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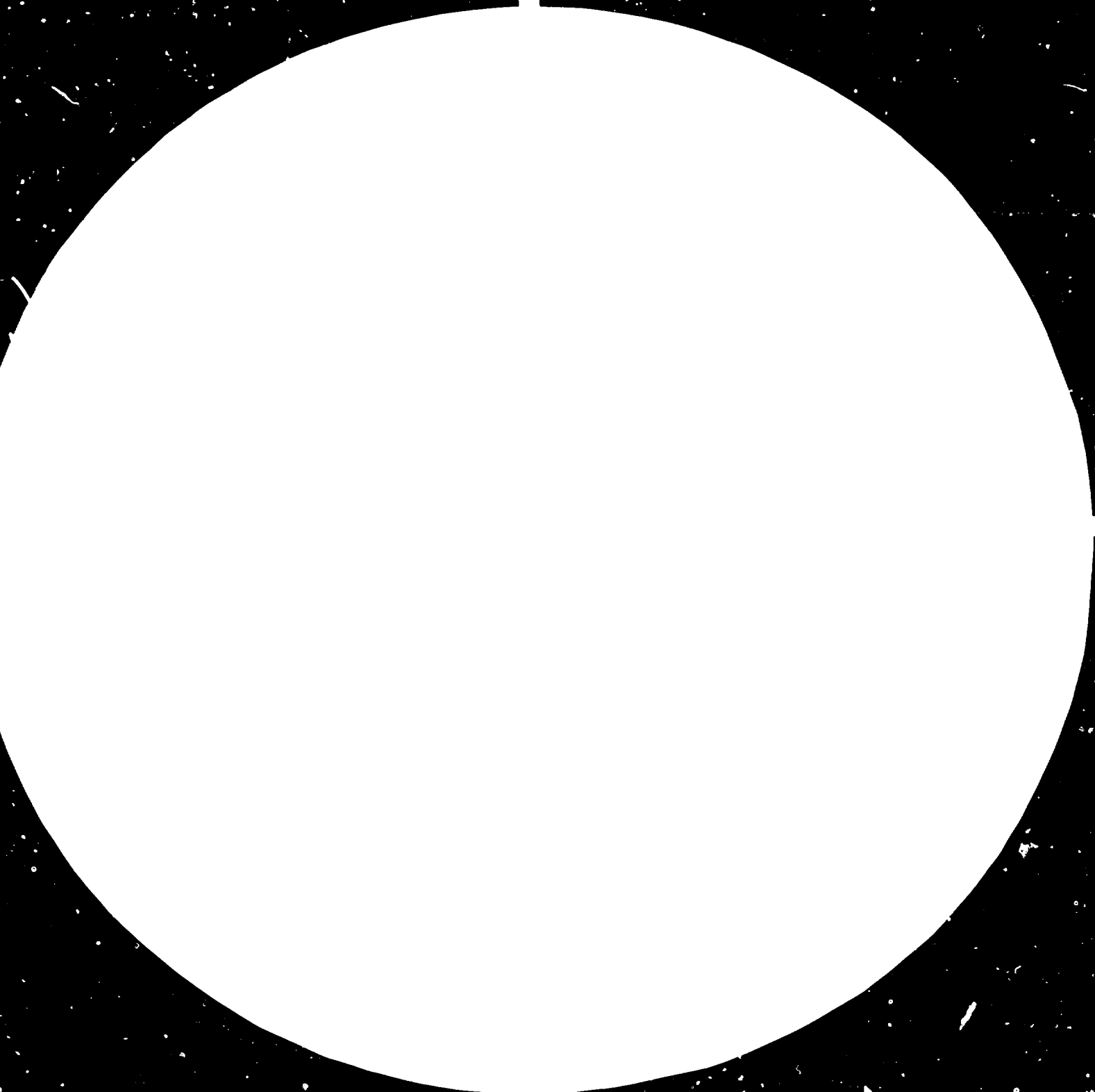
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Classification (IPC)\*

III - Agricultural Machinery and Implements

Industrial and Technological Information Bank (INTIB)

Industrial Information Section  
UNIDO Technology Programme

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### FOREWORD

The Industrial and Technological Information Bank (INTIB) came into existence in 1977 as a UNIDO pilot operation in four industrial sectors: Iron and Steel, Fertilizers, Agricultural Machinery and Implements, and Agro-Industries. After its successful completion, INTIB has become a permanent activity of UNIDO covering, for the time being, 20 industrial sectors. Its main objective is to facilitate the choice of technology for decision makers in developing countries.

Users' Guides to the International Patent Classification (IPC) were produced by WIPO in co-operation with the European Patent Office in the four sectors selected for the pilot operation of INTIB. They are intended to facilitate access to patent information through the use of the UNIDO Thesaurus of Industrial Development Terms. The Guides stress the importance of patent information for technology selection and describe the process of the identification of patent documents using the International Patent Classification (IPC).

It is hoped that this document will be of assistance to industrial information facilities in developing countries in identifying technologies of relevance to investment decision-making on the basis of appropriate choices of technologies.

Dr. Abd-El Rahman Khane  
Executive Director

## PREFACE

This Users' Guide to the International Patent Classification (IPC) is one of a series dealing with the use of the IPC to retrieve technological information from patent documents. Each Guide considers a well-defined technical section of direct relevance to the development process in developing countries and gives detailed guidance as to how pertinent technological disclosures contained in patent documents may be identified by using the IPC.

The series of Users' Guides to the IPC so far covers the following technical sections:

- Guide No. I - Fertilizers
- Guide No. II - Iron and Steel
- Guide No. III - Agricultural Machinery  
and Implements
- Guide No. IV - Agro-Industries

The Guides have been produced by the World Intellectual Property Organization, Geneva, in consultation with the European Patent Office, Munich, following an agreement with the United Nations Industrial Development Organization, Vienna.

REVISED EDITION  
GENEVA, 1981

Arpad Bogsch  
Director General  
WIPO

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## INTRODUCTION

1. Today, in many fields of technology, scientific and technological development is advancing at a very fast pace. Scientific and technological information is assuming increasing importance as a vital resource in the development of national economies, and has become a major factor in the formulation of national policy decisions.
2. Scientific and technological information is primarily to be found in patent documents and in technical and scientific books and periodicals. Access to that information, which is vast and rapidly expanding, demands the use of an efficient, widely accepted, classification system. This Guide describes, in general terms, the usefulness of patent documents as a source of technological information and explains how the International Patent Classification (IPC) may be used to retrieve technological information concerning AGRICULTURAL MACHINERY AND IMPLEMENTS.

## PATENT DOCUMENTS AS A SOURCE OF TECHNOLOGICAL INFORMATION

3. In this Guide, the expression "patent documents," means published patents for invention and published patent applications. It also includes other published documents reflecting other forms of protection for inventions, such as inventors' certificates or utility models.
4. By technical and scientific books and periodicals is meant such books and periodicals which contain texts that describe solutions to technical problems. They are sometimes referred to in English as "non-patent literature."
5. The expression "patent information" is used in this Guide not (as in some other contexts) to indicate information about patents and patent applications but to mean the technological information content of patent documents.

### Characteristics of patent documents

6. In searching for, and retrieving, technological information, patent documents have more practical importance than periodicals and books. This is so for several reasons, the most important of which are briefly described in the following paragraphs.
7. One reason is that patent documents should and, in fact, usually do, disclose solutions of technical problems more clearly, more completely and in more detail than most periodicals and books. They have to do so; otherwise the said disclosurer do not qualify as "patents for invention".
8. Another reason is that patent documents bear classification symbols of a classification system--the IPC--which was so devised that it should facilitate the finding of the state of the art in a given technology. Later parts of this Guide give a detailed introduction to the IPC and deal exhaustively with the retrieval, by use of the IPC, of patent documents concerned with AGRICULTURAL MACHINERY AND IMPLEMENTS. Articles in periodicals and books usually do not show any classification symbols or, if they do, the classification is usually one which has not been devised for the purposes of finding the state of the art.
9. An additional reason for which patent documents are generally more useful than periodicals and books is that patent documents are drafted in a certain style and their contents are divided in certain parts which follow each other in a certain order. And this is true not only in respect of the patent documents of a given country but also in respect of the patent documents of all countries. The resulting advantage is that a searcher reads documents which have a structure with which he is familiar. Such uniform structure does not always exist in the case of articles in periodicals and books.
10. Finally, there is still another reason for which patent documents are more useful than periodicals and books. This reason lies in the fact that, characteristically, any given patent application tries to prove that the invention claimed in it is something new, and something representing the required inventive step, in relation to former inventions claimed in older patent applications.



11. Patent documents also possess a certain number of specific characteristics that make them eminently suitable for retrieval of technological information, e.g.: they normally disclose information on new inventions earlier than is disclosed in other sources of technological information; a high proportion of patent documents contain an abstract; patent documents belonging to the same family\* are frequently in a number of different languages.

12. The preceding assertions can be proven by statistics. It is estimated that only less than 10% of all the publications cited against the average patent application are citations of articles in periodicals or books. The rest, that is, on average more than 90% of the publications cited against the average patent application, are citations of patent documents.

13. Patent documents are, then, useful sources of technological information with clear advantages over other sources of technological information. There are, however, a certain number of limitations to this usefulness, which are the following:

- (a) new technology is not always sufficiently inventive to be patentable;
- (b) even where a patent has been granted by an examining Patent Office, this is not a guarantee that the invention is absolutely new;
- (c) although patent documents should be, and generally are, written in a way which allows the invention to be executed on the basis of them alone, it will frequently be cheaper and faster in practice to execute it with the cooperation of the inventor (for example, by acquiring his know-how and blueprints under a contract concluded with him) than without such cooperation.

14. Each year more than one million patent documents are published by some 70 countries. Some countries publish a patent document as a patent application and later as the granted patent. Other countries publish only the granted patent. The following twelve countries publish 80% of the world's total patent documents:

Japan	439,000	Canada	23,000
Germany (Federal Republic of)	146,000*	Spain	21,000*
Soviet Union	70,000	Australia	21,000
France	58,000	Netherlands	18,000
United States of America	49,000	Sweden	16,500
United Kingdom	43,000	Italy	12,000

(Based on WIPO Statistics for 1979)

\* including utility model publications

#### THE INTERNATIONAL PATENT CLASSIFICATION (IPC)

15. The IPC is based on an international multilateral treaty administered by the International Bureau of WIPO (the Strasbourg Agreement Concerning the International Patent Classification of 1971). The symbol or symbols of the classification to which the technical invention described in a patent document belongs are usually indicated on the patent document by the Patent Office of the country where the application was filed. Thus, the document will be retrievable according to its subject matter with the help of the IPC.

16. The IPC is now applied by over 40 Patent Offices which, taken together, issue over 90% of the patent documents of the world. By the end of 1980, some ten million patent documents had been provided with the classification symbols of the IPC. Approximately 4.0 million of them are in English, 2.0 million in French and 1.5 million in German. The remainder are in various other languages, mainly Dutch, Japanese and Russian.

17. Many years of international cooperation, which started in 1956 under the auspices of the Council of Europe, resulted, in 1971, in the Strasbourg Agreement Concerning the International Patent Classification which provided a worldwide forum for the development of the IPC.

