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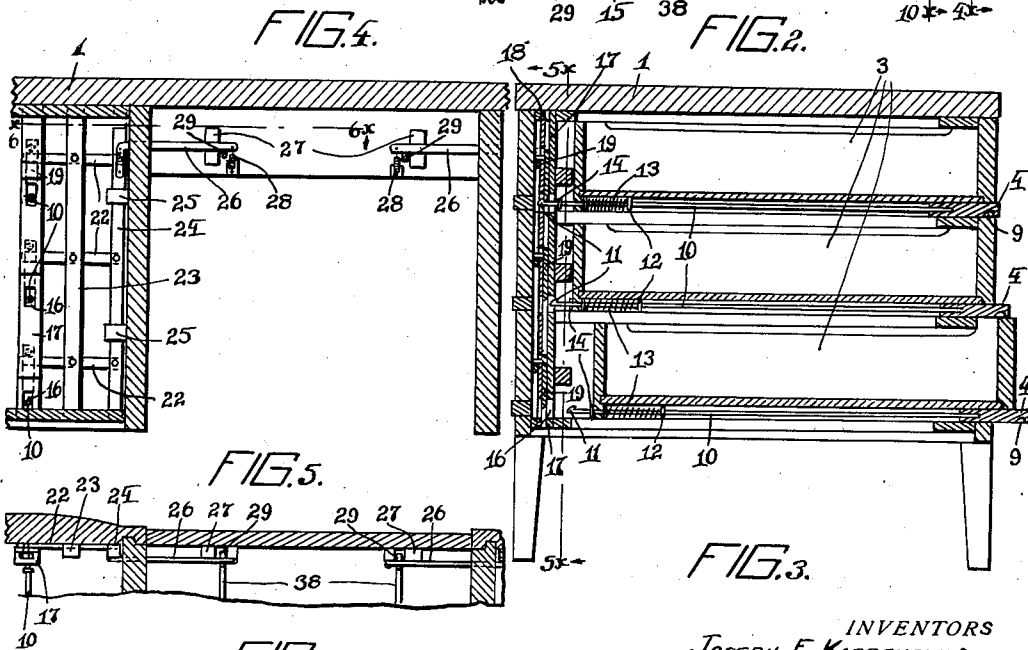
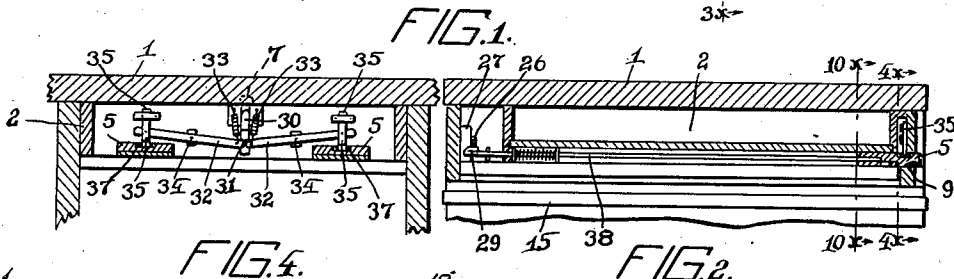
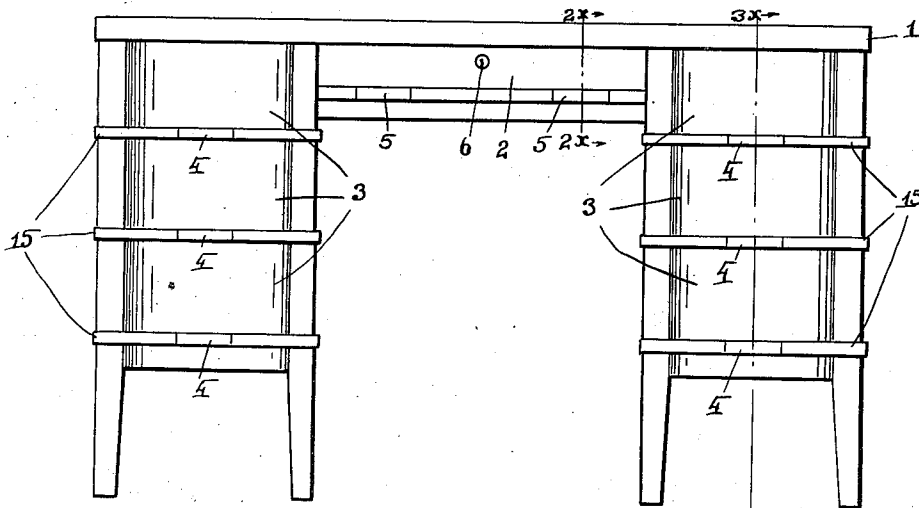
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2,094,895

