J. D. HARNESBERGER.

FILE CABINET.

APPLICATION FILED NOV 30, 1915

1,204,567.

Patented Nov. 14, 1916.

6 SHEETS—SHEET 1.

FIG. 1.

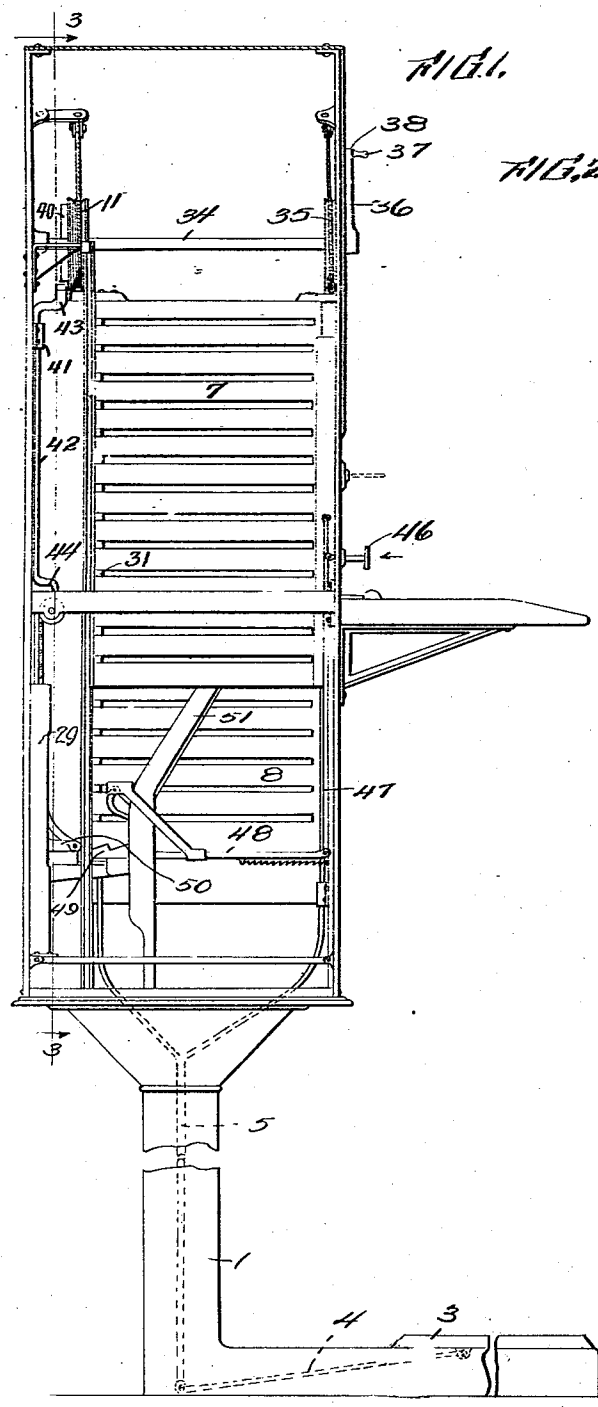
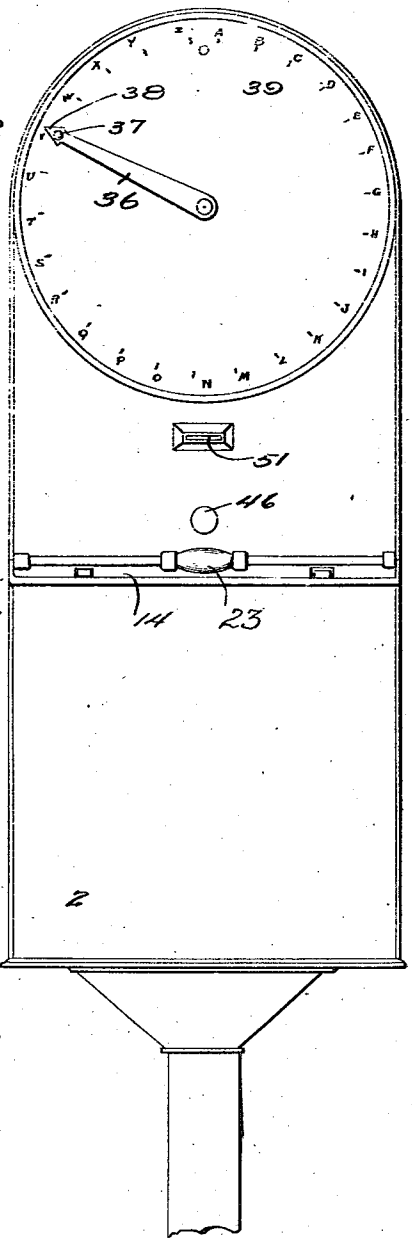


FIG. 2.