\* Patent documents published in different countries but relating to the same invention are generally called a "patent family".

18. The IPC, being a means for obtaining an internationally uniform classification of patent documents, has as its primary purpose the establishment of an effective search tool for the retrieval of patent documents by Patent Offices and other users to establish the novelty and evaluate the inventive step (including the assessment of technical advance and useful results or utility) of patent applications.

19. The IPC, furthermore, has the important purposes of serving as:

- (a) an instrument for the orderly arrangement of patent documents in order to facilitate access to the information contained therein;
- (b) a basis for selective dissemination of information to all users of patent information;
- (c) a basis for investigating the state of the art in given fields of technology;
- (d) a basis for the preparation of industrial property statistics which in turn permit the assessment of technological development in specific areas.

20. Keeping the IPC up to date and allotting its symbols to new patent documents is one of the largest international efforts, at least in terms of expert manpower at international and national levels, in information processing today. At the international level, an estimated 120 work-months per year, and, at the national level, an estimated 240 work-months per year, are devoted to revising the IPC and adapting it to newly developing technologies and the needs of the users. The yearly effort to allot the IPC symbols to new patent documents is estimated at approximately 600 work-months (90,000 hours) of work by highly qualified Patent Office staff. It should be emphasized that such new patent documents can, subject to a possible check of the classification allotted, be directly inserted into the appropriate place in a search file organized according to the IPC.

21. The third edition of the IPC came into force on January 1, 1980. It comprises nine volumes, being the Guide and the Classification itself. The Guide, which is contained in Volume 9, explains the layout, use of symbols, principles, rules and application of the Classification contained in Volumes 1 to 8. In the following paragraphs a short outline will be given of the system and principles of the IPC as well as of the most important rules.

#### Layout and Use of Symbols

22. The IPC is a hierarchical system comprising the following classification levels, which are listed in hierarchical order:

- Sections,
- Classes,
- Subclasses,
- Groups (main groups and subgroups).

23. These different classification levels are characterized by a letter or a number. A complete classification symbol consists of a combination in which each of these levels is represented. The third edition of the IPC consists of:

- 8 sections,
- 118 classes,
- 617 subclasses, about
- 7,000 main groups, and approximately
- 47,000 subgroups.

24. The IPC is divided into eight sections, each designated by a capital letter (section symbol), as follows:

- Section A HUMAN NECESSITIES
- Section B PERFORMING OPERATIONS; TRANSPORTING
- Section C CHEMISTRY AND METALLURGY

- Section D TEXTILES AND PAPER
- Section E FIXED CONSTRUCTIONS
- Section F MECHANICAL ENGINEERING; LIGHTING;  
HEATING; WEAPONS; BLASTING
- Section G PHYSICS
- Section H ELECTRICITY

25. Each class symbol consists of the section symbol followed by a two-digit number, e.g. A 01. Each subclass symbol consists of the class symbol followed by a capital letter, e.g. A 01 B.

26. Each group symbol consists of the subclass followed by two numbers separated by an oblique stroke, either as:

- main group symbol, which consists of the subclass symbol followed by a one to three digit number, the oblique stroke and the number 00:

Example: A 01 B 1/00

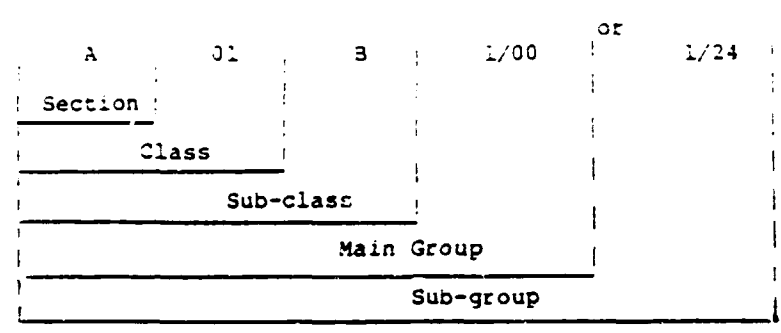
- sub-group symbol, which consists of the subclass symbol followed by the one to three digit number of its main group, the oblique stroke and a number of at least two digits other than 00:

Example: A 01 B 1/24

Any third digit after the oblique stroke is to be read as a decimal subdivision of the second digit, e.g., "/215" is to be read as "twenty one point five," and not "two hundred and fifteen."

27. A complete classification symbol comprises the combined symbols representing the section, class, subclass and main group or sub-group:

Example:



28. The hierarchy among groups is determined solely by the dots preceding the titles of sub-groups. These dots are used in place of, and avoid repetition of, the titles of hierarchically directly superior groups:

Example: A 01 B 13/00 Ploughs or like machines for special purposes  
 (for drainage E 02 11/02)  
 13/08 . for working subsoil  
 13/10 . . Special implements for lifting subsoil  
 layers  
 13/12 . . . Means for distributing the layers on  
 the surface

Without the use of hierarchical levels, sub-group A 01 B 13/12 would have to have a title such as: "ploughs or like machines for working subsoil provided with special implements for lifting subsoil layers and distributing them on the surface."

29. In many cases, a class, subclass or group title is followed by a phrase in brackets referring to another place in the IPC. Such a phrase indicates that the subject matter identified is classified in the place referred to (or in one or more places where several are referred to). An example of such a reference can be seen in Appendix III to this document under the symbol A 01 B 13/00.

30. In certain places of the Classification, some particular classification rules are specified. The purpose of these rules is to limit multiple classification, to improve consistency and to facilitate searching.

31. The places where such rules apply are clearly marked by a note at the highest place covered by such classification rules. Such rules are:

- (a) Precedence Note - The most frequently occurring rule is the "precedence note", indicating which one of two or more places has priority in the classification of a technical subject which can be classified in more than one of these;
- (b) Last Place Rule - In certain parts or places of the Classification, where a particular technical subject is covered by two or more places of the same hierarchical level or indentation, a "last place rule" has been introduced. According to this rule, such a technical subject is classified in the one of these places which appears last in the Classification. This rule is applied successively at each hierarchical level or indentation at which the technical subject in question is covered by two or more places. In each part of the Classification (class, subclass or group), where this rule applies, this rule is clearly set out in a note specific to the subject matter concerned. The "last place rule" is in effect a systematic precedence rule which obviates the need for separate precedence notes in each of the places concerned;
- (c) Other Rules - In a limited number of places in the Classification other particular rules exist which are clearly specified in notes at the places concerned.

Relevant sub-groups of the IPC concerned with AGRICULTURAL MACHINERY AND IMPLEMENTS

32. The aim of identifying basic technical information necessitates the carrying out of a so-called "information search," which is made to familiarize the inquirer with the state of the art in a particular field of technology.

33. Before making a search, it is essential to establish clearly what is being sought, i.e. the technical subject has to be determined. Having formulated a clear statement of the technical subject which is being sought, the searcher has to identify the proper place for this subject in the IPC. Although the IPC is a relatively logical subdivision of technology, it is advisable for the uninitiated searcher to approach the system using the Catchword Index to the IPC, which has been elaborated in several languages, e.g., in English, French, German, Japanese and Spanish.

34. Consideration of the statement of the technical subject sought will bring to mind a word which covers broadly or specifically the field of technology with which this subject is clearly concerned. As most of the words of the Catchword Index are nouns, it is preferable to consider the name given to the relevant process or device, although it may be useful to consider other words. The Catchword Index may indicate to the searcher a precise group of the IPC as the proper place for the technical subject being sought, but often there can only be an indication of the subclass or possibly only the class or range of classes concerned.

35. A sample page of the Official Catchword Index appears in Appendix I to this document and shows, for example, the catchword "AGRICULTURE" with a number of subordinate entries with references to specific places in the IPC.

36. If use of the Catchword Index does not lead to a pertinent field of search, the "Contents of Section" (see Appendix II to this document) appearing at the beginning of each section of the IPC should be consulted. The eight sections should be scanned and the possible classes should be selected. Thereafter, the searcher should turn to those classes in order to select the subclass (or subclasses) which most satisfactorily covers the subject. The references and notes appearing in the selected subclass title should be checked for an indication of subclass content and for possible distinctions between subclasses, which in turn may indicate that the location of the desired subject is elsewhere. It is also essential to consult any notes or references appearing in the title of the relevant class, since these may also affect the subclass content.

37. When the correct subclass has been identified, the main group which, in the light of its full wording and any existing notes and references, most clearly includes the subject being sought should then be selected.

38. The most indented sub-group (i.e., having most dots) under the selected main group, which still covers the subject sought, should be chosen for search.

39. After completing the search in a chosen group, it should be considered whether the superior group (i.e., having fewer dots) under which it is indented should be searched, since a wider subject which includes the subject sought may be classified there.

40. Appendix III to this document shows an excerpt of the IPC giving the whole of sub-class A 01 B relating to soil working, and Appendix IV shows photocopies of front pages of patent documents published by the United Kingdom Patent Office (GB Patent No. 2013121), by the United States Patent and Trademark Office (US Patent No. 4 005 756) and by the International Bureau of WIPO (PCT International Application No. W081/00951).

41. Appendix V gives an exhaustive list of thesaurus terms as defined by UNIDO as relevant to the industrial sector "AGRICULTURAL MACHINERY AND IMPLEMENTS." Against each term is listed the IPC symbol(s) most appropriate for the technological subject of the term. Where necessary detailed explanatory notes are given.

42. Against each IPC symbol, or group of symbols, statistical information giving the patent activity in each industrial sector is given in Appendix V. The statistics give the number of patent documents published in the year 1978, based upon information received from INPADOC (see paragraph 47 below), on which the symbol, or group of symbols, is printed. The total number of patent documents relevant to each industrial sector may be estimated by multiplying the figure given in Appendix V by a factor of 10, although that factor naturally varies between industrial sectors.

#### RETRIEVAL OF PATENT DOCUMENTS RELATING TO AGRICULTURAL MACHINERY AND IMPLEMENTS USING THE IPC

43. There are several ways to take cognizance of the enormous amount of technological information contained in patent documents, namely, the consultation of patent document collections organized according to the IPC or other (national) classification systems or the consultation of secondary sources of patent information, e.g., patent gazettes, abstracts services, Selective Dissemination of Information (SDI) or international referral services which, in many cases, contain also references to patent documents.

44. In view of the enormous amount of patent documents published each year, the user will almost certainly like to restrict the number of patent documents which he is interested in reading to a strict minimum. It is, therefore, likely that he will first rely on a secondary information source for a first selection of relevant documents.

#### Patent gazettes

45. To assist users in identifying primary sources of patent information, most Industrial Property Offices publish patent gazettes (also named official gazettes or official bulletins). These gazettes usually contain a certain number of indexes, e.g., by classification symbol, by name of applicant, etc., and contain entries consisting of bibliographic data relating to and marked also on the newly published patent documents. Some of these gazettes also contain abstracts of patent documents.

