No. 748,519. PATENTED DEC. 29, 1903.

C. McPIKE.

CARD INDEX.

APPLICATION FILED JAN. 21, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

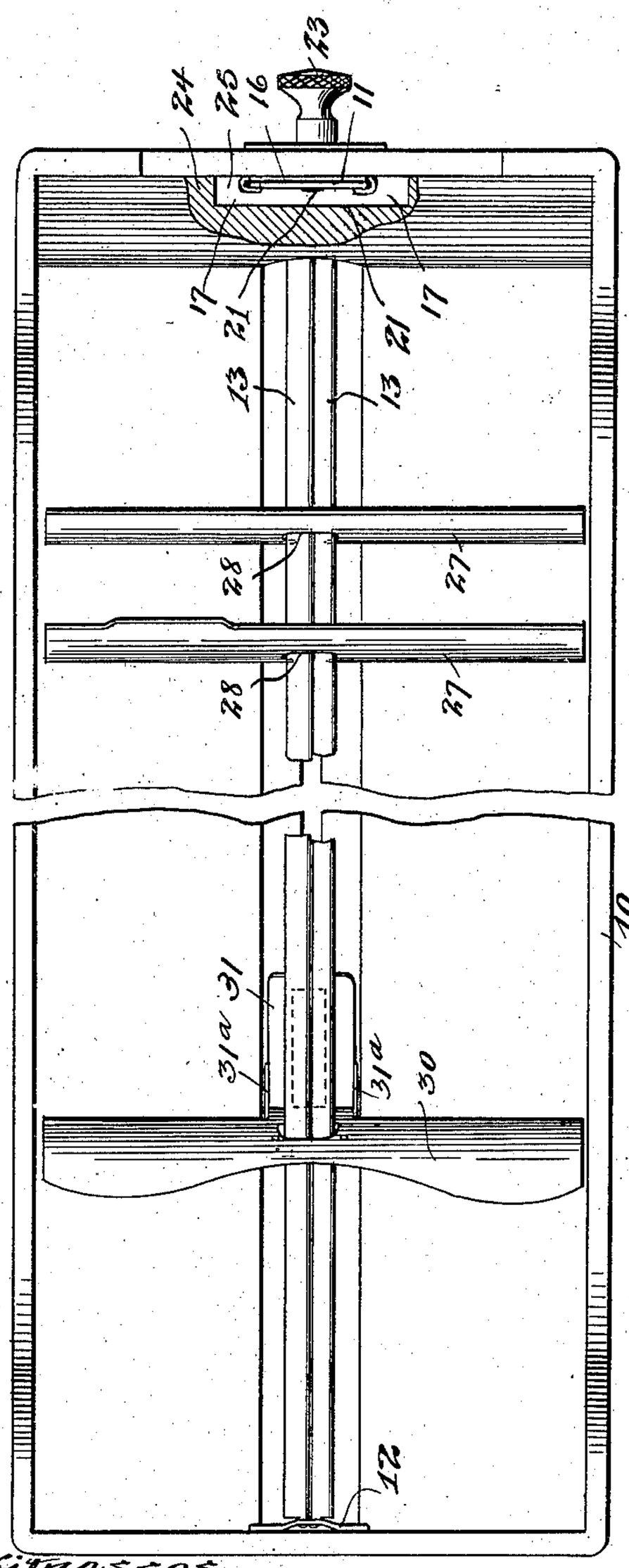

Fig. 1.

