G. W. THACKER.

SYSTEM OF AND APPARATUS FOR FILING AND INDEXING RECORDS.

APPLICATION FILED OCT. 3, 1914.

1,183,779.

Patented May 16, 1916.

3 SHEETS—SHEET 1.

Fig. 1.

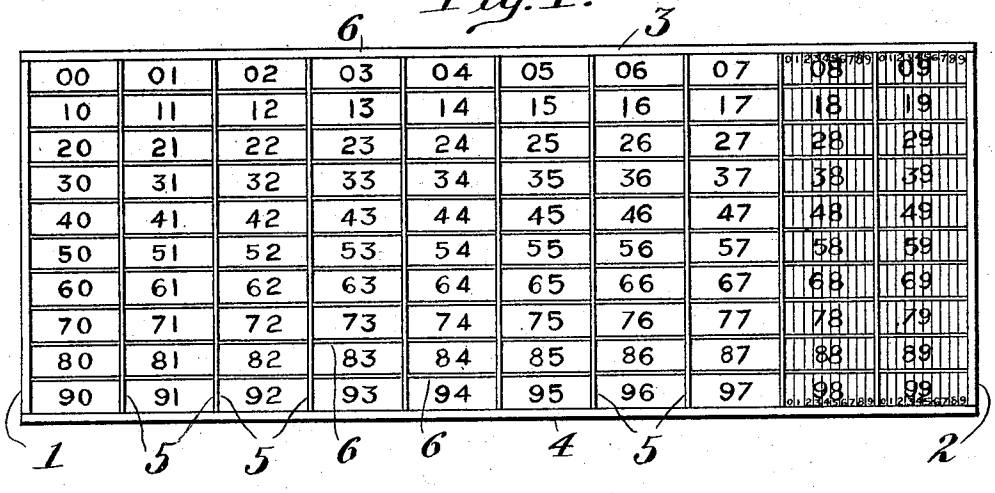
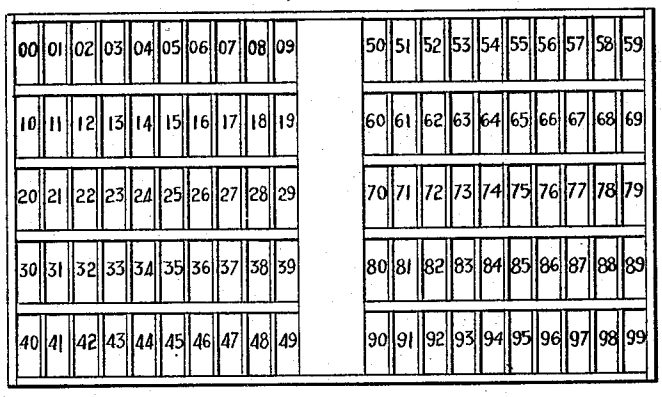


Fig. 2.



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Witnesses

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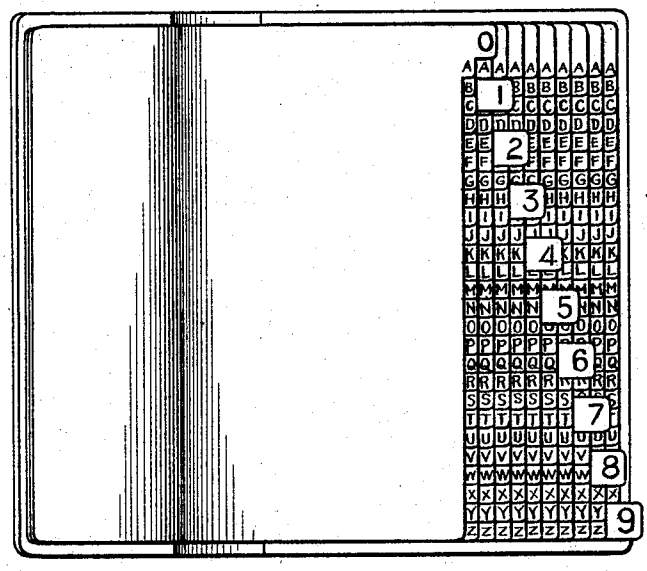
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3 SHEETS—SHEET 2.

Fig. 3.