#### Abstracts services

46. As set forth above, many patent gazettes contain abstracts, as also do patent documents (see Appendix IV containing the first pages of patent documents). There are also many patent documents which are officially published in a given language but of which abstracts--that is, a description of their technological content in a few lines--are available in another

language. For example, the Japanese Patent Office publishes English abstracts of a substantial portion of its published unexamined patent applications, whilst Derwent Publications Limited, a private firm in London, publishes each year tens of thousands of abstracts in English of patent documents published in many languages, including Russian and Japanese. Chemical Abstracts, a publication of Chemical Abstracts Service (CAS), a subsidiary of the American Chemical Society, Columbus, Ohio, United States of America, publishes abstracts in the chemical and chemical engineering field supplemented by indexes produced weekly.

#### International referral services

47. A truly international referral service for patent information came into existence in 1972. In that year, the International Patent Documentation Center (INPADOC) was created in Vienna by virtue of an Agreement between WIPO and the Republic of Austria. INPADOC stores, in a machine-readable data bank, the most important bibliographic data of each patent document, i.e., the title of the invention, its classification symbol, relevant dates, names and numbers. The said bibliographic data are either obtained from Industrial Property Offices in machine-readable form or input by INPADOC on the basis of the announcements published in patent gazettes.

48. At present, bibliographic data pertaining to patent documents published by the following 46 countries are included on a current basis in the data bank of INPADOC: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Cuba, Cyprus, Czechoslovakia, Denmark, Egypt, Finland, France, German Democratic Republic, German (Federal Republic of), Greece, Hong Kong, Hungary, India, Ireland, Israel, Italy, Japan, Kenya, Luxembourg, Malawi, Monaco, Mongolia, Netherlands, Norway, Philippines, Poland, Portugal, Republic of Korea, Romania, South Africa, Soviet Union, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America, Yugoslavia, Zambia. The data bank is growing at a rate of 16,000 patent documents per week (more than 90% of the world total) and is the largest computerized data bank of bibliographic data relating to patent documents in the world.

49. INPADOC processes the bibliographic data and provides services to government authorities and the public. The data bank can be used for answering many kinds of questions, the two most important being the following. Firstly, the data bank can be asked to identify all the patent documents belonging to any given symbol of the more than 54,000 symbols of the IPC. Here lies of course the main usefulness of the Center in giving industry and other users access to the achievements of modern technology. The Patent Classification Service (PCS) provided by INPADOC gives, on microfiche, the bibliographic data of each patent document belonging to each IPC symbol. An alternative service gives information concerning one, or a selected number of, IPC symbols. An example of the PCS is given in Appendix VI to this document. Secondly, the data bank can provide all the patent documents which in various countries have been filed for the same invention by--usually, but not necessarily--the same person, company or enterprise. Thus, one can obtain information at a glance as to the likelihood of the invention being protected in various countries, and, which is of greater interest for the purpose of access to technological information, as to the likelihood of the invention being described in different languages. INPADOC is also studying the possibility of using its services in the preparation of industrial property statistics.

50. To replace the burdensome scanning of various patent gazettes published by many countries, INPADOC publishes each week an international patent gazette, the INPADOC Patent Gazette (IPG). The IPG, which is published on microfiche, consists of three basic indexes, i.e., by number, by IPC symbol, and by standardized applicant's name, respectively, each containing references to all patent documents stored in INPADOC's data bank in the previous week. The index by IPC symbol, the Selected Classification Service (SCS), is particularly useful as a current-awareness service. An example of the SCS is given in Appendix VI. Users thus can follow easily and week by week any field of technology or the activities of any given company, enterprise or applicant.

#### Access to the primary sources of information

51. Each Patent Office has a collection of all the patent documents it has published. Each major Patent Office also has complete, or largely complete, collections of patent documents published by the Patent Offices of the other countries or at least of most of them. These collections are either in

numerical order or classified order or both. Some libraries (in developed countries) also have more or less complete collections of domestic and foreign published patent documents. Members of the general public usually are allowed to consult such collections. In major Patent Offices and major libraries, specialized staff is usually available to assist the public in locating published patent documents it is interested in.

52. Patent Offices and the libraries mentioned above are usually equipped to furnish copies of published patent documents contained in their collections to anyone who wants them and pays the prescribed price. Unit prices, mostly independent of the number of pages of the patent document, range from US dollar 0.50 for a US patent to approximately US dollars 5.00 for a Soviet Union patent. The average price per patent document, on standing order, is approximately US dollars 2.00.

53. It should be emphasized that the patent document collections available throughout the world are the result of a broad free-of-charge exchange of currently issued patent documents among countries and, more especially, among the Patent Offices of those countries under bilateral and multilateral exchange agreements. The patent documents are exchanged in the form of paper copies or in microform. It is estimated that a total of more than 15 million copies of patent documents per year are exchanged in this way. Secondary sources of patent information in the form of patent gazettes are also exchanged free of charge on a broad basis. In order to promote national and regional infrastructures, WIPO has successfully developed and sponsored procurement and exchange of primary and secondary sources of patent information for developing countries

#### Conclusions

54. This Guide is intended to give the basic approach in obtaining the state of the technology in a given industrial sector in the most economic way by consulting selected patent documents.

55. For those individuals and institutions who have easy access to patent libraries and to the updated official editions of the IPC the way of action is straightforward:

- Step I - determine which of the UNIDO Thesaurus Keywords (Appendix V) reflect the main features of the technology in question;
- Step II - find out (using the second column of the Appendix V) which of the IPC units correspond to that keyword;
- Step III - consult the IPC to find out (from the definitions of main groups and subgroups) the groups to be searched;
- Step IV - select patent documents published within a certain period and classified by the symbols of the given IPC group (the average number of patent documents published with a particular subgroup symbol is about 20 per year);
- Step V - analyse selected documents and, if necessary, other relevant documents cited in the selected ones.

56. For those users whose location or other circumstances prevent them from consulting in person the official edition of the IPC, Step III might be facilitated by Appendix V-A which gives supplementary information by reproducing definitions of certain groups of the IPC. This has been done in those cases (marked by daggers in Appendix V) where a keyword corresponds to more than one main group of the IPC.

57. Selection and reproduction, if necessary, of the relevant patent documents (Step IV) for the interested users may be performed on a commercial basis by the above-mentioned INPADOC (Möllwaldplatz 4, A-1041 Vienna, Austria) or by national Patent Offices or libraries (some of these institutions provide such a service).

58. Governmental institutions of developing countries may also avail themselves of still another possibility, namely, the WIPO State-of-the-Art Search program. Established as one of the forms of technical assistance to developing countries, this program enables a user to receive, free of charge, a report on the latest achievements and the general technological level in a particular field specified in the user's request and also copies of relevant patent documents.

References

1. Strasbourg Agreement Concerning the International Patent Classification of March 24, 1971 (WIPO Publication No. 275).
2. The International Patent Classification, Third Edition, 1979, and the Official Catchword Index to the Third Edition (published by Carl Heymanns Verlag KG, Steinsdorfstrasse 10, Postfach 275, Munich, Federal Republic of Germany).
3. World Patents Index; World Patents Abstracts (Derwent Publications Ltd., Rochdale House, 128 Theobalds Road, London WC1X 8RP, United Kingdom).
4. INPADOC, General Information (WIPO/INPADOC Publication No. 426 (E F G)).

[Appendices I to VI follow]



APPENDIX I

# OFFICIAL CATCHWORD INDEX

to the Third Edition (1979) of the  
International Patent Classification

**AGITATING**

**AGITATING** see  
**MIXING** and catchwords for  
the processes or apparatus  
concerned

**AGGLOMERATING** see  
**GRANULATING**

**AGREGATE(S)**  
composition of — for making  
concrete C04B

<b>AGRICULTURE</b>	A01
harvesting in —	A01D
planting, sowing or fertilising ic —	A01C
soil working in —	A01B
weed or pest control in —	A01M A01N

**AILERONS** B64C 9/00

**AIMING-DEVICES**  
— for weapons F41G

**AIR**  
see also **PNEUMATIC(S)**

— brushes or pencils B05B  
B08B  
B44D

— cooling or drying in mines E21F 3/00  
— curtains F24F 9/00  
— cushion(s)  
— cushion(s) bearings F16C 32/06  
— cushion(s) vehicles B60V  
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— locks for divers B63C 11/00  
— or gas-tight doors or win-  
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— separators in liquid meters G01F 15/08  
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taining or repairing — B64F 5/00  
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**SECTION A — HUMAN NECESSITIES**

**CONTENTS OF SECTION (References and notes omitted)**

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**A 01 D Harvesting** ..... 12

**A 01 F Processing of harvested produce; Hay or straw presses; Devices for storing agricultural or horticultural produce** ..... 16

**A 01 G Culture of vegetables, flowers, fruit, vines, hops, or seaweed; Forestry; Watering** ..... 17

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[Appendix III follows]

## AGRICULTURE

## A 01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

A 01 B SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL (making or covering furrows or holes for sowing, planting or manuring A 01 C 5/00; soil working for engineering purposes E 01, E 02, E 21)

Sub-class Index

HAND TOOLS .....	1/00	IMPLEMENTS USABLE EITHER AS PLOUGHS OR HARROWS, ETC .....	7/00
PLOUGHS		OTHER MACHINES .....	27/00 to 45/00, 49/00, 77/00
General construction .....	3/00, 5/00, 9/00, 11/00	ELEMENTS OR PARTS OF MACHINES OR IMPLEMENTS .....	59/00 to 71/00
Special adaptations .....	13/00, 17/00	TRANSPORT IN AGRICULTURE .....	51/00, 73/00, 75/00
Details .....	15/00	PARTICULAR METHODS FOR WORKING SOIL .....	47/00, 79/00
HARROWS			
General construction .....	19/00, 21/00		
Special applications .....	25/00		
Details .....	23/00		

1/00 Hand tools (edge trimmers for lawns A 01 G 3/06)	3/37 . . . Balance ploughs
1/02 . Spades; Shovels	3/34 . . . with parallel plough units used alternately
1/04 . . with teeth	3/36 . Ploughs mounted on tractors
1/06 . Hoes; Hand cultivators	3/58 . . without alternating possibility
1/08 . . with a single blade	3/40 . . Alternating ploughs
1/10 . . with two or more blades	3/42 . . . Turn-wrest ploughs
1/12 . . with blades provided with teeth	3/421 . . . with a headstock frame made in one piece [2]
1/14 . . with teeth only	3/426 . . . with a headstock frame made of two or more parts [2]
1/16 . Tools for uprooting weeds	3/44 . . . with parallel plough units used alternately
1/18 . . Tong-like tools	3/46 . Ploughs supported partly by tractor and partly by their own wheels
1/20 . Combinations of different kinds of hand tools	3/50 . Self-propelled ploughs
1/22 . Attaching the blades or the like to handles (handles for tools, or their attachment, in general B 25 G); Interchangeable or adjustable blades	3/52 . . with three or more wheels, or endless tracks
1/24 . for treating meadows or lawns [2]	3/54 . . . without alternating possibility
	3/56 . . . Alternating ploughs
	3/58 . . with two wheels
	3/60 . . . Alternating ploughs
	3/62 . . . Balance ploughs
	3/64 . Cable ploughs; Indicating or signalling devices for cable plough systems
	3/66 . . with motor-driven winding apparatus mounted on the plough
	3/68 . . Cable systems with one or two engines
	3/70 . . . Systems with one engine for working uphill
	3/72 . . Means for anchoring the cables
	3/74 . Using electric power for propelling ploughs (electric current collectors B 60 L 5/00)
	5/00 Ploughs with rolling non-driven tools, e. g. discs (with rotary driven tools 9/00)
	5/02 . drawn by animals
	5/04 . drawn by tractors
	5/06 . . without alternating possibility
	5/08 . . Alternating ploughs
	5/10 . . mounted or partly-mounted on tractors
	5/12 . . without alternating possibility

