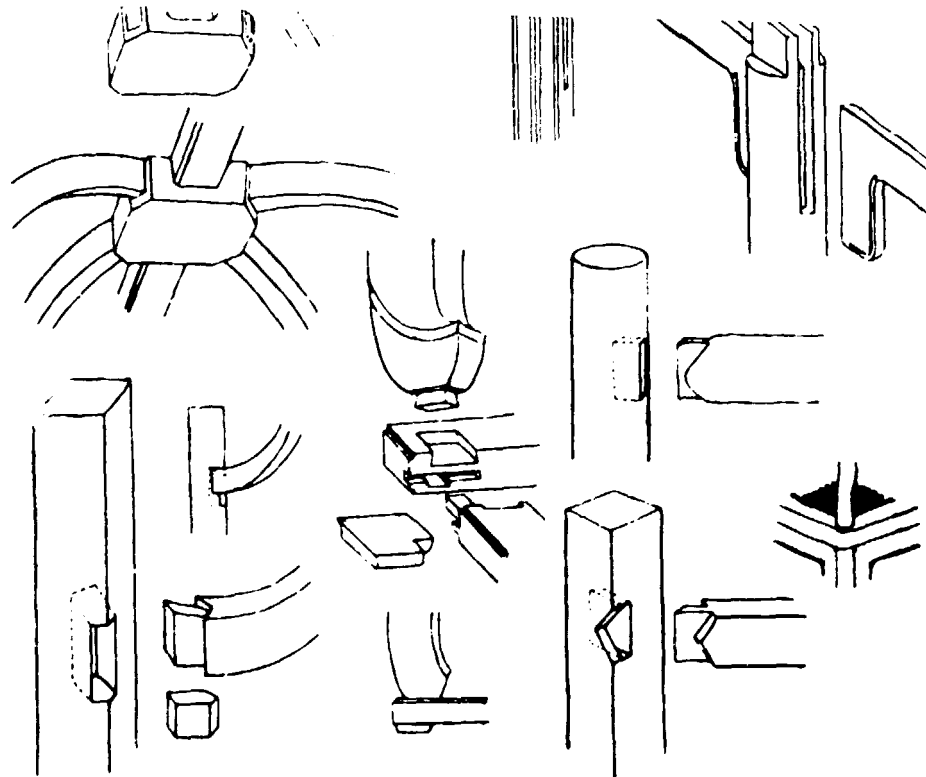


Fig. 59: "Bawangzhang (giant's arm stretcher) construction method.

When it is installed on a table, it not only has the functions of supporting and connecting but it also will not hamper the legs and knees of persons seated at the table, therefore it is really a very clever construction.

VII. Joining of chair legs with aprons and seat frames:

For the Ming style chairs, the rear legs usually come through two cut-outs in the seat-frames to form the posts of the seat back. As for the armchairs all four legs come through cut-outs in the corners of the seat frame to form the posts of the seat backs and armrests. The legs should also be connected with the aprons and stretcher under the seat frame, however such examples are rather scarce and the construction is not very firm.