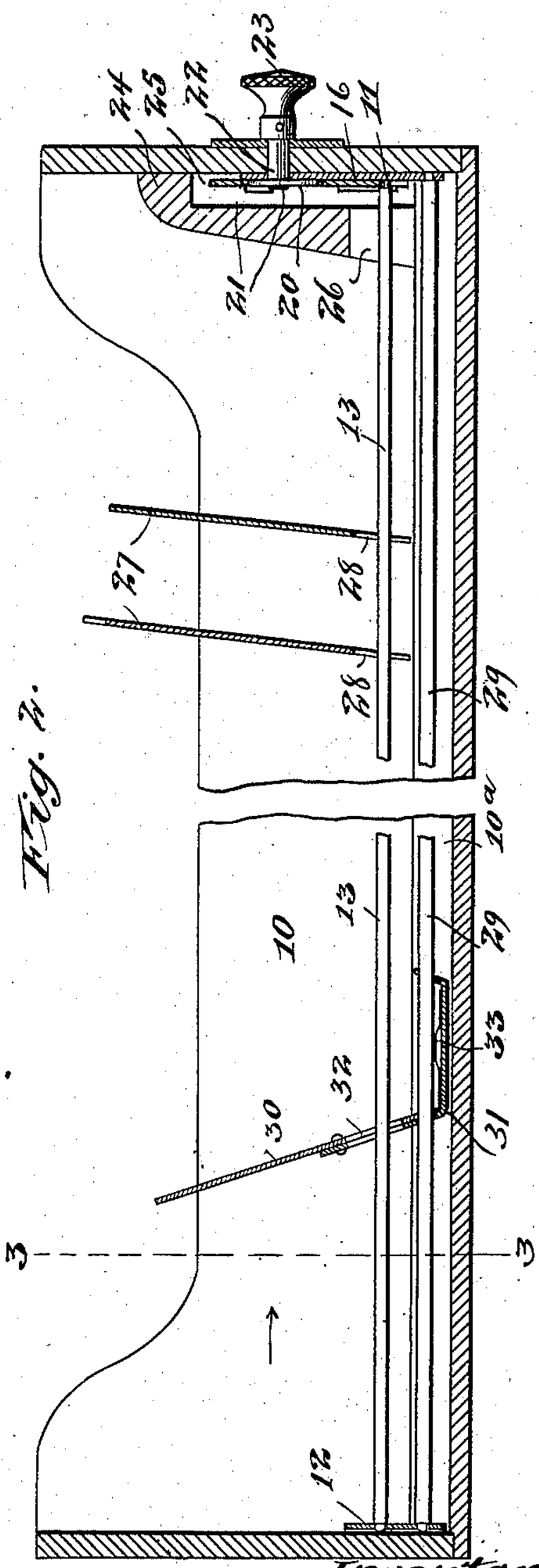

Fig. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5.

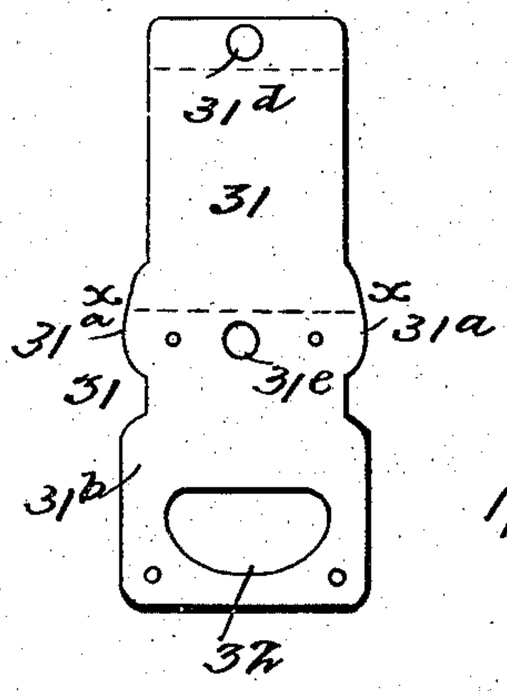


Fig. 4.

