April 1, 1958 C. F. WOLTERS 2,829,021

DUAL LOCKING MECHANISM FOR SAFE FILES

Filed Oct. 7, 1955 4 Sheets-Sheet 1

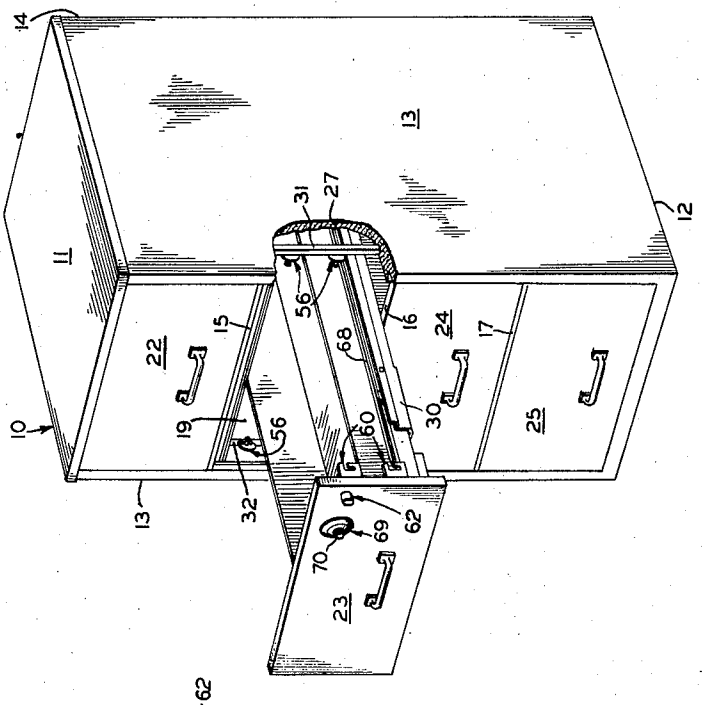


FIG. 1

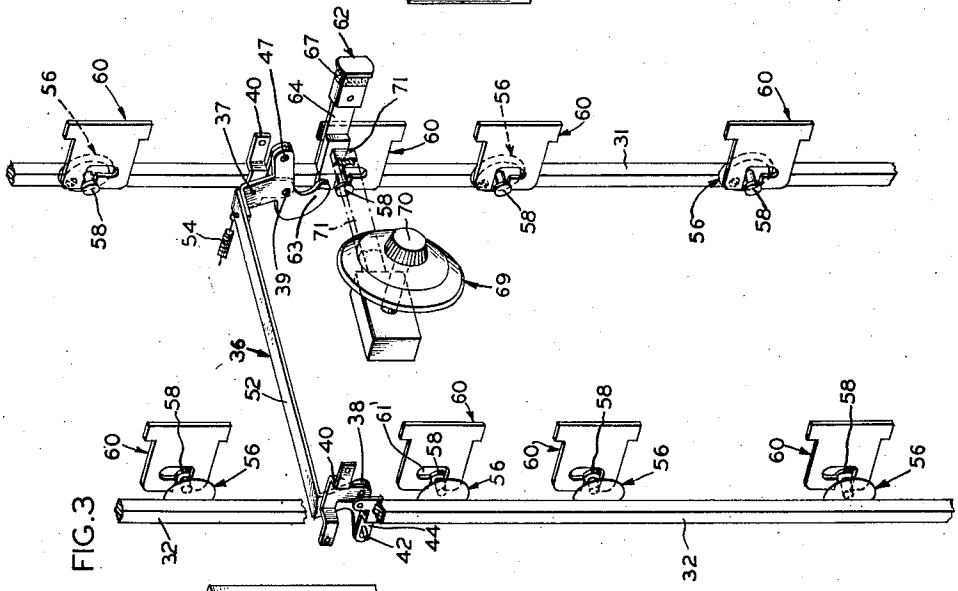