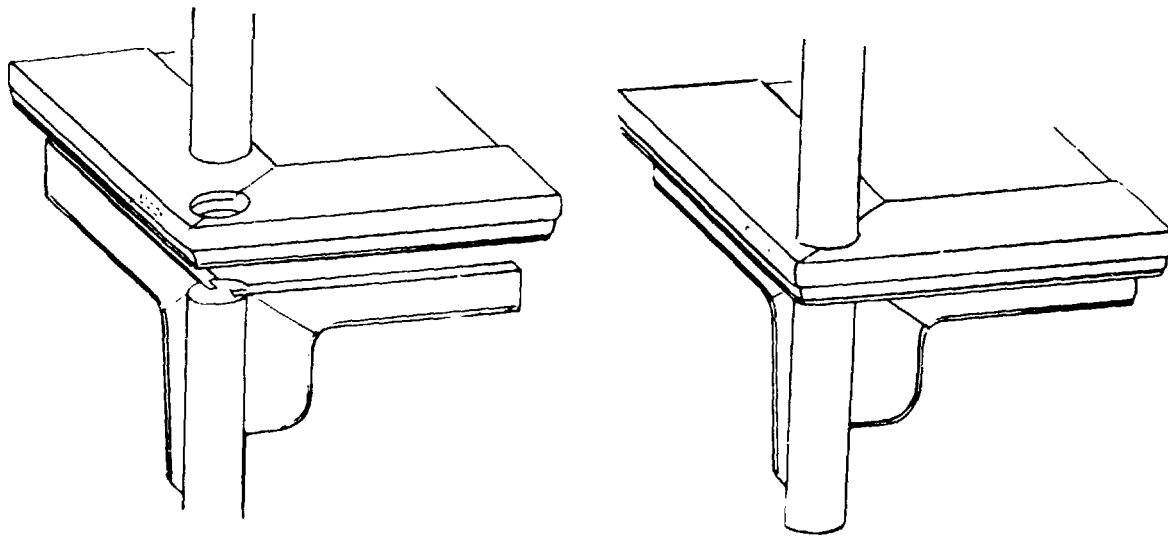


Fig. 60: Joining of chair legs with apron and seat frames.

4. Joining legs of furniture with their lower components:

I. Joining of square furniture with square bottom frames:

The bottom frame is a frame shaped component installed at the bottom of the legs.

Under square furniture there are bottom frames installed which are made of four pieces of timber in a way fundamentally similar to the making of the bonding frame on the top faces of tables and stools. The four corners of the bottom frame are chiseled into holes for receiving the tenons on the lower part of the legs. This tenon is either made with the leg successfully from the same piece of timber or a tenon is fitted to it separately. The former is obviously firmer than the latter. Under the bottom frames, small feet are still fitted. They are - and not the bottom frames themselves - the parts actually directly touching the ground.

II. Joining round furniture with round bottom frames:

There are often bottom frames under the legs or round stools or round incense-burner stands. The assembly of the bottom frame uses the method called "xiedingsun" (cogged-scarf joint), that is the curved timber joining the arm-rests on the round back armchairs. The point of joining the legs with the bottom frame must shunt off the cogged-scarf joint, otherwise it will be chopped off while chiseling the mortise.

III. Joining legs with base supports on long tables:

The "base supports" are the two transverse timbers fitted at the ends of the legs on a long table with each of them supporting two legs. As for its construction, there are two tenons on the lower end of the leg and two mortises chiseled on the base supports. The advantage of such base supports is

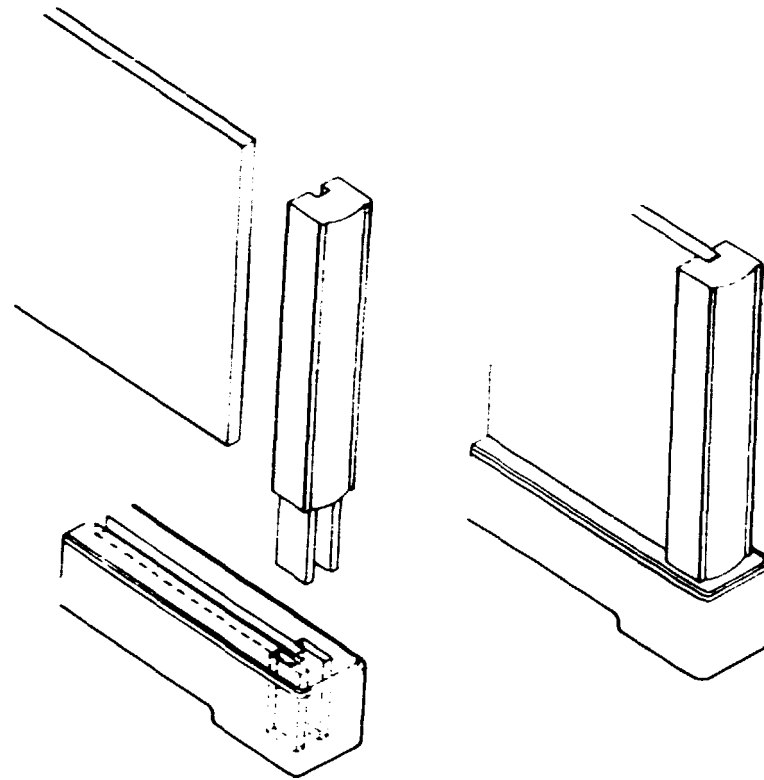


Fig. 61: Base support of long narrow table.

