E. J. VICKERS.

ACCOUNT FILE.

APPLICATION FILED JUNE 11, 1910.

992,299.

Patented May 16, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

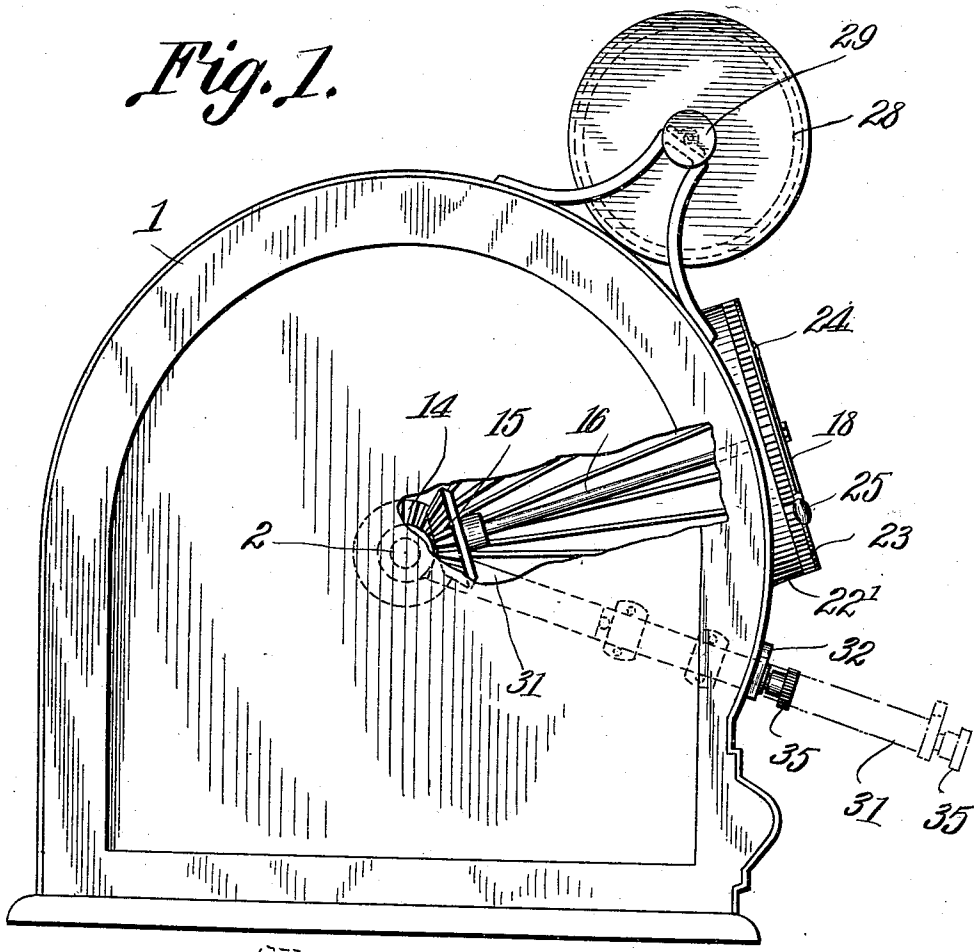
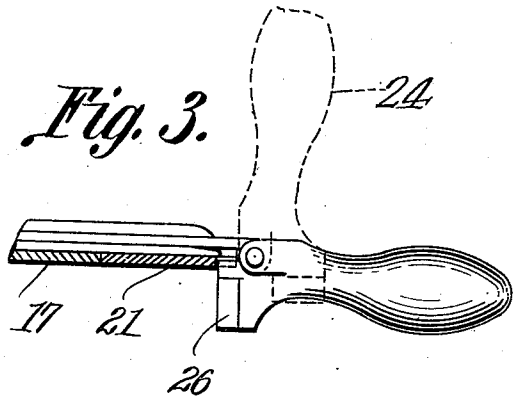


Fig. 3.



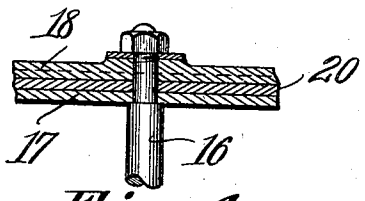


Fig. 4.