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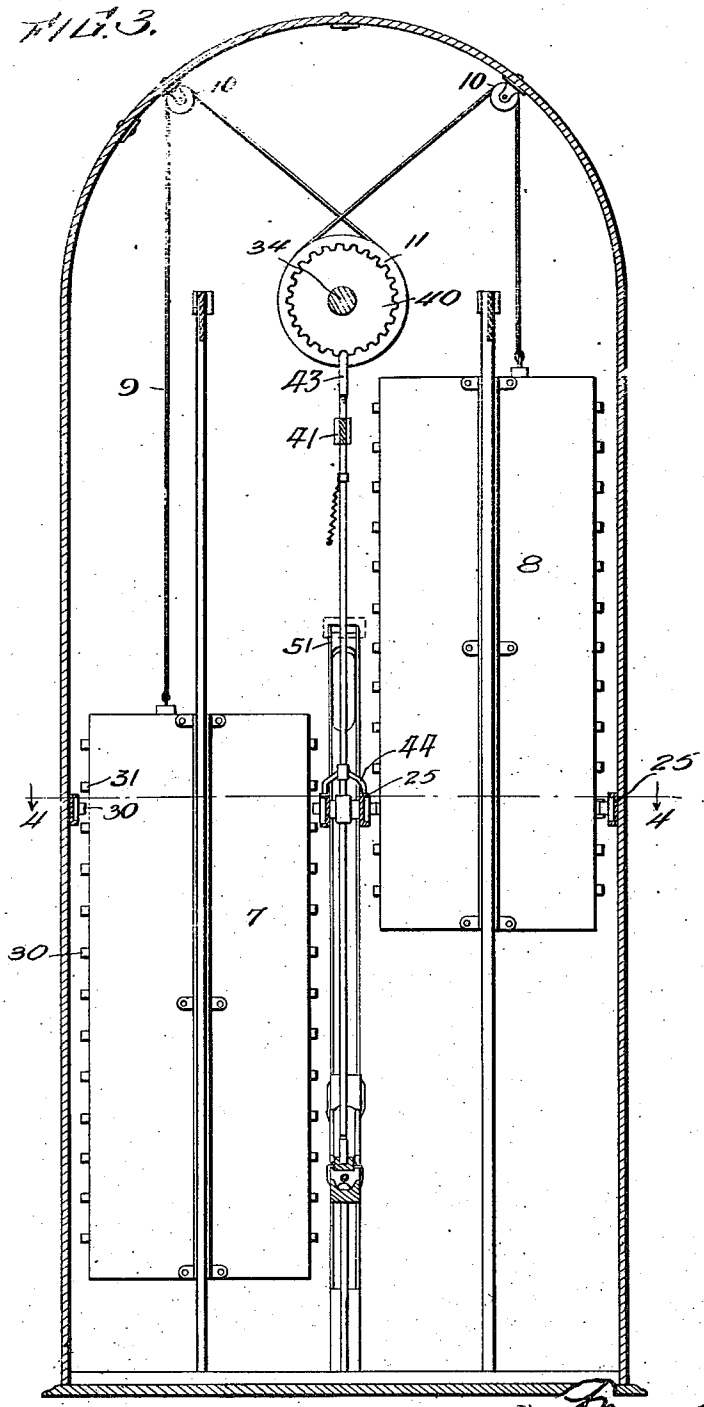
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6 SHEETS—SHEET 2.

FIG. 3.



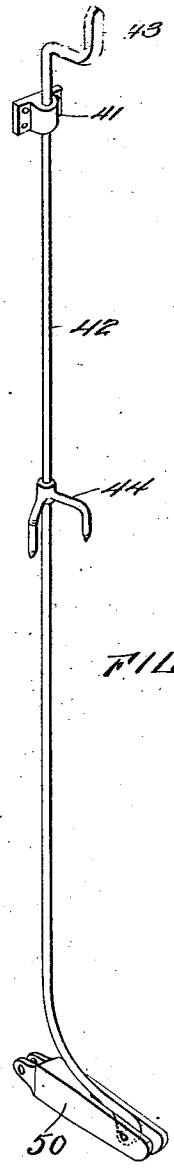


FIG. 6.

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6 SHEETS—SHEET 3.

FIG. 4.

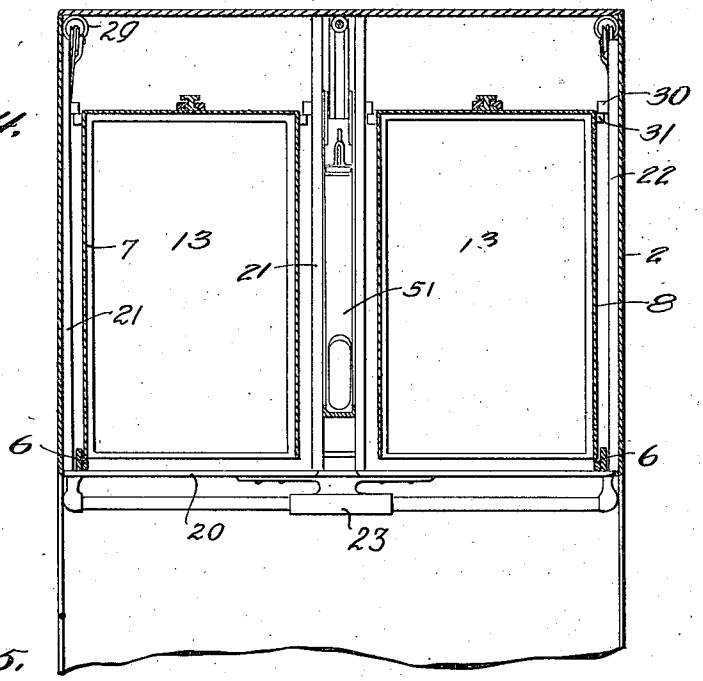


FIG. 5.

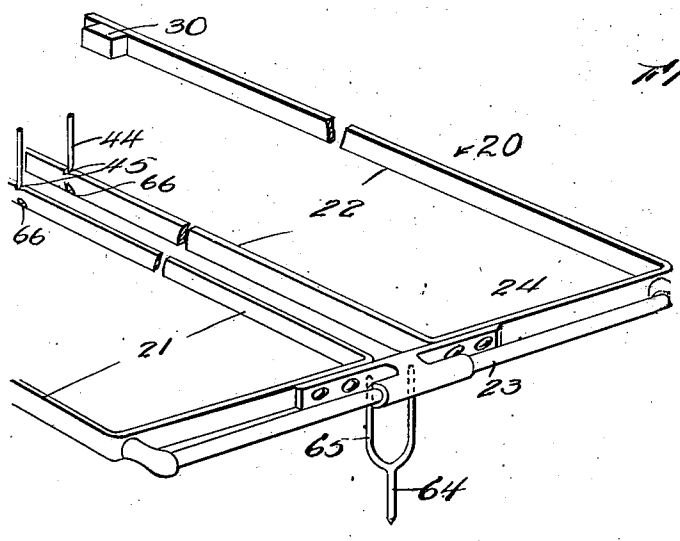
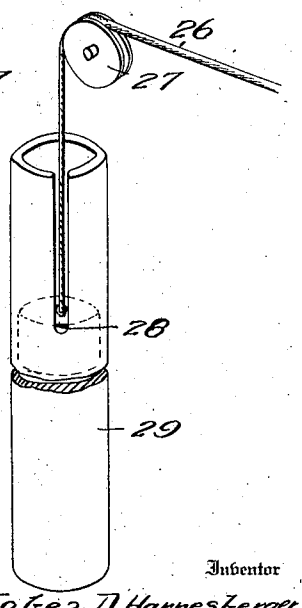


FIG. 7.



