L. DONATHAN.

LOCKING MEANS.

APPLICATION FILED MAR. 26, 1918.

1,280,183. Patented Oct. 1, 1918.

Fig. 1.

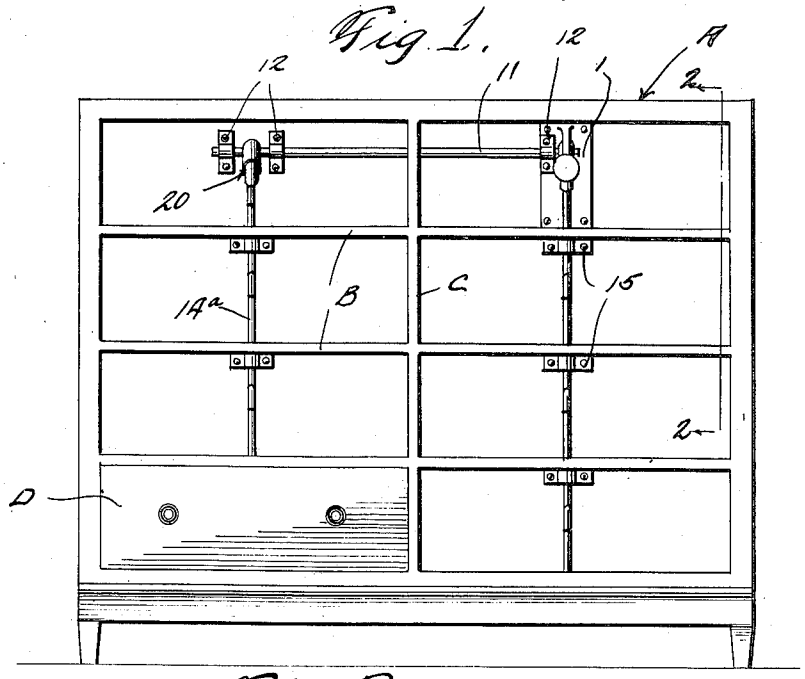
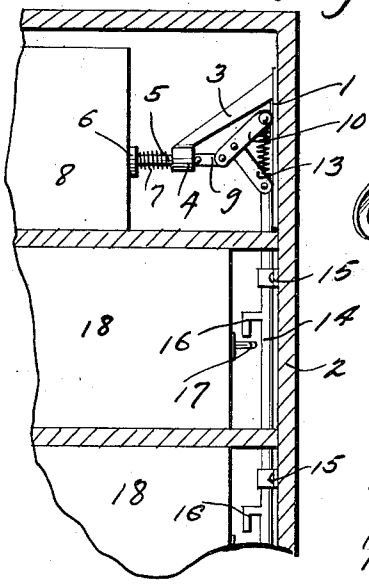


Fig. 2.



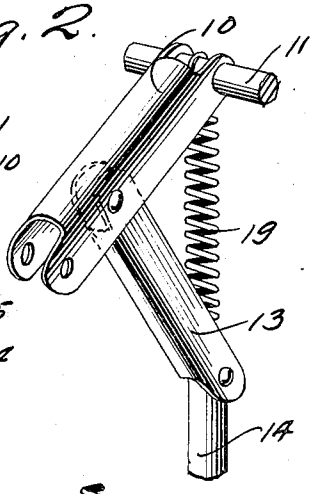
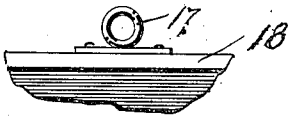


Fig. 3.

Fig. 4.



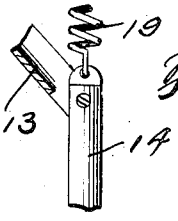


Fig. 5.

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LOCKING MEANS.

1,280,183. Specification of Letters Patent. Patented Oct. 1, 1918.

Application filed March 26, 1918. Serial No. 224,855.