Witnesses

J. Gourlay

F. T. Chapman

Edwin J. Vickers

Inventor,

by C. A. Snow & Co.

Attorneys.

E. J. VICKERS.

ACCOUNT FILE.

APPLICATION FILED JUNE 11, 1910.

992,299. Patented May 16, 1911.

3 SHEETS—SHEET 2.

Fig. 2.

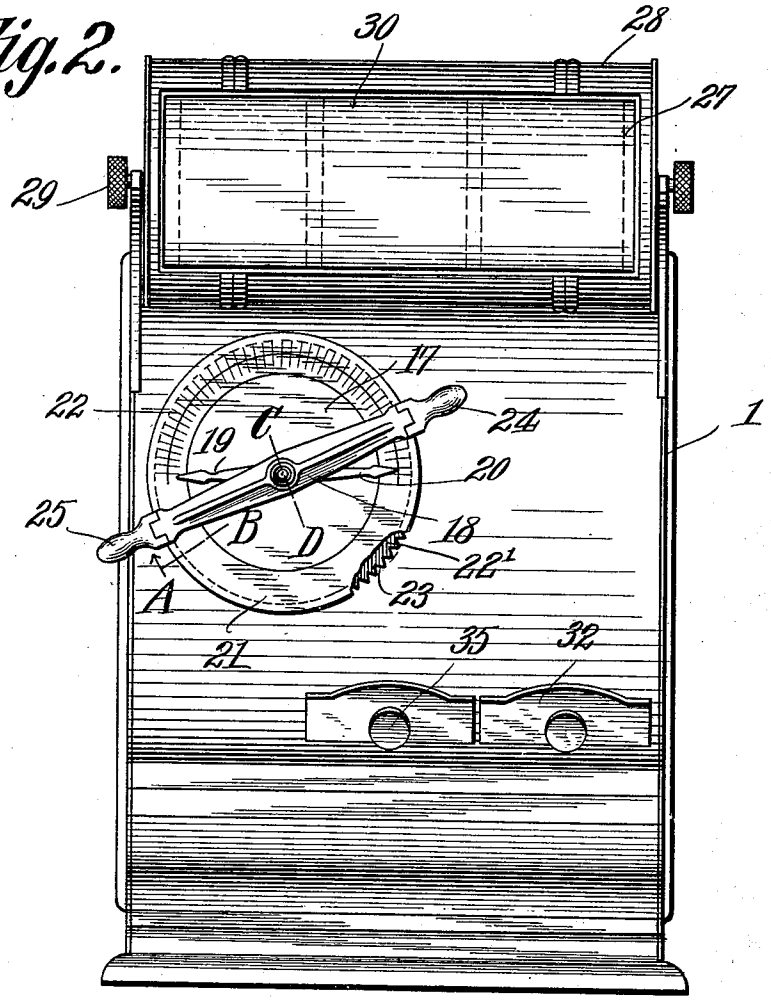


Fig. 10.

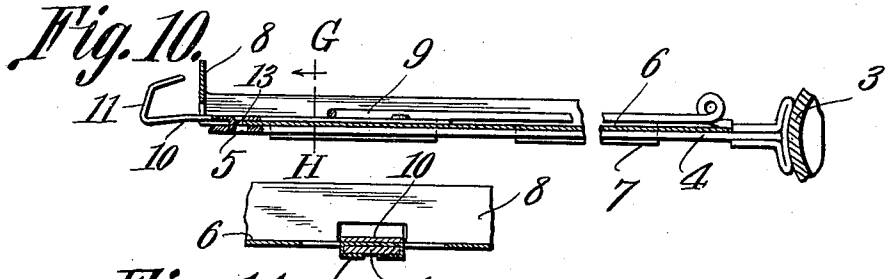


Fig. 11.

Witnesses

J. C. Lowell

F. T. Chapman.

Edwin J. Vickers

Inventor,

by Cashow & Co.

Attorneys.