the ease of its replacement in case it becomes damp and rotten; all one has to do is only change two transverse pieces. If the four legs are allowed to touch directly the ground, the entire leg should be replaced once it is rotten. This will be a very expensive operation, wasting both labour and material.

IV. Construction of "base block" embedded with posts:

All screens with stand, cloth-racks and lantern-stands adopt this construction. The base of the furniture is composed of two thick and heavy wooden blocks with holes chiseled out in the centre for embedding posts. Large triangular standing spandrels are used to support the post both in the front and

at the back so as to secure its stability and avoid it being upset. Furthermore, in order to make the spandrels stand firmly, both ends of the block are made into the shape of a drum, and the bulging round drums are utilized to guard the spandrels. Since the lantern stand has only a single post, the two base blocks at the lower end are intersected at right angles and a mortise is chiseled in the centre of the intersection to plant the post.

F. Decorative arts of conventional furniture:

1. The natural beauty of the hardwood:

The artisans making the Ming style furniture were highly talented in the decorative arts, and the actual objects passed down from the past are the best evidence of this point. Hardwood often has very beautiful patterns specially the huang huali and jichimu. The carpenters usually choose materials with the best patterns and put them at the conspicuous parts of the furniture. On some round corner cabinets thick boards with patterns have been sawn in two halves to be used for the two panels of the cabinet doors. The chair backs with beautiful patterns are certainly more inviting to the eye than those without any textures. Some choose two different kinds of timber and use them on different parts of the same piece of furniture, such as the tzú t'an with a dark colour is used to make the main frame of the arhat bedstead while its minor components are made with light coloured wood, thus a decorative result is achieved through the contrast.

2. Mouldings:

The Ming style furniture uses very exquisite mouldings which have not only taken the harmony and integrity of the whole body into consideration but also often show great originality. To sum up,

the faces of the mouldings are no other than the plane, the convex, and the concave while the lines of the mouldings involve the difference among the high, the low, the shallow, the deep, the wide and the narrow. However, when they were applied to concrete objects through matching and variation, the patterns emerged one after another.

Examples are given hereunder of the mouldings often used on the daban, the motou, the stretchers and the legs, and the shape of which will be expressed by this sectional line diagram.