To all whom it may concern:

Be it known that I, LUTHER DONATHAN, a citizen of the United States, residing at Sulphur, in the county of Murray and State of Oklahoma, have invented certain new and useful Improvements in Locking Means, of which the following is a specification.

This invention relates to locking means, and more particularly to means for simultaneously locking or securing a plurality of slidable members, such as the drawers of desks, and similar pieces of furniture.

One of the main objects of the invention is to provide a locking mechanism of the character stated of simple construction and operation which may be readily applied to a cabinet or desk of standard construction. A further object is to provide a locking mechanism which is controlled by one drawer and may be operated thereby so as to simultaneously lock the other drawers of the series of the desk or cabinet. Another object is to provide a locking mechanism which, when the control drawer is moved outwardly a predetermined distance, will automatically release the other drawers thus permitting the same to be readily operated in the usual manner. Further objects will appear from the detailed description.

In the drawings:

Figure 1 is a front view of a cabinet having a locking mechanism constructed in accordance with my invention applied, the drawers of the cabinet being removed to show more clearly the arrangement and construction of the locking means.

Fig. 2 is a fragmentary sectional view taken substantially on line 2—2 of Fig. 1,

Fig. 3 is a detail perspective of the control toggle lever and spring,

Fig. 4 is a fragmentary detail of one of the eyes,

Fig. 5 is a fragmentary detail of the connections between the releasing spring and the locking bar.

The cabinet A may be of usual or any preferred construction and is provided with the horizontal and vertical bars B and C, respectively, which form the compartments which slidably receive the drawers D of the usual construction. In the form of cabinet illustrated, I have shown two vertical series of compartments which receive the drawers, though it will be evident that the drawers or slidable members may be arranged in as many series or in any manner desired without affecting the operation of the invention.

A supporting plate 1 is secured on the inner face of back 2 of the cabinet adjacent the upper edge thereof and substantially at the center of one of the uppermost drawer receiving compartments. This plate is provided with a downwardly and forwardly inclined bracket arm 3 which is provided at its lower end with a forwardly directed integral sleeve 4 which is horizontally disposed. The sleeve slidably receives a plunger rod 5 provided at its forward end with a disk-like head 6. This rod is normally held in extended position by an expansion coil spring 7 mounted about the same and confined between head 6 and sleeve 4. Rod 5 is adapted to be engaged by a drawer 8 which is slidable in the uppermost compartment of the right hand series, as viewed in Fig. 1 of the drawings, so as to be forced inwardly through sleeve 4 against the action of spring 7.

The inner end of rod 5 is connected by a link 9 to the lower end of an arm 10 the upper end of which is rigidly secured on a rock shaft 11 rockably supported in bearing straps 12 which are secured to the back of the cabinet and to plate 1. An arm 13 is pivotally secured at its lower end to a locking bar 14 which is vertically slidable in bearing straps 15 secured to the back 2 of the cabinet. The upper end of arm 13 is pivotally secured to arm 10 intermediate the shaft 11 and link 9. The two arms 10 and 13 constitute a toggle lever which, when straightened, acts to force the locking bar 14 downwardly in the bearing straps 15.

Bar 14 is provided with suitably spaced downwardly directed rectangular or L-shaped locking fingers 16 which are adapted to engage into coöperating eyes 17 which are secured to the backs of the drawers 18 slidable in the compartments of the cabinet A beneath drawer 8. By pushing draw-

ers 18 into their innermost positions within the cabinet, so as to bring the eyes 17 into alinement with each other and with the vertical arms of fingers 16, and then forcing the uppermost drawer 8 into its innermost position so as to straighten the toggle lever composed of arms 10 and 13 thus forcing locking bar 14 downwardly, the fingers 16 are caused to engage into eyes 17 so as to positively lock drawers 18 against outward movement. The uppermost drawer 8 thus forms a control member by means of which the drawers of the whole series may be readily locked in the cabinet.