E. J. VICKERS.

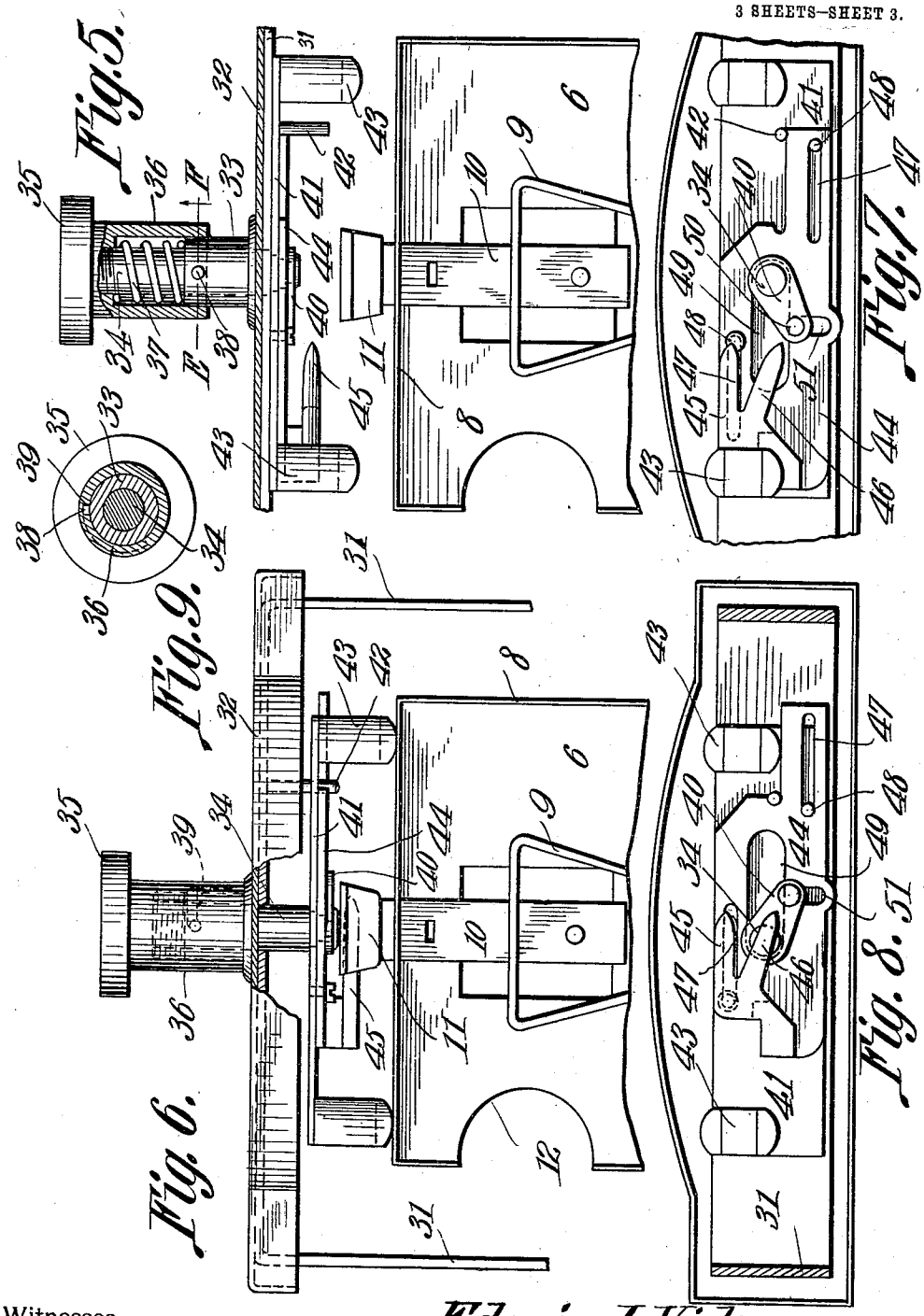
ACCOUNT FILE.

APPLICATION FILED JUNE 11, 1910.

992,299.

Patented May 16, 1911.

3 SHEETS—SHEET 3.



Witnesses

F. T. Chapman

Edwin J. Vickers. Inventor,

by Cashow & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

EDWIN J. VICKERS, OF NEW PHILADELPHIA, OHIO.

ACCOUNT-FILE.

992,299. Specification of Letters Patent. **Patented May 16, 1911.**

Application filed June 11, 1910. Serial No. 566,393.

