Aug. 16, 1932. C. H. COBB 1,871,840

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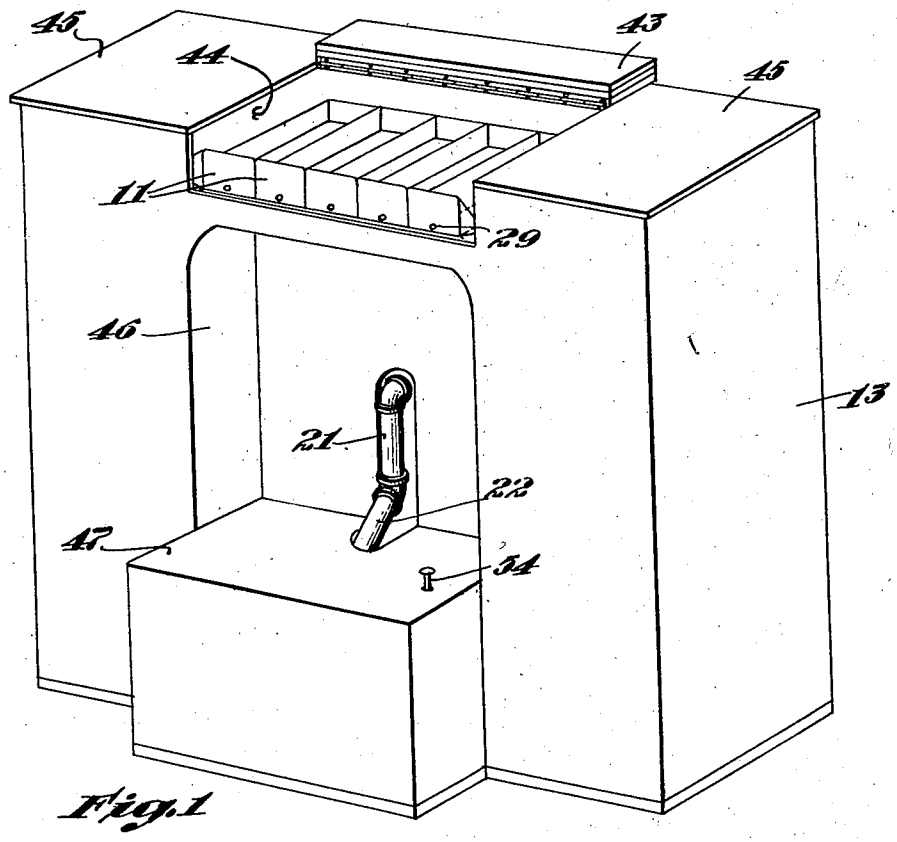