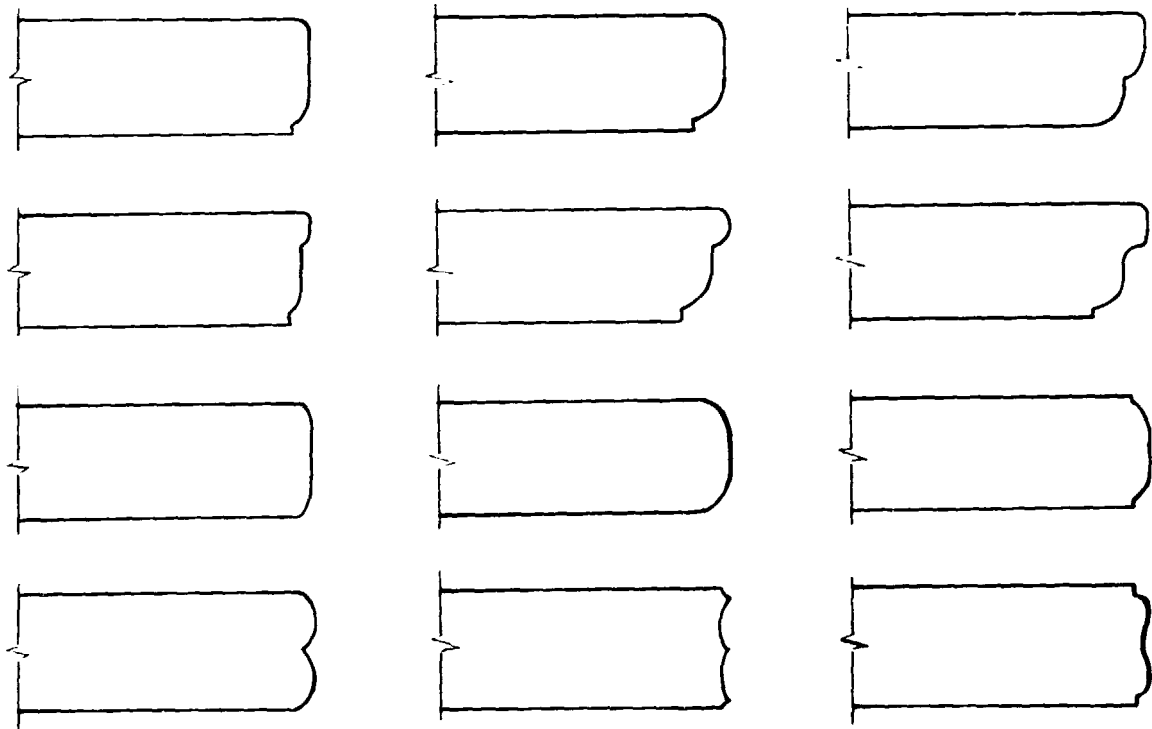


Fig. 62 a: Cross-section diagrams of examples of mouldings

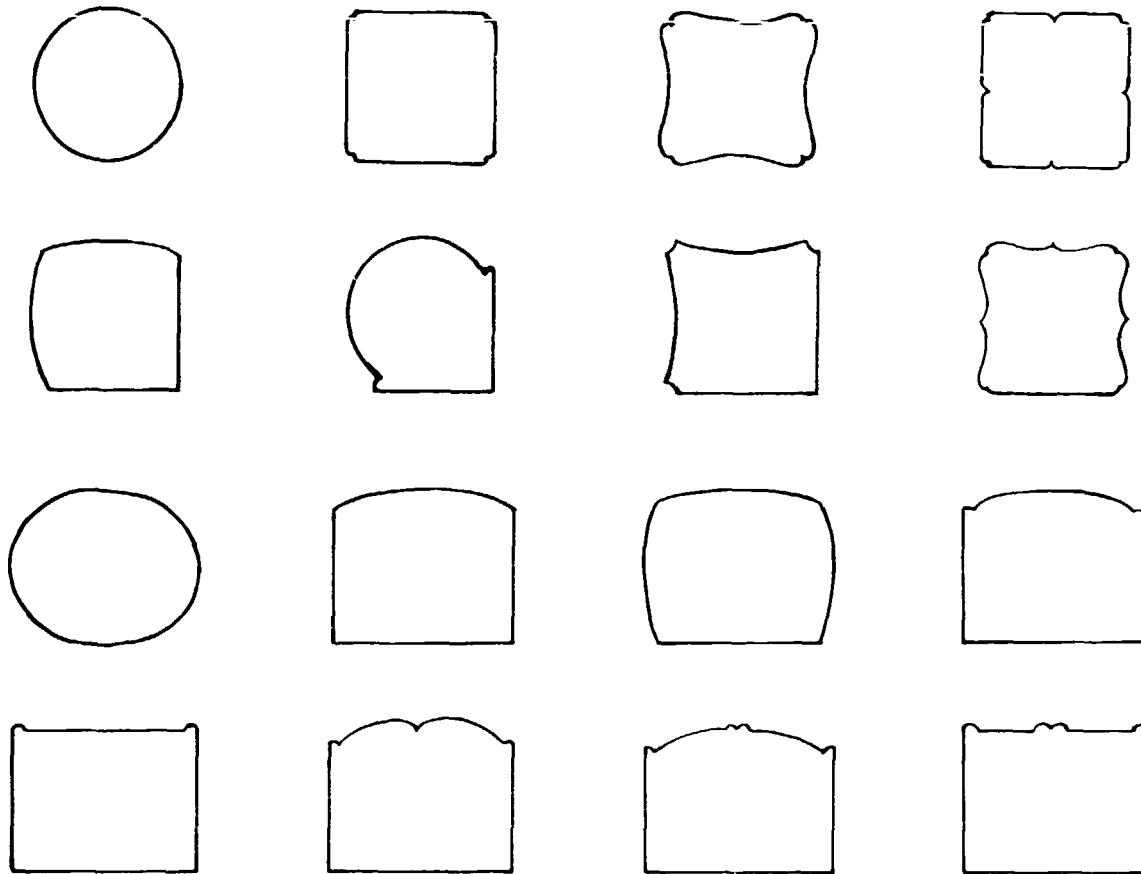


Fig. 62 b: Cross-section diagrams of examples of mouldings

The mouldings of the dabian and motou are generally protruding outwards at the upper part and shrinking at the lower part, somewhat like the edge of a plate. There are also mouldings with balanced upper and lower parts.

All the mouldings applied to the square or round legs looking like ridges on a melon (regardless of whether the ridges are wide or narrow, dense or sparse, intermingled densely or sparsely) are called "sweet melon ridges". Some of these only have mouldings on the two sides exposed to the outside while the two inwards facing sides are all plain.

Another type is applied to the rectangular or oblong legs which often adopt the method of decoration by elevated lines.

3. Joining and assembling processes:

"Joining process" means pre-assembling, that is joining together the short transverse and vertical wooden strips to form a pattern; whereas the "assembling process" relates to assembling the engraved or hollowed-out components into a motif. Sometimes the combination of the two is also used. These methods of decoration have been used since the ancient times. They often appear on banisters, doors or windows. The artisans in the Ming Dynasty had also very skillfully and ingeniously used it on furniture and had achieved an excellent decorative result.

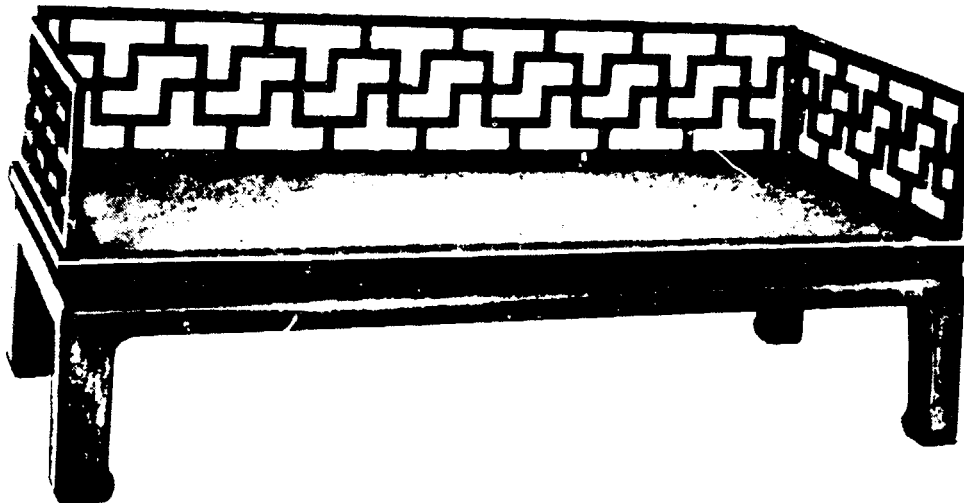


Fig. 63: Pattern made by joining process.



Fig. 64: Pattern made by assembling process

The jointing and assembling processes are often used on certain parts of furniture as follows:

- table aprons or elements under table aprons;
- elements between legs of long narrow tables;
- rails on arhat bedsteads and testered bedsteads;
- banisters on shelves;
- top-faces on footstools;
- cabinet doors;
- central panels on cloth racks, washstands, etc.