To all whom it may concern:

Be it known that I, EDWIN J. VICKERS, a citizen of the United States, residing at New Philadelphia, in the county of Tuscarawas and State of Ohio, have invented a new and useful Account-File, of which the following is a specification.

This invention has reference to means for filing account slips or other papers or documents which means is compact and protective to the papers or documents while at the same time any desired paper or document is readily obtainable at will.

The present invention is of the same general nature as that for which Letters Patent #881363 were granted to me for improvements in account files on Mar. 10, 1908, and the present invention comprises numerous improvements in the structure disclosed in said Letters Patent.

The rotatable series of holding members or trays is retained, but the construction of these trays is modified to adapt them for use with a selecting mechanism forming in part the subject matter of the present invention.

In accordance with the present invention there is provided a suitable casing in which is lodged one or more, and preferably two rotatable series of trays in radial arrangement to the axis of rotation. Exterior to the casing there is provided a manipulating device by which chosen ones of the trays may be brought into coincidence with a delivery mechanism by which the tray is moved to a position exterior to the casing and rendered accessible to the operator.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification, in which drawings,—

Figure 1 is an end elevation with parts broken away of the improved account file. Fig. 2 is a front elevation also with parts broken away of the structure of Fig. 1. Fig. 3 is a section on the line A—B of Fig. 2 on a larger scale. Fig. 4 is a section on the line C—D of Fig. 2 on a larger scale. Fig. 5 is a detail view with parts in section of the tray-delivery mechanism, and also showing one of the account trays or supports in operative relation to the delivery mechanism. Fig. 6 is a view similar to Fig. 5 but showing a different relation of the same parts, the view being somewhat more extended and also having parts broken away. Fig. 7 is an elevation of the structure of Fig. 5 with the tray removed and viewed from the inner face, the parts being shown in one operative position. Fig. 8 is a similar view of the structure of Fig. 6 showing the parts in another operative position. Fig. 9 is a section on line E—F of Fig. 5. Fig. 10 is a longitudinal central section of one of the file trays and its support. Fig. 11 is a section on the line G—H of Fig. 10.

Referring to the drawings there is shown a casing 1 which may be of any suitable shape to inclose filing trays to be described, and also operating mechanism therefor. Within the casing there is a suitable shaft 2 upon which are mounted drums 3 as in the aforesaid Letters Patent, one of the drums being indicated in Fig. 10. The drum 3 carries a circular series of radially disposed arms 4, the particular structure shown contemplating two such series of arms in spaced relation in the direction of the length of the axis of rotation, one drum 3 answering for the support of both series of arms. Each arm 4 is provided near the outer end with a passage or perforation 5 to which reference will hereinafter be made. Each arm 4 is designed to support a tray 6 of general rectangular shape and of a size to accommodate the slips or other papers to be introduced into the cabinet or casing 1. Each tray 6 is secured to its supporting arm 4 by means of mating flanges 7 in embracing relation to the strip 4, these flanges being formed of the metal of the tray 6 struck out of the body of the tray and bent into appropriate shape. This does not of course preclude the employment of other means for the same purpose, the flanges 7 maintaining the trays on the arms 4 but permitting movement on the trays longitudinal of said arms for a purpose which will presently appear. Each tray is provided with a marginal flange 8 serving to maintain papers on the tray and

also with a spring clip 9 such as is commonly employed in file cabinets for maintaining the papers in the trays. At the outer or free end of each tray there is mounted a strip 10 secured near the inner end to the tray so as to have its outer end in elastic relation thereto, and this outer end is bent into a loop 11 so formed that designating numbers or other indications may be produced thereon and this loop also serves as a means for withdrawing the tray from the cabinet when desired and in a manner to be presently described.

One side of each tray may be cut away as indicated at 12 so that the papers may be readily grasped by the fingers of the operator. Each spring strip 10 is formed with with a tooth or projection 13 adapted to engage in the notch 5 of the respective arm 4 when the tray is in the retracted position, the elasticity of the strip 10 serving to maintain the tooth in the notch and to move the tooth into the notch when the tray is moved on the arm to the innermost position. However, the elasticity of the strip 10 permits the lifting of the tooth out of the perforation 5 so that the tray is then unlocked from the arm 4 and may be moved longitudinally thereof to an outermost position for a purpose to be described.