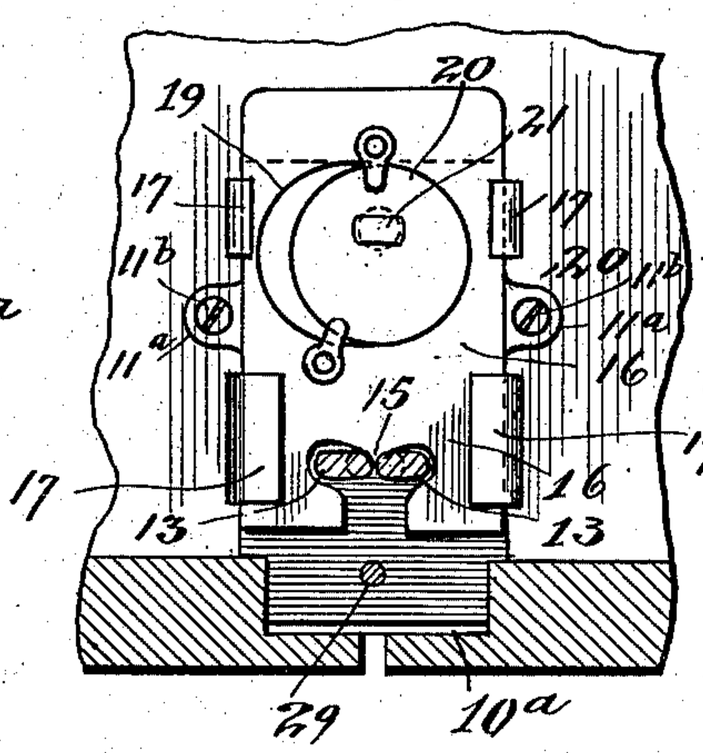


Fig. 6.

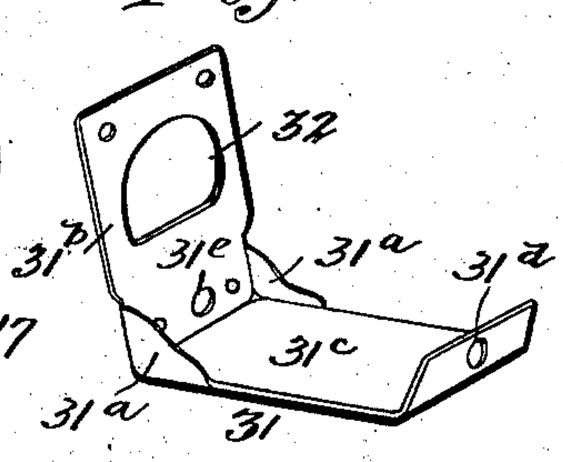


Fig. 3.