Fig. 1

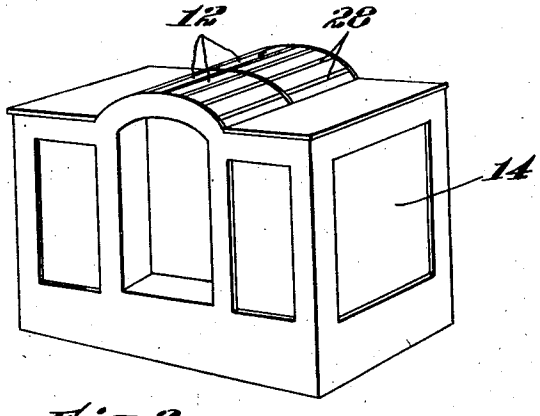


Fig. 2

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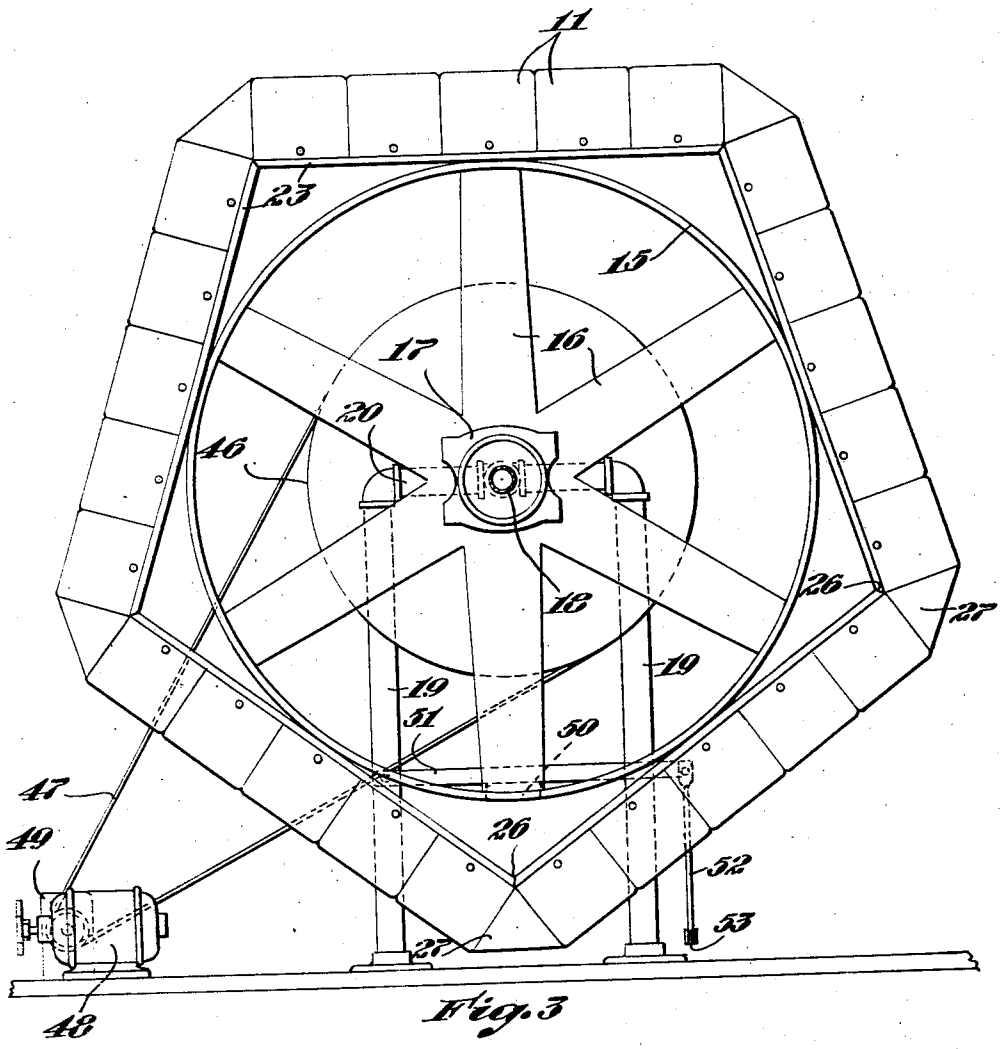