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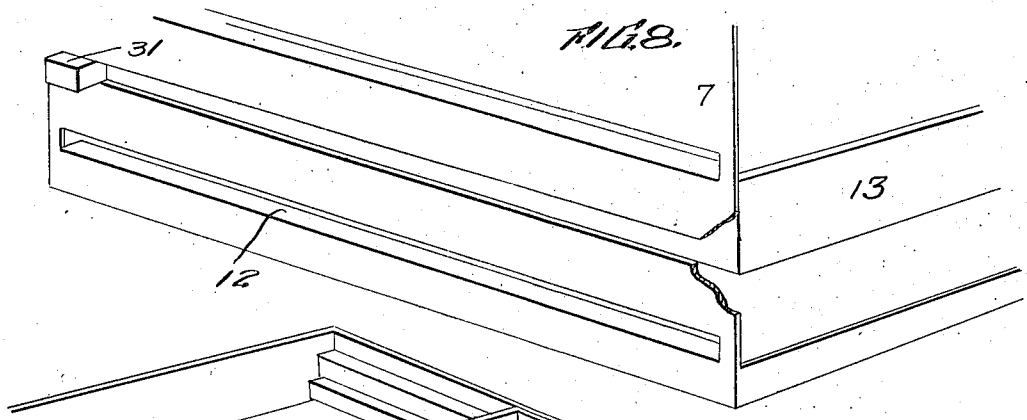
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6 SHEETS—SHEET 4.

FIG. 8.



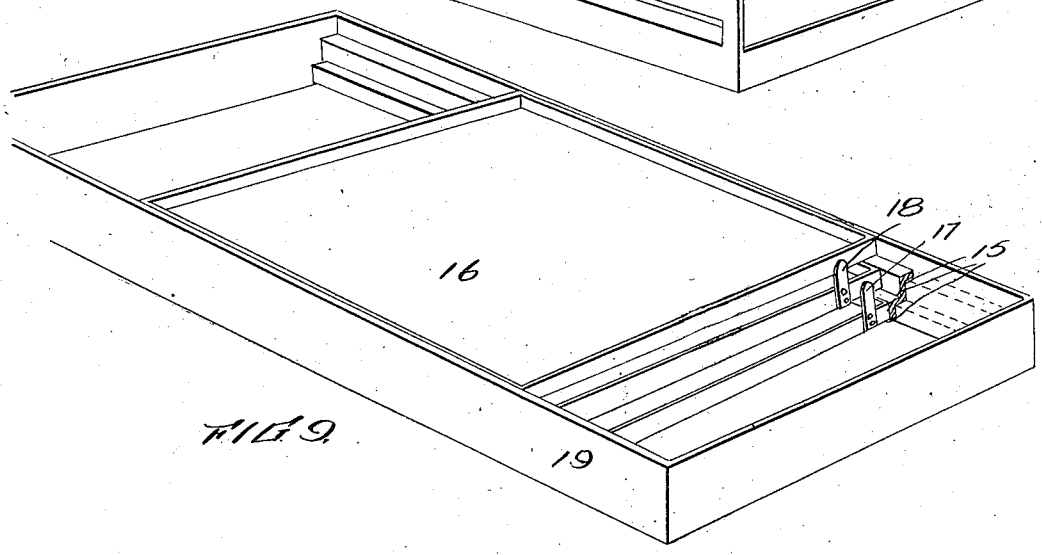


FIG. 9.

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6 SHEETS—SHEET 5.

FIG. 10.

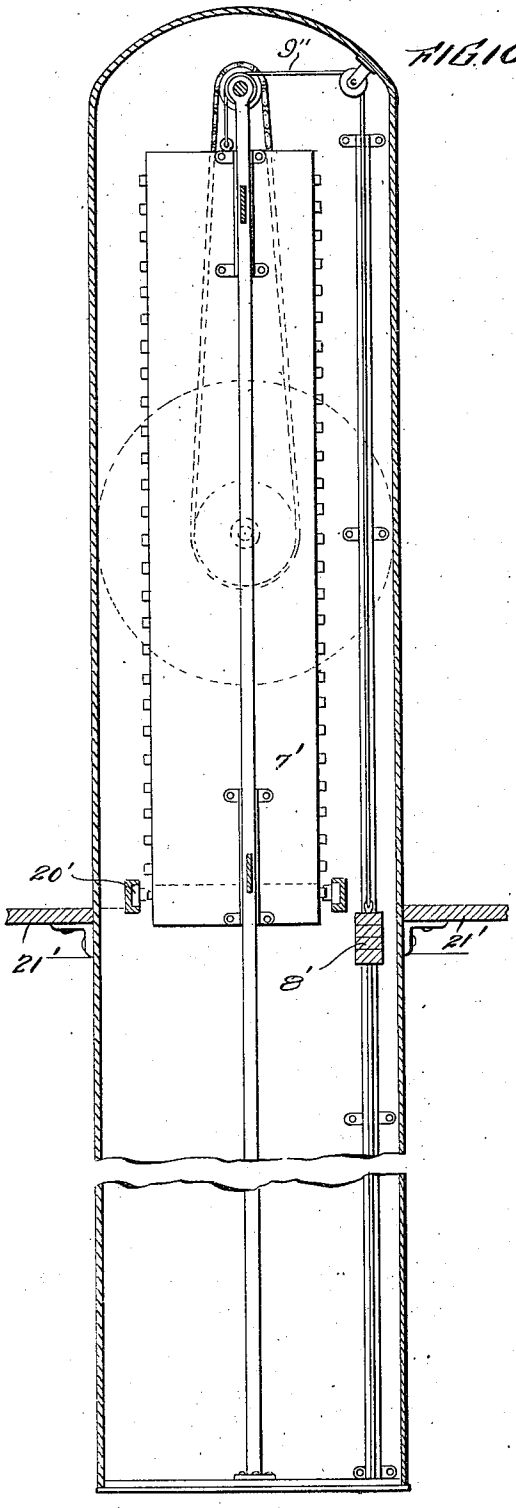
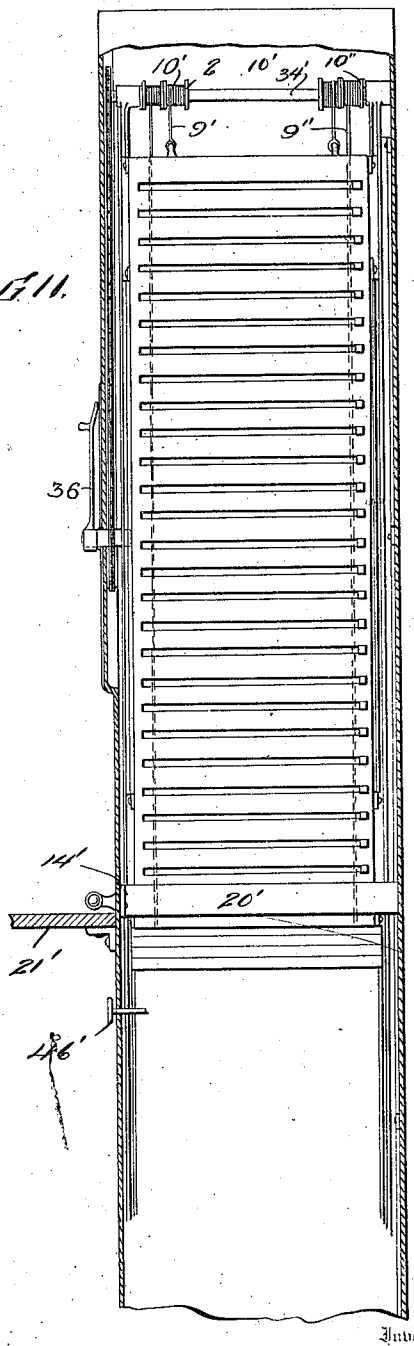


