

(No Model.)

E. F. MURDOCK.

FILE BOX.

No. 346,216.

Patented July 27, 1886.

Fig. 3.

Fig. 1.

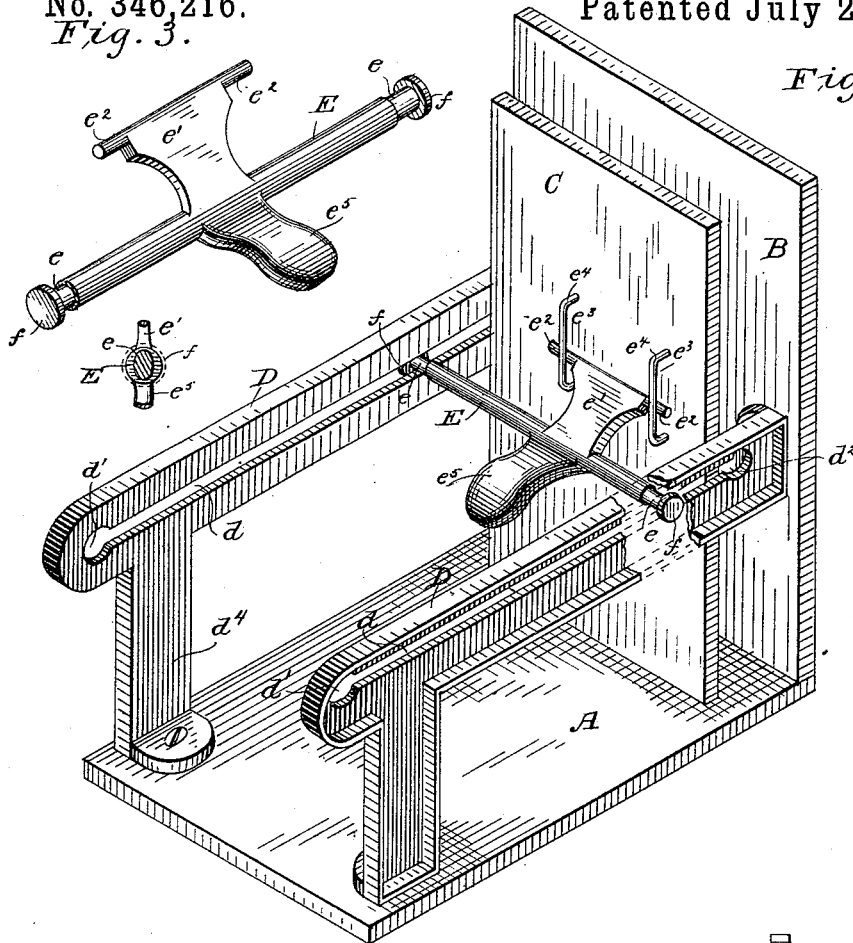
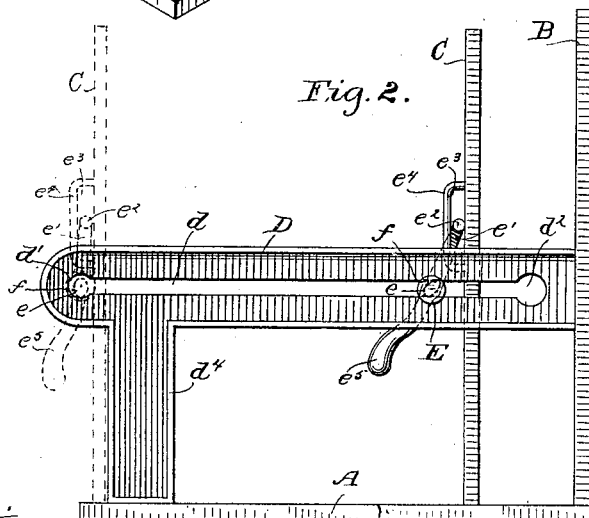


Fig. 2.



Witnesses

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FILE-BOX.

SPECIFICATION forming part of Letters Patent No. 346,216, dated July 27, 1886.

Application filed April 6, 1886. Serial No. 198,006. (No model.)

To all whom it may concern:

Be it known that I, EDWIN F. MURDOCK, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in File-Boxes, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

My present invention relates to that class of file-boxes wherein a movable follower is employed for sustaining and clamping the files against a fixed head or upright; and the said invention consists in the novel means employed for actuating, sustaining, and clamping or holding the follower, whereby the capacity of the box is enlarged, the range of adjustment of the follower is increased, and the locking devices are rendered more certain and easy of action.

File-boxes as heretofore usually constructed are objectionable, in that the clamps for retaining the followers could only be applied at predetermined points in the length of the box, if the requisite degree of security were obtained, and if endowed with the capacity of locking at all points the structure of the locking mechanism was such as required a considerable amount of manipulation to secure and release the follower, and the latter was permitted so much play or lost motion that the files were either insufficiently clamped or if properly held could only be released by the application of considerable power. These and other difficulties and inconveniences are obviated, or in a great measure diminished, by the employment of my improvements, as hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, wherein I have illustrated one form in which my invention can be embodied, Figure 1 is a perspective view of a file-box, showing the manner of applying the locking mechanism thereto. Fig. 2 is a side elevation of the same, with the follower shown in dotted lines in different positions of adjustment. Fig. 3 is a view in perspective of the locking-bar detached.