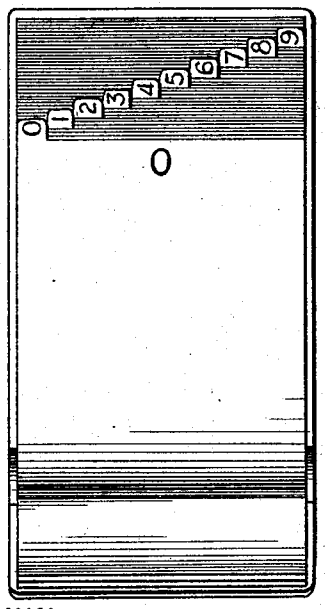


Fig. 4.

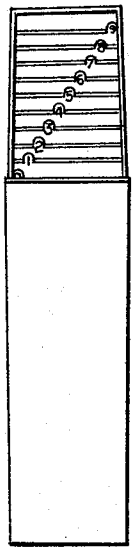


Fig. 5.

Witnesses

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3 SHEETS—SHEET 3.

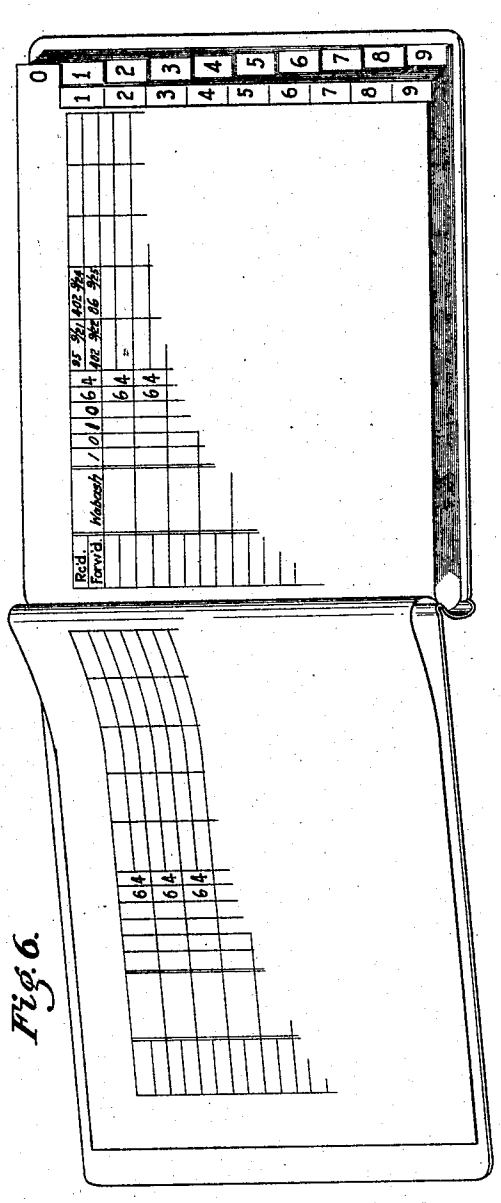


Fig. 6.