FIG. 3

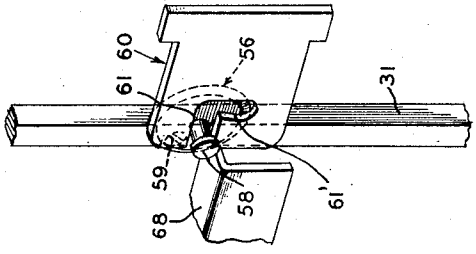


FIG. 4

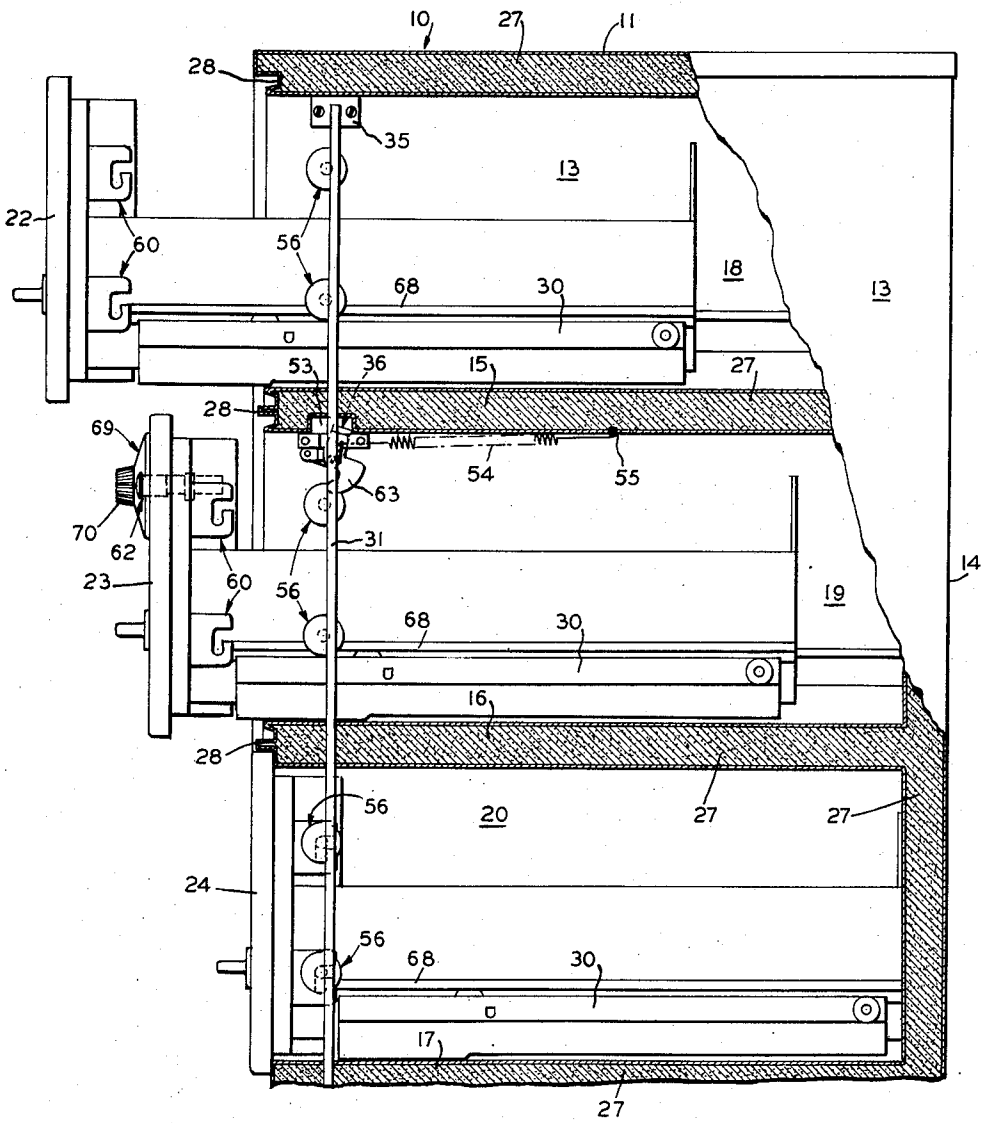
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DUAL LOCKING MECHANISM FOR SAFE FILES