Ploughs

3/00 Ploughs with fixed plough-shares	
3/02 . Man-driven ploughs	
3/04 . Animal-drawn ploughs	
3/06 . . without alternating possibility, i. e. incapable of making an adjacent furrow on return journey	
3/08 . . . Swing ploughs	
3/10 . . . Trussed-beam ploughs; Single-wheel ploughs	
3/12 . . . Two-wheel beam ploughs	
3/14 . . . Frame ploughs	
3/16 . . Alternating ploughs, i. e. capable of making an adjacent furrow on return journey	
3/18 . . . Turn-wrest ploughs	
3/20 . . . Balance ploughs	
3/22 . . . with parallel plough units used alternately	
3/24 . Tractor-drawn ploughs (3/04 takes precedence)	
3/26 . . without alternating possibility	
3/28 . . Alternating ploughs	
3/30 . . . Turn-wrest ploughs	

Appendix III  
23/00

- 5/14 . . . Alternating ploughs
- 5/16 . . . Self-propelled disc or like ploughs
- 7/00 Disc-like soil-working implements usable either as ploughs or as harrows, etc.
- 9/00 Ploughs with rotary driven tools (tilling implements with rotary driven tools 33/00)
- 11/00 Ploughs with oscillating, digging or piercing tools
- 13/00 Ploughs or like machines for special purposes (for drainage E 02 B 11/02):
  - 13/02 . . . for making or working ridges, e.g. with symmetrically arranged mouldboards
  - 13/04 . . . for working in vineyards, orchards, or the like
  - 13/06 . . . Arrangements for preventing damage to the vines, etc.
  - 13/08 . . . for working subsoil
  - 13/10 . . . Special implements for lifting subsoil layers
  - 13/12 . . . Means for distributing the layers on the surface
  - 13/14 . . . for working soil in two or more layers
  - 13/16 . . . Machines for combating erosion, e.g. basin-diggers, furrow-dammers
- 15/00 Elements, tools, or details of ploughs
  - 15/02 . . . Plough blades; Fixing the blades
  - 15/04 . . . Shares
    - 15/06 . . . Interchangeable or adjustable shares
    - 15/08 . . . Mouldboards
    - 15/10 . . . Interchangeable or adjustable mouldboards
  - 15/12 . . . Beams; Handles (handles for tools or their attachment as general B 25 G)
  - 15/14 . . . Frames
  - 15/16 . . . Discs (bearing therefor 71/04); Scrapers for cleaning discs; Sharpening attachments (sharpening per se B 24)
  - 15/18 . . . Coulters
  - 15/20 . . . Special adjusting means for tools of ploughs drawn by, or mounted on tractors working on hillsides or slopes
- 17/00 Ploughs with special additional arrangements, e.g. means for putting manure under the soil, clod-crushers (49/00 takes precedence; ploughs for working subsoil 13/08) [2]

Harrows

- 19/00 Harrows with non-rotating tools
  - 19/02 . . . with tools rigidly or elastically attached to a tool-frame
  - 19/04 . . . with two or more tool-frames
  - 19/06 . . . with tools or tool-frames moved to-and-fro mechanically
  - 19/08 . . . with link network supporting tooth-like tools
  - 19/10 . . . Lifting or cleaning apparatus
- 21/00 Harrows with rotary non-driven tools (tilling implements with rotary driven tools 33/00)
  - 21/02 . . . with tooth-like tools
  - 21/04 . . . on horizontally-arranged axles
  - 21/06 . . . on vertically-arranged axles
  - 21/08 . . . with disc-like tools
- 23/00 Elements, tools, or details of harrows
  - 23/02 . . . Teeth; Fixing the teeth
  - 23/04 . . . Frames; Drawing-arrangements

- Discs (15/16 takes precedence; bearings therefor 71/04); Scrapers for cleaning discs; Sharpening attachments (sharpening per se B 24) [4]
- 25/00 Harrows with special additional arrangements, e.g. means for distributing fertilisers; Harrows for special purposes (39/00 takes precedence)

Other machines for working soil

- 27/00 Clod-crushers
- 29/00 Rollers
  - 29/02 . . . with smooth surface
  - 29/04 . . . with non-smooth surface formed of rotatably-mounted rings or discs or with projections or ribs on the roller body; Land packers
  - 29/06 . . . with special additional arrangements
- 31/00 Drags
- 33/00 Tilling implements with rotary driven tools
  - 33/02 . . . with tools on horizontal shaft transverse to direction of travel
  - 33/04 . . . with tools on horizontal shaft parallel to direction of travel
  - 33/06 . . . with tools on vertical or steeply-inclined shaft
  - 33/08 . . . Tools; Details, e.g. adaptations of transmissions or gearings
    - 33/10 . . . Structural or functional features of the tools
    - 33/12 . . . Arrangement of the tools; Screening of the tools
    - 33/14 . . . Attaching the tools to the rotating shaft, e.g. resiliently-attached tools
    - 33/16 . . . with special additional arrangements (49/00 takes precedence; for sowing or fertilising 49/06)
- 35/00 Other machines for working soil (37/00, 39/00, 77/00 take precedence)
  - 35/02 . . . with non-rotating tools
  - 35/04 . . . drawn by animal or tractor
  - 35/06 . . . with spring tools
  - 35/08 . . . with rigid tools
  - 35/10 . . . mounted on tractors
  - 35/12 . . . with spring tools
  - 35/14 . . . with rigid tools
  - 35/16 . . . with rotating or circulating non-propelled tools
  - 35/18 . . . with both rotating and non-rotating tools
  - 35/20 . . . Tools; Details
    - 35/22 . . . Non-rotating tools; Mounting non-rotating tools
    - 35/24 . . . Spring tools
    - 35/26 . . . Rigid tools
    - 35/28 . . . Rotating tools; Mounting rotating tools
  - 35/30 . . . Undercarriages (23/04 takes precedence) [2]
  - 35/32 . . . with special additional arrangements
- 37/00 Devices for loosening soil compacted by wheels or the like
- 39/00 Other machines specially adapted for working soil on which crops are growing
  - 39/02 . . . with non-rotating tools
  - 39/04 . . . drawn by animal or tractor
  - 39/06 . . . Self-propelled machines
  - 39/08 . . . with rotating tools
  - 39/10 . . . with oscillating tools
  - 39/12 . . . for special purposes
  - 39/14 . . . for working ridges
  - 39/16 . . . for working in vineyards, orchards, or the like

[Appendix IV follows]

(12) UK Patent Application (19) GB (11) 2 013 821 A

- (21) Application No 7849385
- (22) Date of filing 20 Dec 1978
- (23) Claims filed 20 Dec 1978
- (30) Priority data
- (31) 1027/78
- (32) 11 Jan 1978
- (33) United Kingdom (GB)
- (43) Application published 15 Aug 1979
- (51) INT CL<sup>2</sup>

A01G 25/06

- (52) Domestic classification F2P 1A27

- (56) Documents cited GB 1040712 GB 980052

- (58) Field of search F2P

- (71) Applicant Dunlop Limited Dunlop House, Ryder Street, St. James's, London, S.W.1.

- (72) inventor William Arthur Bruton

- (74) Agents R E S Waller

(54) Irrigation tube

(57) A flexible irrigation tube is formed with slits at intervals along its length. Each slit is angled relative to a direction perpendicular to the surface of the tube wall in the region of the slit, at least over part of the length of the slit. The material at one side 17 of each slit constitutes a tongue 16 and the tongue may be deformed and tucked inside the tube as illustrated. Fluid may leak through the slit and the resulting leak-

age rate is less affected by curvature of the tube than a conventionally slit irrigation tube.

The slits may be formed by cutting with a flat knife or a knife which is curved in cross-section. Preferably each slit is angled at between 50° and 80° relative to the direction perpendicular to the tube wall surface, at least over part of the length of the slit. Preferably the tube is formed of low or medium density polyethylene and preferably has a Young's modulus in the range 10 to 200 MN/m<sup>2</sup>.

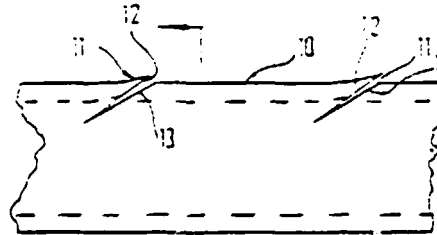


FIG. 1a

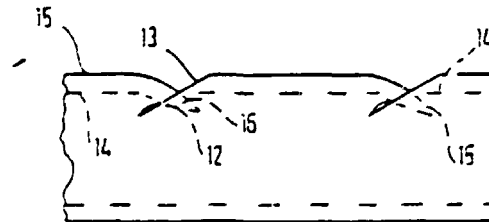


FIG. 2

GB2 013 821 A

Appendix IV

United States Patent [19]

[11] 4,005,756

Morse, Jr.

[45] Feb. 1, 1977

- [54] LIGHTWEIGHT PASTURE HARROW
- [76] Inventor: William E. Morse, Jr., 612 A Bankers Trust Bldg., Jackson, Miss. 39201
- [22] Filed: Aug. 5, 1975
- [21] Appl. No.: 602,063

Related U.S. Application Data

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- [52] U.S. Cl. .... 172/643; 56/400.16; 172/142; 172/198; 172/339; 172/657; 172/697; 172/753
- [51] Int. Cl.<sup>2</sup> ..... A01B 19/02
- [58] Field of Search ..... 172/29, 142, 152, 189, 172/193, 194, 195, 197, 198, 199, 200, 389, 390, 612, 620, 621, 643, 657, 658, 681, 691, 697, 705, 706, 707, 708, 709, 710, 711, 714, 719, 747, 753, 762, 765, 766, 769, 770, 771, 776; 56/400, 400.16; 47/31; 71/21

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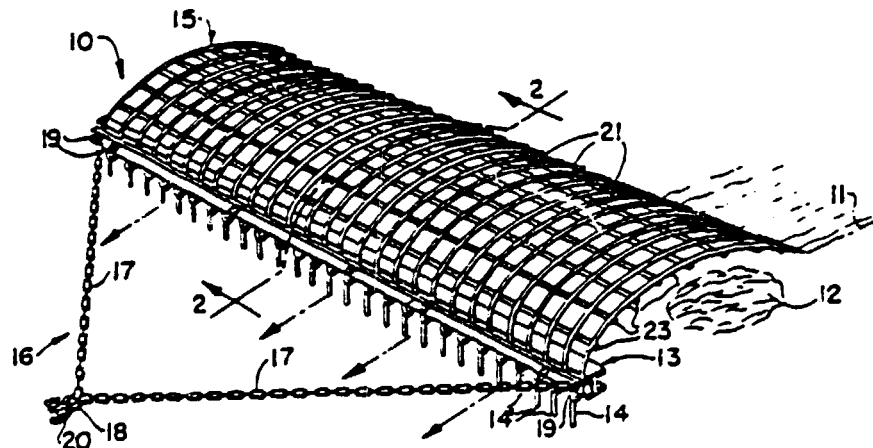
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Primary Examiner—Richard T. Stouffer

[57] ABSTRACT

A lightweight pasture harrow for breaking up and scattering piles of manure and like material in a pasture including a shaped wire mesh framework secured to a front crossbar which provides a tow bar for pulling the harrow across a field, or pasture. The wire mesh framework includes a plurality of longitudinal wires and a plurality of transverse wires. Ends of the longitudinal wires may serve as harrow teeth, or separate harrow teeth may be provided.