A tension coil spring 19 is secured at its upper end to shaft 11, and at its lower end to the upper end of locking bar 14. This spring acts to normally raise the locking bar into inoperative position so as to cause folding of the toggle lever formed of arms 10 and 13. This also results in rocking shaft 11 upwardly and rearwardly A locking bar 14ª similar to bar 14 is provided in back of the other vertical series of drawers and serves to lock them against movement in the same manner as the drawers 18 are secured, when depressed. This bar is connected to shaft 11, at its upper end, by means of a toggle lever indicated generally by 20 in the same manner as the bar 14 is connected to the shaft. By this arrangement, all of the drawers of the two series may be simultaneously secured in the cabinet A, and the locking means for these members is controlled by the drawer 8 so that, by first moving all of the drawers 18 into their innermost or closed position, and then forcing the drawer 8 into its innermost position and locking it in this position, all of the drawers of the cabinet are locked. By releasing drawer 8 and moving it outward a proper distance, the tension spring 19 and expansion spring 7 act to cause upward and rearward movement of shaft 11, thus moving the two locking bars into inoperative position and releasing the drawers.

This locking mechanism may be readily applied to cabinets and other articles of furniture of standard construction without necessitating any alteration whatever in the construction of the particular article to which it is applied, and for this reason, it is deemed very practical and efficient. The locking mechanism itself has been so constructed as to eliminate all unnecessary elements and to avoid unnecessary complication, and may, therefore, be produced at very small cost.

It will be evident that there may be slight changes made in the construction and arrangement of the details of my invention without departing from the field and scope of the same, and I intend to include all such variations, as fall within the scope of the appended claims, in this application, in which a preferred form only of my invention is disclosed.

What I claim is:

1. In locking means, a cabinet, a vertical series of drawers slidably mounted therein, each provided at its inner end with an inwardly projecting eye, a locking bar slidably mounted on the inner face of the back of said cabinet and provided with downwardly directed locking fingers adapted to engage into said eyes when the bar is depressed, a toggle lever pivotally secured at its lower end to the upper end of said bar and at its upper end to the back of the cabinet, means for extending said lever so as to move the locking bar into operative position when one of the drawers is moved inwardly a predetermined distance, and means adapted to raise the locking bar into inoperative position when said drawer is moved outwardly a predetermined distance.

2. In locking means, a cabinet, a vertical series of drawers slidably mounted therein, each of said drawers being provided on its inner end with an inwardly directed eye, a locking bar slidably mounted on the inner face of the cabinet and provided with a plurality of locking fingers adapted to engage into said eyes when the bar is depressed, a toggle lever pivotally secured at one end to the upper end of said bar and at the other end to the back of said cabinet, a horizontal plunger rod slidably supported in position to be engaged by the inner end of one of said drawers and having its inner end connected to said toggle lever adjacent the joint thereof so as to cause straightening of the toggle lever and depressing of the locking bar when the plunger is forced inwardly toward the back of the cabinet, and means for normally forcing said plunger outwardly so as to cause folding of the toggle lever and raising of the locking bar into inoperative position.

3. In locking means, a cabinet, two vertical series of drawers slidably mounted therein, a shaft rockably mounted on the inner face of the back of said cabinet adjacent the top thereof, the drawers of both series being provided at their inner ends with inwardly projecting eyes, a bar slidably mounted on the inner face of said cabinet for vertical movement adjacent the inner ends of one series of drawers and provided with a plurality of spaced locking fingers adapted to engage into said eyes when the bar is in depressed position, means for normally holding said bar in raised position, a toggle lever secured at its upper end to said shaft and pivotally connecting at its lower end to said locking bar, means engageable

by one of the drawers for extending said lever so as to lower the bar when said drawer is in its innermost position, a bar mounted in back of the other series of drawers and having a plurality of locking fingers adapted to engage into the eyes carried thereby, and connections between said locking bar and the shaft for raising and lowering said bar when the shaft is rocked in accordance with the movement of the first mentioned locking bar.

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

LUTHER DONATHAN.

Witnesses:
INIS HALL,
WILLIAM W. SAYLES.