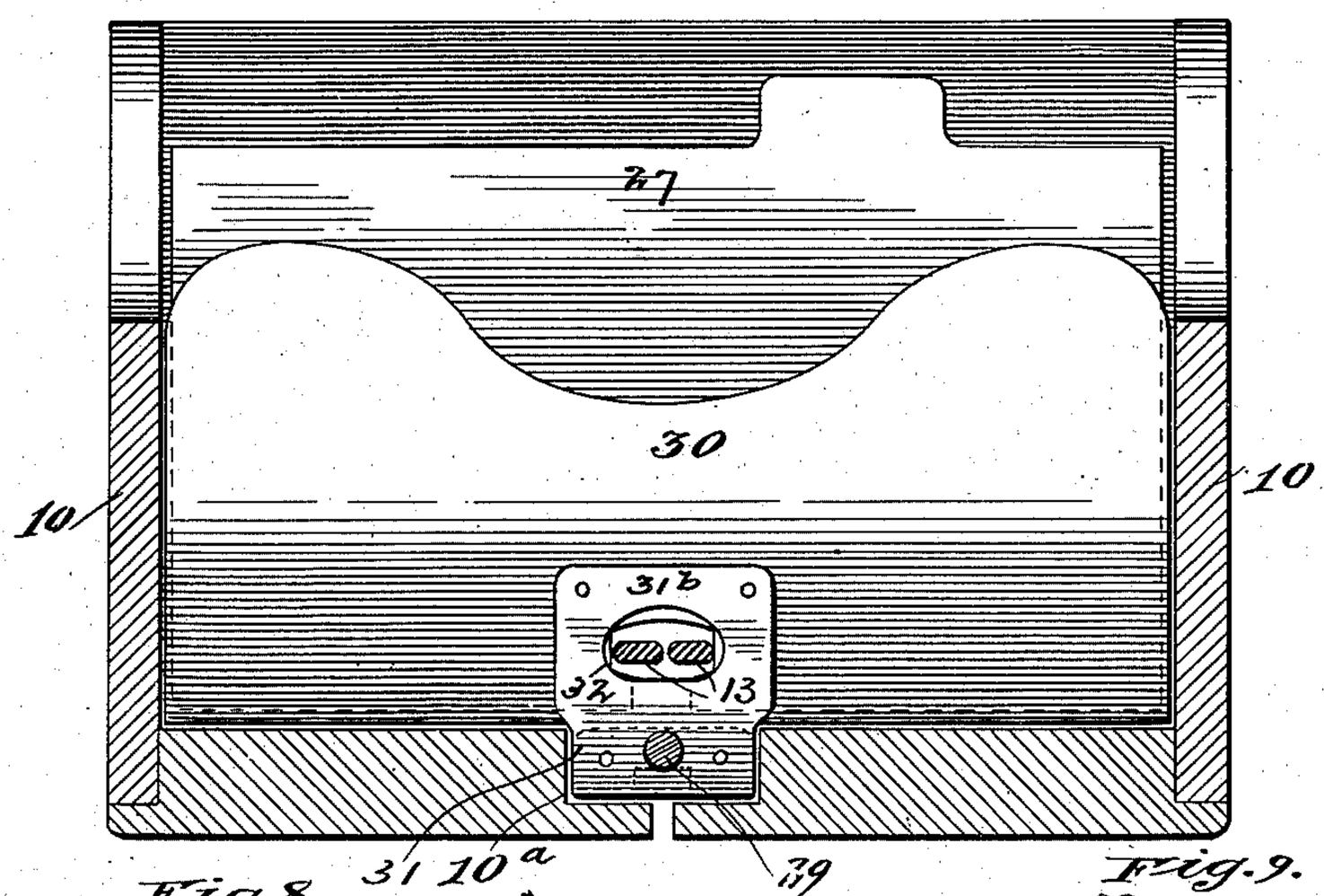


Fig. 8.

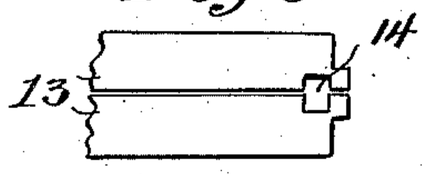


Fig. 7

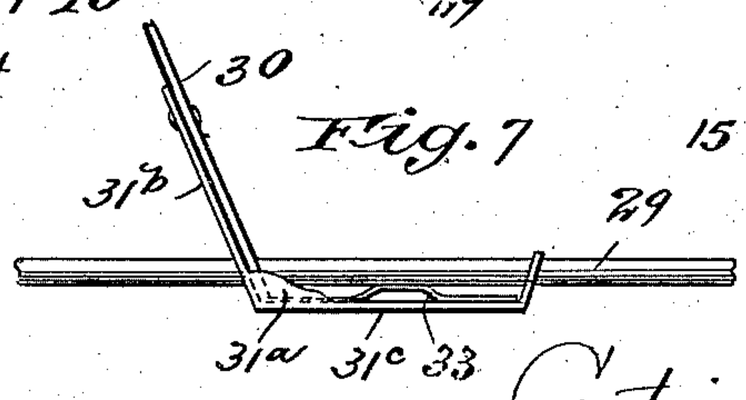
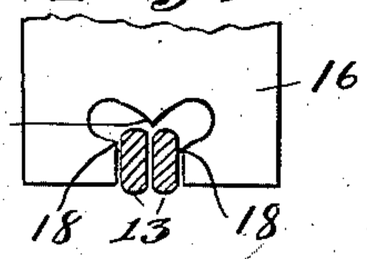


Fig. 9.



Witnesses,
F. S. Mann.
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Atty's.

No. 748,519. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

CURTIS McPIKE, OF WABASH, INDIANA, ASSIGNOR TO ROCKWELL & RUPEL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CARD-INDEX.

SPECIFICATION forming part of Letters Patent No. 748,519, dated December 29, 1903.

Application filed January 21, 1903. Serial No. 140,010. (No model.)

To all whom it may concern:

Be it known that I, CURTIS MCPIKE, a citizen of the United States, residing at Wabash, in the county of Wabash and State of Indiana, have invented certain new and useful Improvements in Card-Indexes, of which the following is a specification.

