No. 802,585. PATENTED OCT. 24, 1905.

L. C. McNEAL.

FILE.

APPLICATION FILED SEPT. 1, 1900.

Figure 1.

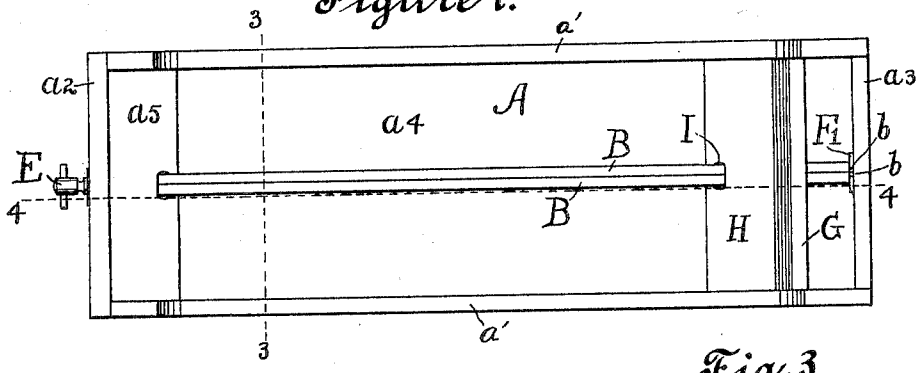


Fig. 2.

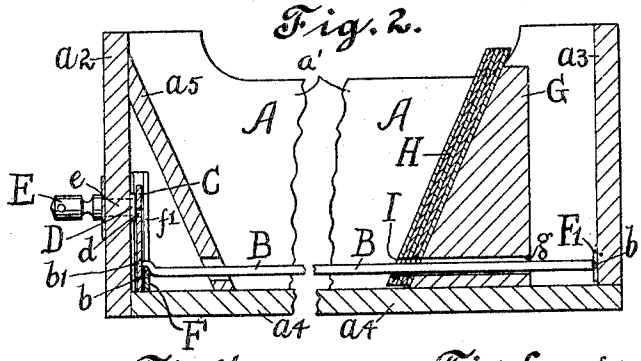


Fig. 3.

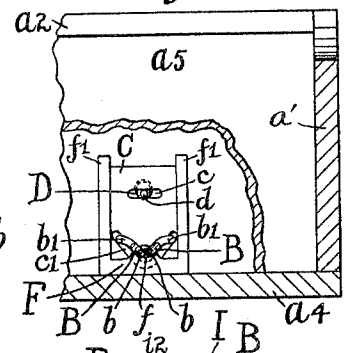


Fig. 4.

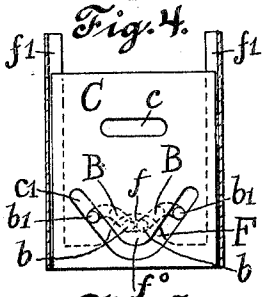


Fig. 5.

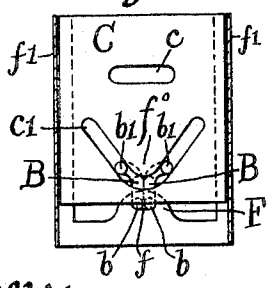


Fig. 6.

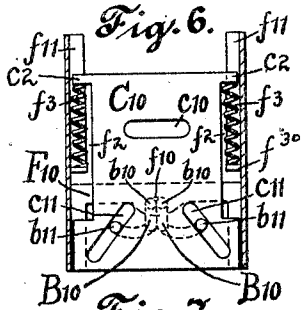


Fig. 7.

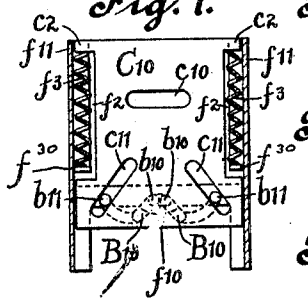


Fig. 8.

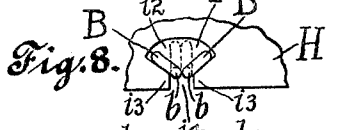


Fig. 9.

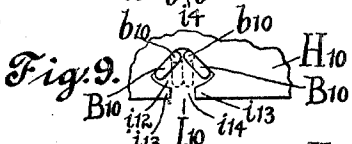


Fig. 10.

