April 28, 1942. C. W. STRAUBEL 2,281,464

DRAWER FOLLOWER

Filed June 6, 1941 4 Sheets-Sheet 1

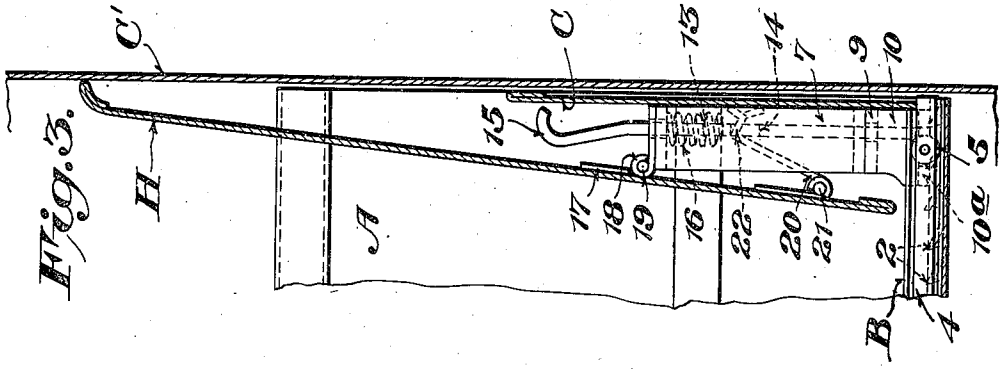



Fig. 3.

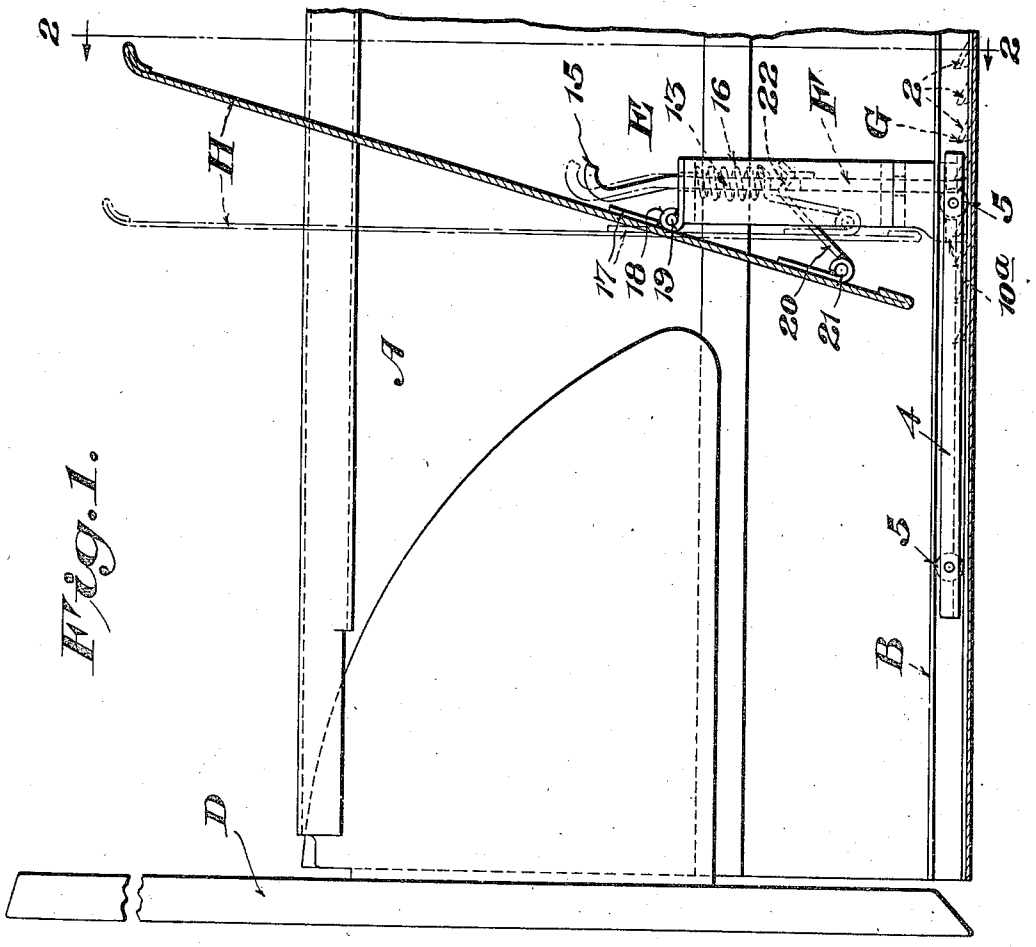



Fig. 1.