36 Claims, 23 Drawing Figures





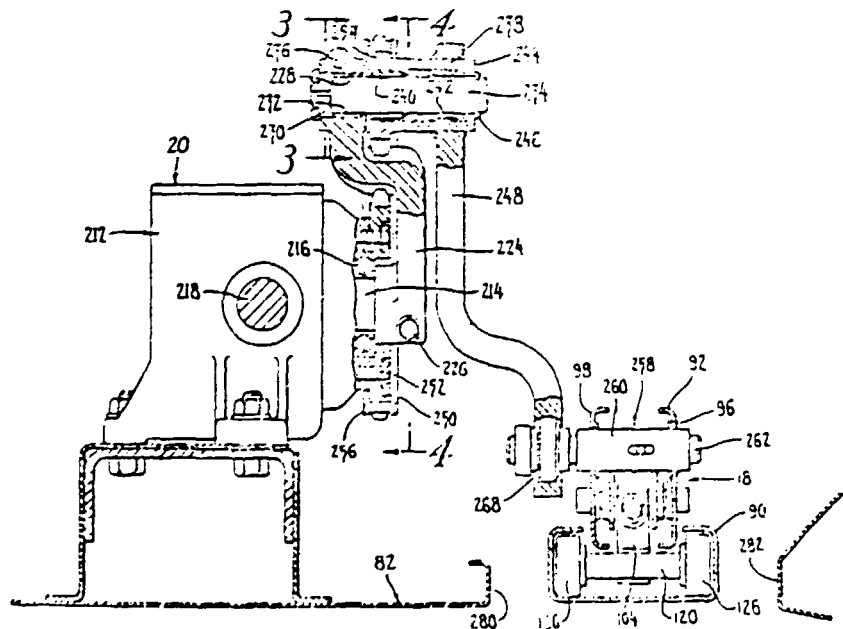


PCT

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(54) Title: AN AGRICULTURAL BALER



(57) Abstract

Agricultural baler with a bale chamber (18), a feed chamber (14) attached to one side of the bale chamber (18), a crop material pick-up assembly (16) for gathering crop material and feeding it into the feed chamber (14), and a packer fork assembly (18) and a packer fork drive (20) for feeding crop material from the feed chamber (14) into the bale chamber (18). The packer fork drive (20) is an epicyclic drive with a first arm (224) secured to a driven first shaft (214) and a second arm (248) rotatably secured to a second shaft (234) on the free end of the second arm (248). A chain (256) is trained around a stationary sprocket (250) concentric with the first shaft (214) and a second sprocket (254) concentric with the second shaft (234) and secured to the second arm (248). A packer fork assembly (18) is connected to the free end of the second arm (248).

[Appendix V follows]

APPENDIX V

Agricultural Machinery and Implements

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
<u>1) Soil-Working Equipment</u>		
HAND-TOOLS	A01B 1/00 to 1/24	58
- spades; shovels	A01B 1/02 to 1/04	15
- hoes	A01B 1/06 to 1/14	20
STONE-GATHERERS; ROCK-SHARES	A01B 43/00	16
ROLLERS; PACKERS	A01B 29/00 to 29/06	57
DRAGS; EARTH LEVELLERS; LAND PLANES SCRAPERS for LEVELLING EARTH	A01B 31/00	8
PLOUGHS *	A01B 3/00 to 13/16	11
- with fixed plough-shares	A01B 3/02	1
- man driven	A01B 3/04 to 3/22	4
- animal drawn	A01B 3/24 to 3/34	21
- tractor drawn	A01B 3/36 to 3/44	63
- tractor mounted	A01B 3/50 to 3/62	2
- self-propelled	A01B 3/46 and	18
- other	A01B 3/64 to 3/74	7
- with non-driven discs	A01B 5/02	7
- animal drawn	A01B 5/04 to 5/08	4
- tractor drawn	A01B 5/10 to 5/14	7
- tractor mounted	A01B 5/16	3
- self-propelled	A01B 9/00	30
- with driven discs	A01B 13/00 to 13/16	10
- for special purposes	A01B 13/02	16
- working ridges; ditchers	A01B 13/04 to 13/06	23
- vineyards; orchards	A01B 13/08 to 13/12	1
- subsoilers	A01B 3/16 to 3/22	17
- animal drawn	A01B 3/24 to 3/34	51
- tractor drawn	A01B 3/40 to 3/44	2
- tractor mounted	A01B 3/56 and	2
- self-propelled	A01B 3/60 to 3/62	2
- disc, animal drawn	A01B 5/08	4
- disc, tractor drawn	A01B 5/14	92
ELEMENTS or DETAILS of PLOUGHS	A01B 15/00 to 15/10	14
- plough shares	A01B 15/04 to 15/06	3
- mould-boards	A01B 15/08 to 15/10	6
- beams	A01B 15/12	16
- frames	A01B 15/14	3
- discs	A01B 15/16	3
- coulters	A01B 15/18	3
- interchangeable or adjustable	A01B 15/06	3
- snares		
- interchangeable or adjustable mouldboards	A01B 15/10	3
HARROWS	A01B 19/00 to 25/00	163
- with non-rotating tools	A01B 19/00 to 19/10	68
- with non-driven rotating tools (teeth, discs)	A01B 21/00 to 21/08	32
- discs	A01B 21/08	8
- with driven rotating tools	A01B 23/00 to 23/16	487
- elements or details of harrows	A01B 23/00 to 23/06	56
- teeth	A01B 23/02	16
- frames	A01B 23/04	25
- discs	A01B 23/06	8
- harrows for special purposes	A01B 25/00	7
TILLERS <u>with</u> ROTARY DRIVEN TOOLS; ROTAVATORS	A01B 33/00 to 33/16	487
rotavators	A01B 33/02	67
tools, details, transmissions etc.	A01B 33/08 to 33/14	155

\* A plough is an implement which cuts, lifts and turns over soil. The so-called "chisel-plough" is a misnomer since it does not do this and it is therefore to be found under "OTHER SOIL-WORKING MACHINES" in the IPC.

\* For details see paragraph 36 and Appendix V-A.

Appendix V

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
TILLERS <u>without ROTARY DRIVEN TOOLS; "CHISEL PLOUGHS";</u> OTHER SOIL-WORKING MACHINES <u>not specially adapted for</u> working soil on which <u>crops are growing</u>	A01B 35/00 to 35/32	91
- with non-rotating tools, drawn mounted	A01B 35/04 to 35/08 A01B 35/10 to 35/14	5 8
- with rotating tools	A01B 35/16	10
- with both rotating and non-rotating	A01B 35/18	7
- tools; details	A01B 35/20 to 35/30	32
CULTIVATORS; CONDITIONERS <u>specially adapted for working</u> soil on which <u>crops are growing</u>	A01B 39/00 to 39/28	90
- with non-rotating tools	A01B 39/22 to 39/06	17
- with rotating tools	A01B 39/08	17
- for special purposes	A01B 39/12 to 39/19	39
working ridges, row crops	A01B 39/14	6
for vineyards, orchards	A01B 39/16	10
for weeding	A01B 39/18 to 39/19	20
- tools; details	A01B 39/20 to 39/26	9
COMBINED SOIL-WORKING MACHINES	A01B 49/00 to 49/06	155
- soil-working in combination with sowing or fertilizing	A01B 49/06	53
PARTS, DETAILS and ACCESSORIES	A01B 51/00 to 75/00	333
2) Planting; Sowing; Fertilizing		
PRETREATMENT of SEED or ROOTS etc.; SEED PROCESSING; APPARATUS THEREFOR	A01C 1/00 to 1/08	130
MANURE - MANURING	A01C 3/00 to 3/08	35
- distributors	A01C 3/06 to 3/08	22
- distributors for liquid manure	A01C 23/00 to 23/04	142
FERTILIZERS	A01C 15/00 to 19/00	245
- distributors	A01C 15/00 to 15/18	143
- with centrifugal wheels	A01C 17/00	69
- with power driven tools	A01C 19/00	32
- in combination with seeding apparatus	A01C 7/06	27
- in combination with soil-working	A01B 49/06	53
FERTILIZING METHODS	A01C 21/00	28
(e.g. applying fertilizer to the leaves = "liquid-leaf")		
ROOT-ZONE FERTILIZING	A01G 29/00	62
MAKING FURROWS or HOLES; COVERING THEREOF	A01C 23/02 and)	
- hand tools	A01C 5/00 to 5/08	95
- machines for making/covering holes	A01C 5/02	8
- machines for making/covering furrows	A01C 5/04	14
{ e.g. "cotton ridgers" }	A01C 5/06	39
{ "wheat planters" }		
SOWING; SEEDING (e.g. "drills", "maize-planters")	A01C 7/00 to 7/20	382
- hand tools	A01C 7/02	13
- single grain seeders	A01C 7/04	66
- row seeders; broadcast seeders	A01C 7/08 to 7/16	120
with seed-box adjuster	A01C 7/10	2
with feeding wheels	A01C 7/12 to 7/14	27
with other types of feeders	A01C 7/16	29
e.g. centrifugal feeders		
- seeders with centrifugal wheels	A01C 17/00	69
- in combination with fertilizing	A01C 7/06	27
- in combination with soil-working	A01B 49/06	53