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FIG. 2



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DUAL LOCKING MECHANISM FOR SAFE FILES

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FIG. 5

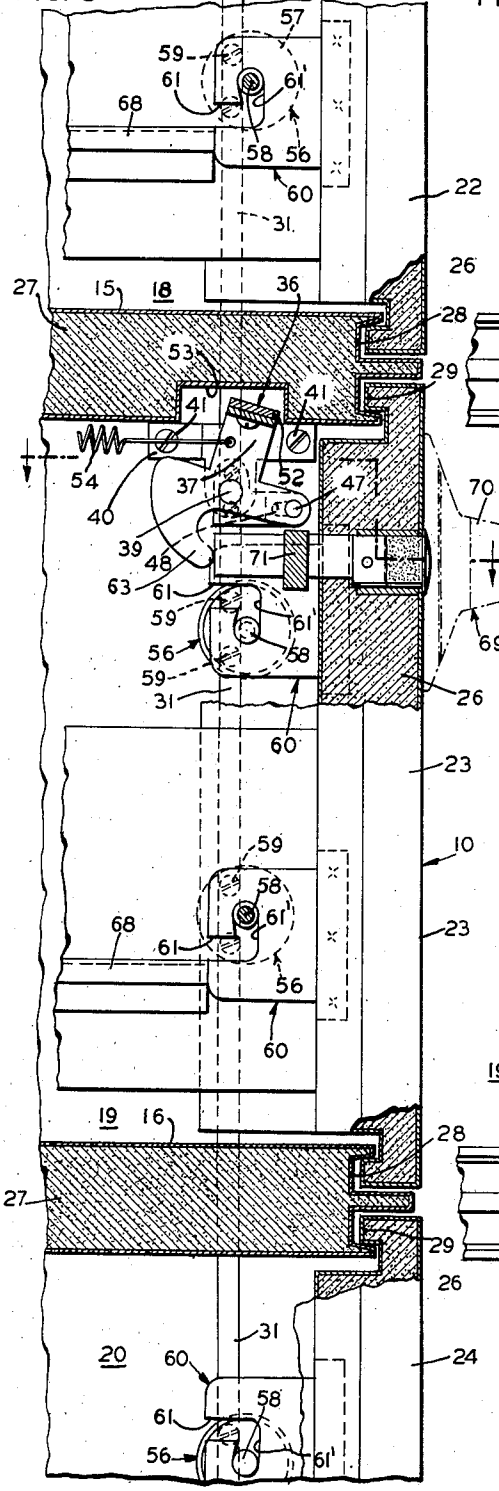
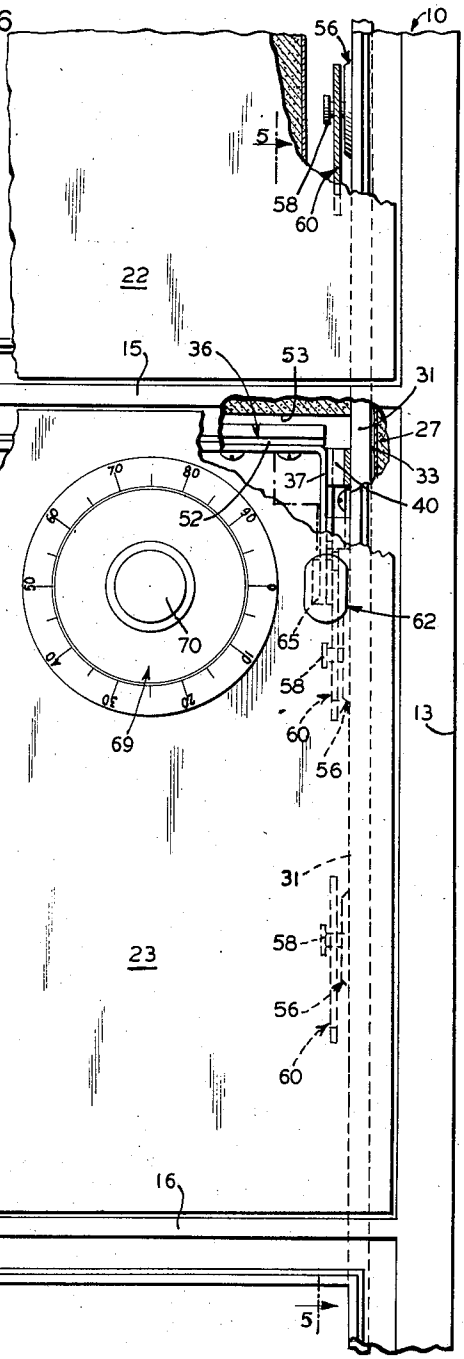