The application of the jointing or assembling process also has its own governing law. Generally, most heavy bearing or frequently rubbed parts on a furniture piece adopt the jointing process; whereas those having a smaller load-bearing and not being rubbed as often adopt the assembling process. This is determined by the requirements for its extent of firmness. Thus the aprons of tables and the top faces of footstools mostly use the jointing process; while the cabinet doors and central panels of cloth-racks use the assembling process.

4. Carving:

For decorative effect, carving is the most common and also most important approach to conventional furniture which can be summed up into four kinds from a point of view of technique and skills.

I. Linear carving in intaglio:

The incision section of the pattern carved out is "V" shaped. It is either cut out twice with a single-edge knife or once with a double-edge blade. Some linear intaglio carved patterns on conventional furniture are even filled up with gold, mineral green or azurite colour to make it more eye-catching.

II. Relief:

Besides the differences in high, low, fat and thin there are also many other differences of relief patterns. Some patterns cover up the whole space without exposing the base at all, while others have the patterns sparsely distributed with the base widely exposed. The exposed bases are again divided into the plain base and the fancy base, the former being also called "scraped base" which means that the base has been scraped to obtain a plane while the latter adopts a shallow and regular pattern to set off the motif.

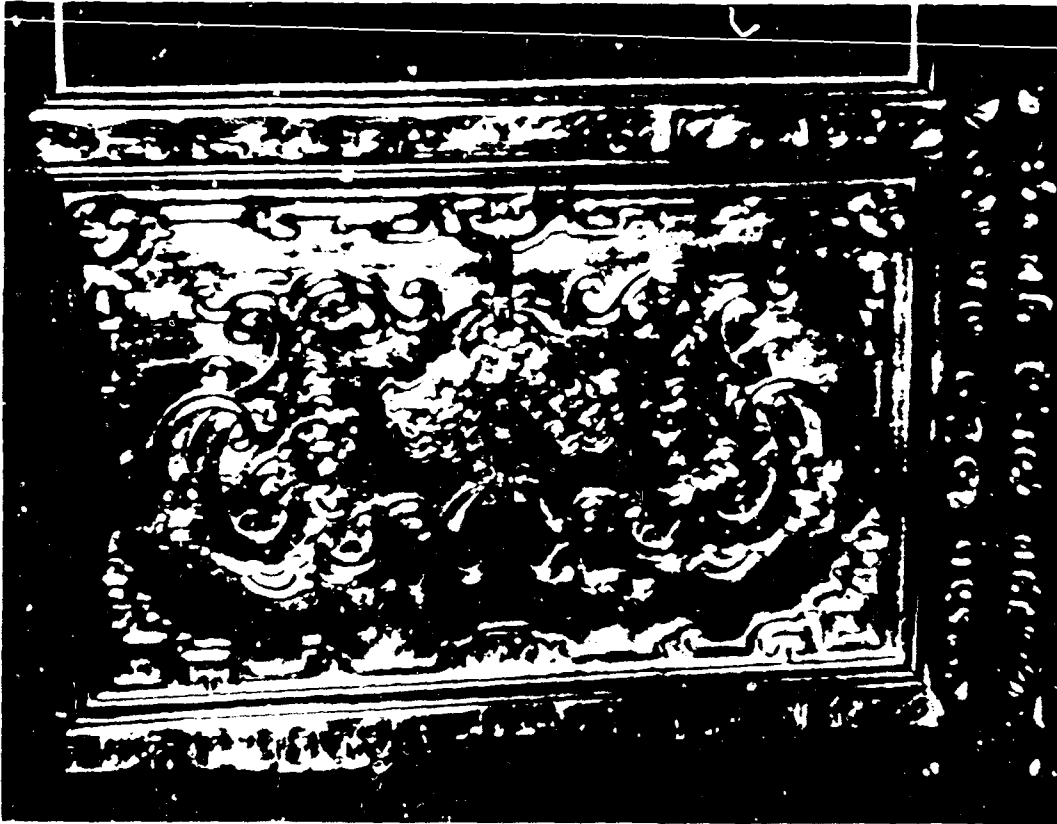


Fig. 63: Relief from "a", eighteenth century furniture piece.