Appendix V

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
PLANTING - planting of potatoes - transplanting - consolidating the soil around plants	A01C 9/00 to 11/00 A01C 9/00 to 9/08 A01C 11/00 A01C 13/00	437 56 38 5
3) Harvesting		
HAND TOOLS - rakes	A01D 1/00 to 11/06 A01D 7/00 to 7/10	32 15
DIGGING MACHINES (for root crops e.g. potatoes, onions...) - diggers; digger ploughs - with sieves but without conveyors - with sieves and conveyors - with centrifugal wheels, drums or spinners - with tools specially adapted for potatoes	A01D 13/00 to 21/04 A01D 13/00 A01D 15/00 to 15/04 A01D 17/00 to 17/22 A01D 19/00 to 19/13 A01D 21/00 to 21/04	92 11 5 54 17 5
TOPPING MACHINES	A01D 23/00 to 23/06	49
LIFTERS (e.g. for beet)	A01D 25/00 to 25/04	60
MACHINES for both TOPPING and LIFTING (e.g. for beet)	A01D 27/00 to 27/04	23
PEANUT (=groundnut) HARVESTERS	A01D 29/00	3
OTHER DIGGING-TYPE HARVESTERS	A01D 31/00 to 31/02	2
ACCESSORIES for DIGGING/LIFTING/TOPPING etc. MACHINES	A01D 33/00 to 33/14	124
MOWERS; HARVESTING MACHINES	A01D 35/00 to 35/28	409
REAPER-BINDERS	A01D 37/00 to 37/06	3
INDEPENDENT BINDERS	A01D 39/00	21
COMBINE HARVESTERS; HARVESTER-THRESHERS (specially adapted for specific crops -- see below)	A01D 41/00 to 41/14	230
HARVESTERS COMBINED with OTHER MACHINES	A01D 43/00 to 43/12	168
MACHINES SPECIALLY ADAPTED for HARVESTING or PICKING of SPECIFIC CROPS	A01D 45/00 to 46/28	432
- maize - rice - flax - sugar cane - tobacco - beans - peas - cabbages; lettuce - spinach - grass-seeds or like seeds - hops - tea - coffee - cotton (e.g. trammers & stackers) - apples or like fruit - grapes, i.e. vintaging machines	A01D 45/02 A01D 45/04 A01D 45/06 A01D 45/10 A01D 45/16 A01D 45/22 A01D 45/24 A01D 45/26 A01D 45/28 A01D 45/30 A01D 46/02 A01D 46/04 A01D 46/06 A01D 46/08 to 46/18 A01D 46/24 A01D 46/28	70 1 6 58 21 25 8 3 - 1 11 22 1 48 26 -
SHAKING of TREES or SHRUBS	A01D 46/26	-
DETAILS or COMPONENTS of HARVESTING MACHINES - cutting apparatus - delivering mechanisms (i.e. reels, rakes,) - binding equipment - elevators; conveyors - driving mechanisms	A01D 55/00 to 73/00 A01D 55/00 to 55/32 A01D 57/00 to 57/32 A01D 59/00 to 59/14 A01D 61/00 to 61/04 A01D 69/00 to 69/18	829 297 78 62 89 218

Appendix V

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
ACCESSORIES for HARVESTING MACHINES	A01D 75/00 to 75/30	75
HAYMAKERS + - with tines which are stationary during operation - with tines which move during operation - other types - details or components of haymakers	A01D 76/00 to 84/00 A01D 76/00  A01D 78/00 to 78/20 A01D 84/00 A01D 80/00	170 - - 4 4
CROP CONDITIONERS (i.e. machines which crush or bruise stalks)	A01D 82/00	-
LOADERS (e.g. bale-elevators)	A01D 87/00 to 87/12	72
VEHICLES (including trailers) with (UN-LOADING MEANS for CARRYING HARVESTED CROPS	A01D 90/00 to 90/16	140
<u>4) Post-Harvest Technology</u>		
HAND TOOLS - for binding hay or straw - for cutting-up hay or straw - for threshing - for baling	A01F 1/00 to 1/06 A01F 3/00 A01F 5/00 A01F 13/00	5 1 - 1
THRESHING MACHINES + - with rotary tools - transverse flow (i.e. axes transverse to feeding direction) - axial flow (i.e. axes in line with feeding direction) - with flails - specially adapted for specific crops flax clover; lucerne maize, e.g. maize-shellers palm fruit	A01F 7/00 to 12/60 A01F 7/02 A01F 7/04  A01F 7/06  A01F 9/00 A01F 11/00 to 11/08 A01F 11/02 A01F 11/04 A01F 11/06 A01F 11/08	533 3 5  18  2 25 - - 11 -
DETAILS or COMPONENTS of THRESHING MACHINES - feeders - threshing devices, e.g. cylinders, concaves - straw shakers - winnowers; grain cleaners; separators - conveyors for grain - back-filling devices	A01F 12/00 to 12/60 A01F 12/10 to 12/16 A01F 12/18 to 12/28 A01F 12/30 to 12/38 A01F 12/44 A01F 12/46 A01F 12/50	461 50 57 13 35 14 33
BALING PRESSES; BALERS for HAY or STRAW	A01F 15/00 to 15/18	193
HAY BINDERS	A01D 39/00	21
STORING AGRICULTURAL PRODUCE - arrangements in silos	A01F 25/00 to 25/22 A01F 25/16 to 25/22	212 89
SILOS	E04H 7/22 to 7/32	133
CUTTING MACHINES specially adapted for HAY, STRAW, FODDER } CHAFF-CUTTERS	A01F 29/00 to 29/22	98
PREPARING GRAIN (e.g. for milling) + - hulling, husking, decorticating, polishing, awn-removing, degerming. - other preparation	B02B 1/00 to 5/02 B02B 3/00 to 3/14  B02B 1/00 to 1/08 B02B 5/00 to 5/02	180 121  38 21

Appendix V

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1973)
MILLS SPECIALLY ADAPTED FOR GRAIN		
- with two or more rollers	B02C 4/06	10
- with a roller and a plate	B02C 4/16	1
- with a roller and a bar	B02C 4/24	1
- with means for adjusting the roller pressure or distance	B02C 4/38	2
- with discs	B02C 7/18	4
construction of the discs	B02C 7/13	5
- other grain mills	B02C 9/00 to 9/04	35
- auxiliary devices for grain mills	B02C 11/00 to 11/08	12
CLEANING GRAIN		
- during the threshing operations	A01F 12/44	35
- as preparation for milling	B02B 1/00 to 5/02	180
EXTRACTING JUICE or OIL from FRUIT or NUTS etc. (not sugar)		
- using presses	B01B 3/02 to 3/26	215
- using other means	A23M 1/00 to 1/02	55
<u>5) Destroying of Harmful Animals (e.g. insects) or Plants</u>		
PESTICIDES; HERBICIDES (chemical aspects)	A01N 25/00 to 65/02	10,198
FLAME-THROWERS; FLAME-GUNS	A01M 15/00	-
SPRAYING or DUSTING from AIRCRAFT	B64D 1/18	4
SPRAYING APPARATUS SPECIALLY ADAPTED for DESTROYING HARMFUL ANIMALS or PLANTS	A01M 7/00 to 13/00	161
- for liquids	A01M 7/00	99
- for powder or dust	A01M 9/00	14
- for liquid and powder combined	A01M 11/00	3
- for gases or fumes	A01M 13/00	45
SPRAYING APPARATUS in general, <u>see note</u> - knapsack type sprayers	B05B 9/08	6
<u>6) Irrigation and Drainage</u>		
DITCHES or CHANNELS		
- for drainage	E02B 11/00 to 11/02	131
- for irrigation	E02B 13/00 to 13/02	69
IRRIGATION by PERFORATED PIPE-LINES		
- above the soil	A01G 25/02	71
- in the soil	A01G 25/06	40
IRRIGATION using MOVABLE INSTALLATIONS	A01G 25/09	90
CONTROL of IRRIGATION (except of spray-irrigation)	A01G 25/16	56
CONTROL of SPRAYING	E05B 12/00 to 12/14	86
SPRAYING APPARATUS in general, <u>see note</u>		
PUMPS and PUMPING in general, <u>see note</u>		
<u>7) BOTTLING and CANNING</u>		
CLEANING BOTTLES or CANS	B67C 1/00 to 1/20	147
FILLING BOTTLES or CANS with LIQUIDS or SEMI-LIQUIDS	B67C 3/00 to 3/28	238
COMBINED CLEANING and FILLING of BOTTLES or CANS	B67C 7/00	32

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
SUGAR CANE CUTTERS/CRUSHERS	C13C 1/02 to 1/04	3
SUGAR BEET CUTTERS/SLICERS  (other processing of sugar e.g. juice extraction see AGRO-INDUSTRIES )	C13C 1/06	2
MACHINES for CORING or STONING FRUIT + - having a special feeder device - having a special stoning device for peaches, plums, apricots etc. for cherries etc. for oblong fruits e.g. dates, olives for fruits with very small pips e.g. grapes - having a special coring device for apples, pears etc. for tomatoes for citrus fruit for pineapples	A23N 3/00 to 4/24 A23N 3/00 to 3/06 A23N 4/02 to 4/10 A23N 4/04 A23N 4/06 A23N 4/08 A23N 4/10  A23N 4/12 to 4/20 A23N 4/14 A23N 4/16 A23N 4/18 A23N 4/20	51 16 12 6 1 3 1  10 2 - - 3
MACHINES for HULLING, HUSKING or CRACKING NUTS (including decorticating of coffee beans) - peanuts - coconut shells - removing the fleshy or fibrous hull e.g. of coconuts	A23N 5/00 to 5/08  A23N 5/01 A23N 5/03 A23N 5/08	34  4 - 5
PEELING FRUIT or VEGETABLES	A23N 7/00 to 7/10	79
MACHINES for WASHING, BLANCHING of FRUIT or VEGETABLES - in combination with drying	A23N 12/02 to 12/06 A23N 12/06	34 45
MACHINES for DRYING or ROASTING FRUIT or VEGETABLES	A23N 12/08 to 12/12	50
MACHINES for OTHER TREATMENT of FRUIT or VEGETABLES - snelling or hulling of peas or beans	A23N 15/00 to 15/12 A23N 15/10	119 2
SEPARATING SOLIDS from SOLIDS by subjecting their mixture to GAS CURRENTS, e.g. WINNOWING - with the use of sieves, screens etc.	B07B 4/00 to 4/08  B07B 4/08	156  51
SIEVING, SEPARATING, SORTING in general, <u>see note</u>		
DISINTEGRATING, CRUSHING, CHOPPING, CUTTING, MINCING SLICING in general, <u>see note</u>		
DRYING in general, <u>see note</u>		
<b>B) Engines, Vehicles, Tractors</b>		
TRACTORS + - with lifting devices - with pushing devices - multi-purpose, (i.e. the usual farm tractors) - with means for preventing overturning or tipping - with the driver walking (i.e. hand-tractors)	B62D 49/00 to 51/06 B62D 49/02 B62D 49/04 B62D 49/06 B62D 49/08  B62D 51/04 to 51/06	254 25 6 21 31  35
FORK-LIFT TRUCKS	B66F 9/06 to 9/24	561
VEHICLES with (UN-LOADING MEANS SPECIALLY ADAPTED FOR CARRYING AGRICULTURAL PRODUCTS	A01D 90/00 to 90/16	140

Appendix V

UNIDO Thesaurus Keywords (with clarification)	Symbols of the IPC (Third Edition)	Statistical data (No. of patent documents published in 1978)
LOAD CARRYING VEHICLES in general - with tipping action	B60P 1/00 to 9/00 B60P 1/04 to 1/34	1,817 303
TRAILERS in general	B62D 63/06 to 63/08	70
DIESEL ENGINES - with fuel-air mixture compression and compression ignition - with air compression, subsequent fuel addition and compression ignition - with the fuel-air charge being ignited by compression ignition of an additional fuel	F02B 1/12 to 1/14 F02B 3/06 to 3/12 F02B 7/00 to 7/08	4 20 4
COOLING of ENGINES - air cooling - liquid cooling (usually water)	F01P 1/00 to 1/10 F01P 3/00 to 3/22	52 199
<u>Notes*)</u>		
Sieving, Separating, Sorting in general	B07B; B07C.	1,669
Disintegrating, Crushing, Chopping, Cutting, Mincing, Slicing in general	B02C; B26B; B26D.	6,142
Drying in general	F26B.	2,199
Pumps in general - positive displacement type (excluding rotary- piston and oscillating-piston types) - positive displacement by rotary-piston or oscillating-piston - non-positive displacement type - inertia pumps and pumping by direct contact of another fluid	F04 F04B. F04C. F04D. F04F.	3,214 1,900 1,457 1,375 381
Spraying in general	B05B.	1,263
Packaging (incl. bagging, sacking); Conveying; Weighing	B65B; B65G; G01G.	22,020

\*) The technical fields indicated above deal with certain operations which are applicable in many different areas. These fields are not arranged according to the application of the operations but according to the characteristics of the machine itself or the method in which the operation is performed.