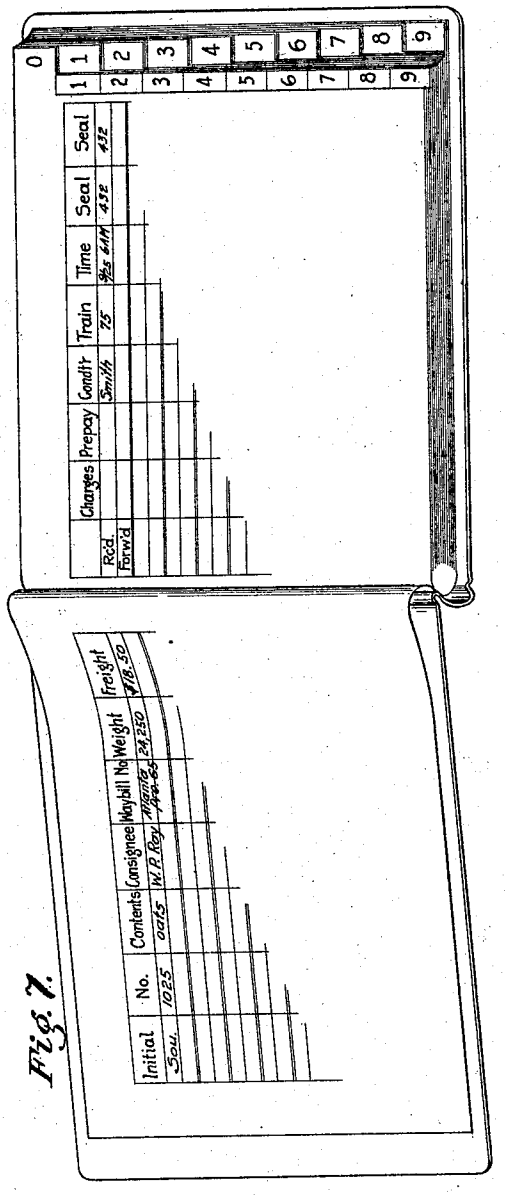


Fig. 7.

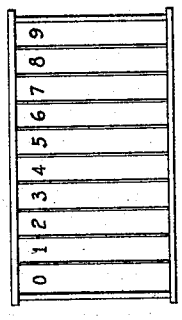


Fig. 8.

WITNESSES

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UNITED STATES PATENT OFFICE.

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SYSTEM OF AND APPARATUS FOR FILING AND INDEXING RECORDS.

1,183,779. Specification of Letters Patent. Patented May 16, 1916.

Application filed October 3, 1914. Serial No. 864,815.

To all whom it may concern:

Be it known that I, GEORGE W. THACKER, a citizen of the United States, residing at Irondale, county of Jefferson, State of Alabama, have invented certain new and useful Improvements in Systems of and Apparatus for Filing and Indexing Records, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to systems, methods, and apparatus of and for filing and indexing records, and it has for its object the production of means and a method by which it will be possible to arrange and carry a very large number of individual or unit records, requiring classification under two or more heads, so that any and all of them will be instantly available without search when required.

While not limited in its applicability to any special portion of the field of filing and maintaining records, this invention is found specially useful to yard masters and in railway offices, in keeping car records.

The systems in common use of classifying and indexing units under two or more heads, whether the units handled be the objects themselves, or merely records symbolic of the objects, have heretofore been defective in basic particular, viz., they are based upon primary subdivisions under general heads secondary distribution under sub-heads, and so on. This necessitates the provision of separate receptacles or space or shelf room, for each principal head, although there may be only a few units under that head, and similarly a pro rata provision must be made for each sub-head, whether secondary, tertiary, or what not. In other words, all the machinery of an army must be provided for a handful of private soldiers, because they are classified according to corps, divisions, brigades, and so on down, instead of being handled as units. To illustrate this condition specifically, I may refer to the handling of car records under heads and sub-heads or names and numbers. Suppose for example that in the yard in which records are being kept, cars are received from time to time belonging to twenty different roads, and aggregating in number for a given period say one thousand. This would give an average of fifty cars per road, but of course in practice and for any particular period of time, there would probably be many more than this number for some roads, and none for others. Nevertheless, provision must be made for recording under the head of each road, and for indexing in complete numerical order under each head. Obviously, there will always be vacant space in the file cases, or blank pages in the books, in which such records are kept. In addition to this, the finding of any particular record involves the examination of every single head and sub-head for every unit sought.

In any numerical system of filing, there will always be broken numbers under the heads, and the higher the numbers to be provided for in the end, the more waste space there will be in the beginning, some of which will never be filled up. For example if the classification must extend to hundreds of thousands pigeon holes or guide cards or what not would of course be arranged for hundreds, tens, and units, of thousands, and if there is going to be any unit received bearing a number over nine hundred thousand, then a full equivalent for one hundred thousand additional numbers must be provided, to accommodate the relatively small number of units which may be received between nine hundred and one thousand and nine hundred and ninety-nine thousand. Similarly a full equipment must be provided to keep every other hundred thousand and for every ten thousand under every hundred thousand, and for every thousand under every ten thousand, and for every hundred under every thousand and for every ten under every hundred, and finally for every unit under every ten.

To sum the whole matter up in a few words, the ordinary system of classification and indexing requires full equipment, so far as divisions and space go, for the full theoretical limit covered by the system, whether expressed in subject matter, or numerically, and whether ultimately used or not.