CONCEALED DRAWER HANDLE LOCKING DEVICE

Filed May 19, 1936

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

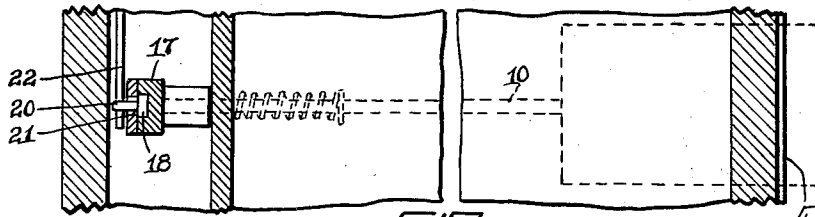


FIG. 7.

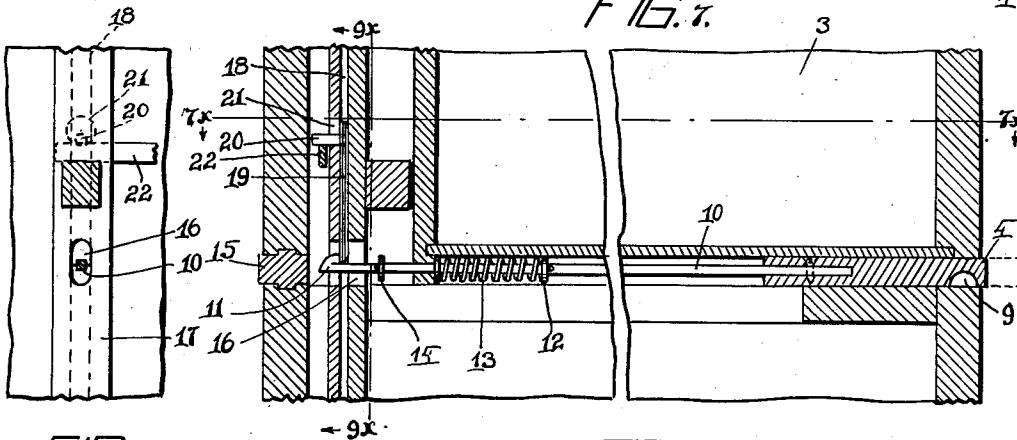


FIG. 9.

FIG. 8.

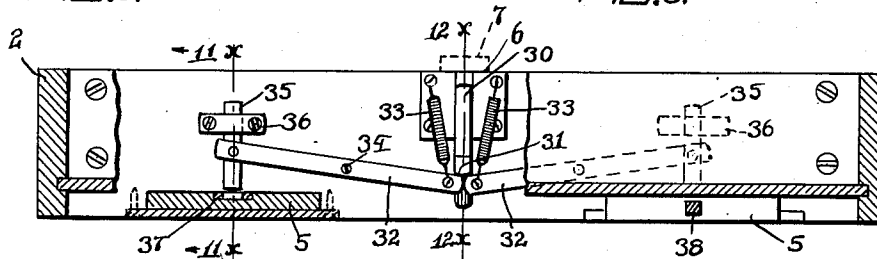


FIG. 10.

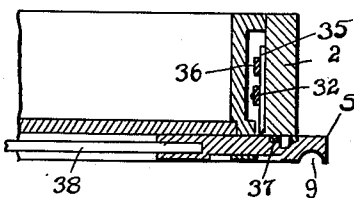


FIG. 11.

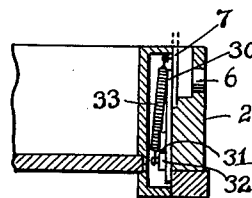


FIG. 12.

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2,094,895

CONCEALED DRAWER HANDLE LOCKING
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Application May 19, 1936, Serial No. 80,536

7 Claims. (Cl. 45—94)

This invention relates to locking means for drawers for use in desks, cabinets etc. and more particularly to a unitary locking mechanism for controlling a number of drawers.

5 With this in view, one object of the invention is to provide each drawer with a concealable handle for the operation of the drawer and the control of the locking mechanism of the drawer.