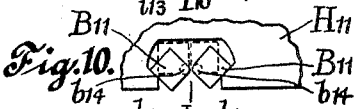
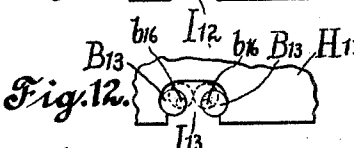


Fig. 11.



Fig. 12.



Witnesses:

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UNITED STATES PATENT OFFICE.

LUTHER C. McNEAL, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-FOURTH TO HOWARD L. OSGOOD AND C. SCHUYLER DAVIS, OF ROCHESTER, NEW YORK, A FIRM.

FILE.

No. 802,585. Specification of Letters Patent. Patented Oct. 24, 1905.

Application filed September 1, 1900. Serial No. 28,824.

To all whom it may concern:

Be it known that I, LUTHER C. McNEAL, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Files, of which the following is a specification.

My invention relates to improvements in files or holders for retaining cards or other articles provided with apertures or engaging shoulders and a locking mechanism for retaining said cards or other articles in position and permitting their insertion and removal, and has for its object the production of a device for the desired purpose that is particularly simple, strong, and durable; and to this end the invention consists in the combination, construction, and arrangement of the component parts of a file, as hereinafter fully described, and pointed out in the claims.

Referring to the drawings, in which similar letters refer to similar parts throughout the several views, Figure 1 is a top view of a file embodying my invention. Fig. 2 is a longitudinal section along the line 4 4 of Fig. 1. Fig. 3 is a view to the left on the line 3 3 in Fig. 1, a part only of said view being shown with a portion of the front rest a^5 cut away to show construction. Figs. 4 and 5 are detail views of the operating mechanism. Figs. 6 and 7 are detail views of a modified form of operating mechanism, and Figs. 8, 9, 10, 11, and 12 are detail views of the manner in which various forms of locking-bars engage the cards.

My improved file comprises in its organization a frame, tray, or holder A of any suitable form for receiving cards, leaves, or other articles H and a locking mechanism for retaining said cards or other articles in position and permitting their insertion and removal. The frame A is preferably rectangular. The articles H are arranged crosswise, usually between lengthwise sides or walls a' of the frame A, and are formed with apertures I, which are provided with enlarged inner portions i^2, oppositely-arranged engaging shoulder i^3, (integral with the card in the forms shown,) and contracted outer portions i^4, extending from said inner portions through the adjacent edges of the cards or other articles. The card therefore has a slot extending inward from its edge, at the inner end of which is a transversely-widened portion.

The locking mechanism of my improved file preferably consists of two parallel bars B, wider in one direction than another, each bar being pivoted at or near its ends and near one edge of the adjacent sides of the two bars. The pivots b of the bars B are supported in sockets f of plates F F', attached to the front and rear walls a^2 a^3 of the frame A.

In the preferred form (shown in Figs. 1 to 5 and 8) the bars B are adapted to stand side by side in parallel planes or in such a position relatively to each other that they may pass through the narrow portions i^4 of the slot in the card and may then be moved out of parallelism or may be set at any angle to each other or in line, so as to spread out in the widened portion i^2 of the slot in the card in order to lock it in the frame.

In Figs. 1 and 8 the bars B are pivoted at their lower edges, and their upper edges move to and from each other in order to engage in a slot in a card that may be fan-shaped, with the wider portion uppermost, as shown in Fig. 8. In Fig. 9 the fan-shaped portion i^{12} of the slot I^{10} in the card H^{10} has its wider portion lowermost and the bars B^{10} are pivoted at their upper edges at b^{10}, so that when spread they engage the shoulders i^{13} and when closed together they can pass through the narrower portion i^{14} of said slot.

While the foregoing is the preferable form of the locking-bars, their constructions may be considerably varied without departing from the spirit of my invention.

Figs. 10, 11, and 12 represent different forms. In these forms of my invention the flat bars B B^{10} of Figs. 1 to 9 have their equivalents in bars of other cross-sections. In Fig. 10 the bars B^{11} are square in cross-section, in Fig. 11 the bars B^{12} are oval in cross-section, and in Fig. 12 the bars B^{13} are circular in cross-section. In each of these forms the bars are pivoted eccentrically—in Fig. 10 at b^{14}, in Fig. 11 at b^{15}, and in Fig. 12 at b^{16}—so as to permit in each case a spreading when the bars are turned, in order to engage the shoulders produced by the widened upper portions of the slots I^{11} I^{12} I^{13} in the cards H^{11}, H^{12}, and H^{13}, respectively.