Rotative movement is imparted to the cylinder 3 by means of a beveled gear wheel 14 engaged by a pinion 15 on a shaft 16 extending to the exterior of the casing where this shaft carries a disk 17, a manipulating arm 18 extending at both ends beyond the disk 17, and between this arm and the disk a double ended pointer 19—20, one end of the pointer being indicated by the numeral 19 and the other by the numeral 20 for convenience of reference hereinafter. The disk 17 turns in an annular frame 21 on which is displayed a circular index 22 and this frame 21 is in turn mounted on a support 22′ having a peripheral series of notches 23 underriding the frame or ring 21.

The arm 18 terminates at each end in a hinged handle 24, 25, respectively, and each handle is provided with a tooth 26 adapted, when the handle is in alinement with the arm 18 to engage in a notch 23 thereby locking the arm 18 in position. On lifting the handles 24, 25 to a position at approximately right angles to the length of the arm 18 the teeth 26 are carried out of engagement with the notches 23 and the arm 18 may then be rotated to cause a like rotation of the shaft 16 and through this shaft and the pinion 15 and gear wheel 14 imparting a rotative movement to the drum 3 and the series of trays 6 carried thereby, the hands 19 and 20 participating in this movement. It will be observed that the hands 19 and 20 are slightly displaced angularly to the arm 18 so as to be at all times visible since these hands 19 and 20 underlie the arm so as to be in close relation to the index 22. In the particular arrangement shown in the drawings the index is assumed to be a double index, that is two indices in concentric relation one to the other and the arm 19 is shown shorter than the arm 20 so as to be in operative relation to the inner index, while the arm 20 is in operative relation to the outer index and suitable distinguishing characteristics may be utilized to differentiate the hands 19 and 20, as by having these hands of different distinctive colors. If desired, the handles 24 and 25 may also be distinguished in like manner.

The number of trays 6 on the cylinder or drum 3 and the index markings on the index 22 have a definite relation, and when two series of trays are used then the inner and outer indices will be used for the respective series of trays.

Mounted on the casing 1 is a drum 27 within a protecting casing 28 and capable of rotative movement through knobs 29. The casing 28 may have a glass panel 30 through which the cylinder 27 may be readily observed. The cylinder 27 is designed to serve simply as an index and needs no special description.

Movable into and out of the casing 1 in operative relation to the circular series of trays 6 are frames 31, one for each series of trays 6. These frames comprise each two parallel legs and a connecting yoke member so that the frame is substantially U shaped. The yoke member has applied thereto a flanged face plate 32, which, when the frame 31 is in the innermost position, covers the opening in the casing 1 provided for the withdrawal of any one of the trays 6 of the particular series to which it belongs.

Centrally located on the exterior of each face plate 32 is a sleeve 33 fixed to the plate 32 in any suitable manner. This sleeve is traversed by a rod 34 also traversing the face plate 32 and the yoke of the frame 31 back of the face plate. Secured to the outer end of the rod 34 is a knob 35 provided with a hollow shank 36 adapted to receive the sleeve 33 and between the outer end of the sleeve 33 and the knob 35 at the inner end of the shank 36 there is housed a spring 37 surrounding the rod 34, the tendency of the spring being to maintain the knob in an outer position, the outer movement being limited by a pin or stud 38 on the sleeve 33 engaging in a groove 39 in the inner face of the shank 36, this groove being an angle groove so that when the inner limit of movement of the knob 35 along the sleeve 33 is reached a partial rotation of the knob will serve to lock the knob in the inner position with the spring 37 compressed, and the knob may be readily released from this locked position by a reverse turning of the knob un-

til the stud 38 is brought into coincidence with the longitudinal portion of the groove 39.

The inner end of the rod 34 has fast thereto a crank member 40 and also carries in fixed relation to the rod 34 a plate 41 in spaced relation to the crank 40. This plate 41 is held from turning with the rod 34 by a guide pin 42 projecting from the yoke on the frame 31 and passing through the plate 41. The rod 34 may however turn in the plate 41 but any longitudinal movement of the rod 34 causes the plate 41 to participate in such longitudinal movement. The plate 41 at the ends carries buffers 43. The buffers 43 may end in elastic caps adapted to engage the terminal flange of the respective trays 6 for a purpose which will hereinafter appear.