FIG. 11.



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1,204,567.

Patented Nov. 14, 1916.

6 SHEETS—SHEET 6.

FIG. 12.

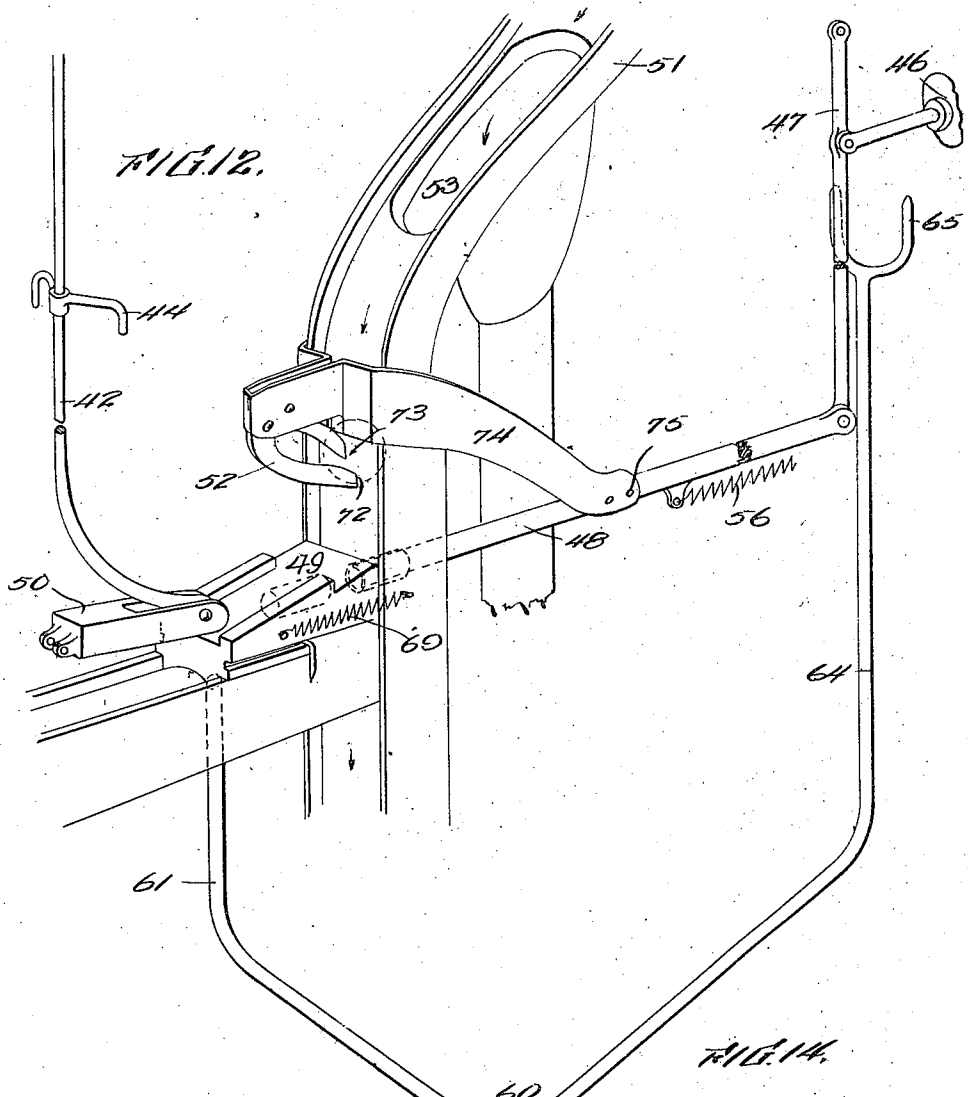


FIG. 14.

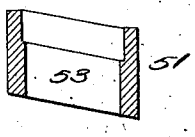
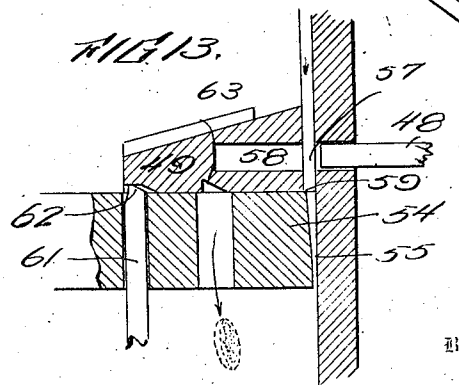


FIG. 13.



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UNITED STATES PATENT OFFICE.

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FILE-CABINET.

1,204,567. Specification of Letters Patent. Patented Nov. 14, 1916.

Application filed November 30, 1915. Serial No. 64,321.