Where specific subgroups exist for machines or operations which are specifically adapted for agricultural purposes these are indicated in the above sections 1) to 8).

Nevertheless the general classes may contain interesting information for agricultural applications. In order to find it, it is necessary to know in detail the working mechanism of the machine concerned or of the method in which the operation is performed.

(Appendix V-A follows)



APPENDIX V-A

Definitions of selected  
main groups of the IPC

Reference in Concordance Table	Definitions appearing in the IPC
A 01 B 3/00 to 13/16	3/00 Ploughs with fixed plough-shares
	5/00 Ploughs with rolling non-driven tools, e.g. discs (with rotary driven tools 9/00)
	7/00 Disc-like soil-working implements usable either as ploughs or as harrows, etc.
	9/00 Ploughs with rotary driven tools (tilling implements with rotary driven tools 33/00)
	11/00 Ploughs with oscillating, digging or piercing tools
	13/00 Ploughs or like machines for special pur- poses (for drainage 2 02 B 11/02)
A 01 B 19/00 to 25/00	19/00 Harrows with non-rotating tools
	21/00 Harrows with rotary non-driven tools (tilling implements with rotary driven tools 33/00)
	23/00 Elements, tools, or details of harrows
	25/00 Harrows with special additional arrange- ments, e.g. means for distributing ferti- lizers; Harrows for special purposes (19/00 takes precedence)
A 01 B 51/00 to 75/00	51/00 Undercarriages specially adapted for mounting-on various kinds of agricultural tools or apparatus (general vehicle as- pects in the relevant sub-class of class B 60 or B 62)
	59/00 Devices specially adapted for connection between animals or tractors and agricul- tural machines or implements (63/00 takes precedence; vehicle connections in general B 60 D; draught assemblies for animal drawn vehicles, in general B 62 C 5/00)
	61/00 Devices for, or parts of, agricultural machines or implements for preventing overstrain (preventing overstrain in vehicle connections, in general B 60 D; preventing overstrain in couplings <u>per se</u> F 16 D)
	63/00 Lifting or adjusting devices or arrange- ments for agricultural machines or imple- ments (lifting mechanisms for the cutter- bar of a mower A 01 D 55/28; adjusting devices for the cutter-bar of a mower A 01 D 55/32; constructional features of lifting devices <u>per se</u> B 66 F)
	67/00 Devices for controlling the tractor motor by resistance of tools (preventing over- strain 61/00)

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 B 51/00 to 75/00 (continued)	69/00 Steering of agricultural machines or implements (steering of motor vehicles, e.g. tractors, or trailers B 62 D); Guiding agricultural machines or implements on a desired track (vehicle course control in general G 05 D 1/02)
	71/00 Construction or arrangement of setting or adjusting mechanisms, of implement or tool drive or of power take-off; Means for protecting parts against dust, etc.; Adapting machine elements to or for agricultural purposes
	73/00 Means for transporting agricultural machines or implements.
	75/00 Carriers for supporting persons when working in the field, e.g. while thinning beet
A 01 C 9/00 to 13/00	9/00 Potato planters (combinations with soil-working A 01 B 49/04)
	11/00 Transplanting machines (carriers for supporting persons A 01 B 75/00; transplanting devices for trees A 01 G 23/02)
	13/00 Machines or apparatus for consolidating soil around plants
A 01 C 15/00 to 19/00	15/00 Fertiliser distributors (7/06 takes precedence; with centrifugal wheels 17/00; with motor-driven tools 19/00; sand, gravel or salt spreaders for roads E 01 C 19/20)
	17/00 Fertilisers or seeders with centrifugal wheels (sand, gravel, or salt spreaders E 01 C 19/20; mechanical throwing machines for articles or solid bulk materials, in general B 65 G 31/00)
	19/00 Fertilisers or seeders with motor-driven tools
A 01 D 1/00 to 11/06	1/00 Handcutting implements for harvesting (hedge trimming means A 01 G 3/04)
	3/00 Non-abrasive sharpening devices for sythes, sickles, or the like (abrasive or similar sharpening devices B 24 D 15/06)
	5/00 Containers for whetstones for use during harvesting (whetting implements B 24 D 15/00)
	7/00 Rakes (haymakers, crop conditioners 76/00 to 84/00)

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 D 1/00 to 11/06 (continued)	9/00 Forks 11/00 Other hand implements
A 01 D 13/00 to 21/04	13/00 Diggers, e.g. potato ploughs 15/00 Digging machines with sieve graters but without conveying mechanisms 17/00 Digging machines with sieving and convey- ing mechanisms 19/00 Digging machines with centrifugal wheels, drums, or spinners 21/00 Digging machines with potato-picking implements
A 01 D 45/00 to 46/28	45/00 Harvesting of standing crops (44/00 takes precedence) 46/00 Picking of fruits, vegetables, hops, etc.; Devices for shaking trees or shrubs
A 01 D 55/00 to 73/00	55/00 Cutting apparatus (cutting in general B 26) 57/00 Delivering for mechanisms for harvesters 59/00 Equipment for binding harvested produce (specially adapted for baling presses A 01 F 15/14; bundling articles for pack- aging in general B 65 B 13/00) 61/00 Elevators or conveyors for binders or com- bines (conveying in general B 65 G; hoist- ing, lifting, in general B 66) 63/00 Outside dividers 65/00 Grain-crop lifters 67/00 Undercarriages or frames specially adapted for harvesting machines (coupling arrange- ments between animal or tractor and har- vesting machine A 01 B 59/00); Mechanisms for adjusting the frame (adjusting devices for the cutter-bar 55/32); Platforms 69/00 Driving mechanisms; Parts thereof 73/00 Other component parts
A 01 D 76/00 to 84/00	76/00 Haymakers with tines that are stationary with respect to the machine during opera- tion but that may be liftable for dumping 77/00 (transferred to 76/00, 78/00, 80/00)

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 D 76/00 to 84/00 (continued)	78/00 Haymakers with tines moving with respect to the machine 79/00 (transferred to 76/00, 78/00, 80/00) 80/00 Parts or details of haymakers (parts or details specific for one type of machine, <u>see the relevant groups for these machines</u> ) 81/00 (transferred to 76/00, 78/00, 80/00) 82/00 Crop conditioners, i.e. machines for crushing or bruising stalks (combined with harvesters 43/10) 83/00 (transferred to 76/00, 78/00, 80/00) 84/00 Haymakers not provided for in a single one of groups 76/00 to 82/00
A 01 F 7/00 to 12/60	7/00 Threshing machines (with flails 9/00); Threshing devices for combines 9/00 Threshing machines with flails 11/00 Threshing machines adapted for special crops 12/00 Parts or details of threshing machines
B 02 B 1/00 to 5/02	1/00 Preparing grain for milling or like processes (hulling, husking, decorticating, polishing, removing the awns, or degerming 3/00) 3/00 <u>Hulling; Husking; Decorticating (decorticating textile fibres D 01 B 1/14); Polishing; Removing the awns (in threshing machines A 01 F 12/42); Degerming</u> 5/00 Grain treatment not otherwise provided for
A 01 N 25/00 to 65/02	<u>Biocides; Pest repellants or attractants; Plant growth regulators</u>

Notes

- (1) In groups 27/00 to 65/00 in the absence of an indication to the contrary, an invention is classified in the last appropriate place for an active ingredient. For the purpose of this sub-class, a foodstuff is not to be considered as an active ingredient.
- (2) Different materials applied in sequence, at different times, are to be considered as a mixture of all materials employed.

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 N 25/00 to 65/02 (continued)	<p>Notes (contd.)</p> <p>(3) Compounds covered by different main groups according to alternatively specified parts of their formulae are classified in every one of the relevant main groups.</p> <p>(4) Synergistic or potentiated compositions are classified as if the synergist or potentiator were an active ingredient.</p> <p>(5) Salts or metal chelates of an organic compound are classified as that compound. Salts formed between two or more organic compounds are classified as the compound providing the essential ion with classification also for the compound providing the other ion.</p> <p>(6) Where a compound is described as existing in tautomeric forms, it is classified as though existing in the form which is classified last in the system.</p> <p>(7) In groups 25/00 to 65/00, the symbol X means nitrogen, oxygen, sulphur or a halogen; Y means nitrogen, oxygen or sulphur. A dotted line between atoms indicates an optional bond, e.g. ... indicates one or two single bonds or a double bond.</p> <p>(8) Attention is drawn to the definitions of groups of chemical elements following the title of Section C.*</p>
	<p>25/00 Biocides, pest repellants or attractants, or plant growth regulators, characterised by their forms, or by their non-active ingredients or by their methods of application (apparatus for the destruction of noxious animals or noxious plants A 01 M; fungicidal, bactericidal, insecticidal, disinfecting or antiseptic paper D 21 H 5/22); Substances for reducing the noxious effect of the active ingredients to organisms other than pests</p>
	<p>27/00 Biocides, pest repellants or attractants, or plant growth regulators containing hydrocarbons</p>

\* See Appendix V-B

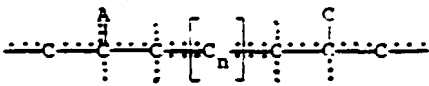
Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 N 25/00 to 65/02 (continued)	29/00 Biocides, pest repellants or attractants, or plant growth regulators containing halogenated hydrocarbons
	31/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic oxygen or sulphur compounds
	33/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic nitrogen compounds
	35/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom having two bonds to hetero atoms with at the most one bond to halogen, e.g. aldehyde radical
	37/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom having three bonds to hetero atoms with at the most two bonds to halogen, e.g. carboxylic acids (containing cyclopropane carboxylic acids 53/00)
	39/00 Biocides, pest repellants or attractants, or plant growth regulators containing aryloxy- or arylthio-aliphatic or cycloaliphatic compounds, containing the group $Ar-O-C_n$ or $Ar-S-C_n$ , e.g. phenoxyethylamine, phenylthio-acetonitrile, phenoxyacetone
	<u>Note</u> $C_n$ means a carbon skeleton, not containing an aromatic ring system wherein $n \geq 2$ .
	41/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a sulphur atom bound to a hetero atom
	43/00 Biocides, pest repellants or attractants, or plant growth regulators containing heterocyclic compounds (containing cyclic anhydrides, cyclic imides 37/00; containing compounds of the formula
	$X_m - C_n - N$
containing only one heterocyclic ring, wherein $m \geq 1$ and $n \geq 0$ and $-N$ is unsubstituted or alkylsubstituted pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more $CH_2$ groups, 33/00 to 41/12)	