My present invention differs radically from the foregoing. I reason that in handling units, they appear as units, and not primarily as members of a grand division or genus. Therefore I classify them first as units, and then sub-divide them according to their genus, species, and family connections in inverse order. Take for example the keeping of car records, to which I have referred. The cars which come into the yard from twenty roads are all numbered as

units and their numbers are capable of classification by themselves regardless of the roads to which they belong. There will be a great many more of these numbers running together into related groups, than there will be of the names of the roads to which they belong. Moreover, there will be fewer lapses or elisions, or in common parlance gaps, in the unit numbers. Suppose in one month it be found that 10 cars have come in all having their total designation terminating in the two digits 15. Suppose that their hundreds designations are distributed among four or five groups, their thousands designations of each group among two or three groups, and finally that six of these cars belonged to different roads, and four to the same road, these four of course having their numerals differing in the higher digits. Obviously, distribution by the ordinary method would involve use of a considerable equipment, and much blanking or loss of space in the indexes. According to my invention however these cars would all be classified and indexed first under the numeral 15, then that group would be sub-divided according to the next higher digits, and so on, working down to the final sub-division under the names of the roads. By this method, the records of all the cars coming into the yard and bearing numerals terminating in the same last two digits, would be kept together, the units designation thus becoming the generic or principal head, under which subsequent sub-division and classification is effected.

In the practical working of a railway office, and especially of such a center as a yard master's office, the records must be kept so that special training will not be required in either making or handling them, as they have to be kept and used by practical men. Moreover, it is absolutely essential that they be both complete and correct, and so far as possible without dead wood or waste. In systems of transportation, time is money in the most direct sense, and any defect or inadequacy in methods, which slows down or lowers the efficiency of service rendered by employees, is translated without any possibility of evasion, into direct increase of expense and loss to the shippers and travelers who are being served, and of course through them to the public at large. The ordinary method of keeping car records is not only relatively slow and inefficient, but subject to limitation in ultimate capacity, and liability of error in transcription or arrangement. By the use of my invention, these defects are partially if not entirely cured, the ultimate capacity of a given equipment being greatly increased, probably beyond the requirements of any yard or center for which it would be designed, while the probability of error in transcription, filing, or finding individual records is greatly reduced or eliminated.

Applied to cases of filing systems, my invention enables a very large number of letters or papers to be systematically and compactly arranged, with every individual unit instantly available at any time. This of course is due to my putting together in primary groups the order of numbers which recur the most frequently as for example the units digits below one hundred, mentioned above.

Various refinements of my invention will appear in the detailed description hereinafter. The invention may be embodied in various forms, such as index books, file cases, pigeon holes, etc. Its essentials remain the same in any case, however, and of course the details may be varied in many ways without departing from the spirit of the invention.

I have illustrated in the accompanying drawings some forms of apparatus with which my invention may be practised.

In the drawings: Figure 1 is a front view of a filing case with its divisions numbered according to my invention. Fig. 2 is a similar view of a modified form of filing case. Fig. 3 is a face view of a record book with the front cover open, showing double index. Fig. 4 is a similar view of a modified form of book having a single index. Fig. 5 is a perspective view of a filing drawer adapted for use with the cabinets or file cases of Figs. 1 and 2. Figs. 6 and 7 show modified forms of record books. Fig. 8 is a front view of a modified form of cabinet, adapted to be used in small systems with the books of Figs. 6 and 7.

It will be most convenient, and will make for clearness, if I first describe my invention specifically as applied to a car record system, and then point out how it can be applied to other uses, and the benefits which will flow from such applications.

Referring to Fig. 1, this represents a cabinet having side walls 1 and 2 and top and bottom members 3 and 4. In the rectangle formed by 1, 2, 3 and 4, the cabinet is divided into 100 spaces by the vertical partitions 5 and the horizontal shelves 6. The number of divisions and the dimensions of the rectangle are such that each pigeon hole is rectangular in section and of dimensions suitable to receive a record book, a card case, or the like. The simplest arrangement calls for a record book. I provide one of these books, such for example as shown in Fig. 4, for every pigeon hole, from 00 to 99. Each book is suitably indexed, either in the manner shown in Fig. 4, to provide for numerical distribution, or with equivalent alphabetical divisions, or as shown in Fig. 3 with double distribution.