INVENTOR

Clarence W. Straubel,

By Wheelwright & Groff

Attorneys

April 28, 1942. C. W. STRAUBEL 2,281,464

DRAWER FOLLOWER

Filed June 6, 1941 4 Sheets-Sheet 2

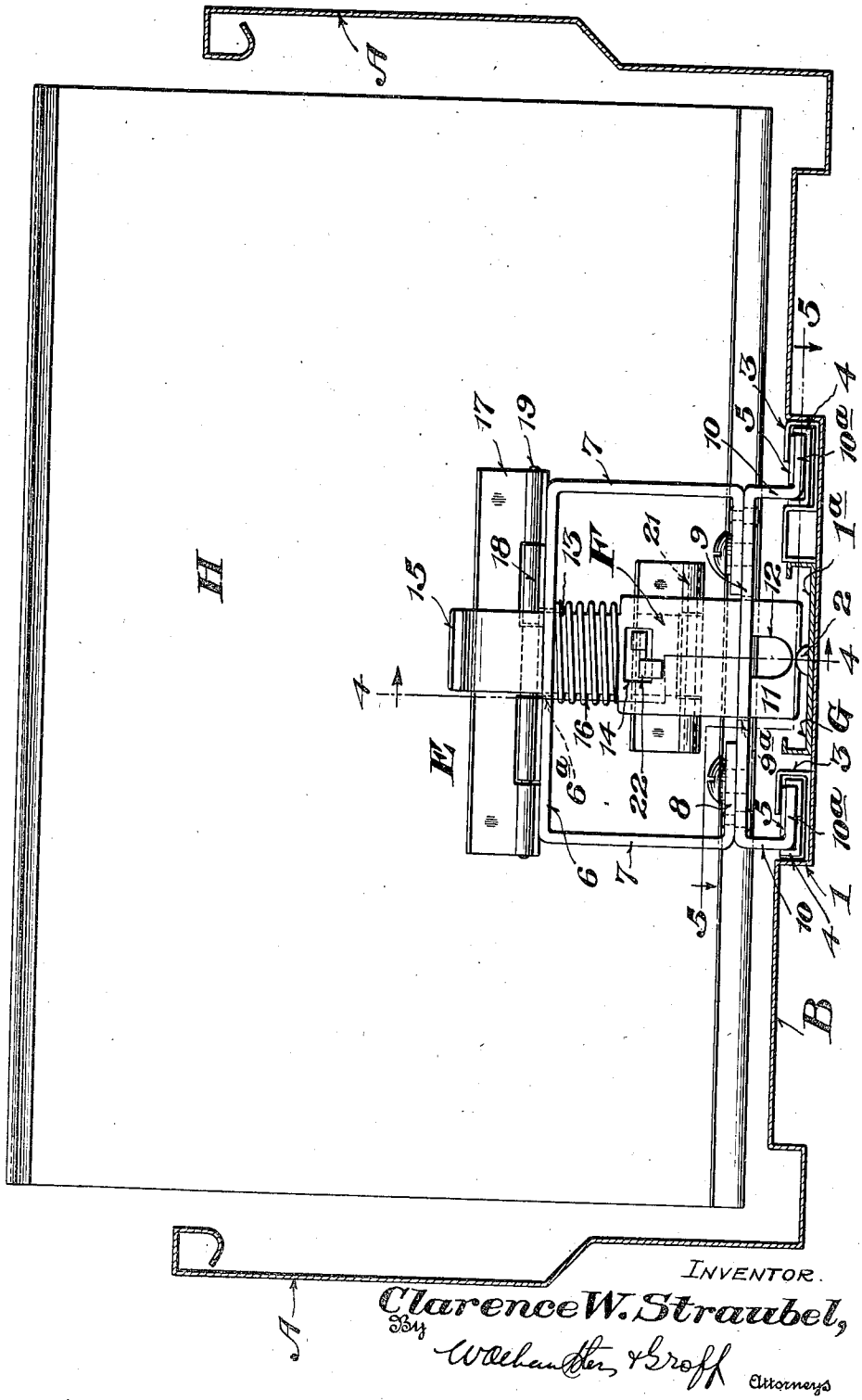



Fig. 2.