FIG. 6



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DUAL LOCKING MECHANISM FOR SAFE FILES

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FIG. 8

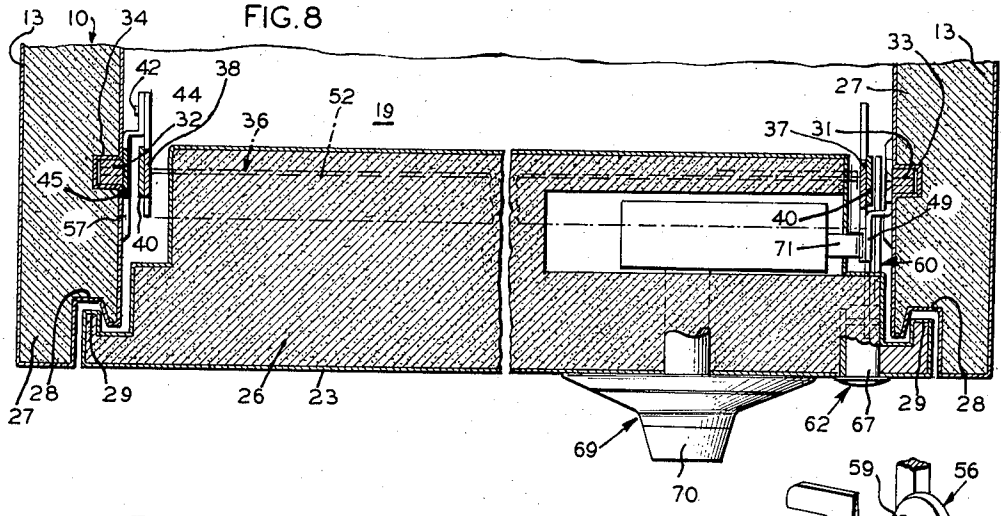


FIG. 7

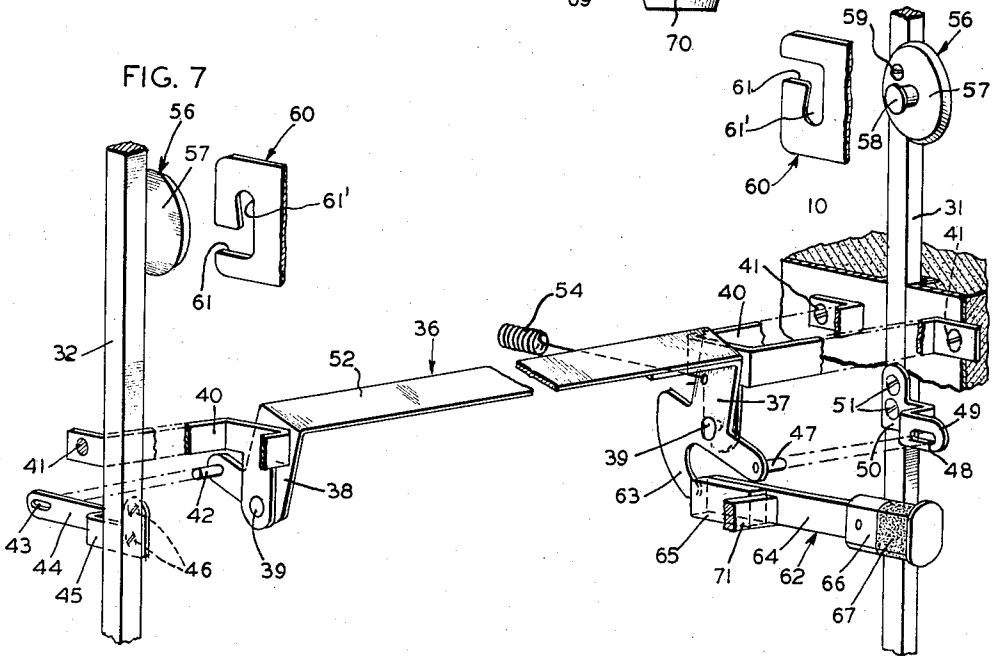
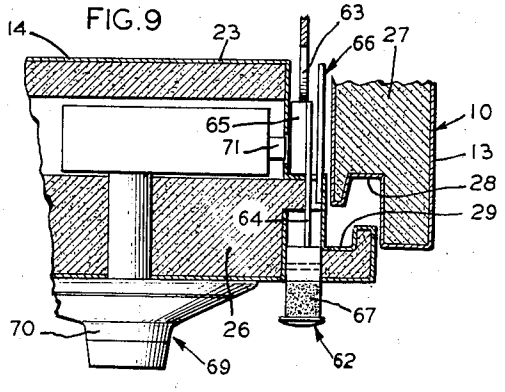


FIG. 9



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DUAL LOCKING MECHANISM FOR SAFE FILES

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Application October 7, 1955, Serial No. 539,142

2 Claims. (Cl. 312—218)

This invention relates to improvements in locking mechanisms for vertical file cabinets and more particularly to fire-resisting safe-files of the type having a metal shell with an inner liner of molded fire-resisting insulation.

As heretofore manufactured, the sliding drawers of safe-files are usually locked on one side only through a combination lock and dead bolt arrangement, and while this conventional and well-known locking arrangement provides a limited amount of protection against unauthorized forcible entry, the time needed for such unauthorized entry to the file is comparatively short.

Another disadvantage of conventional locking mechanisms for safe-files, wherein the drawers are locked on one side only, is that in the event the file is dropped with great force, for example, from one floor to another of a building during a fire, the conventional locking mechanism is apt to be sprung or damaged to such an extent that the drawers are caused to open and the contents are thus destroyed.