To all whom it may concern:

Be it known that I, JABEZ D. HARNESBERGER, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in File-Cabinets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to furniture, and more especially to file cabinets; and the object of the same is to produce a cabinet of this character in which books, records, accounts, and other articles can be filed in such manner that they may be inspected at any time and added to or taken from if required.

I may say that it has been my intention to divide a large city directory into signatures or booklets whereof each contains the names under one letter of the alphabet, and provide this device with a coin-controlled mechanism so that when a customer dropped in a penny he could actuate the setting mechanism to bring the desired booklet into position where he could draw it forth for an inspection, but as this is only one of many uses to which the invention could be put, I do not wish to be limited in this respect. Also while I have herein shown and described the cabinet as containing a coin mechanism, it is quite obvious that if the device is used only for filing papers and similar purposes where an outsider does not approach it, the coin mechanism can be omitted.

Broadly speaking, the invention consists in a framework having upright guides, a pair of racks movable therein and counterbalancing each other (or in some cases a single movable rack counterbalanced by a weight), setting mechanism for adjusting the racks (or rack) so that the desired drawer comes opposite an opening, and displacing mechanism for withdrawing or projecting that drawer. When the coin controlled mechanism is used, means of course will be employed to lock the machine so that its racks can not be set or its displacing mechanism moved until the coin is inserted, but whether the coin mechanism is used or not I find it advantageous to employ part of the locking mechanism for holding the racks steady while the displacing device is being used.

Filing cabinets as generally constructed contain stacks or rows of drawers or trays properly labeled, and the user withdraws the one desired. In some instances these cabinets have been made rotary with provision for turning them on their axis until the desired compartment is presented to the user. In the first instance the operator must move his hand, and if the cabinet is tall may have to use a step-ladder, to gain access to the proper tray. In the latter instance the revolving cabinet fills its case and is turned to bring the desired tray to the user. In the present invention the casing is twice the size of the racks containing the drawers or trays, and means are provided for moving the racks up and down. I find there is always plenty of room at the top of a store, office or apartment, and therefore there is no objection if this cabinet be made quite tall as may be required if its drawers or trays are individually deep. On the assumption, however, that they are rather shallow, it is quite possible to build this device so that it stands no higher than the average man, and mount it on a pedestal or stand or desk so that all its parts are in ready reach of an operator standing on the floor. I do not wish to be limited in this respect, and therefore the size and proportion of parts, their materials, and their exact details of construction are not essential to the present invention. My preferred manner of carrying out the same is described and claimed below and illustrated in the accompanying drawings wherein—

Figure 1 is a left side elevation of this cabinet with its casing removed, and Fig. 2 is a front elevation. Fig. 3 is an enlarged vertical section on the line 3—3 of Fig. 1, and Fig. 4 is a horizontal section on the line 4—4 of Fig. 3. Fig. 5 is a perspective detail of the displacing frame, Fig. 6 a perspective detail of a part of the locking mechanism, and Fig. 7 a perspective detail of the cushion. Fig. 8 is a perspective detail of one of the racks, showing one tray in place and the space from which another has been removed. Fig. 9 is a perspective detail of a slightly modified form of tray containing a plurality of shelves. Figs. 10 and 11 are vertical sections at right angles to each other

through a modified or simplified type of the invention as will be explained below. Fig. 12 is an enlarged perspective detail of the coin controlling mechanism, Fig. 13 a sectional detail through the wedge-shaped block and the shelf on which it slides, and Fig. 14 a cross sectional detail of the coin chute.

In Fig. 1 of the drawings is seen a pedestal 1 by which the framework and housing 2 of this improved cabinet is supported above the floor, and when this pedestal is employed it contains a treadle 3 mounted on a rock lever 4 whose inner end carries an upright rod 5 whereby the locking mechanism is actuated by the weight of an operator standing on the treadle. It will be clear without further illustration that the rod 5 might be raised by a hand lever or other means within the body or housing 2 of the cabinet and projecting therefrom so that it could be manipulated by the operator, but the type of the invention shown in Figs. 1 and 2 is intended for use in public places and will be described accordingly. The framework contains upright and preferably L-shaped guides 6 in which move two racks designated as a whole by the numerals 7 and 8 in Figs. 1, 3 and 4, and these racks counterbalance each other by means of flexible cables or chains 9 passing over individual pulleys 10 and around a common drum 11 as shown in Fig. 3. Each rack in the present illustration is a skeleton structure containing thirteen pairs of cleats 12 disposed horizontally and upon which are slidably mounted the drawers or trays 13, and in the front of the casing 2 is a transverse opening 14 through which any tray is withdrawn.

While I use the word "withdrawn" and have illustrated means for displacing a tray by drawing it toward the operator, it will be obvious without further illustration that the drawer or tray might be displaced by pushing it from the operator so as to project it from the other side of the casing, and I wish to give this breadth to the word "displacing" throughout the present specification. The drawers are shown in the accompanying drawings as rather flat trays, each intended to hold a single article like a pamphlet or booklet, but in Fig. 9 I have shown the tray as composed of a frame 19 having a plurality of cleats 15 within its side bars on which slide a plurality of smaller trays or shelves 16 each perhaps quarter the depth of the frame 19. The lowermost shelf carries a finger 17 at its front end rising so as to overlap the second shelf, and the second shelf carries another finger 18 rising sufficiently to overlap the third shelf, and three shelves are sufficient for the illustration. When this frame 19 is displaced it brings the various shelves with it out into view, and if what is desired by the operator is not found on the uppermost shelf, it can be moved on its cleats 15 to expose the next shelf, and this action can be repeated to expose the lowermost shelf. This view is given to show that the construction of each tray may itself be such that the matter contained therein may be subdivided. In other words, if each drawer contains one letter of accounts or the like, each shelf in that tray could contain one name under that letter and therefore the entire contents can be divided on the letters of the alphabet and then subdivided as much as its capacity will allow.

The displacing mechanism illustrated herewith consists of a frame 20 best seen in Fig. 5, the same having two pairs of side bars 21 and 22 and a common front bar 24 of a size to close the opening 14, this front bar carrying a handle 23 by which the frame may be manipulated. The side bars travel in guides 25 in the main frame, and flexible cables or chains 26 lead from them over pulleys 27 to weighted pistons 28 fitting rather closely within cylinders 29 disposed within the housing, whereby the movements of the frame 20 are cushioned. This feature (best seen in Fig. 7) is provided to prevent too quick action which might be injurious to parts, but it is obvious that any weight or spring might be employed to house the frame after the device has been used. Each side bar of the frame carries a lug 30 at its rear end projecting inward beyond its guide 25, each drawer or tray 13 carries a corresponding lug 31 at its rear end projecting outward beyond its cleat 12 and adapted to be engaged by the lug 30 when the frame is drawn outward.