INVENTOR.

Clarence W. Straubel,

By Wolcott & Groff Attorneys

April 28, 1942. C. W. STRAUBEL 2,281,464

DRAWER FOLLOWER

Filed June 6, 1941 4 Sheets-Sheet 3

Fig. 3.

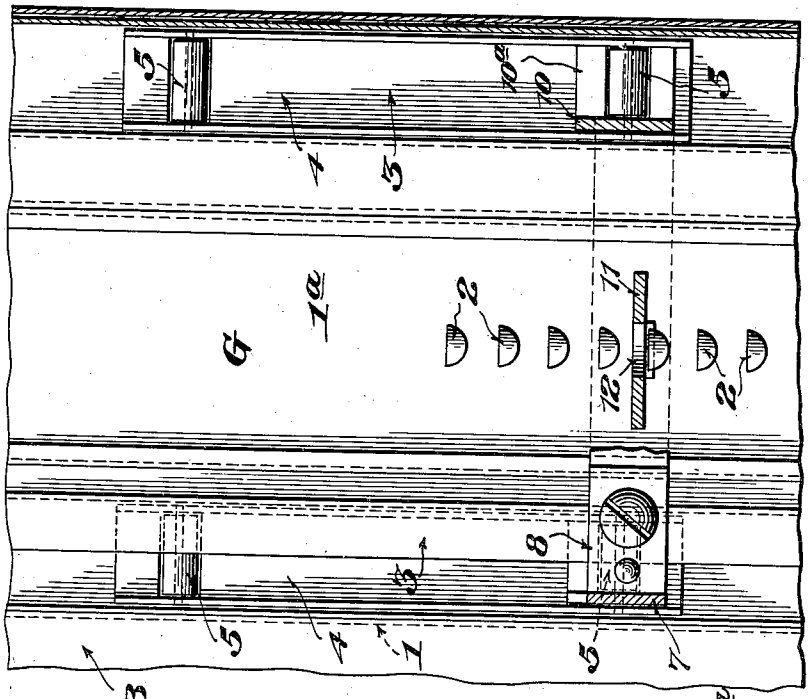
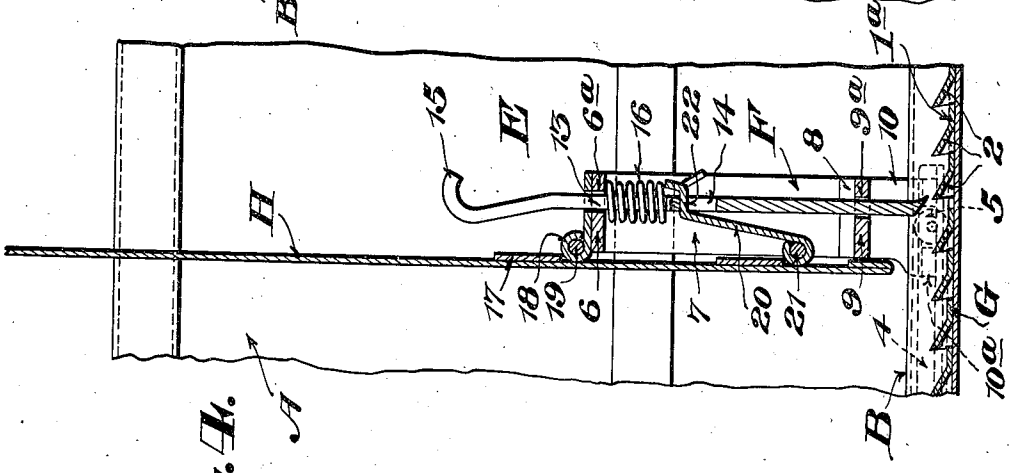



Fig. 4.




Inventor

Clarence W. Straubel,

By Wilkinson & Groff.