III. Hollowed-out carving:

The hollowed-out carving is a cut-through engraving which is divided into "single-face process" and "double-face process". The former is only with one face meticulously carved and the back is almost flat without any polishing at all, whereas the "double-face process" engraves on both the front and the back and is often applied to the parts which can be seen from both sides, such as the central panels on cloth-racks and the ornamented panels on screens with stands. The aprons on tables are parts with only one side exposed to the outside.



Fig. 64: Hollowed-out carving.



Fig. 65: hollowed-out carving from high washstand.

IV. Round carving:

Sometimes solid round carvings also appear on furniture such as dragon heads and phoenix heads on the ends of the top rails of cloth-racks and washstands, and the squatting lions and lotus petals on the tops of washstands.



Fig. 65: Round carving.

Of course the above skills and techniques can also be combined together in the same piece of carving thus obtaining more variations and a better decorative effect.

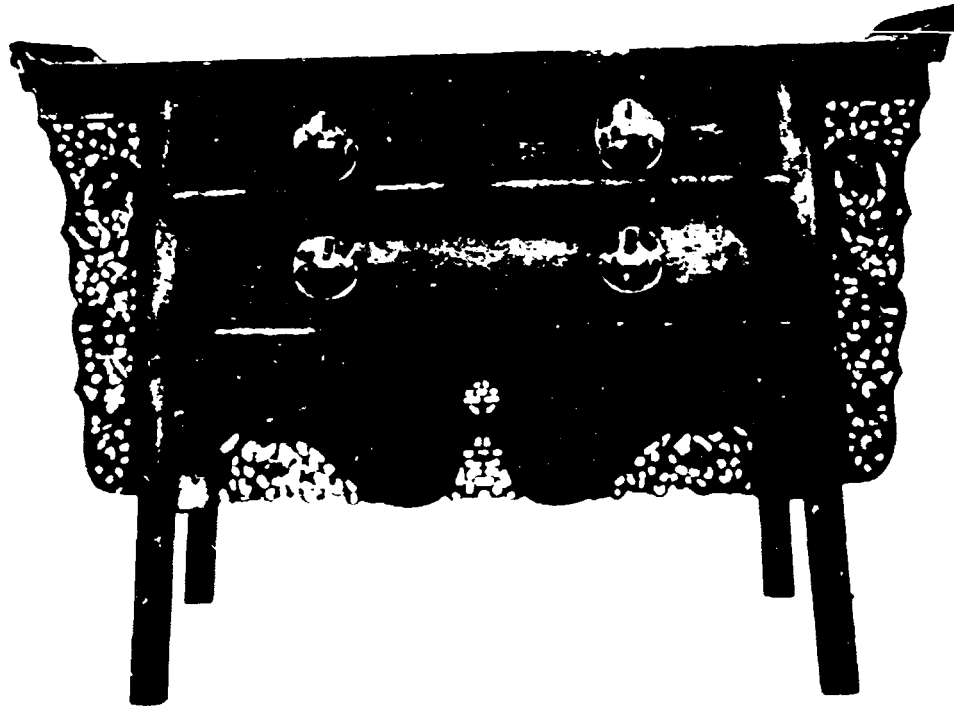


Fig. 67: Splay-leg coffer as an example of combination of relief carving and hollowed-out carving.

The Ming style furniture is also rich in subjects of decorative patterns. The most common ones are vine clusters, interwoven lotus petals, cloud patterns, glossy ganoderma, dragons, phoenix, unicorns, etc. Patterns with propitious characters are also very common, such as the characters for longevity, happiness, etc. Human figures, flowers, birds and animals are also often used for decorative patterns on furniture.

5. Inlaid work:

Inlay is also often used in conventional furniture. The materials used involve mother-of-pearl, wood, or a variety of precious materials such as jade, ivory, and rhino-horn which is called "a hundred treasure inlay".