10 A further object of this invention is to provide a novel form of locking mechanism by means of which the unlocking of all the drawers and the exposure of the handles for the opening of the drawers is simultaneously effected by a single lock which also serves as the locking means of one of
15 the drawers, while the locking operation on the remaining drawer is effected by the handle of the individually locked drawer in combination with their own handles.

20 Another object of this invention is to combine the locking mechanism with the handles of the drawers in such a manner that the concealment of each handle will effect the locking of the drawer operated by the handle.

25 These and other objects and attendant advantages of the invention will become more clearly apparent from the detailed description which follows and more particularly the claims appended thereto, reference being had to the accompanying drawings in which

30 Figure 1 is a front elevation of a desk with the novel locking mechanism embodied therein.

Figure 2 is a cross section of the desk taken on the line 2x—2x of Figure 1.

35 Figure 3 is a cross section of the desk taken on the line 3x—3x of Figure 1.

Figure 4 is a section taken on the line 4x—4x of Figure 2.

Figure 5 is a section taken on the line 5x—5x of Figure 3.

40 Figure 6 is a horizontal section taken on the line 6x—6x of Figure 5.

Figure 7 is an enlarged horizontal sectional view of a portion of the desk and a drawer, the section being taken on the line 7x—7x of Figure 8.

45 Figure 8 is an enlarged vertical sectional view of a portion of the desk and a drawer taken on the line 3x—3x of Figure 1.

Figure 9 is a sectional view taken on the line 9x—9x of Figure 8.

50 Figure 10 is a sectional view taken on the line 10x—10x with a portion of the lock cover broken away.

55 Figure 11 is a sectional view taken on the line 11x—11x of Figure 10.

Figure 12 is a sectional view taken on the line 12x—12x of Figure 10.

In the several figures of the drawings like reference numerals indicate like parts.

The locking mechanism and its combination 5 with the handles of the drawers of a desk or cabinet forming the subject matter of our invention is so constructed that the handle of each drawer is concealed in the front thereof while the drawer is locked and there is no need for a 10 handle. In unlocking the drawers however the handles thereof are released and automatically appear to permit the drawers to be pulled out thereby. The drawers then stay unlocked and may be moved in and out by means of their 15 handle without affecting the locking mechanism until a single key operated master lock is operated to lock one of the drawers and set the locking mechanism for the other drawers. The 20 drawers however remain unlocked and are free to be moved in and out by means of their handles until each drawer is separately locked by forcing its handle into the front of the drawer into a concealed position therein. The position of the 25 handles of the drawers at the front of the desk thus reveal which of the drawers are locked or unlocked. Furthermore if it is desired to lock some of the drawers and allow others to remain unlocked it may be done by the operation of the master lock and the concealment of the handles 30 of the drawers that are to be locked and this will leave the remaining drawers unlocked and free to be moved in and out by means of their handles until each exposed handle of the remaining un- 35 locked drawers is separately moved into its concealed position. In this way the accidental closing of any of the drawers will not lock the drawer or affect a locking operation of the remaining drawers and each drawer except the one controlled by the master lock can only be locked by 40 the movement of its handle from an exposed to a concealed position on the drawer.

The combined locking and drawer handling mechanism is illustrated as applied to a desk having a top 1, a central drawer 2 and the side 45 drawers 3, 3. The drawers are suitably mounted to slide in the frame work on the desk to permit their ready movement in and out therefrom. Each of the side drawers 3 is provided with a single concealable handle 4 and the central 50 drawer 2 is provided with a pair of concealable handles 5, 5. In addition to the pair of handles the central drawer is also provided with the key operated master lock 6 which may be any one of the well known type of locks in which the turn- 55

ing of a key moves the locking bolt 7 into and out of locking engagement with the top of the desk. The lock 6 is centrally mounted in the front of the drawer and the handles 5, 5 are located to either side thereof and comprise short and flat members which are slidably mounted in the front and the bottom of the drawer as illustrated in Figures 1, 2, 7 and 8. The under side of each of these members, near the forward end thereof, has a handle groove 9. These grooves are adapted to have the ends of the fingers engage therein in order to pull and open the drawer when unlocked. As illustrated in Figures 2, 3 and 8 the handle groove 9 is located in each handle so that when the drawer is locked this groove is concealed in the bottom of the drawer and is only exposed when the handle is released and projects from the front of the drawer after the locking mechanism is unlocked.