Attorneys

April 28, 1942. C. W. STRAUBEL 2,281,464

DRAWER FOLLOWER

Filed June 6, 1941 4 Sheets-Sheet 4

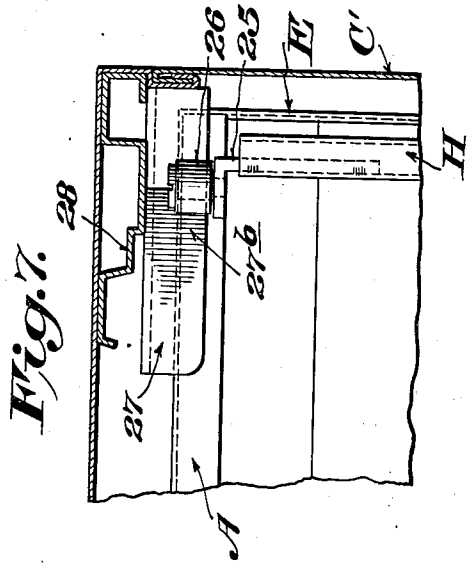



Fig. 7.

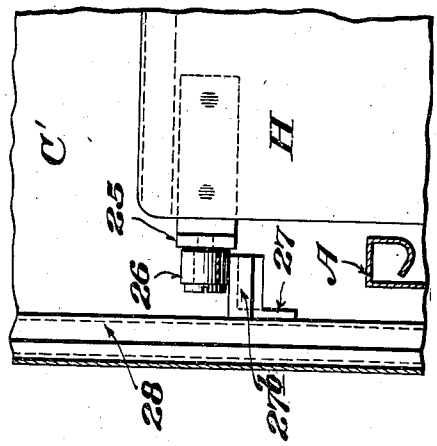



Fig. 8.

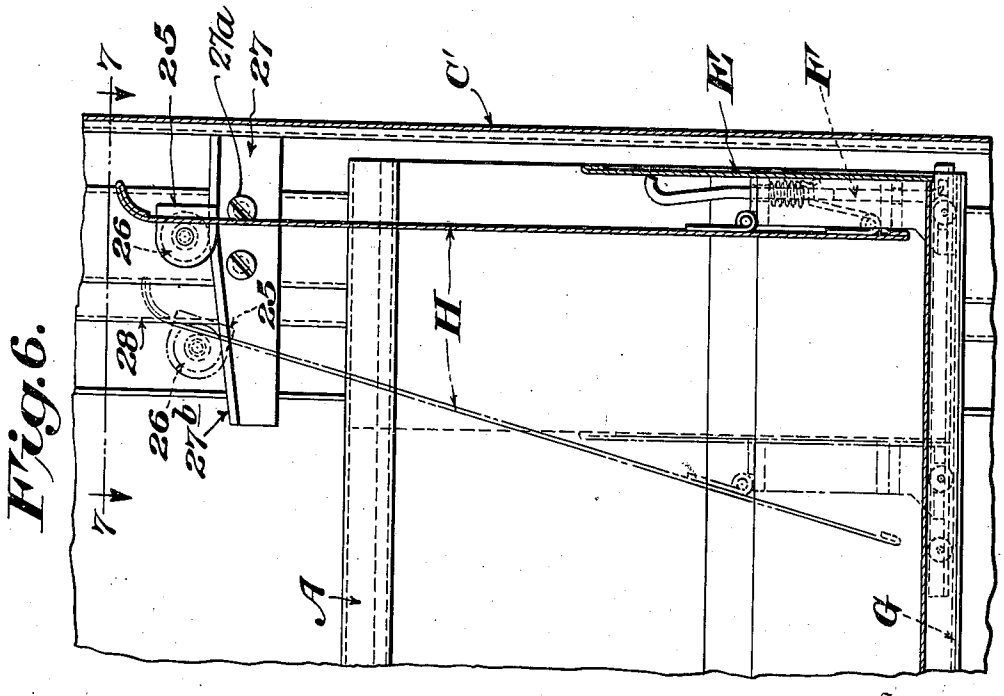



Fig. 6.

Inventor

Clarence W. Straubel,

By Williamson & Groff

Attorneys

Patented Apr. 28, 1942

2,281,464

# UNITED STATES PATENT OFFICE

2,281,464

## DRAWER FOLLOWER

Clarence W. Straubel, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio

Application June 6, 1941, Serial No. 396,954

10 Claims. (Cl. 129—28)

This invention relates to space regulating followers for filing drawers, trays, sorters, and the like.