An important point in the successful operation of this machine (best illustrated in Fig. 3) is that the cables or chains 9 and in fact the entire suspending or counterbalancing mechanism must be so adjusted and constructed that when a tray in one rack comes directly opposite the displacing mechanism and stands within one side of the frame 20, the cleats 12 in the other rack stand within the opposite side. Then when the frame is withdrawn two of its lugs 30 engage those on one tray and withdraw it, while its other lugs 30 pass alongside the cleats 12 of the opposite rack and do not withdraw a tray therefrom. It follows that means should be provided for checking the vertical adjustment of the racks at times when a tray in one or the other rack is exactly opposite the opening 14. The lugs on the frame 20 can never engage those on two trays simultaneously, and no tray can be displaced unless it is directly opposite the opening 14. This gives rise to the necessity or at least the desirability of providing a locking mechanism which will be described below. For adjusting or setting the racks, however, perhaps the simplest device

is that shown herein which consists of extending the shaft 34 of the drum 11 forward, through a front drum 35 if one be employed, and through the front of the housing 2; and providing it with a crank 36 having a handle 37. The tip of the crank constitutes an index 38 which may move over a dial 39 carrying letters as seen in Fig. 2, and if the contents of the various trays contain matter which is indexed under the same letters, it will be obvious that the setting of the index adjusts the racks so that the corresponding tray is brought opposite to the opening 14. This occurs whether the locking mechanism described below is employed or not, and if the invention is used as a file cabinet where it is accessible only to the operator, it may not be necessary to employ the locking mechanism because the operator can not withdraw a tray unless it is directly opposite the opening. It is necessary in all cases, however, that the trays in one rack bear matter lettered A, C, E, et cetera, while the trays in the other bear matter lettered B, D, F, et cetera.

The locking mechanism is best seen in Figs. 1, 3 and 6. On the drum shaft 34 is fixed a toothed wheel 40, and slidably mounted in guides 41 in the main framework is an upright rod 42 having its upper end formed into the shape of a bolt 43 adapted to engage between the teeth on the wheel 40 when any tray 13 is directly opposite the opening 14. The rod 42 also carries a finger or a pair of fingers 44 projecting downward, and standing above notches 45 in the inner side bars of the frames. As shown this rod falls by gravity and the tips of the fingers normally engage the notches and hold the frame in locked position, while the tip of the bolt 43 is disengaged from the wheel 40 on the drum shaft and therefore the setting mechanism is unlocked. As above stated, this lock may be actuated by any suitable means such as a hand lever or plunger, although when the cabinet is for public use I prefer to employ a plunger whose action is controlled by a coin mechanism as set forth below. The hand lever or plunger therefore constitutes the manual controlling means for lifting the rod 42. When it is lifted it first releases or unlocks the frame and then locks the racks against vertical movement.

The operation of so much of the machine as has been described is as follows: Manipulating the crank 36 by its handle 37 until the index 38 stands opposite the letter desired, turns the drum shaft and actuates the setting mechanism to raise one rack and lower the other and bring the corresponding tray opposite the opening 14. The lock-actuating mechanism is then manipulated and the rod 42 rises, its bolt 43 locks the wheel 40 against rotation, and therefore the setting mechanism can no longer be moved. Its fingers 44 disengage the notches 45, and then the operator grasps the handle 23 and draws out the frame 20. The proper pair of lugs 30 on the latter engage the lugs 31 on the tray desired, and the latter is drawn out through the opening 14 into view. If the contents of this tray be subdivided by means of shelves 16 as seen in Fig. 9, they are manipulated as already described. Whether the contents are to be removed, inspected, or added to, as thus far described the operator must hold on to the handle 23 because its release would permit the descent of the weight 28 which would restore the frame 20 to its closed position and carry the tray back into its rack. Any suitable means may be provided, however, for holding the displacing frame 20 in its distended position, and I will describe one such means below.

In the simpler form of machine shown in Figs. 10 and 11, the same framework, housing, setting mechanism, and trays may be employed, but I prefer to use but a single rack 7′ of double height and mount all the trays therein. Cables or chains 9′ run from this rack over drums 10′, and counterbalancing weights 8′ are connected by other cables or chains 9″ with other drums 10″ on the single shaft 34′. The weight is shown in Fig. 10 in section, as being in pieces which may be added as the rack and its trays become heavier. The frame 20′ of the displacing mechanism is here made single, and its lugs engage those on the trays whenever one of the latter comes opposite the opening 14′ as shown in Fig. 11. This simpler type may be provided with the locking mechanism above described, if it is desired to prevent movement of the rack when the displacing mechanism is being actuated, but I do not consider it necessary because as soon as a tray has started forward through the opening 14′ it is impossible to move the rack at all. This simpler form may also be provided with suitable means for retracting the frame 20′ after it has been drawn outward, but I do not consider it necessary. I have shown the front of the housing as provided with a shelf 21′ over which the frame and the selected tray are drawn and upon which they rest when in use. But if the mechanism for restoring these parts to their housed position is employed, some such device as the plunger 46′ indicated in Fig. 11 will be needed to trip said mechanism and release the frame. In Fig. 1 the numeral 46 designates a button projecting through the casing from a swinging lever 47, and the lower end of the lever is connected with a plunger 48 which carries a wedge-shaped lock 49 that stands beneath a shoe 50 at the lower end of the rod 42, and

therefore when the plunger is driven to the rear the wedge raises said shoe on the rod with the result described above. The action of the plunger rod on the block 49 may be controlled by a coin mechanism illustrated in detail on the last sheet of drawings, but it is obvious that no such coin mechanism is needed for the simpler type of the invention shown in Figs. 10 and 11.