Each handle member has the end of a locking rod 10 suitably anchored therein and this locking rod extends along the under side of the drawer and passes thru the back thereof to the rear of the drawer where a detent 11 is formed on the rod. At a point intermediate the back of the drawer and the handle member 4 is held a washer 12 and between this washer and the back of the drawer surrounding the locking rod 10 is interposed the coil spring 13. When the handle members 3 and 5 are in their concealed position the spring 13 is compressed so that when the locking mechanism is unlocked, as will hereinafter be described, the handle members are moved into their exposed operative position and held in this position by the expansion of the springs 13. A washer 14, carried by each locking rod at the rear of the drawer and normally spaced therefrom serves as the stop for the movement of the locking rod by the spring 13 and limits the distance the handle members 3 or 5 may project out of the front of the drawer for the opening of the drawer.

In locking the handle member and with it the drawer which carries it, the handle member is pushed into the front of the drawer until its outer end is flush with the molding 15 which surrounds the desk below each drawer or extends the full width of the drawer as is the case in the central drawer. In this way the outer end of each handle member blends in with the molding when its drawer is locked and the drawer appears as if no handle were provided thereon. In pushing the handle into the concealed locked position the latch end 11 of the locking rod 10 moves into one of the openings 16, 16 which extend thru the stationary upright 17 spacedly mounted from the rear of the desk. In this upright is provided a vertical duct 18 and in this duct are mounted the bolts 19, one for each of the detents 11. Each bolt carries a pin 20 which extends thru an opening 21 in the back of the upright 17 to rest on top of the end of a swinging lever arm 22 by means of which the bolt is raised or lowered. The movement of each bolt is restricted by the top and bottom of the opening 21 thru which the pin 20 of the bolt projects.

The lever arms 20 to which the bolts 19 are connected, are mounted to swing on the stationary upright 23 mounted to one side of the upright 17 parallel thereto. From the upright 23 the lever arms project to and pivotally engage the vertically movable upright 24 which is mounted to slide in the bearings 25, 25. This latter upright in turn is provided with an arm

26 which extends thru the side of the desk behind the central drawer thereof where it rests against the bearing block 27. A spring 28 is attached to the end of the arm 26 and suitably anchored to the rear of the desk so as to normally hold the arm and with it the vertically movable upright 24 in its lowermost position. In this position the lever arms 22, which connect the upright 24 with the individual bolts 19, hold these bolts in an elevated position out of engagement with the detents 11 of the locking rods. The side drawers, controlled by the position of their handles 4, 4, are thus free to move in and out as long as the bolts 19 are held elevated in the upright 17 as above pointed out.

A locking position of the bolts 19 is brought about by moving the handle 5 of the central drawer 2 into its concealed locking position. This movement of the handle member 5 causes the cam 29 at the end of its locking rod 38 to engage under and raise the arm 26 and with it the upright 24 so that all of the lever arms 22 are rocked thereby to have their outer free ends lowered and with it the pins 20 which rest thereon. The bolts 19, which carry these pins, are thus lowered in the upright 17 into the position illustrated in Figures 5, 8 and 9. In this position the locking bolts 19 engage behind any of the detents 11 which are forced into the openings 16 and hold the drawer which carries this particular detent. However, unless the handle of a drawer is moved into its concealed position so as to force its detent 11 into the upright 17 for engagement by a bolt 19 as above described, the drawers remain unlocked and are free to be moved in and out of the desk. But when it is desired to lock one or all of the side drawers after the middle drawer is locked, its handle member 4 is simply forced in and this causes the detent 11 at the end of its locking rod to engage under its bolt 19 to raise it and then allow it to drop back behind the detent to hold the locking rod and with it the drawer handle and drawer in a locked position.

The handle members 5, 5 of the middle drawer 2 are controlled by the master lock 6 and the mechanism for this purpose is illustrated in Figures 4, 10, 11 and 12. The master lock 6, as pointed out above, may be any one of suitable locks operated by a key for the purpose of moving the locking bolt 7 into and out of its locking position. The lock is suitably set into the front of the middle drawer 2 so that its bolt 7 can move into locking engagement with the top 1 of the desk. To the face of the bolt 7 is suitably fastened an auxiliary bolt 30 so as to move therewith. This auxiliary bolt is provided with a shoulder 31 against which the ends of the levers 32, 32 are held by means of the springs 33, 33. The levers 32 are pivoted at 34 and their outer ends have attached thereto the bolts 35. The latter are mounted to slide in suitable guides 36 so as to provide a substantially vertical movement for them and cause its lower end to move in and out of the opening in the locking plate 37 carried by the handle members 4 to lock or unlock these handles for the operation of the locking mechanism as above pointed out.