A still further disadvantage of locking mechanisms heretofore used on safe-files is that no positive means are provided for visibly indicating whether the drawers are in locked or unlocked condition. In many installations, where large numbers of safe-files are used daily, and where such files must be locked at the close of each day for security or other reasons, considerable time and effort are expended in ascertaining whether the files are locked or unlocked. For example, a visual check of all files may show that all drawers are closed, but this does not insure that the files have been properly locked, and it therefore becomes necessary to manually try each and every file to be sure it is in locked condition.

The present invention contemplates an improved locking mechanism for the drawers of safe-files which will eliminate the above noted objections and disadvantages by providing a dual locking means for simultaneously locking both sides of each drawer in the file, thereby increasing the time necessary for unauthorized entry to the file, and reducing the danger of failure of the locking means by reason of the drawers accidently breaking open in the event the file is dropped with great force. It further contemplates a locking device for safe-files and like furniture having one or more sliding drawers, which is designed so that the locking mechanism on one side of the drawers is counter-balanced by the locking mechanism on the other side of the drawers whereby a minimum pressure on the locking plunger or button is required during the locking of the file. It still further contemplates a dual locking mechanism in which provision is made to visually indicate the condition of the file as to whether it is locked or unlocked, when all the drawers are in closed position, thus eliminating the necessity for manually trying to open the drawers of each and every file.