Fig. 3

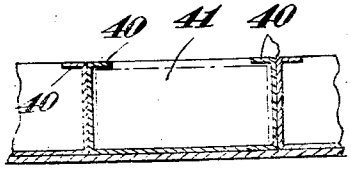


Fig. 7

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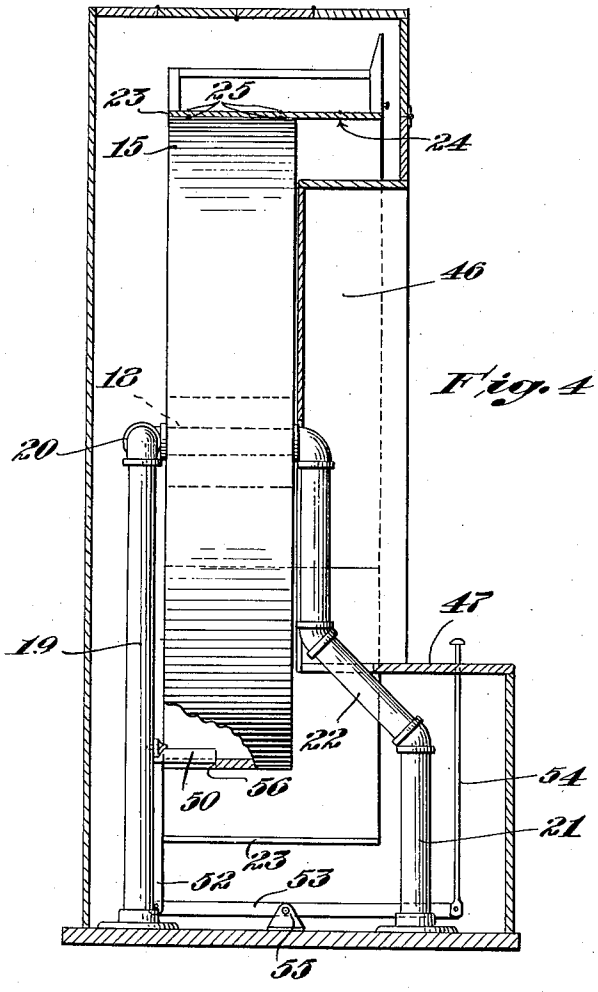


Fig. 4

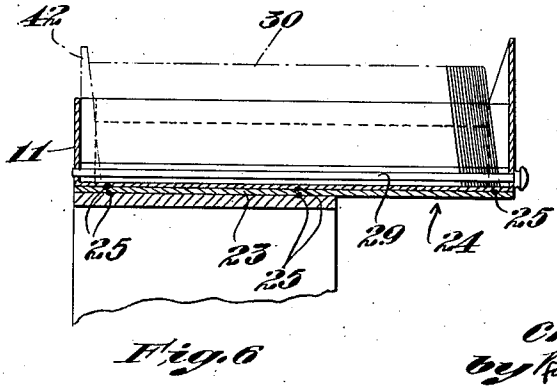
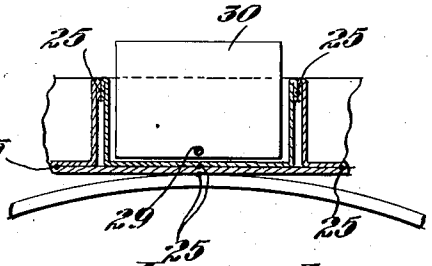


Fig. 6

Fig. 5



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1,871,840

UNITED STATES PATENT OFFICE

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INDEX

Application filed February 12, 1931. Serial No. 515,257.

This invention relates to index devices and pertains more particularly to improvements in indexes of the rotary type in which record cards or other index sheets or folders are filed for inspection or search purposes. The principal purpose of the invention is to provide a compact, convenient and efficient file which is adapted to contain a large number of readily accessible index cards so arranged as to occupy a relatively small space and to be easily available for inspection or removal, and which is desirably housed in a protective enclosure having the neat and ornamental appearance of an office desk at which the operator of the index may be comfortably seated.

Among the more specific objects of the invention are the provision of a rotary index in which a plurality of index compartments or trays are mounted about the periphery of a rotatable drum or wheel with corresponding ends of the several trays projecting transversely to provide an interior chamber or clearance for the knees of an operator, so that the cards or sheets assembled and retained within the respective compartments may be viewed and conveniently reached by an operator seated in front of the wheel; the provision of means for supporting a number of the compartments in a common plane whereby all the cards contained therein are simultaneously exposed in upright position at the top of the index; the provision of releasable braking mechanism for preventing rotation of the drum in order that the desired compartment or series of aligned compartments may be held in accessible position; and the provision of a desk or cabinet for enclosing and protecting the file from dirt and moisture, the front of the desk having an inset or recess projecting rearwardly within the chamber or opening defined by the forwardly projecting ends of the trays and affording knee-space for the seated operator, and the top of the cabinet being provided with a closable opening for exposing a group of the index compartments.