A primary object is to provide a space regulator including a normally rearwardly tilted or inclined follower plate and a latch, which latter automatically engages and disengages with follower locater means in the drawer upon the application of backward pressure to the bottom edge of the plate, or upon forward pressure on the top edge thereof. That is to say, in one instance, the mere crowding of filing material between the drawer head and the bottom edge of the follower plate will cause said plate automatically to move to a new rearward position, or, on the other hand, application of forward pressure at or near the top edge of the plate will accomplish the same purpose. In the latter case, forward pressure on the top of the plate may be caused by the top edge of the plate striking the rear wall of the drawer casing when the top edge projects beyond the back wall of the drawer and the drawer is pushed into the casing, or when the follower plate is automatically straightened to a vertical position by a part on the follower plate striking an abutment on the drawer case as the drawer approaches closed position. If the space regulator is wholly disposed within the limits of the length of the drawer space itself, forward pressure on the top edge applied by the hand of the operator will produce the same result, namely free the follower plate from the follower locater for free sliding movement backward to increase the filing space, or forward until it is stopped by the actual contents of the drawer.

Another object of the invention is to provide novel means for mounting the space regulator or follower assembly in the drawer so that the plate thereof will uniformly maintain a transverse position throughout its adjusting movement. In other words, the construction is such that the follower plate will not twist about a vertical axis during its adjusting movement.

A further object is to provide novel means for supporting the latch which engages the follower locater in the drawer and connecting it with the follower plate which is pivoted or hinged to the support on a horizontal axis.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a vertical longitudinal sectional view of a drawer including the novel space regulator which is shown in side elevation, the full lines indicating the normal position of the follower plate and the dot and dash line indicating the position of the plate when the latch of the assembly is lifted.

Fig. 2 is a vertical transverse sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail longitudinal section taken at the rear of the drawer shown in Fig. 1 and illustrating the manner in which the follower plate automatically assumes a vertical position when the drawer is pushed fully into its casing.

Fig. 4 is a detail vertical sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a horizontal sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a detail vertical section showing a modification wherein means are provided for moving the plate to a vertical position before the drawer is fully closed.

Fig. 7 is a detail plan view taken on the line 7—7 of Fig. 6.

Fig. 8 is a detail front elevation of the interengaging parts on the plate and drawer casing.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

The filing drawer or tray includes the side walls A (not necessarily required), bottom wall B, back wall C and drawer head D. The latter may be of either the rigid or tilting type, or may even be of the telescopic type wherein the drawer head is shiftable longitudinally with reference to the front of the drawer. Regardless of the type of drawer head D, however, the space regulator follower device designated generally as E, and including the latch F for cooperating with the follower locater G, and the follower plate H, is intended to be shifted or moved longitudinally of the drawer to regulate or define the filing space inwardly of the drawer head before the drawer is completely filled and the space regulator is of necessity moved to the extreme rear end of the drawer, as shown in Fig. 3. In the latter case, however, it will be apparent that the space regulating follower also automatically assumes a position that enables the full capacity of the drawer to be utilized to the maximum extent.

Referring to the drawer bottom B, it will be

observed that the same is provided with a relatively wide central channel which accommodates the follower locater G. The follower locater G may be of any appropriate type, but in the embodiment shown preferably consists of a channel strip 1a provided longitudinally thereof with a plurality of extruded teeth 2 of the ratchet type in the sense that in one direction they provide positive abutments for the latch element F of the follower, while in the other or forward direction the said latch element may slide thereover. The type of follower locater described may be conveniently fitted in the channel 1 by spot welding or other securing means well known in the art. At each side of the follower locater G and near the side walls of the channel 1, suitable guides or tracks 3 extend throughout the length of the channel and receive the relatively elongated shoes 4 which are preferably of channel cross-section and fitted with rollers 5 to facilitate free sliding movement in the guides. The shoes 4—4 sliding in the guides provide in effect a carriage on which the main support of the space regulator E is mounted.

The primary support of the space regulator preferably consists of an open frame, including the upper frame part having the top cross piece 6 and the side members 7 which are inwardly turned as at 8 to be secured by screws or other fastenings to the lower cross member 9. This member may be provided with depending legs 10 having angular foot portions 10a secured directly to the sliding shoes 4 of the support carriage.