Each pigeon hole in Fig. 1 bears a number as shown, which may be applied in any

desired and suitable manner. The numbers may be painted on hinged drop fronts or covers, which may be of glass like the Wernicke sectional book case covers, or of wood or other material. In Fig. 1 pigeon holes numbers 00 to 97 in the first eight columns are shown as having these covers or drops, while the pigeon holes in the last two columns of the "8's" and "9's" are shown fitted with a series of drawers such as that shown in Fig. 5. Where such drawers are provided, the number may be painted on the front of the drawers in each pigeon hole, its temporary mutilation when a drawer is removed being a matter of no importance. Drawers would be fitted throughout for completing the case for filing purposes.

The numbers on all the pigeon holes correspond to and indicate the last two digits of the car numbers recorded in the several books kept in the pigeon holes, one book to each pigeon hole. For example, the book in pigeoen hole 11 is numbered 11, and when opened is found to contain an index like that shown in Fig. 4. This book contains the car records of all cars whose numbers end in 11, and it is divided according to its index so that the car records are grouped in the book according to their next highest digits. Thus all cars whose numbers end with 011 will be entered on the first group of pages, all those ending in 111 will be entered on the next group of pages, and so on, those whose numbers end with 911 being entered in the last group of pages.

Each one of the car groups, 111, 211, 311, etc., may be sub-divided by sub-dividing the space in its group of digits. In such case cars whose numbers end with 0011 would appear in the first sub-division of the first group of pages in the book. Cars whose numbers end with 9011 would appear in the last division of the first group of pages. Cars whose numbers end in 0411 would appear in the first division of the fourth group of pages in the book. Cars whose numbers end with 9411 would appear in the last subdivision in the fourth group of pages in the book. Finally, cars whose numbers end with 0911 would appear in the first subdivision of the last group in the book, and cars whose numbers end with 9911 would appear in the last sub-division of the last group in the book.

Where a double distribution of sub-division into four or more digits is thus made, the index may be doubled, and divisions from 0 to 9 will then appear under each of the main divisions 0 to 9. Sub-division to this extent provides for a classification and instant location of any one of ten thousand digits. It will usually be found unnecessary to go above this so far as the numerals are concerned, and indeed it should not usually be necessary to go above one thousand. The duplication of the last three digits of the numerals appearing on the cars in transit through the same yard, will not be so frequent as to require special provision, and of course the duplication of the last four digits would be still less frequent. I therefore find it sufficiently convenient to enter those having the same last three digits in the same group, in the order in which they may happen to come through. Of course, in a large center where the traffic is very heavy, and the number of cars handled in a month will run into many thousands, the four digit classification is to be preferred, as a time saver. It does require however a little more time in making the record, and this partially off-sets the time saved in finding the same afterward when needed.

In the statement of invention herein, I have referred to the designation of cars by the names of the roads to which they belong. They may also be sub-divided and classified according to such names, and in a large yard or a busy office, this will be found both desirable and necessary. Fig. 3 shows the double index for such a classification. The book is divided into ten portions, each portion in the illustration being composed of twenty-six or more pages. Each division or group of pages is marked by a tab bearing one of the numerals, as 0, 1, 2, 3, etc. Each page constituting a sub-division in each group, is marked with a letter of the alphabet. In the illustration all the letters of the alphabet are employed. In practice only so many letters would be employed, and only so many sub-divisions would be made as might be necessary to provide for the roads whose cars would have to be recorded in the book. The entries would be made, first by groups according to the last two digits of the car numbers, (which involves selection of a pigeon hole and its contained record book); second by sub-divisions of groups from 0 to 9, as indicated by the tabs in the book; and third by the names of the roads, each road having one or more pages to itself under the letter of the alphabet by which it is known. It is to be here noted that this sub-division by letters of the alphabet does not necessarily means that initial letters of the names would govern. Some roads are known by a letter, for example "Q", which is not the initial letter, and others are known by strings of letters, any one of which might arbitrarily be selected for record purposes and would be entirely satisfactory provided its use be recognized and standardized in all the yards having occasion to refer to each other's records, or in all the yards of the same road, at least.

It will readily be perceived that a record book arranged in the manner described will have its useful capacity multiplied several

times, as compared with the capacity of the ordinary book, in which the pages are usually indexed alphabetically or according to the names of the roads, and purely empirical provision made under each name for the numbers of cars belonging to the corresponding road.