Other novel features of the invention will be apparent from the following description of the recommended embodiments which are illustrated in the accompanying drawings, and will be pointed out in the appended claims; but it will be understood that the structural details of the described apparatus may be varied to suit particular purposes without departing from the spirit of this invention.

In the drawings:

Fig. 1 is a perspective view of one form of the improved index;

Fig. 2 is a similar view of a modified structure;

Fig. 3 is a front elevation, to larger scale and partly in section, of the rotatable drum and associated elements removed from the cabinet of Fig. 1;

Fig. 4 is a central vertical section, partly in elevation, of the apparatus shown in Fig. 3;

Figs. 5 and 6 are detail sectional views of the index trays, illustrating one mode of affixing the trays to the wheel or drum; and

Fig. 7 is a view similar to Fig. 5, illustrating a modification of the tray.

The subject matter of this invention is particularly useful as a reference file for credit departments, insurance companies, factories or business offices which require a handy and quickly available collection of cards, sheets or folders indexed by name, subject matter or arbitrary reference numbers or characters. Heretofore, such index material has usually been assembled in the sliding trays or drawers of a file cabinet or upon the panels of a so-called visible index device. Apparatus of this type is obviously unsuitable for displaying a collection of cards running into the thousands in number, owing to the extensive space required, the inconvenience and time expended in reaching and inspecting the desired card or tray, and the unnecessary labor expended by the operator or searcher.

Hence, in accordance with the general object of my invention, I propose to remedy the structural and operative deficiencies of the common types of reference files by providing a compact index which may be arranged to contain any reasonably large number of cards and which may be quickly and easily manipulated by an operator who may be comfort-

ably seated at the front of the apparatus and who is enabled to inspect any desired card at the same convenient level without standing, reaching, or moving from the seat. I have therefore devised an index of the rotary type in which the rotatable wheel may be of sufficient size to accommodate many thousand index cards retained about its periphery in parallel compartments of convenient length; and I have enclosed this mechanism in an ornamental desk or cabinet in such a manner that the contents of several compartments may be viewed at the same time, and that all the cards in said compartments may be reached without undue bending or stretching on the part of the user.

In the preferred embodiment chosen for the purpose of illustration in Figs. 1 and 3 to 6, inclusive, the card trays 11, are mounted about the rotary member in the form of a regular polygon so that a row or bank of several aligned compartments or trays is supported in a plane tangential to the rotating member; whereas in Fig. 2, the individual trays 12 are radially affixed to the circumference of the rotary drum. In either instance, several trays are presented in substantially upright position at the top of the index or within an opening in the top of the enclosing cabinet or housing. In Fig. 1, a single index unit is housed in the desk-like enclosure 13; while in Fig. 2, two similar units may be mounted upon a common axis and enclosed by a double width desk 14, so that the respective units may be manipulated by operators seated at opposite sides of the desk. It will be understood that the size of the desk may be varied according to the diameter of the rotary drum or wheel, and that the wheel may revolve through an opening in the floor if necessary, in order that the desired height of the desk may be preserved.

As best shown in Figs. 3 and 4, the illustrated index mechanism may comprise a drum or wheel having a rim 15, spokes 16, and a hub 17 suitably journalled upon a shaft or axle 18 supported horizontally in suitable brackets or standards arranged at the rearward side or (as illustrated) at opposite sides of the wheel, the rear standard including spaced upright posts 19 and a cross bar 20, and the front bracket (if desired) consisting of a central upright 21, rearwardly offset at 22 to clear the side of the index; a polygonal frame rigidly fixed about the wheel rim 15 to provide flat, tangential platforms 23; and card trays 11 preferably secured in aligned rows transversely of the respective platforms in parallel juxtaposition. The ends of the trays preferably project forwardly a substantial distance to one side of the hub or axis of the wheel, so that the projecting portions overhang the body of the wheel, and the platforms 23 may extend a corresponding distance, as indicated at 24 (Figs. 4 and 6), to provide a central zone or chamber which is substantially unobstructed and which provides clearance for the knees of the operator.