The upper cross piece 6 of the frame is slotted as indicated at 6a, and the lower cross piece 9 is slotted as at 9a, thereby to receive the aforesaid latch element F. This latch element preferably includes the lower blade portion 11 for engaging with the elements 2 of the follower locater means and having an opening 12 for receiving the usual guide card holding rod (not shown). The said blade element 11 is guided in the slot 9a of the lower cross piece of the frame and just below the point where it connects with the relatively narrow shank portion 13, the said blade is provided with an opening 14. The shank 13 is guided in the slot 6a of the upper frame piece and terminates in a curved finger engaging hook portion 15 which will permit the latch to be manually lifted when desired. A coil spring 16 is confined between the upper cross piece 6 of the frame and the shoulder provided by the junction of the blade and the relatively narrow shank 13, thereby normally to urge the blade of the latch constantly toward the follower locater in the bottom of the drawer.

The follower plate H is hinged or pivoted on a horizontal axis to the top cross piece 6 of the supporting frame, as will be clearly apparent from Figs. 1 and 2. The hinge connection preferably consists of the hinge butt 17 carried by the rear of the plate, while the knuckle 18 of the hinge is formed from the cross piece 6. The hinge pin 19 connects the butt and knuckle of the hinge. The horizontal pivot axis formed by the pin 19 is preferably located below the transverse center of the plate, and, at a point below the horizontal hinging or pivoting axis 19, the plate is connected with the latch by a link 20. This link has one end pivotally connected to the rear of the plate H, as indicated at 21, while the other end is preferably formed at an angle and bifurcated so as to enter the opening 14 of the latch blade. The ends of the bifurcations are deflected upwardly and downwardly so as to loosely interlock the end 22 of the link with the latch.

The link 20 and spring 16 normally cause the follower plate H to assume a rearwardly tilted or inclined position, and the arrangement is such that pressure applied to either the bottom edge of the follower plate, or to the top edge, and tending to move the plate to a vertical position, will cause the actuation of the latch against the tension of the spring 16. The actuation or lifting of the latch 16 in an upward direction will cause the lower edge of the blade 11 to disengage the abutments or stop elements 2 of the divider locater G and the entire space regulator assembly, including the following plate, can then be moved to a new rearward or forward position.

When the space regulator is in use, the follower plate normally assumes the rearwardly tilted or inclined position shown in Fig. 1 and the drawer contents will be supported in an inclined position so that when the drawer is open the contents will be presented at the proper viewing angle. Assuming that the space between the drawer head and the follower plate is full and another piece of filing material is to be inserted in the space between the drawer head and the follower plate H, it is only necessary to push the additional piece of filing material into the drawer so that pressure is exerted on the lower end of the plate. This pressure will force the plate to assume the vertical dotted line position shown in Fig. 1 and cause the latch to be lifted, thereby to permit the space regulator to move or jump rearwardly a sufficient distance to accommodate the added filing material. This practice and pressure may be followed until the drawer is completely full. In each case the movement of the space regulator to a new rearward position is fully automatic. When the space regulator is moved relatively close to the back wall C of the drawer, the upper edge of the rearwardly tilted or inclined follower plate H will project beyond the vertical plane of the back wall C, which, as will appear from Fig. 3, is substantially only half the height of the side walls A. Thus, as the upper edge of the follower plate H projects more or less beyond the back wall C of the drawer and the drawer is pushed fully into the cabinet or casing, the said upper edge of the follower plate will engage the rear wall C' of the cabinet or casing, thereby to cause the lifting of the latch from the follower locater means and permit the frame of the space regulator assembly to eventually fit flushly against the side face of the back wall C of the drawer. It will thus be apparent that operation of the space regulator is fully automatic, even to the ultimate limit of the capacity of the drawer.

When it is desired to move the space regulator assembly forwardly in the drawer, it is only necessary to grasp the top edge of the follower plate H and tilt it toward a vertical position, whereupon the link 20 will lift the latch blade 11 so as to clear the abutment elements 2 of the follower locater, and the entire assembly may be pulled noiselessly forward of the carriage consisting of the shoes 4—4.

While the channel which receives the follower locater G is preferably arranged in the central part of the drawer, it will, of course, be understood that it may be more or less off center, that is, near one or the other side walls of the drawer. And, while the abutments of the locater are preferably in the form of rack teeth, their

equivalent, for example, slots, may be made in the drawer bottom.