Various other objects and features of the invention

will become apparent from the following detailed description relating to the accompanying drawings, wherein one specific form of the invention is illustrated.

The essential characteristics of the invention are summarized in the attached claims.

In the drawings,

Fig. 1 is a perspective, partly broken away, of a safe-file embodying the improved dual locking mechanism for the drawers thereof;

Fig. 2 is a vertical front-to-rear partial section of a safe-file showing the drawers and their locking mechanisms in elevation and the body of the file in section, two of the drawers being partially open;

Fig. 3 is an enlarged perspective of the locking rod and associated lock studs and lock plates;

Fig. 4 is an enlarged detail of a lock stud and plate showing a stop flange;

Fig. 5 is a vertical section taken on the line 5—5 of Figure 6;

Fig. 6 is a partial front elevation of the device with portions broken away;

Fig. 7 is an enlarged partial perspective of the lock rods and the actuating mechanism therefor;

Fig. 8 is a horizontal section taken through the section line shown in Figure 5; and

Fig. 9 is a partial horizontal section similar to the right side of Figure 8 showing the barrel portion in its forward visible position.

In the accompanying drawings, one application of the invention is shown embodied in the well-known Remington Rand fire-resisting safe-file, but it will be understood that the invention may be applied equally well to other well known filing cabinets having a plurality of sliding drawers.

The drawings have been simplified to illustrate only those portions of a safe-file as are necessary to a complete understanding of the invention.

Referring now to the constructional details of the invention, 10 generally designates a fire-resisting cabinet or safe which includes the usual top, bottom, side and rear walls, 11, 12, 13, and 14 and three horizontal partitions 15, 16, and 17 forming four drawer compartments 18, 19, 20, and 21. Mounted for sliding movement within the four compartments are four drawers 22, 23, 24, and 25 respectively, and each drawer has the conventional insulated front head 26. The walls of the cabinet 10 and the partitions mentioned preferably comprise a metal casing or shell which is filled with suitable insulating material or liner 27 as is well known in the construction of fire-resisting cabinets. The framed openings of the compartments each have conventional stepped jambs 28 for receiving the complementary shaped stepped margins 29 of the drawer heads.

The drawers are each mounted for sliding movement into and out of their associated compartments upon the conventional and well-known drawer suspensions 30.

Referring now to the detailed description of the improved dual locking mechanism for the sliding drawers, with particular reference to Figs. 5, 6, and 7, 31 and 32 designate a pair of vertically movable locking rods which are slidably mounted within shallow channels 33 and 34 formed on the inner faces of the side walls of the cabinet. Each locking rod is suitably retained for vertical sliding movement within its channel by a pair of bracket plates such as 35 secured to the side walls as shown in Fig. 2.

According to the present invention, means are provided for simultaneously moving the locking rods in opposite directions when locking or unlocking the drawers. This means for moving the locking rods in opposite directions is preferably located in the compartment of the second drawer compartment 19 and comprises a U-shaped

bail 36 having parallel leg portions 37 and 38 which are pivoted at 39 to a pair of bracket plates 40 which are secured to the inner surface of the side walls of the cabinet in any convenient manner such as by screws 41. As clearly shown in Fig. 7, the left hand leg 38 of the bail 36 carries an outwardly projecting pin 42 which is disposed rearwardly of the pivot 39. This pin projects through an elongate slot 43 formed in the rearwardly extending arm 44 of an offset member 45 which is suitably secured to the left hand locking rod 32 by screws 46. Similarly, the right hand leg portion 37 of the bail 36 carries an outwardly projecting pin 47 located forwardly of the pivot 39 and projecting through an elongated slot 48 in the forwardly extending arm 49 of an offset member 50 secured to the right hand locking rod 31 by screws 51.