The locking rods 38 of the handle members 5 are mounted in the same manner as the locking rods 10 of the handle members 4 of the side drawers. A spring 39 forces the handle member out of the front of the drawer when the handle member is released by the bolt 35 on the unlocking of the lock 6 which withdraws the bolt 7 from the desk top to unlock the drawer and forces the auxiliary

bolt 30 to rock the levers 32 against the tension of the springs 33, 33 and causes the withdrawal of the bolt 35 from the handle member 5. With the handle member 5 released the locking rod 38 is moved with it so that the cam 29 thereof slides from under the arm 26 to allow this arm and the movable upright 24 to drop and rock the lever arms 22 so as to raise the bolts 19 in the stationary upright 17 and disengage themselves from the detents 11 of the locking rods 10 to release the handle members 4, 4 and drawers 3, 3 held locked thereby.

The handle members 5, 5 in the middle drawer and their connection and operation by the master lock 6 is such that the movement of each handle member 5 effects a locking and unlocking of the handle members 4 of the side drawers on its own side of the master lock 6. All of the drawers are simultaneously unlocked on the unlocking of the master lock 6. However the middle drawers may be locked without in any way affecting any locking of the side drawer and only when the handle members 5 are moved into a concealed position are the locking bolts 19 set to lock the side drawers whenever their handles 4 are pushed into their concealed locking position.

We claim:

1. In combination with a desk having a plurality of drawer compartments, an independently lockable and unlockable drawer movable in and out of one of said compartments and singly lockable and collectively unlockable drawers movable in and out of the other of said compartments, a handle mounted to move into and out of the front of each of said drawers, means for locking and unlocking said independently lockable drawer and means operated by said locking and unlocking means for releasing the handle of said independently lockable drawer, an arm operated by the movement of the handle of said independently lockable and unlockable drawer, individual bolts engaging the handles of said collectively unlockable drawers and means operated by said arm to move said bolts for locking or unlocking said handles.

2. In combination with a desk having two drawer compartments and a drawer movable in and out of each of said compartments, a movable handle member carried by each of said drawers, a locking rod movable by each of said handle members, a cam provided on one of said locking rods, a detent provided on the other of said locking rods, an arm movable by said cam, a bolt mounted to be movable by said detent for engagement therewith and means operated by said arm to hold said bolt for engagement by said detent or free from engagement therewith.

3. The combination in a desk as set forth in claim 2 including a master lock for locking the drawer having the locking rod with the cam and means operated by said master lock for locking and unlocking the handle of said drawer to permit

the movement of said handle to operate said cam and move said arm for the movement of each bolt.

4. In combination with a desk having a plurality of drawer compartments and drawers movable in and out of said compartments, a movable locking bolt carried by one of said drawers for locking said drawer, a handle movable in and out of said drawer, a second locking bolt operated by said first locking bolt to lock and unlock said handle, spring means carried by said drawer to move said handle out of said drawer on the release thereof by said second locking bolt, a cam carried by said handle, an arm mounted in said desk for engagement by said cam, a plurality of bolts suspended for movement by gravity in said desk, means operated by said arm for raising and lowering said plurality of bolts for engagement and disengagement of the remaining said drawers.

5. The combination in a desk as set forth in claim 4 in which the remaining said drawers are each provided with a handle movable in and out of their drawers, a detent carried by each of the handles for engagement by said plurality of bolts to hold said handles concealed in said drawers in locking said drawers into said compartment and spring means carried by each of said drawers to move said handles out of the drawers on the release thereof by the movement of said plurality of bolts.

6. In combination with a desk having a drawer compartment and a drawer movable in and out of said compartment, of a handle adjacent said drawer movable in and out of said compartment to permit it to lie flush with or project from the front of the compartment, locking means within said compartment and cooperating with said handle to lock said handle flush with the front of the compartment, means provided on said drawer and engaged by said handle to simultaneously hold said drawer locked into said compartment and means on said handle adapted to engage said drawer in its projected position for the outward movement of the drawer by said handle.

7. In combination with a desk having a drawer compartment and a drawer movable in and out of said compartment, of a handle member having a handle groove therein movable in and out of said compartment so as to conceal or expose said handle groove adjacent the front of the drawer, locking means within said compartment and cooperating with said handle member to lock said member with its handle groove concealed in the compartment, means provided by said drawer and engaged by said handle member to simultaneously hold said drawer locked into said compartment and means on said handle adapted to engage said drawer in its projected position for the outward movement of the drawer by said handle.

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