It will be understood that the particular construction of the rotating wheel or drum and the nature and arrangement of its supporting members is not essential to this invention. The wheel may be made of any suitable materials and may be mounted in any desired manner to permit the free rotation of the attached card trays or compartments and to provide the clearance above mentioned. For some purposes, the wheel may be rimless and the polygonal frame may be secured directly to the spoke ends or to a disk-like body of the wheel without departing from the invention. Similarly, the shape and structural details of the card trays and their securing means may be varied; and it is contemplated that the several compartments of an aligned row or bank may be formed as a unit, rather than as a collection of individual trays.

As herein shown, the metal trays are affixed to each other and to the platforms 23 and the platforms are rigidly secured to the wheel rim 15 by spot-welding at the points 25 and the abutting ends of the platforms are similarly welded at 26; but other appropriate fastening means (either permanent or detachable) may be employed for this purpose, and the platforms may be integral if desired. Triangular filler members 27 may be inserted at the corners of the pentagonal frame 23 and may be secured between the adjacent compartments 11 by welding or otherwise; and similarly, in the form shown in Fig. 2, wedges 28 may be fastened between each adjoining pair of trays 12 to fill the spaces between the radially mounted trays.

The trays 11 or 12 may be of common construction and may have the usual detachable lock rod 29 extending longitudinally of the tray and passing through apertures at the bottom of the index cards 30 to retain the cards within the tray. If the tray or compartment is not equipped with a lock rod, its sides may have other card-retaining means, such as the inwardly directed flanges 40 engaging over the upper corners of the cards 41 to hold them in place, as shown in the optional arrangement of Fig. 7; in which case the cards may be removed by swinging them diagonally of the tray until the corners are freed from the retaining lips or flanges. In either arrangement, the compartment may have the customary follower 42 which is adjustable longitudinally thereof to support the cards in upright position, and appropriate guide cards may be employed for ease in locating the pertinent group of index cards. Obviously, the cards, sheets or folders and the guides and followers contained within the compartments may be suitably retained in any convenient manner, and for some pur-

poses they need not be freely removable therefrom.

The desk-like cabinet 13 substantially encloses the apparatus above described, and may have a hinged and folding cover 43 closing over the opening 44 provided between its side tables 45 for displaying the horizontal row of card trays 11. The forward ends of the trays lie close to the front of the cabinet, and an underlying recess or inset 46 in the cabinet front extends rearwardly into the chamber or clearance space at the front of the index wheel, to furnish ample leg room for an operator seated before the index. A shelf or foot rest 47 may also be provided at a convenient level, depending upon the height of the cabinet. Hence, the operator may be comfortably seated upon a stool or chair close to the front of the index compartments and may conveniently examine any of the cards in the several exposed trays without stretching or changing position.

The rotary index may be revolved by hand and may be equipped with a releasable brake normally holding the wheel in fixed position, or the wheel may be motor-driven, as herein shown. For example, the wheel may have a pulley 46 carrying a belt or chain 47 operated by the electric motor 48 through any convenient form of friction clutch 49, so that the wheel may be rotated without straining the motor; and the braking mechanism may comprise a shoe or lug 50 carried by a pivoted arm 51 and connected through vertical and horizontal links 52 and 53 respectively to an operating lever or pedal 54 which projects through the foot rest 47, the link 53 being fulcrumed at 55 so that the arm 51 and lug 50 are raised by depressing the pedal 54. Lug 50 frictionally engages the inner surface of the wheel rim 15 which constitutes a brake drum of the wheel and which may have spaced notches or recesses 56 to receive and positively engage with the lug when the pedal is released, these recesses being so arranged that the wheel may be locked in any selective position in which one of the tray banks is located horizontally at the top of the wheel, as in Fig. 1.

Although I have shown in Figs. 1, 3 and 4 a rotary index of pentagonal contour, it is obvious that the polygonal frame may have three or more sides as desired, and that the number and size of the card compartments on each side may also be varied within wide limits. It is thus apparent that the capacity of the index is practically limitless, yet any part of the index material may be quickly located at a convenient level for inspection by the operator.