The horizontal portion 52 of the bail 36 extends upwardly into a transverse clearance groove 53 formed on the underface of the partition 15. The bail 36 is normally urged clockwise, as in Fig. 2, or to its unlocked position by a spring 54 the forward end of which is anchored to the leg portion 37 above the pivot 39 and the other end of which is anchored in a hole drilled in the bottom surface of the partition 15 as at 55. Clockwise rotation of bail 36, as in Fig. 2, under the influence of spring 54, is limited when the rear edge of the horizontal portion 52 of the bail 36 strikes the rear vertical wall of the transverse clearance groove 53. When the bail is held in its unlocked position by spring 54 (Fig. 2) the locking rods 31 and 32 are also held in their unlocked position through the cooperation of the pins 42 and 47 and the offset members 45 and 50, as will be presently explained.

Referring now to Figs. 3 and 7, it will be observed that locking rods 31 and 32 are each provided with a plurality of spaced locking elements 56 each of which comprises a circular disc portion 57 from which projects a headed stud 58. These elements 56 are attached to the locking rods by screws 59 in such a relation that approximately half of each disc projects forwardly of its respective locking rod and is in sliding contact with the inner face of the side walls 13. In the embodiment shown there are two pairs of discs 57 for each of the drawers, one pair connected to each locking rod as shown in Fig. 2.

Each of the drawers are provided with two pairs of locking plates 60 which are adapted to cooperate with their corresponding pairs of locking elements in a manner to be presently explained. The locking plates 60 are welded or otherwise securely attached to the insulated drawer front walls (Fig. 2) and each such plate is provided with a horizontal slot 61 which connects with a vertical slot 61'. All of these plates 60 are identical in construction, but since the locking rods 31 and 32 move in opposite directions for the purpose of counter-balancing one another, the plates 60 that cooperate with the locking rod 32 are installed on the drawers so that the vertical slots 61' extend upwardly from the horizontal slots 61, whereas the plates 60 that cooperate with the locking rod 31 are installed on the drawers so that their vertical slots 61' extend downwardly from the horizontal slots 61 as will be clear from Fig. 7.

Movement of bail 36 and the locking rods 31 and 32 to locked position is accomplished through a manually operable plunger 62 which is mounted for horizontal sliding movement within the insulated front wall of the drawer 23. This plunger cooperates with a downwardly curved extension 63 on the right hand leg 37 of the bail 36 and is therefore located near the right hand side of drawer 23 as best illustrated in Fig. 6. As shown the plunger 62 comprises a short bar section 64 having a block 65 secured to the side of its inner end and a barrel-like portion 66 suitably secured to its outer end. That part of the barrel portion 66 which normally projects forward of the front wall of the drawer 23 is preferably painted red as indicated at 67 for use as a visual indicator in a manner and for reasons presently to be described. The construction is such that when the drawer 23 is fully closed the rear end of block 65 engages the curved extension 63 of the leg 37 of the bail 36, thus holding the plunger 62 in its forward or unlocked position under the influence of spring 54. Under this condition, the painted part 67 of the barrel portion 66 is exposed to visually indicate that the file is in an unlocked condition.

It will now be understood that when all of the sliding drawers are pushed in to a fully closed position within their respective compartments of the cabinets, plunger 62 may then be pushed inwardly to rock bail 36 on its pivots 39 against the tension of spring 54. This rocking of the bail 36 in turn moves the locking rods 31 and 32 to a locked position and the studs 58 will therefore be moved into the vertical slots 61' of their respective locking plates 60 or to the position shown in Fig. 5. However, if any of the drawers are not fully closed, the locking rods 31 and 32 cannot be moved to locking position. This is prevented by providing each of the drawers with a longitudinally extending horizontally disposed stop flange 68 which lies beneath the studs 58 when the drawers are not in closed position, thus blocking the locking rods against vertical movement.