The means for actuating the locking-bars B may be of any desirable form of construction and as here illustrated consists of a reciprocating plate C and a turning-handle E, with connections to said plate comprising a

slot-and-pin device for moving said plate. Preferably I use a turning-handle E, having a journaled portion or shaft e extending through one end of the front wall a^2 of the frame A. Attached to the inner end of the handle E is a crank D, having a pin d, which moves in the transverse slot c of the plate C and imparts to said plate a reciprocating movement. Crank portions b' of the locking-bars B acting upon the non-adjacent edges of the bars (or a portion of the bars opposite to or away from the pivoted edge—in other words, eccentric to the pivots b) engage the diverging portions of the slot c'. The slot c', Figs. 4 and 5, has a divided and diverging upper part which bounds on two sides a downwardly-directed wedge f^0 in the plate C, lying between the diverging portions of the slot. By turning the handle E in one direction the slotted plate C will be raised, and by turning it in the opposite direction said plate will be lowered and cause the bars B to rock or turn on their pivots b and into the positions necessary to retain or release the cards or other articles having suitable apertures.

In some of the forms shown the non-adjacent longitudinal edges of the bars engage the shoulders of the cards. In the forms shown in Figs. 11 and 12 non-adjacent longitudinal portions of the bars engage the shoulders of the cards.

The support F at the front a^2 of the frame A has sockets f for holding the pivots b of the locking-bars B and is also provided with guides f', in which the plate C moves, as shown. The plate F is preferably bent and forms the ways or guides f' and is provided with a stop or stops f^{30}, resting in a recess f^2 in the edge of the sliding plate C, which may limit the movement of said last-mentioned plate. The sliding plate C strikes the stop or stops f^{30} when it reaches its highest position when lifted either by the movement of the crank-pin d or by the action of the springs f^3.

Although the successful operation of my improved file does not depend upon the use of springs, it is sometimes desirable to use them. In Figs. 6 and 7 springs f^3 are shown contained in recesses f, each bearing against the shoulders c^2 of the plate C^{10} at one end and at the other end against a suitable stationary projection, such as the stop f^{30} on the plate F.

In Figs. 6, 7, and 9 is shown one form of my invention. The supporting-plate F^{10} has the ways or guides f^{11}, in which the operating-plate C^{10} slides. The plate C^{10} has a transverse slot c^{10} and has recesses or notches f^2 in its side edges, and a projection or stop f^{30} on the plate F^{10} rests in each recess or notch f^2, so as to limit the movement of the sliding plate in one direction. The upper end of the recess or notch forms a lug c^2. A coiled spring f^3 rests on the projection f^{30} and presses against the lug c^2, tending to lift the plate C^{10}. Thus far this form of my device is capable of application to the same locking-bars B shown in Figs. 1 and 5. In Fig. 9 the locking-bars are pivoted at b^{10} to the frame at their upper edges, and their lower edges rock toward and away from each other. In order to accommodate the sliding plate to this movement of the locking-bars, the slot c' of Figs. 3, 4, and 5 may be reversed; but it is an equivalent to form the downwardly-diverging slots c^{11} in the plate and to act upon the ends of the crank portions b^{11} of the bars B^{10}. Spring mechanism of the same kind is obviously applicable to the mechanism shown in Figs. 1 to 5 to press the plate C downward in order to set the bars B in locking relation to the cards. The action of said springs will cause the plate C^{10} to normally hold the bars B^{10} in position for retaining the cards.

G represents a follower-block of the form in common use. It is movable lengthwise of and has a central aperture g to receive the rods B. It may be held in adjusted position by any suitable means; but such means form no part of my present invention.

The construction and operation of my improved file will now be readily understood upon reference to the foregoing description. It will also be noted that the exact construction and arrangement of the component part may be more or less varied as indicated herein, and consequently I do not limit myself to such exact construction and arrangement.

What I claim is—

1. In a file, the combination with a tray, of locking-bars extending lengthwise of the tray, a vertically-movable plate arranged substantially at right angles to said bars for operating them and spring mechanism for moving the plate to hold the bars in locking engagement with cards in the tray, substantially as described.

2. In a file, a frame, a sliding plate, two locking-bars each having a crank connection to said plate, means for operating said plate, and spring mechanism for holding them normally in the position to set the bars in locking engagement with cards in the frame, substantially as described.

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Witnesses:
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