Suitable guide cards may be interspersed with the index cards as above indicated, in order that the operator may quickly locate any particular card, and the outer faces of the corner blocks or fillers 27 (or 28, Fig. 2) may be suitably marked to display index characters denoting the classification range of adjacent compartments, such signals or guides being clearly visible while the index is being rotated. After stopping the wheel at the desired position, any exposed card may be quickly inspected and may be removed for additional notation by releasing the proper lock rod (Figs. 5 and 6) or freeing the card from its retaining elements. The side portions 45 of the cabinet top provide handy tables for stacking or inscribing the cards, and it is apparent that the floor space necessarily occupied by the apparatus is utilized to the best advantage. The operator may be comfortably seated on a chair or stool at the front of the cabinet which, as aforesaid, may be constructed and finished to harmonize with the ordinary furniture of the office.

From the foregoing it is apparent that an important feature of this invention, common to the embodiments shown in Figs. 1 and 2 and to other structural variations of the index, resides in the provision of a rotary member having index compartments so affixed to its periphery that the front bottom portions of the compartments define an interior entrance or chamber which is substantially round or polygonal in contour and which is substantially unobstructed as the hub or axis of the rotatable member is offset rearwardly of a radial plane passing through the centers of the compartments. In the illustrations, the front bracket 21, 22 projects into this chamber or clearance space, but it is apparent that this bracket will not materially interfere with the provision of the cabinet inset 46 or the knee-space afforded for the operator, and it is also obvious that the front support may be omitted by suitably mounting the wheel or drum upon a rear support only. By this arrangement the operator may be comfortably seated close to the front of the index and all the cards, sheets or folders retained in the exposed compartments may be reached with ease even though the compartments are of substantial length.

The polygonal arrangement herein described also presents advantages which are independent of the interior recess; the provision of means of the type herein set forth for impeding the rotation of the rotating member further improves the operative efficiency of the index apart from its particular construction; and the type of cabinet or desk which encloses the index mechanism and preferably has an inset chamber in its front wall cooperating with the recess of the index, furnishes a protective housing which is particularly appropriate for a file of this character.

These and other features of my invention will be pointed out in the following claims, and it will be understood that the main pur-

pose of the invention is satisfied by an index device comprising essentially a rotatable member or frame and a plurality of peripherally arranged trays, compartments or other holders carried by the frame and adapted to hold index elements such as cards, sheets, folders or the like for reference; the rotary frame and the index holders being so constructed and arranged relative to each other as to provide an interior recess disposed within the circumference of the peripherally arranged holders or compartments and having a substantially unobstructed entrance which opens at the side of the frame toward the front of the index, in order to afford the clearance space above mentioned.

I claim:

1. An index of the class described comprising a rotatable frame having substantially flat, tangential platforms defining a polygonal periphery of the frame and holders for index elements carried on said platforms, the frames, platforms and holders being so constructed and arranged as to provide a recess within the peripherally arranged holders having a substantially unobstructed entrance at the front of the index.

2. An index of the class described comprising a polygonal frame, means for supporting the frame for rotation about its axis, and peripherally arranged holders for index elements carried by the frame, several of said holders being arranged upon each of the respective sides of the polygonal frame.

3. An index of the class described comprising a rotatable frame having a polygonal periphery, and a plurality of index compartments peripherally arranged upon each side of the periphery of the frame so that several of the compartments may be supported in a common plane at the top of the index.

4. An index of the class described comprising a rotatable member and peripherally arranged compartments for index elements mounted upon said member in the form of a polygon, the sides of the polygon being tangential to said member, and several compartments being arranged in parallel relation upon each of the respective sides.

5. An index of the class described comprising a rotatable frame and peripherally arranged holders for index elements carried by the frame, said frame and holders being so constructed and arranged as to provide a recess within the circumference of the peripherally arranged holders having a substantially unobstructed entrance opening at the side of the frame, and a housing for the index, the housing having an inset portion extending into said recess to provide leg room for an operator seated in front of the housed index.