The coin mechanism includes a coin chute 51 which may have the usual safety devices such as a magnet 52 for arresting a slug of magnetic material rather than copper, an opening 53 for dropping out under-sized coins, and a shelf 54 at the lower end of the chute and having a narrow opening 55 for dropping disks which are thinner than the proper coin. A wedge-shaped block 49 is slidably mounted on said shelf beneath the shoe 50 of the locking mechanism, and a plunger 48 is connected with its operating knob or button 46 by any suitable mechanism such as the lever 47 described above. The plunger 48 is held in a normally retracted position by any suitable means such as a spring 56, and when projected it passes across the path of the coin at the point 57 and enters a socket 58 in the block 49. Obviously if no coin is present the block is not moved, but if the proper coin rests at 59 on the shelf 54, movement of the plunger will move the block along said shelf, and the wedging shape of the block will cause the rise of the shoe 50. As best seen in Fig. 1, the lever 47 carries the knob or button 46 above the shelf over which the frame 20 is drawn out, and the coin chute 51 is carried up through the frame 20 as seen in Figs. 3 and 4, and its mouth is just under the dial 39 as seen in Fig. 2. With this coin mechanism another lock (or, more properly, a latch) is by preference employed, and this latch is automatically operated by the treadle 3 when the operator steps thereon to place his coin in the chute. The rod 5 described above is forked as shown at 60, and its rear arm 61 passes up through a hole in the shelf 54 and has its tip beveled at 62 and underlying the block 49. The latter is provided with a notch 63 with which said tip may engage when the block is pushed to the rear. The front arm 64 of the fork passes up within the main framework and is itself forked or provided with fingers 65, these fingers underlying the inner side bars 21 and 22 of the frame 20. Near their rear ends said side bars are notched in their lower edges as seen in 66.

The action of this coin-controlled mechanism is as follows: An operator stepping on the treadle 3 raises the fork 60, its tip 62 bears gently upward against the block 49, and its fingers 65 bear gently upward against the inner bars of the frame 20. When he steps on the platform he comes within reach of the setting mechanism, and following instructions he turns the crank 36 until the index 38 points to the letter desired. Now he inserts the coin which, if a proper one, falls to the point 57 and rests at 59 upon the shelf 54. Then he actuates the plunger and the presence of the coin causes the block 49 to move to the rear where it is caught and held by the tip 62 until the operator steps off the platform. Rearward movement of the block raises the rod 42 and unlocks the frame and locks the setting mechanism. The operator now withdraws the frame and the tray he has selected, and when the notches 66 of the frame come over the fingers 65 the latter latch the frame in its withdrawn position and hold it there until he steps off the platform. Having inspected the booklet or done whatever else is permitted by the withdrawal of a tray, if he should step off the platform without restoring the frame to its proper position, the fork 60 falls, its tip 62 releases the block which is immediately restored to the position shown in Fig. 13 by springs 69, the descent of the fingers 65 releases the frame which is restored with its tray by the weights 28, and the withdrawal of the block from beneath the shoe 50 permits the descent of the rod 42 so that its fingers 44 lock the frame and its bolt 43 unlocks the setting mechanism for the two racks.

It will be obvious without further illustration and description that the coin-controlled mechanism and the lock and latch would operate with equal success in the simplified form of cabinet shown in Figs. 10 and 11, but as above stated I would not ordinarily use this mechanism in connection therewith. Also it will be obvious that it is not necessary always to employ all of the details of the coin mechanism. For instance, some or all of the safety devices might be used or not, or might be replaced by others if preferred. I have said that the coin runs down the chute to the point 57, but if the magnet 52 be employed I prefer that one leg shall be longer than the other so as to rest normally upon the bottom of the chute as shown at 72, while the shorter leg stands off the bottom of the chute so that a coin may enter at the point 73. The magnet is held in this position by a yoke 74 which passes around the chute and is connected at 75 with the plunger. When now the coin is dropped in place it comes to rest on the long leg at 72 and stands at the point 73 opposite the short leg, so that if instead of a copper coin it should be a slug of magnetic material, it is attracted by and held against the magnet. The first initial movement of the plunger carries the yoke 74 to the rear and moves the magnet off the chute at the point 72, and if it be a penny that has been dropped into place the same is then re-

leased and falls to the point 57 in Fig. 13. There it rests at 59 on the shelf 54, and further movement of the plunger clamps this penny between the end of the plunger and the front face of the block 49.

The widest latitude must be allowed the owner as to the use of this device. As suggested above, the trays may contain information indexed under the letters of the alphabet, so that any tray and its data becomes accessible to the operator on the deposit of the penny and nothing is really ever put into or taken out from the device by the customer. However, the device becomes a vending machine if the trays are filled with articles which it is intended that the customers shall take out. Assuming that the coin required were a nickel and that the articles in the trays were sandwiches, it is clear that the customer could set the index to the word "Ham" on the dial, drop in his nickel, withdraw a tray containing a ham sandwich, and take out the latter. The device then becomes a vending machine, but it is incumbent upon the operator to refill the trays from time to time. Again, the device may be used strictly as an account or filing cabinet, in which case the operator gains access to a tray and puts something into it; but in that case the coin mechanism would obviously be omitted. These and other uses of the device may necessitate alterations in its general structure, and will doubtless require adaptation of the trays to the purpose for which they are to be used, and one instance of such adaptation is shown in Fig. 9.

What I claim is:

1. In a cabinet, a housing having an opening, a rack movable in the housing past the opening and having guides, and trays on the latter; combined with setting mechanism for adjusting the rack, a toothed wheel forming part of this mechanism, a frame for withdrawing a tray through said opening, a rod having a bolt projecting in one direction and adapted to engage the toothed wheel and a finger projecting in the opposite direction and adapted to engage said rack, and manually operable means for moving the rod to lock the setting mechanism and free the frame.

2. In a cabinet, a housing having a horizontal opening, a counterbalanced rack movable vertically in the housing and having horizontal guides, and trays on the latter adapted to be projected singly through said opening; combined with setting mechanism for adjusting the rack, a toothed wheel forming part of this mechanism, a frame for withdrawing a tray through said opening, the frame having a notch, an upright rod having a bolt projecting in one direction and adapted to engage the toothed wheel and a finger projecting in the opposite direction and adapted to engage said notch, and manually operable means for moving the rod to lock the setting mechanism and free the frame.