My invention relates to card-indexes of that type wherein a tray or drawer intended to hold the cards is provided with means for locking and releasing the cards in position therein and also with a sliding follower whose function is to maintain the cards in normal upright position within the drawer whether the latter be wholly or but partially filled; and my invention has to do more particularly with an improved form and construction of follower and manner and means of mounting the same upon its guide and support. Card-indexes of this class have hitherto, as far as I am aware, been commonly provided with a follower in the form of a block of wood of generally triangular shape resting at its base on the bottom of the drawer and slidable over the usual card-locking bars and itself overriding a rod underlying the locking-bars and provided with various means for frictionally clamping said follower-block at any desired position upon said rod. Such wooden follower-blocks as heretofore constructed are of considerable thickness, and consequently occupy a not inconsiderable portion of the space of the drawer or tray which might otherwise advantageously be filled with index-cards; and the chief object of my invention is to save a part of the space thus wasted through the employment of a novel form and construction of follower and which possesses the rigidity and efficiency of the usual wooden follower-block while at the same time occupying but a fraction of the space in the drawer required by the latter.

Minor objects of my invention are to provide an improved clamping device for retaining the follower at any adjusted position and an improved actuating device for effecting the required movements and locking of the card-locking rods.

To these ends my invention consists in a novel card-index having the peculiarities of form and construction substantially as hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings, which illustrate my invention in its preferred form, Figure 1 is a top plan view, partly broken away, of a drawer or tray equipped with a card-index mechanism having my improvements embodied therein. Fig. 2 is a longitudinal vertical section through the same. Fig. 3 is a transverse vertical section on the line 3 3 of Fig. 2 looking in the direction of the arrow. Fig. 4 is a detail end view of the novel rod actuating and locking mechanism. Fig. 5 is a detail plan view of the blank from which the shank or stem of the follower is struck up. Fig. 6 is a detail perspective view of the same after it has been struck up into operative form. Fig. 7 is a detail side elevational view illustrating the coöperation of the shank of the follower with the rod on which it rides and my novel device for frictionally clamping the follower at any adjusted position on the rod, and Figs. 8 and 9 are detail views of parts of the mechanism for opening and closing the locking-bars.

The card-index to which my present invention relates is of a type which is fairly illustrated by Letters Patent No. 658,153, granted September 18, 1900, to Frank Macey, and my present improvements are more particularly based upon the general structure of card-index disclosed in my pending application on a card-index-locking device, Serial No. 727,804, filed August 19, 1899, and allowed July 24, 1902.

I will first briefly describe the parts and elements of a card-index with which my present improvements are associated and upon which they are based and will then more particularly describe the construction and operation of the improvements themselves.

10 designates the tray or drawer, of any convenient form or size, to the front and rear end walls of which are affixed plates 11 and 12, in which are journaled the spindles of a pair of longitudinal parallel locking-rods 13. These rods, as herein shown, are flat or in the form of thin bars, preferably of metal and rounded upon their corners and having their end jour-