6. An index of the class described comprising a rotatable frame and peripherally arranged compartments for index elements mounted transversely upon the frame, said frame and compartments being so constructed and arranged as to provide an interior recess having a substantially unobstructed entrance opening at the side of the frame, and a housing substantially enclosing the index, the housing having an inset portion extending rearwardly into said recess and a top opening affording access to said compartments.

7. An index of the class described comprising a rotatable wheel and a plurality of index compartments mounted transversely about the periphery of the wheel in closely spaced parallel relation, the front ends of the compartments extending a substantial distance to one side of the hub of the wheel thereby to provide a recess interiorly of the bottoms of the compartments having a substantially unobstructed entrance opening at the side of the wheel and affording knee space for an operator seated in front of the index.

8. An index of the class described comprising a rotatable wheel, a plurality of index compartments mounted about the periphery of the wheel with the front ends of the compartments extending a substantial distance to one side of the hub of the wheel thereby to provide a substantially unobstructed recess interiorly of the compartment bottoms, and a cabinet enclosing the wheel and its compartments, the front of the cabinet having an inset portion projecting rearwardly into said recess to provide knee space for an operator, and the top of the cabinet having an opening for displaying the index compartments at the top of the wheel.

9. An index of the class described comprising a rotatable wheel, and a plurality of index compartments mounted transversely about the periphery of the wheel in closely spaced, parallel relation, the forward ends of said compartments projecting in an axial direction to overhang the body of the wheel, the respective compartments being open at the top and having means for retaining index elements therewithin.

10. An index of the class described comprising a rotatable wheel and a plurality of index compartments mounted transversely about the periphery of the wheel in closely spaced parallel relation, the forward ends of said compartments projecting in an axial direction to overhang the body of the wheel the respective compartments being open at the top and having means for retaining index cards therewithin, and a cabinet substantially enclosing the index, the cabinet having a top opening for exposing several of the compartments and having a rearwardly extending recess in its front side projecting within the overhanging ends of the compartments and providing leg room for the operator of the index.

11. An index of the class described comprising a rotatable wheel, and a plurality

index compartments mounted transversely about the periphery of the wheel in closely spaced, parallel relation, the respective compartments being open at the top and having means for retaining index cards therewithin, means for rotating the wheel, and means operable by the operator of the index for stopping the rotation of the wheel and holding it in a fixed position.

12. An index of the class described comprising a rotatable member, a plurality of closely spaced parallel index compartments mounted transversely about the periphery of said member in the form of a regular polygon, so that the compartments are arranged in planes defining the respective sides of the polygon, and a cabinet substantially enclosing the index and having a top opening for exposing all the compartments on any side of the polygon.

13. An index of the class described comprising a rotatable member, a polygonal frame mounted concentrically about the periphery of said member to provide tangential platforms, and a plurality of index compartments transversely supported in parallel relation upon the respective platforms, whereby the row of compartments on any of said platforms may be disposed in a horizontal plane for inspection of the index material therein contained, the compartments being open to expose index elements therein contained.

14. An index of the class described comprising a rotatable member, a polygonal frame mounted concentrically about the periphery of said member to provide tangential platforms, a plurality of index compartments transversely supported in parallel juxtaposition upon the respective platforms, whereby the row of compartments on any of said platforms may be disposed in a horizontal plane for inspection of the index material therein contained, and filler members retained between the compartments at the respective corners of the frame.

15. An index of the class described comprising a rotatable member, a polygonal frame mounted concentrically about the periphery of said member to provide tangential platforms, and a plurality of index compartments transversely supported in parallel juxtaposition upon the respective platforms, whereby the row of compartments on any of said platforms may be disposed in a horizontal plane for inspection of the index material therein contained, the forward ends of the compartments projecting a substantial distance to one side of the rotatable member to provide a peripheral overhanging ledge defining an interior recess having an entrance opening at the front of the index.