It will further be observed that whenever bail 36 is held in its unlocked position by the spring 54, as shown in Fig. 7, all the studs 58 on the locking elements 56 will be in horizontal alinement with the horizontal slots 61 of the locking plates 60. This permits each stud 58 to clear its stop flange 68 as it enters slot 61 in its corresponding locking plate 60 when the drawer is closed.

Drawer 23 is fitted with any conventional combination lock which is generally indicated as 69 and the lock may be provided with the usual spring dial knob 70 and locking bolt 71. The combination lock 69 is mounted within the front wall of drawer 23 adjacent the plunger 62 so that upon spinning the dial knob 70, the locking bolt 71 is caused to move into locking position in front of the forward end of block 65 on the plunger 62 which is the position shown in Fig. 7.

Operation

From the foregoing description it will now be clear that in order to lock the drawers, it is necessary that all drawers be fully closed. Assuming therefore that all four drawers are fully closed, all that is necessary to lock the file is to push inwardly on the plunger 62 against the tension of spring 54 to rock the bail 36 which in turn moves the right hand lock rod 31 downwardly to carry the studs 58 into engagement with the vertical slots 61' of the locking plates 60. Rocking the bail simultaneously moves the left hand lock rod 32 upwardly to engage the studs 58 with the vertical slots 61' in its locking plate 60. It will be clear from Figs. 5 and 8 that when the plunger 62 is positioned inwardly to locking position, the painted portion 67 of the barrel portion 66 will no longer be exposed. However, unless the dial knob 70 of the combination lock 69 is spun while holding the plunger 62 inwardly to position the locking bolt 71 in front of the block 65, the spring 54 will return the plunger 62 to its unlocked position through the intermediary of the curved extension 63 and will move the locking rods 31 and 32 to their unlocked positions, withdrawing the studs 58 from the vertical slots 61' in the locking plates 60. In other words, it is impossible to hold the plunger 62 and locking rods 31 and 32 in locked position without moving the locking bolt 71 of the combination lock in front of the block 65. Moreover, should any drawer be partly open, its stop member 68 beneath the studs 58 will prevent the plunger 62 from being pushed inwardly to locked position. It will now be appreciated that there is no need to manually try to open the file drawers to determine whether or not they are in locked condition, since the locked condition of the file may be determined by whether the painted portion 67 of the

plunger is exposed or concealed. The construction of the locking mechanism is such that the only conditions under which the plunger **62** can be held in its locked position is by having all four drawers closed and the combination lock thrown to prevent the spring **54** from returning the plunger to unlocked position. To unlock the file it is merely necessary to properly operate the combination lock to withdraw the locking bolt **71** and free the block **65** on the plunger, whereupon the spring **54** will rock the bail **36** so as to shift the locking rods **31** and **32** to their unlocked position whereby studs 58 are removed from the vertical slots **61'** allowing each and all drawers to be opened at will.

While I have described what I consider to be a highly desirable embodiment of my invention, it is obvious that many changes in form can be made without departing from the invention, and I, therefore, do not limit myself to the exact form herein shown and described, nor to anything less than the whole of my invention, as hereinbefore set forth and as hereinafter claimed.

What I claim is:

1. In a device of the class described having a casing with drawer compartments and drawers slidable in said compartments, the invention which comprises slidable lock rods disposed for vertical movement at opposite sides of the casing, projecting studs on the rods and cooperating plates on the drawers, said plates having L-shaped slots therein, the studs lying in a horizontal portion of the slots when the drawers are closed, and manually operable means to move the rods in opposite directions and dispose the studs in the vertical portions of said slots.

2. The invention of claim 1 in which the manually operable means include a rockable bail connected at its ends to the respective lock rods, a spring means to hold the bail in a normal unlocked position, and a manually operable plunger in the front wall of one of the drawers to engage said bail and rock it, whereby the lock rods are moved to locking position.

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