The letter A designates the bottom, B the front or vertical partition, and C the follower, of a file-box of the ordinary or well-known

construction and materials. The front piece or vertical partition, B, is secured, preferably, at its lower end in position upon the bottom piece, A, in the usual manner. On each side of the box is arranged a side bar or plate, D, in which is formed a longitudinal slot or way, d , terminating at each end in a circular or enlarged opening, d' and d'' , the latter, d'' , of slightly greater size or dimensions than the former. These side bars, D, are secured at one end to the front piece or vertical partition, B, and are formed or provided with legs or vertical extensions d' , by which they are secured to the bottom piece, A, at or near the rear end thereof. When the side bars are thus secured, they serve not only to brace and strengthen the connection between the bottom and end pieces, and form a receptacle for the files and a way or guide for the follower, but they also constitute a bearing for the application of the clamping or locking mechanism, as will be explained. The side bars extend back to or slightly beyond the rear end of the bottom A, with the circular or enlarged portion d' of the slots d nearly in line with the rear end of the bottom piece, A.

Extending across the box, and in rear of the follower C, is the locking-bar E, having a bearing at opposite ends in the slots or ways d of the side bars, D, said locking-bar being so constructed, arranged, and applied that by a partial rotation or movement it will be caused to engage the walls of the slots or ways at any point in their length, and instantly assist the backward movement of the follower, and hold the latter securely in position, while by a slight movement in the opposite direction, and without producing any considerable advance of the follower, the locking-bar can be released and the follower drawn back. To this end the locking bar is constructed and applied in the following manner: At or near each end of the locking-bar E is formed an oval, elliptical, or cam-shaped bearing; e , whose major axis is somewhat longer than the width of the slot d , while its minor axis is shorter than the width of said slot, so that when the bar lies or is turned with the minor axis of the bearings perpendicular, or nearly so, to the length of the slots or way d , in which they rest, the bar can be readily reciprocated back and forth in said

slots or ways; but so soon as the bar is turned or partially rotated, so as to cause the major axis of the bearings to approach the vertical, they will become wedged between the walls of the slot or way, and all further movement of the bar in one direction will be prevented. To effect this rotation or movement of the bar upon its axis by the pressure or expansion of the files, I form upon or attach to the said bar E, at or near its center, an arm or lever, e' , substantially parallel with the major axis of the cam-bearings e , and projecting toward the follower, to which latter it is attached by a joint permitting of a limited oscillating and reciprocating movement. Such a connection is shown in the drawings, wherein the lever or arm e' is provided with lateral arms or pivots e'' , resting in elongated bearings e''' , formed by applying the arms or staples e^4 to the back of the follower. As thus arranged, when the follower is pressed toward the front piece, B, and against the files or papers, it will, by pulling upon the arm e' , partially rotate the bar E in a direction to release its grip upon the walls of the slots, and will cause the said bar to be advanced with it until the required degree of pressure has been exerted upon the papers, when, by giving the said bar E a slight rotation in the opposite direction, (which can readily be accomplished by pressing the bar forward, so that the arm e' shall come against the follower,) its bearings will be caused to engage the walls of the slots, in which position they will be retained by the expansion of the papers, so that the follower cannot be retracted without first turning the locking-bar. To facilitate the turning of the locking-bar both in locking and unlocking the follower, as described, and to afford a convenient handle by which the follower can be advanced and retracted and locked or unlocked at one operation, I provide the said bar with a second arm or thumb-piece, e^5 , which, in connection with the arm e' , serves as a convenient device for manipulating the locking mechanism, as by placing the thumb or finger upon the lever and grasping the arm e^5 with another finger or the thumb, the bar E can be turned to release or lock the follower without producing any material movement of the latter, which is an advantage, in that in the act of locking the follower the pressure upon the papers is neither increased or diminished, and when once pressed sufficiently to hold them there is no relaxation of the pressure, when the locking action is effected. If desired, the amount of vertical movement permitted to arm e' on the follower may be so limited or adjusted that the end of the said arm shall not fall sufficiently to permit the cam-bearings to be thrown down into such position as to permit the free backward movement of the follower, excepting where the bar E is rotated and held by the hand; but I prefer to make the said bearings of such length that the end of the lever or arm e' may be moved when said bar is interlocked or held at the same extremity of

the bearings, so that the follower is free to be moved in either direction until the bar is properly rotated or turned in a direction to clamp the follower against the files or papers interposed between it and the front piece, B.