Mounted on the plate 41 is a slide 44 between the crank 40 and the said plate 41. This slide carries near one end divergent fingers 45, 46 in spaced relation to the corresponding end of the slide 44 but parallel therewith. The slide 44 is provided with guide slots 47 through which extend pins 48 fast on the plate 41. The slide 44 is also provided with a slot 49 through which extends the corresponding end of the rod 34 and the crank 40 is provided with a pin 50 entering a slot 51 in the slide 44.

The buffers 43 are of such length that when engaging the front terminal flange of a tray 6 the hook 11 is close to but out of actual contact with the end of the rod 34 or crank 40. When however, the parts are in normal position the spring 37 moves the plate 41 into engagement with the yoke of the frame 31 and then ample space is provided for the passage of the hook ends 11 of the strip 10 as the series of trays 6 is rotated. When the knob 35 is pushed inward against the action of the spring 37, the fingers 45 and 46 are closer to the outer end of the trays 6 than are the hooks 11. Under these circumstances, assuming that a tray 6 is in operative relation to the extracting mechanism just described, then a rotative movement of the knob 35 permitted by the angle extension of the groove 39 circumferential to the knob causes a like rotation of the rod 34 and rocking of the crank 40 in a direction to cause the slide 44 to move longitudinally of the plate 41 and transversely of the length of the strip 10. This results in the finger 45 moving into the hook 11, while the finger 46 underrides the hook 11 and causes an elevation of the same due to the angle position of the finger 46 with relation to its direction of movement. This slight elevation of the strip 10 is sufficient to lift the tooth 13 from the notch or perforation 5, thus releasing the particular tray from its supporting arm 4. Now on an outward movement of the frame 31 caused by drawing on the knob 35, the frame 31 together with the particular tray 6 then locked to the frame is withdrawn from the casing so that the tray 6 and its contents are exposed to inspection and handling.

When the papers in the withdrawn tray 6 have been examined or withdrawn or new papers inserted as may be desired the tray may be reinserted in the casing by pushing on the knob 35 thus causing the frame 31 together with the tray to travel toward the axis of rotation of the drum 3 until finally the parts have reached the inner limits of their movement, the tray being held in the innermost position by the buffers or stop members 43, the tooth 13 of the strip 10 then being directly over the perforation 5 of the respective arm 4. Now on turning the knob 35 in the reverse direction to which it was originally turned, the groove 39 is caused to move along the stud 38 until the longitudinal portion of the groove is reached when the spring 37 becomes active and the knob is moved outwardly carrying with it the plate 41 and parts attached thereto. The rotative movement of the knob 35 has however caused a reverse rocking of the crank 40 in a direction to cause the slide 44 to move the fingers 45 and 46 out of engagement with the hook end of the strip 10 thus permitting the latter to move under its own elasticity until the tooth 13 has seated in the perforation 5 thus locking the tray to the respective arm 4, while the movement of the plate 41 toward the face plate 13 has also moved the parts carried thereby out of operative relation to any of the trays carried by the respective portion of the drum 3.

A convenient arrangement of the indices 22 is to have those portions of the index referring to one set of trays 6 arranged in alternate odd numbers, while those on the other set of trays are in alternate even numbers, or alphabetical or other indications may be used as desired.

In operation of the device let it be assumed that a certain slip or paper is desired and on consulting the index drum 27 visible through the panel 30, the drum having been manipulated by the knobs 29 to the proper extent, it is ascertained that the particular paper wanted is in tray 100. This will mean that the index containing the even numbers is the one to be consulted. Let it further be assumed that the hand 19 is the hand which is in operative relation to the index of even numbers. The handles 24 and 25 are moved out of engagement with the notches 23 and then the arm 18 is swung around until the hand 19 points to the number 100, this operation having caused a rotative movement of the drum 3 sufficient to bring tray 100 into coincidence with the proper one of the extracting mechanisms. The handles 24 and 25 are now moved into

locking engagement with the notches 23 thus holding the circular series of trays in the position to which they have been moved. The proper one of the extracting devices is now operated in the manner already described, that is the knob 35 is pushed inward and turned and then the extractor is withdrawn, bringing the particular tray wanted with it when the papers are exposed and may be examined or withdrawn and replaced or treated in the manner desired after which the extractor is returned to its innermost position and the tray unlocked therefrom by the reverse movement of the knob 35, the spring 37 returning the knob and the parts controlled thereby to normal position. If another slip is desired the index is again consulted and the operation repeated in the manner described. By this means the slips are protected from damage or inspection except as wanted.