The method of employment of the apparatus in Figs. 1, 3 and 4 and the method of operation involved broadly in my invention, will be clearly apparent from this description. In locating a car or in making a record, the operator selects first the pigeon hole in the cabinet of Fig. 1 whose number corresponds to the last two digits of the car number in question. The record book in the selected pigeon hole is then taken out and opened by that one of the numbered tabs which corresponds to the next higher digit. In a yard with small traffic, this will be sufficient, the book shown in Fig. 4 being then employed, having on the same page or in the same group of pages all the cars whose numbers have the same last three digits, or in other words all the cars whose numbers are in the same tens group of the same hundreds group of the same thousands group. In a larger yard however the book of Fig. 3 would be used, and after turning up the number tab corresponding to the third digit, the operator would run down the index letters in the group selected, until he reached the letter (or numeral if such be employed) designating the road to which the car belongs.

Broadly speaking, of course this method contemplates a primary classification and distribution of units according to their unit characteristics, followed by the division of each group into smaller groups, according to their family characteristics, then dividing each family according to species, and so on.

Having thus described the invention as applied to car records, which involve to a certain extent a system of indexing complete in itself for reference purposes, I will now point out how the same method and apparatus may be applied to general filing, without special regard to indexing.

The right-hand two columns in Fig. 1 show the pigeon holes filled with small vertically separated drawers. Fig. 5 shows one of these drawers removed, on a larger scale. It will be noted that the inside of the drawer is separated by transverse partitions into ten spaces, each adapted to receive papers or other objects. On the backs of the drawers in place, are displayed not only the numbers of the pigeon holes, but also drawer numbers from 0 to 9 for each pigeon hole. Following the same system as with the car records, suppose that we have a paper which bears the number 8978. To locate this paper the operator would first go to pigeon hole No. 78 (these being the last two digits of the desired number) then pull out drawer No. 9 in that pigeon hole, when the desired paper would be found behind partition No. 8 in that drawer. Obviously this sub-division by four digits enables correct classification of and instant access to any and all of ten thousand papers or other objects. The compactness of the system cannot be questioned, because in any large number of objects averages hold, and the number of units with the same last two digits would be fairly constant for all the pigeon holes, while the sub-division of each group by the next higher digit would also be fairly uniform, as would be the sub-division according to the highest digit. There would of course be a tendency to depart from strict uniformity, becoming more marked as the digits rise in value, but even this would usually be along uniform lines.

The cabinet shown in Fig. 2 is adapted to hold record books such as shown in Figs. 3 and 4, or it may be used for filing papers or other objects, and its pigeon holes may be sub-divided if desired. It is particularly adapted for the use of the operators in a yard master's office, and in the form illustrated may be conveniently mounted on the back of a desk or shelf, so that every pigeon hole will be within easy reaching distance of the occupant. I have shown two banks of pigeon holes, separated from each other by an open space, in which I purpose locating other files, records, or apparatus, having no direct connection with the present invention. The pigeon holes are numbered from 00 to 99, and in each pigeon hole is a book of the type shown in Fig. 3 or Fig. 4, each book bearing upon its back the same number as the pigeon hole. As a matter of fact, the numerals shown in Fig. 2 may actually be the numerals carried on the backs of the books, since it is the numbering of the books and not of the pigeon holes themselves that is of importance.

The method of operation with these books has been described *in extenso*, and need not be repeated. This method may be varied somewhat, and the various pieces of apparatus may be interchanged, without departing from the invention. For example, a drawer like that of Fig. 5 may be fitted to each of the pigeon holes in Fig. 2, and papers or other objects placed in the divisions of the drawer. Should it be considered desirable to employ card indexes instead of books shown in Figs. 3 and 4, then the drawers referred to would be necessary to hold the cards, and all the cards in each pigeon hole would be divided into ten groups, instead of the pages in the book. Moreover, each group of cards may be sub-divided under higher heads, or under alphabetical designations, or under names of the roads, in ac-

cordance with the sub-division of pages previously set forth. Various other changes and non-essential modifications may be made which will readily occur to those skilled in the art, but I wish it to be understood that I contemplate all such changes and modifications as fairly fall within the scope of the appended claims.