nals or spindles located in line with their meeting or adjacent edges. At their front ends these rods have their adjacent edges notched, as shown at 14, to provide an aperture to receive an operating or opening wedge 15, Figs. 4 and 9, which latter constitutes an integral part of a sliding plate 16, mounted to slide vertically in ways formed by vertical guides 17, consisting, as herein shown, of inwardly-bent lateral ears or extensions of the end plate 11, said last-named plate being rigidly secured to the front wall of the tray, as by screws 11^b, passed through lugs 11^a on the vertical edges of the plate 11. The plate 16 is notched in its lower edge, as best shown in Fig. 9, the notch expanding and widening upwardly and outwardly to provide operating-shoulders 18, which are just wide enough apart to admit the locking-bars 13 when the latter are turned edgewise or into vertical position and lie in contact, said shoulders serving to maintain the bars in such position. Referring now to those features of improvement which have to do with this locking-bar actuating and locking mechanism, the plate 16 is provided in its upper portion with an oval-shaped opening 19, formed therethrough and having its longest diameter disposed transversely of the plate. Within the opening 19 and in the plane of the plate 16 is confined a circular disk 20, which is eccentrically and rigidly mounted at 21 on the inner end of a stem or short shaft 22, Fig. 2, extending through the end wall of the tray and provided with an operating-knob 23. When the knob is turned, the eccentric 20 will obviously, by reason of its engagement with the edge of the oval opening in which it is confined, cause a vertical reciprocation of the sliding plate 16 in its guides or keepers 17, and if the bars 13 be turned up, as shown in Fig. 9, and the eccentric be turned in a direction to lower the sliding plate 16 the wedge-shaped point 15 will enter between said bars, separating their upper edges, and as the plate farther descends said rounded edges will come in contact with the curved walls of the slot, thus turning said bars into horizontal position. When the knob is turned in the opposite direction, the sliding plate will be raised by the eccentric, and the shoulders 18, which in the downward movement of the plate passed below the plane of the bar, will engage the latter on their under sides and turn them into the upright or vertical position. In this connection it may be noted as an important characteristic and capability of the locking-rod-actuating device described that the relation between the eccentric 20 and the oval opening 19, with which it coöperates, is such that the eccentric locks the sliding plate fixed in both its upper and lower positions against accidental movement except such as is occasioned by a turning of the knob 23, and this by reason of the fact that the pivotal axis of the eccentric lies to one side (the right, as herein shown) of the vertical diameter of the oval opening 19, in which the eccentric plays, and at each limit of rotation of the eccentric in its confining opening all points of contact between the periphery of the eccentric and the margin of the opening are in vertical lines which lie on that side (the right) of the pivotal axis of the eccentric toward which the eccentric is incapable of further rotation.

For the purpose of covering and protecting the cam-plate and the operating mechanism connected therewith a block 24, substantially triangular in cross-section and recessed on its front side, as shown at 25, may be employed, said block being suitably apertured at 26 to permit the operation of the locking-bars. The cards (indicated at 27) are herein shown as provided in their lower edges with T-shaped notches 28, the narrowest part of which is adapted to receive the bars 13 when the latter are turned into vertical position and the widest part of which is adapted to permit said bars to be turned into a horizontal plane, and when so turned said bars obviously engage with the cards and prevent their being withdrawn until released by the manipulation of the bars.

From the foregoing it will be seen that I have provided an improved and simplified means for actuating the sliding plate 16 which effects the inward and outward turning of the locking-bars 13, which mechanism is positive in its movements in both directions and at the limits of its movements automatically locks the sliding plate against accidental return movement in either direction.

Referring now to those features of my invention which relate to the follower, it will be observed by reference to Figs. 3 and 4 that the bottom wall of the drawer or tray is longitudinally recessed or grooved, as shown at 10^a, in order to receive the shank or foot of the follower next to be described and its operating-rod. This latter consists of a rod 29, journaled at its ends in the end plates 11 and 12, directly beneath and in the vertical plane of the meeting edges of the locking-bars, said rod preferably lying wholly within the groove 10^a of the base in order that it may not occupy any portion of the space of the drawer or tray designed to be occupied by the cards.

30 designates the body of the follower, which is in the form of a thin plate, preferably of sheet metal and of a length substantially equal to that of the cards themselves. This follower-plate 30 is rigidly united centrally of its lower edge to the shank or stem 31 of the follower, which latter embodies in itself the principal novel features of my invention. This shank is cut and struck up from a sheet-metal blank, which possesses substantially the form and outline illustrated in Fig. 5, the chief characteristic feature thereof residing in the provision of a pair of ears 31^a on either side thereof substantially opposite the transverse line $x\,x$, on which the blank is bent to