For the purpose of preventing the accidental displacement of the locking-bar E, and to guide and retain it in working position, I form securely upon each end a shoulder or collar, f, f , and it is to permit the insertion of these collars, when formed integral with the bar E, that I provide the enlargements d'' at the front end of slots d in bars D. When the bar E is turned, as described, to unlock the follower, and the latter is retracted and relieved from the pressure of the paper on file, the follower can readily be inclined backward to permit an inspection of the contents, and when in this position the arm e' can be turned down so as to extend below the level of the bar E, and the weight of the follower and files will be sustained in part by the bar E, which is prevented from becoming locked in the slots or ways by the arm or thumb-piece e^5 bearing against the follower, and holding the cam-bearings from biting against the walls of the slots.

In order that the pressure exerted by the papers shall operate upon the locking bar in a direction to maintain it tightly clamped in the slots or ways, the arm e' is projected forward and connected to the follower in advance of the locking-bar; hence, when the said bar is employed as a clamping device, sufficient space must be left at the rear end of the box to accommodate the angular lever and permit the partial rotation of the bar E, thereby reducing the effective capacity of the box. It is oftentimes desired, however, to utilize the full capacity of the box, as measured by the length of the bottom piece, A, and in such event no clamping device is required, there being no necessity for compressing the files or papers which completely fill the box. In order that my improved file-box may, when desired, be thus employed, I enlarge the rear ends of the slots or ways d , as at d' , so that when the follower is retracted and has nearly arrived at the rear end of the bottom piece, A, the cam-bearings e on the locking-bar E will enter the enlarged openings d' , which are of a diameter greater than the major axis of the bearings e on the locking-bar E, thereby permitting said bearings and the bar E to be turned or rotated into a vertical position, when the follower can be pressed back against the bar E, thereby utilizing the space which was formerly occupied by the arm e' of the locking-bar, so that the box can be filled almost the entire length of the bottom piece.

I claim—

1. In a file-box such as described, and in combination with the follower thereof, and the side bars; slotted as described, the walls or faces of said slots being substantially parallel, the movable locking-bar having cam-shaped or elliptical bearings at the ends resting in the slots in the side bars, and an arm or lever at-

tached to said locking-bar and bearing against the follower at a point remote from the center of said locking-bar, substantially as described, whereby when the follower is forced against the files or other elastic material, and the latter is sufficiently compressed, the locking-bar can be forced toward the follower, and at the same time be rotated or turned so as to cause its bearings to engage the walls of the slots in the side bars, and thus become locked by direct pressure upon the locking-bar, and in a direction toward the follower, without permitting the backward movement of the latter.

2. In a file-box such as described, the combination, with the follower and side plates having longitudinal slots with parallel walls, of the locking-bar provided with cam or elliptical bearings for engaging the walls of the slots in the side bars at any point in their length by the rotation of said bar, an arm attached to said locking-bar and bearing against the follower at a point remote from the center of said bar, and a thumb-piece attached to said bar upon the side opposite that to which the before-mentioned arm is attached, whereby the follower is pressed against the files contained in the box, and the locking-bar can be forced tightly against it, and at the same time be rotated and locked in position without relaxing the pressure on the files, substantially as described.

3. In a file-box such as described, the combination, with the follower and the slotted side bars having longitudinal slots or ways terminating at the outer ends in enlarged openings, such as described, of the locking-bar provided with elliptical bearings at each end and an arm bearing against the follower at a point remote from the center of the locking-bar, substantially as described, whereby when the follower is retracted the bearings of the locking-bar will be free to turn, and will be supported at substantially the level of the slots in the side bars, thus permitting the follower

to rest against and be supported in a vertical position by the locking-bar, as set forth.

4. In a file-box such as described, the combination, with the follower and the side bars having longitudinal slots with plain faces, of the locking-bar provided with elliptical bearings for engaging the walls of the slots in the side bars, and the arm projecting from the said locking-bar and bearing against the follower at a point above the plane of said slots, substantially as described.

5. In a file-box such as described, the combination, with the follower and the side bars having plain-faced slots, as described, of the locking-bar with cam-shaped or elliptical bearings for engaging the walls of the slots, and provided with an arm bearing against the follower to one side of the plane of the slots, and a thumb-piece or lever secured to said locking-bar, whereby the locking-bar can be brought to position and clamped by a movement toward the follower, and while the latter remains stationary, substantially as described.

6. In a file-box, the combination, with the follower and the side bars having longitudinal slots with plain faces, of the locking-bar pivoted to the follower, and having elliptical bearings for engaging the walls of the slots in the side bars, substantially as described.

7. In a file-box, the combination, with the follower and the side bars having longitudinal slots with plain faces, of the locking-bar pivoted to the follower, and having elliptical bearings at its ends for engaging the walls of the slots in the bars, and a thumb-piece or lever secured to the locking-bar, substantially as described.

In testimony whereof I have hereunto set my hand this 3d day of April, A. D. 1886.

E. F. MURDOCK.

Witnesses:

W. C. MURDOCK,
ALEX. B. BURNS.