Figs. 6, 7 and 8 show the equipment for a very small business, to be used by local agents and conductors along the line of the railroad. The case in Fig. 8 is intended to hold a set of books such as shown in Figs. 6 and 7, the books numbered from 0 to 9, and to be used by agents and terminals. For instance, an agent at a small station may make a complete copy of every way bill of cars set out at his station. (See Fig. 7). At terminal yards, the yard men may make a record of each car as shown in Fig. 6. Of course this is covered in the description of the larger books and cabinets, but I consider that this smaller cabinet and the books intended for it constitute specific forms of my invention, and I intend to claim them correspondingly. The indexing is practically the same as in the other cases described, except that it is double indexing. Suppose for example, a car should be received numbered "Wabash 101,064," the operator first pulls out book No. 4, from the pigeon hole No. 4 in Fig. 8, then he pulls strap No. 6 on the right hand column of figures in the book, then pulls strap No. 0 in the left hand column, and so on. The book contains 100 leaves, divided into 10 divisions, according to the 10 outside straps in the column of figures to the right. Each division contains 10 leaves, which it will be observed are numbered from 0 to 9.

It will be understood that the books illustrated in Figs. 6 and 7 while usable with the small case shown in Fig. 8, would have their numbers changed to the extent that only the last digit of all the numbers would be the same as the number of the book. It follows from the book that there are only ten boxes.

In Figs. 6 and 7 of the drawings, the last two digits are shown constant in accordance with the requirements of the large case in Fig. 2 which contains one hundred boxes. In the small case of Fig. 8 the last digit of all the numbers in each box will be the same, and in the large case the last two digits in each box would be the same. This means that in the small case of Fig. 8, it would be the second digit from the right that would determine the initial group in the book, and the third digit from the right that would determine the special group. On the other hand, in the books for the large case of Fig. 2, made exactly as illustrated in Figs. 6 and 7, the last two digits would be the same in each book, the third digit from the right would determine the first index group, and the fourth digit from the right the sub-group. In using the same book in the large case of Fig. 2, and assuming the same car number, the operator would first pull out book No. 64, then open to the first group No. 0, and then to the sub-group No. 1.

For yard purposes, this set of 10 books would hold the records of 120,000 cars, while those in common use to the knowledge of applicant, hold only 20,000 cars. An agent at a small station should be able with this equipment to write up 60,000 cars in a set of books. This set would therefore last for several years, saving much time daily.

What I claim and desire to secure by Letters Patent is:

1. A filing and record equipment comprising a cabinet having its content divided into one hundred spaces or pigeon holes, and a group of records for each pigeon hole secured together and comprising numerals all of which correspond in their last two digits to the number of the pigeon hole.

2. A filing equipment comprising a cabinet containing one hundred pigeon holes numbered from 00 to 99, a book for each pigeon hole, each book numbered the same as its pigeon hole and having its leaves divided according to the third digit from the end of each number to be classified, whereby the individual records may be made first in the order of their last two digits and thereafter according to other higher designations.

3. Apparatus for compactly filing and storing aggregations of unitary records having generic and specific designations, so as to render them quickly accessible and avoid waste space, comprising a cabinet containing pigeon holes arranged and marked to correspond with the specific designations, and a record holder such as a book fitted to each pigeon hole, numbered to correspond therewith and comprising aggregations of unit leaf members for receiving and holding the individual records, all having the same specific designation, said individual members or leaves being divided into sub-groups according to the generic designations aforesaid.

4. Apparatus for making and keeping records of cars bearing individual designations each consisting of an indication of the road to which the car belongs and a numeral, comprising a cabinet divided into pigeon holes arranged and numbered to correspond to the last two digits of the various car numbers to be recorded, a book fitted to each pigeon hole designated by the same number as the pigeon hole, and containing a plurality of record leaves subdivided into groups corresponding to and designated for the respective roads to which the cars belong.

5. A filing equipment comprising a cabinet containing one hundred pigeon holes numbered from 00 to 99, a book fitted to each pigeon hole, each book numbered the same as its pigeon hole, and having its leaves doubly divided and indexed, the first division and index being based on the third digits from the end of the numbers to be classified, and each such group being subdivided and indexed according to higher or more generic designations, whereby the individual records may be made and preserved first in the order of their individual units digits, then in the sub-order of the next higher digit, and thereafter according to a still more generic designation.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. THACKER.

Witnesses:
L. W. JONES,
MARY S. SANFORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."