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 N 25/00 to 65/02 (Continued)	<p><u>Note</u> For the purpose of group 43/00, the following definitions apply:</p> <p>(a) a "hetero ring" is a ring having at least one halogen, nitrogen, oxygen or sulphur atom as a ring member.</p> <p>(b) Two rings are "condensed" if they share at least one ring member, i.e. "spiro" and "bridged" are considered as condensed. The term "bridged" denotes the presence of at least one fusion other than ortho, peri and spiro.</p> <p>(c) A "condensed ring system" is a ring system in which all rings are condensed among themselves.</p> <p>(d) The number of rings in a condensed ring system equals the number of scissions necessary to convert the ring system into one acyclic chain. The relevant rings in a condensed system are chosen according to the following criteria consecutively:</p> <p>(i) lowest number of ring members,</p> <p>(ii) highest number of hetero atoms as ring members.</p> <p>Ring members shared by two or more rings are regarded as being a member of each of these rings.</p>
45/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing compounds having three or more carbocyclic rings condensed among themselves, at least one ring not being a six-membered ring (halogenated hydrocarbons 29/08; condensed with heterocyclic rings 43/00)</p>
47/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom not being member of a ring and having no bond to a carbon or hydrogen atom, e.g. derivatives of carbonic acid (carbon tetrahalides 29/02)</p>
49/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing compounds containing</p> <p>the group <math>\begin{array}{c} \text{C} \\   \\ \text{---}[\text{C}]_n\text{---}[\text{C}]^*-\text{C}^*-\text{C}^*-\text{C}^*-\text{---}[\text{C}]_m\text{---} \\   \quad   \\ \text{X} \quad \text{X} \end{array}</math></p> <p>wherein <math>m \geq 1</math>, both X together may also mean -Y- or a direct carbon-to-carbon bond, and the carbon atoms marked with an asterisk are not part of any ring system</p>

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 N 25/00 to 65/02 (continued)	<p>other than that which may be formed by the atoms X, the carbon atoms in square brackets being part of any acyclic or cyclic structure, or the</p>
	<p>group </p>
	<p>wherein A means a carbon atom or Y, n &gt; 0, and not more than one of these carbon atoms being a member of the same ring system, e.g. juvenile insect hormones or mimics thereof (containing hydrocarbons 27/00)</p>
51/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds having the sequences of atoms O-N-S, X-O-S, N-N-S, O-N-N or O-halogen, regardless of the number of bonds each atom has and with no atom of these sequences forming part of a heterocyclic ring</p>
53/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing cyclopropane carboxylic acids or derivatives thereof</p>
55/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen and sulphur (containing organo-phosphorus compounds 57/00)</p>
57/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing organic phosphorus compounds</p>
59/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing elements or inorganic compounds</p>
61/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing substances of unknown or undetermined composition, e.g. substances characterised only by the mode of action</p>
63/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing micro-organisms, viruses, microbial fungi, enzymes, fermentates or substances produced by, or extracted from, micro-organisms or animal material (containing compounds of determined constitution 27/00 to 59/00)</p>
65/00	<p>Biocides, pest repellants or attractants, or plant growth regulators containing plant material, e.g. mushrooms, derris root, or extracts thereof (containing compounds of determined constitution 27/00 to 59/00)</p>



Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
A 01 M 7/00 to 13/00	<p>7/00 Special adaptations or arrangements of liquid-spraying apparatus for purposes covered by this sub-class (spraying apparatus in general B 05 B)</p> <p>9/00 Special adaptations or arrangements of powder-spraying apparatus for purposes covered by this sub-class (spraying apparatus in general B 05 B)</p> <p>11/00 Special adaptations or arrangements of combined liquid- and powder-spraying apparatus for purposes covered by this sub-class (spraying apparatus in general B 05 B)</p> <p>13/00 Fumigators; Apparatus for distributing gases</p>
A 23 N 3/00 to 4/24	<p>3/00 Machines for coring or stoning fruit, characterised by their feeding device (4/00 takes precedence)</p> <p>4/00 Machines for stoning fruit or removing seed-containing sections from fruit, characterised by their stoning or removing device (for peeling fruit and removing seed-containing sections 7/08; domestic devices for stoning fruit A 47 J 23/00, for coring fruit A 47 J 25/00)</p>
B 62 D 49/00 to 51/06	<p>49/00 Tractors (of walk type 51/04; endless-track features 55/00)</p> <p>51/00 Motor vehicles characterised by the driver not being seated</p>
B 60 P 1/00 to 9/00	<p>1/00 Vehicles predominantly for transporting loads and modified to facilitate loading, consolidating the load, or unloading (vehicles for carrying harvested crops with means for self-loading or self-unloading A 01 D 90/00; peculiar to refuse-collecting-vehicles B 65 F; loading or unloading vehicles by means not incorporated therein B 65 G)</p> <p>3/00 Vehicles adapted to transport, to carry or to comprise special loads or objects (ambulance aspects A 61 G 3/00; fire-fighting land vehicles A 62 C 27/00; refuse-collecting vehicles B 65 F 3/00, 7/00; snow-removing vehicles E 01 H; armoured or armed vehicles F 41 H 7/00; self-propelled mine-clearing vehicles F 41 H 11/16)</p>

Appendix V-A

Reference in Concordance Table	Definitions appearing in the IPC
B 60 P 1/00 to 9/00 (Continued)	5/00 Arrangements of weighing machines on vehicles (adapting weighing machines to use on transport vehicles G 01 G 19/08) 7/00 Securing or covering of load on vehicles 9/00 Other vehicles predominantly for carrying loads

[Appendix V-B follows]

APPENDIX V-B

Definitions of groups of chemical elements valid for  
Section C of the IPC

Alkali metals: Li, Na, K, Rb, Cs, Fr  
Alkaline earth metals: Ca, Sr, Ba, Ra  
Lanthanides: elements with atomic numbers 57 to 71 inclusive  
Rare earths: Sc, Y, Lanthanides  
Actinides: elements with atomic numbers 89 to 103 inclusive  
Refractory metals: Ti, V, Cr, Zr, Nb, Mo, Hf, Ta, W  
Halogens: F, Cl, Br, I, At  
Noble gases: He, Ne, Ar, Kr, Xe, Rn  
Platinum group: Os, Ir, Pt, Ru, Rh, Pd  
Noble metals: Ag, Au, Platinum group  
Light metals: alkali metals, alkaline earth metals, Be, Al, Mg  
Heavy metals: metals other than light metals  
Iron group: Fe, Co, Ni  
Non-metals: H, B, C, Si, N, P, O, S, Se, Te, noble gases, halogens  
Metals: elements other than non-metals  
Transition elements: elements with atomic numbers 21 to 30 inclusive, 39 to 48 inclusive, 57 to 80 inclusive, 89 upwards

(Appendix VI follows)

APPENDIX VI

SAMPLE OF INPADOC'S PATENT  
CLASSIFICATION SERVICE (PCS)

INPADOC	PATENT CLASSIFICATION SERVICE MICROFICHE JULY-1975						PAGE:15765	
I P C	CC PUB.DAT	RD	DOC.NO	IPC (ALL)	CC PR.DAT	KA PRIORITY NO.	APPLICANT	TITLE
E02B 11/00	ML	750424	A	7413763			S TE BAO ZWISC MENAMM, BONDOR EPUBLIK DUTS LAND	
	ML	750425	A	7413061 E02B 11/00	SM	731023 A 73	7314364 LINDEN-ALINAK A B TE SKELLEPTE A, ZWEDEN.	INSTEKBUIS VOOR GRADERINGSDOELEINDEN.
	OE	750210	B	320532 E02B 11/00	OE	671624 A 72	5'09 HEUMANN & CO GH BH, DE	DRAINAGEEINRICHTUNG
	OE	750625	B	323074 E02B 11/00	OT	691025 A 69	1953700 MOESCH ARTIENGE SELLSCHAFT SARLAENDISCHE GESELLSCHAFT F UER GRUBENAUSB AU UND TECHNIK RBN	TRAGENNE AUSKLEIDUNG FUER INSBESONDERE KURVENFORMIG VERLAUFENDE DURCHLASSSE ODER KANALE
	JU	741225	T	454317 E02B 11/00 F16L 21/00 F16L 37/00	SU	720011 A 72	1019971	
	SU	750505	U	469790 E03F 9/00 E00B 9/02 E02B 11/00	SU	740205 A 74	199264	
	SM	730319	B	354600 E02B 11/00	SF	690224 A 69	576 PONJANIEMI A, SF	
	SM	730625	B	357402 E02B 11/00	SM	710304 A 71	2763 SCHUETT M, SW	
	SM	750212	A	7410133 E02B 11/00	OT	730011 U 73	7329424 RENAU PLASTIKS GRBN	
	SM	750210	A	7311225 E02B 11/00	SM	730017 A 73	7311225 HELLENIUS, JARL SUME THORWALD	
	SM	750417	A	7412941 E02B 11/00	OT	731016 A 73	2351760 BAAR HEINZ-JOAC MIN	
	US	741224	A	3055799 E02B 11/00	US	730117 A 73	324300 ADVANCED DRAINAGE GE SYST INC, US	RIGID CORRUGATED TUBING
	UR	750107	A	3050390 E02B 11/00 E02D 5/34	US	690019 A1 69	051353 VIBROFLUTATION FOUNDATION CON PANY	METHOD OF AND APPARATUS FOR MAKING SAND DRAINS
	US	750114	A	3059790 E02B 11/00 E02D 5/14	JA	730522 A 73	56370 CHIYODA CHEMICA L ENGINEERING & CONSTRUCTION CO, LTD.	METHOD OF CONSTRUCTING A FLEXIBLE SAND IN THE SOFT GROUND
	US	750114	A	3059009 E02F 5/10 E02B 11/00	GB	730213 A 73	331747 CLAYHOLDI ARCHI E, J. HANSONI, WALTER F.	PIPE BURYING RIPPER AND METHOD
	US	750121	A	3061152 E02B 11/00 F16L 11/12	US	720612 A2 72	262103 HANOSCHAKI ERNE ST J.	CORRUGATED DRAINAGE PIPE WITH STAGGERED ARRANGEMENT OF PLATEAU RECESSES
	US	750121	A	3061153 E02B 11/00 F16L 11/12	US	720223 A2 72	228500 HANOSCHAKI ERNE ST J.	CORRUGATED DRAINAGE PIPE WITH STAGGERED ARRANGEMENT OF RIB INTERRUPTIONS
	US	750422	A	3070605 E02B 11/00 F16L 11/12	US	700311 A 70	10830 THE HANCOCK BRI CK AND TILE CO MPANY	SEPTIC TANK DRAINAGE TILE
	US	750566	A	3001319 E02B 11/00	JA	721005 A 72	100121 SHINETSU CHEMICAL COMP, JY	APPARATUS FOR DRIVING BOARD DRAINS UNDE RGROUND
	US	750610	A	3000007 E02B 11/00 E02D 31/42	GC	730411 A 73	350200 OLIVIO LORENTZE N ACTIVITIES,	FOUNDATION WALL PROTECTIVE SHEET