16. An index of the class described comprising a rotatable member, a polygonal frame mounted concentrically about the periphery of said member to provide tangential platforms, and a plurality of index compartments transversely supported in parallel juxtaposition upon the respective platforms, whereby the row of compartments on any of said platforms may be disposed in a horizontal plane for inspection of the index material therein contained, the forward ends of the compartments projecting a substantial distance beyond the body of the rotatable member to provide a peripheral overhanging ledge, and a cabinet substantially enclosing the index, the cabinet having a top opening for exposing a horizontal row of compartments and having a rearwardly directed recess in its front side projecting within said overhanging ledge and providing leg room for an operator seated in front of the cabinet.

17. An index of the class described comprising a wheel mounted for rotation about a horizontal axis, a polygonal frame secured to the periphery of the wheel to provide substantially flat, tangential platforms, the forward sides of said platforms projecting a substantial distance to one side of the wheel hub to provide a peripheral ledge overhanging the body of the wheel, index trays affixed transversely to the respective platforms in closely spaced, parallel relation, and index cards housed in the respective trays.

18. An index of the class described comprising a rotatable wheel, a polygonal frame secured to the rim of the wheel to provide substantially flat, tangential platforms, index trays affixed transversely upon the respective platforms in closely spaced parallel relation, braking means engageable with the wheel for restraining rotation thereof, whereby one of said platforms may be held in horizontal position, and a lever actuable by the operator of the index for releasing said braking means.

19. An index of the class described comprising a wheel mounted for rotation about a horizontal axis, a series of closely spaced, parallel index compartments supported transversely about the periphery of the wheel, means for rotating the wheel, and stop means engageable with the wheel for restraining rotation thereof, the index operating means and stop mechanism being substantially enclosed within a desk-like cabinet.

20. An index device comprising a frame having a hub rotatable about a transverse shaft, means for supporting the shaft at opposite sides of the frame hub, and peripherally arranged holders for index elements carried by the frame, the forward ends of the holders extending to one side of said hub to provide an interior recess within the circumference of the peripherally arranged holders having an entrance opening at the front of the index, the shaft-supporting means at the

front of the index comprising a rearwardly offset brace.

21. An index device comprising a rotatable frame and peripherally arranged holders for index elements mounted transversely upon the frame, the frame and holders being so constructed and arranged as to provide an axial recess within the circumference of said holders, the recess having a substantially unobstructed entrance at the front of the index, and a housing for the index, the front of the housing having an inset portion extending rearwardly into said recess to furnish leg room for an operator seated in front of the housed index.

22. An index device comprising a rotatable member, holders for index elements mounted transversely about the periphery of said member, the front ends of the holders projecting to one side of said member to provide an interior, axial recess having a substantially unobstructed entrance at the front of the index, and a housing for the index, the front of the housing having an inset portion extending rearwardly into said recess to furnish leg room for an operator seated in front of the housed index.

23. An index device comprising a rotatable member, holders for index elements mounted transversely about the periphery of said member, the front ends of the holders projecting to one side of said member to provide an interior axial recess having a substantially unobstructed entrance at the front of the index, a housing for the index, the front of the housing having an inset portion extending rearwardly into said recess to furnish leg room for an operator seated in front of the housed index, braking means normally restraining rotation of said member, and means actuable by the operator for releasing the braking means.

24. An index device comprising a rotatable member, holders for index elements mounted transversely about the periphery of said member, the front ends of the holders projecting to one side of said member to provide an interior axial recess having a substantially unobstructed entrance at the front of the index, a housing for the index, the front of the housing having an inset portion extending rearwardly into said recess to furnish leg room for an operator seated in front of the housed index, the rotatable member having a brake drum, braking means bearing against said drum normally to restrain rotation of said member, and means including a pedal actuable by the foot of the operator for releasing the braking means.

Signed by me at Boston, Mass., this 4th day of February, 1931.

CHARLES H. COBB.