3. In a cabinet, a housing having a horizontal opening, a counterbalanced rack movable vertically in the housing and having horizontal guides, and trays on the latter adapted to be projected singly through said opening; combined with a rotary mechanism for adjusting the rack, a toothed wheel forming part of this mechanism, a horizontally sliding frame for withdrawing the trays singly through said opening, the frame having a notch opening upward, a vertically movable rod within said housing having an upwardly projecting bolt beneath said toothed wheel and normally free from it and a downwardly projecting finger normally resting in said notch, and manually operable means for raising said rod, for the purpose set forth.

4. In a cabinet, a housing having a horizontal opening, a counterbalanced rack movable vertically in the housing and having horizontal guides, and trays on the latter adapted to be projected singly through said opening; combined with a rotary mechanism for adjusting the rack, a toothed wheel forming part of this mechanism, a horizontally sliding frame for withdrawing the trays singly through said opening, the frame having notches opening upward and downward, a lock normally engaging the upper notch and adjacent but disengaged from said toothed wheel, manually operable means for lifting the lock to free the frame and lock the setting mechanism, a latch for engaging the lower notch when the frame is withdrawn, and manually operable means for disengaging the latch.

5. In a cabinet, a housing having a horizontal opening, a rack movable vertically in the housing and having horizontal guides, and trays movable on the latter; combined with mechanism for adjusting the rack vertically, a horizontally sliding frame for withdrawing the trays singly through said opening, means for normally housing said frame, a manually operable lock for holding it housed, and an independent manually operable latch for holding it withdrawn.

6. In a cabinet, a housing having an opening, a rack, a series of receptacles movably mounted in said rack, setting mechanism for adjusting the rack in the housing to bring the desired receptacle opposite said opening, and projecting mechanism for moving that receptacle out of the opening; combined with a single device normally disengaged from the setting mechanism and engaged with the projecting mechanism to lock the latter within the housing, manually operable means for moving said device to lock the setting mechanism and free the projecting mechanism, yielding means for holding the

projecting mechanism normally housed, a handle for moving this mechanism when unlocked, and a manually operable latch for holding it in projected position.

7. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having locking devices normally disengaged from the setter and engaged with the projector to hold the latter housed, a wedge-shaped block slidably mounted beneath said rod, and means for the manual movement of said block.

8. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having locking devices normally disengaged from the setter and engaged with the projector to hold the latter housed, a wedge-shaped block slidably mounted beneath said rod, means for the manual movement of said block to raise the rod, yielding means for moving it in the opposite direction to permit the descent of the rod, and a manually operable latch for holding the block against the action of said yielding means.

9. In a cabinet, a housing having an opening, a rack having a series of trays, setting mechanism for adjusting the rack with the desired tray opposite said opening, and projecting mechanism for moving said tray through such opening; combined with locking devices normally disengaged from the setter and engaged with the projector to hold the latter housed, a block movable manually in one direction to move said devices, yielding means for moving the block in the other direction, a latch for holding the block against the action of said yielding means, and a second latch carried by the first for holding the projector withdrawn.

10. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having locking devices normally disengaged from the setter and engaged with the projector to hold the latter housed, a wedge shaped block slidably mounted beneath said rod, a plunger for the manual movement of said block to raise the rod, yielding means for moving it in the opposite direction to permit the descent of the rod, a manually operable latch for holding the block against the action of said yielding means, and a second latch connected with the first for holding the projector withdrawn.

11. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having locking devices normally disengaged from the setter and engaged with the projector to hold the latter housed, a wedge-shaped block slidably mounted beneath said rod, a plunger for the manual movement of said block to raise the rod, yielding means for moving it in the opposite direction to permit the descent of the rod, a treadle, and a rod actuated thereby and having its upper end forked, the block having a notch adapted when the block is moved by the plunger to be engaged by the tip of one fork-arm, and the projector having a notch adapted when said projector is withdrawn to be engaged by the tip of the other fork-arm.

12. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having a bolt normally disengaged from the setter, a wedge-shaped block slidably mounted beneath said rod, a plunger for the manual movement of said block to raise the rod, yielding means for moving it in the opposite direction to permit the descent of the rod, a treadle, and a fork actuated thereby, the block having a notch adapted when the block is moved by the plunger to be engaged by the tip of one fork-arm, and the projector having a notch adapted when said projector is withdrawn to be engaged by the tip of the other fork-arm.

13. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod hav-

ing locking devices normally engaged with the projector to hold the latter housed, a wedge shaped block slidably mounted beneath said rod, a plunger for the manual movement of said block to raise the rod and free the projector, yielding means for moving the block in the opposite direction to permit the descent of the rod, a manually operable latch for holding the block against the action of said yielding means, and a second latch connected with the first for holding the projector withdrawn.

14. In a cabinet, a housing having a horizontal opening in its front and internal vertical guides, a rack movable in the latter, a series of trays movable horizontally in the rack and adapted to be brought singly opposite said opening, setting mechanism for adjusting the rack, and projecting mechanism for withdrawing any tray through said opening; combined with an upright rod having locking devices normally engaged with the projector to hold the latter housed, a wedge-shaped block slidably mounted beneath said rod, a plunger for the manual movement of said block to raise the rod, yielding means for moving the block in the opposite direction to permit the descent of the rod, a treadle, and a fork actuated thereby, the block having a notch adapted when the block is moved by the plunger to be engaged by the tip of one fork-arm, and the projector having a notch adapted when said projector is withdrawn to be engaged by the tip of the other fork-arm.

15. In a file cabinet, a housing having two sets of upright guides and a horizontal opening extending across its front, two racks movable vertically in said sets of guides and each having a plurality of horizontal cleats, trays slidable on said cleats and each having at its rear end a lug projecting laterally beyond its cleat, supporting mechanism connecting and counterbalancing said racks and their trays, and setting mechanism connected with the supporting mechanism, the position of parts being such that a tray in one rack is opposite said opening when a cleat in the other rack is opposite thereto; of projecting mechanism including a pair of connected frames whose side bars are slidable horizontally in said housing, each frame surrounding one rack, lugs on the side bars adapted to engage those on a tray standing within a frame, and means for permitting the manual withdrawal of the projector.

In testimony whereof I affix my signature in presence of two witnesses.

JABEZ D. HARNESBERGER.

Witnesses:

S. TRIBBLE,

ALBERT KEMPER.