It will be observed that the series of trays cannot be rotated except when the parts are in normal position, and when this position is assumed, all the trays are locked positively to their respective arms 4 so that the circular series of trays cannot be rotated when a tray is not locked through negligence and therefore damage to the structure cannot occur.

What is claimed is: —

1. An account file comprising a rotatable series of radially disposed file trays each slidably mounted to move radially, and an extractor for engaging and moving any chosen one of the trays radially.

2. An account file comprising a rotatable series of radially disposed file trays each movable radially and independently and an extractor common to all the trays of the series, said extractor also being movable radially with relation to the axis of rotation of the series and provided with a latch adapted to engage any tray when coincident with the extractor.

3. An account file comprising a rotatable series of radially disposed trays each movable radially and an extractor for the trays also movable radially with relation to the axis of rotation but otherwise in fixed relation to the trays, said extractor being provided with engaging means movable at will into locking engagement with any chosen one of the trays.

4. An account file comprising a rotatable series of radially disposed trays each movable radially, a lock for each tray holding it in the retracted position, and an extractor common to the trays of the series and provided with a latch for engaging a chosen tray, said latch acting to unlock the tray and couple it to the extractor.

5. An account file comprising a rotatable series of radially disposed and movable trays and an extractor common to all the trays of a series, said extractor having a latch member for engaging a tray.

6. An account file comprising a rotatable series of radially movable trays, and an extractor for the trays comprising a radially movable member provided with a radially movable latch in turn movable into engagement with a tray when in the innermost limit of its movement.

7. An account file comprising file trays, a support for each tray upon which it is slidably mounted, a lock member for each tray in normal engagement with the support, and an extractor common to a plurality of trays, said extractor being movable in the direction of the movement of a tray on its support, a latch support movably mounted on the extractor for actuation in the direction of movement of the tray on its support, and a latch member carried by the latch support and movable transversely to the direction of movement of the support, said latch member engaging and simultaneously unlatching a tray.

8. An account file comprising a rotatable series of radially movable trays, supports therefor upon which the trays are movable longitudinally, a lock member for each tray for locking it to its support, a slidable extractor common to all the trays of a series, and provided with a tray-engaging member carried by the extractor and movable independent of the extractor radially toward and from the tray in its path, a manipulating member for the movable member carried by the extractor, said manipulating member being also rotatable, a slide carried by the movable member on the extractor and provided with a latch for engaging and unlocking a tray from its support, and a connection between the slide and the rotatable manipulating member for causing the actuation of the slide on the rotation of the said rotatable member.

9. In an account file, a tray, a support therefor upon which the tray is longitudinally movable, a spring catch for the tray terminating in a hook adapted for the reception of designating indication, an extractor movable in the same direction as the tray on its support when coincident therewith, a longitudinally movable knob on the extractor also capable of rotative movement, a tray-engaging member actuated by the knob and movable toward and from the tray, a slide carried by the tray-engaging member, said slide carrying an engaging finger for the hook and a lifting finger therefor, and connections between the knob and the slide for causing the operative movements of the latter.

10. An account file comprising a suitable casing, a rotatable carrier in said casing and a series of file trays thereon, and means for causing the rotation of the tray carrier com-

prising a suitable shaft connected to the said tray-carrier, an index in concentric relation to the shaft, a circular series of notches in concentric relation to the shaft, an arm radial to the shaft and extending on each side thereof, a handle at each end of the arm hinged thereto and provided with a tooth movable into engagement with any one of the circular series of notches, a circular index, and hands in operative relation to the index and carried by the shaft.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWIN J. VICKERS.

Witnesses:
LEWIS STEINBAUGH,
M. V. REAM.