create the inclined upstanding member 31^b, which is suitably riveted to the back side of the follower-plate 30 and the horizontal portion 31^c, which overlies the base of the groove 10^a. In such bending of the blank the bend is greatly strengthened by drawing the metal in and dieing it so as to draw the ears 31^a of the blank in the form of triangular reinforcements across the corners where the bend is made. The inner end of the horizontal member 31^c of the shank is struck upwardly sufficiently to provide a means for engagement of that end of the shank with the rod 29 which passes through an aperture 31^d therein and also through an aperture 31^e in the base of the upstanding member 31^b just above the reinforced bend. The upstanding member of the shank and the registering portion of the follower-plate are apertured, as shown at 32, sufficiently to accommodate the passage therethrough and the play therein of the locking-bars. With the follower-plate thus mounted on the guiding and supporting rod 29 it is desirable to provide means which will permit the follower-plate to be moved to and fro longitudinally of the rod to any desired position in the draw, but which at the same time will serve to maintain said plate at any adjusted position against the weight of expansive effect of the cards supported and confined thereby. A simple frictional clamping means which I have devised for this purpose consists of a bent leaf-spring 33, which seats at its ends on the horizontal member 31^c of the shank and has its upwardly-bent central portion slidingly engaging the under side of the rod 29 with considerable spring-pressure, thereby creating considerable friction, not only at the contact-point of the spring with the under side of the rod, but also between the rod and its bearings in the apertures 31^d and 31^e of the shank through which it passes. This friction, while sufficient to maintain the follower-plate stationary at any adjusted position under the requirements of its service, nevertheless permits the follower-plate to be moved back and forth longitudinally of the drawer when adjustment thereof is to be made.

From the foregoing it will be seen that by my invention I provide a follower or compressor for a card-index device, which occupies but a fraction of the space of the drawer occupied by the old style of wooden-block follower and which is rendered equally strong and reliable through the provision of a rigid reinforced connection between the follower-plate and its guide and support located in the bottom wall of the drawer, which reinforced connection is capable of being produced economically by being cut into a sheet-metal blank of the required size and shape and afterward pressed or struck up into operative form by a single operation.

My invention also provides a simple, efficient, and economical means for frictionally clamping the follower-plate upon its guide or support at any desired position of the drawer, at the same time permitting the ready adjustment of said follower-plate by the operator by a simple pressure thereon without requiring the previous manipulation of any positive locking devices to free the follower-plate from interlocking engagement with its guide.

I claim—

1. In a card-index mechanism of the character described, the combination with a rod, of a follower coöperating therewith, said follower consisting of a sheet-metal plate and shank attached to the lower edge thereof, said shank being struck up from a sheet-metal blank and integrally reinforced opposite the line of the bend, substantially as described.

2. The combination with a tray, of a rod journaled longitudinally of and in the lower portion thereof, a follower in said tray comprising a flat sheet-metal plate and a shank rigidly secured to the lower margin thereof, said shank being struck up from a suitably-formed sheet-metal blank and suitably apertured to receive and ride over said rod, said blank constituting the shank being formed with lateral ears opposite the line of the bend which, when the blank is shaped up into the operative form of the shank, are thrown in the form of integral reinforcing-plates across the corners where the bend is made, substantially as described.

3. In a card-index mechanism of the character described, the combination with a follower-plate, of a guide or support on which said follower-plate is mounted with capacity for longitudinal sliding adjustment thereon, and an elastic clamping device interposed between the shank of said follower-plate and its guide or support and frictionally engaging the latter in sliding contact therewith, substantially as described.

4. In a card-index mechanism of the character described, the combination with a tray, of a follower guiding and supporting rod journaled longitudinally of and in the lower portion thereof, a follower in said tray having an angularly-bent shank comprising an upwardly-inclined portion united to the follower and a horizontal portion underlying and slidingly suspended from said guiding and supporting rod, and a bent clamping-spring interposed between said horizontal portion of the shank and the guiding and supporting rod and frictionally engaging the latter in sliding contact therewith, substantially as described.

5. In a card-index mechanism of the character described, the combination with a pair of pivoted locking-bars, of a reciprocable plate having bar-engaging parts adapted to spread and contract said bars by opposite movements, respectively, said plate being further provided with an oval opening, and an eccentric mounted in said opening of the plate and positively actuating the plate in both directions and maintaining it locked

against movement at the opposite extremes of its travel, substantially as described.

6. In a card-index mechanism of the character described, the combination with a pair of pivoted locking-bars, of a reciprocable plate having bar-engaging parts adapted to spread and contract said bars by opposite movements, respectively, said plate being further provided with an oval opening disposed with its longer axis transverse to the plate, and an eccentric mounted in said opening of the plate eccentrically thereof and by a partial rotation in opposite directions effecting the reciprocations of the plate and maintaining it locked against movement at the opposite extremes of its travel, substantially as described.

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Witnesses:
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