Also, in connection with the pivoting of the plate H at 19, below its transverse center, it may be pointed out that in so hinging the plate the preponderance of the contents' weight is above said center to prevent shock when the drawer closes, which would otherwise accidentally straighten the follower plate and release its latch, thereby causing the follower to move out of proper space adjustment.

Hand operation of the latch may be effected by grasping the finger grip 15 and lifting the latch out of the follower locater means when desired. However, since the actuation of the latch is fully automatic by manipulation of the follower plate, such manual manipulation of the latch through the hook 15 may be seldom or never used.

Figs. 6, 7 and 8 of the drawings illustrate cooperating means on the plate H and the drawer casing for straightening up the plate independently of the back wall of the cabinet so as to prevent any tendency of the plate in engaging the back wall to push the drawer out of the cabinet, especially if no latch is provided for the drawer. This arrangement straightens the plate before the drawer is fully closed.

Referring to Fig. 6 it will be seen that the follower plate H is provided at its upper side edges with a suitable bracket 25, whose outer end carries a roller 26 intended to cooperate with a cam 27 secured to the rear case upright 28 on the inside face of the side wall of the cabinet. Although the drawings fully show one roller and cam, it will, of course, be understood that the arrangement described, may be duplicated by the other side of the follower plate. The cam 27 is probably of angular cross-section, one of the legs of the angle being secured to the casing upright by the fastenings 27a or their equivalent, while the upper or horizontal leg of the angle is preferably beveled or inclined, as indicated at 27b. Thus, as the drawer, including the space regulator, nears the end of its inward movement, it will be apparent that the roller or rollers 26 will engage the inclined surface 27b of the cam and gradually pull the plate H to vertical position when the roller or rollers 26 reach the zenith of the incline 27b, as shown in full lines in Fig. 6.

The effect of the cooperating roller 26 and cam 27 is to put pressure on the top of the plate and automatically push it forward, thereby releasing the latch from the divider locater means and permitting the follower plate to automatically move to an erect position without the upper edge thereof at any time encountering the back wall C' of the cabinet. Thus, the arrangement described provides another method for automatically causing the follower plate H to assume an erect position when the drawer is fully closed so as to throw the space regulator assembly as far back in the drawer as possible, thereby to fully utilize all of the space in the drawer.

From the foregoing it will be apparent that the present invention provides means for automatically shifting the follower rearwardly under all normal conditions of use. Hand operation is only necessary when the filing space is empty, or relatively so, and when it is desired to shift the follower forwardly. Even under these circumstances the ease and rapidity of adjustment is superior to constructions now in general use.

I claim:

1. In a filing drawer or the like, means for automatically regulating the filing space relative to the drawer head, comprising, in combination with the drawer, follower locater means in the drawer, a space regulating follower slidable in the drawer relative to said locater means and including a follower plate supported on a medially disposed horizontal axis, latch means normally spring-urged toward the follower locater means, and an operating connection between the plate and said latch means, said connection being below said axis, automatically to actuate said latch means upon movement of the plate about said horizontal axis.

2. In a filing drawer or the like, means for automatically regulating the filing space relative to the drawer head, comprising, in combination with the drawer head and drawer bottom, follower locater means on the drawer bottom, a space regulating follower including a support slidable over the follower locater means, a follower plate pivoted horizontally below its transverse axis to said support, a downwardly spring-urged latch carried by the support for releasably engaging said follower locater means, and a drawer contents actuated connection between the plate and the latch, the connection being below the point of pivotal connection of the plate with the support, whereby pressure of additions to the drawer contents between the drawer head and the lower portion of the plate will disengage the latch from the locater means and permit the plate and support automatically to slide rearwardly until pressure due to the added contents is overcome by the spring force tending to engage the latch with a new portion of the locater means.

3. In a filing drawer, means for automatically regulating the filing space relative to the drawer head, comprising, in combination, with the drawer head and the drawer bottom, a space regulating follower including a support, a follower locater on said drawer bottom, guide means at each side of the locater, shoes on said support slidable in said guides, a follower plate pivoted on a horizontal axis to said support, a follower locater engaging latch slidable in the support, a spring for normally urging the latch toward the locater, and a link hinged to the plate below its horizontal pivot axis, said link being connected with the latch above the plane of hinge connection between the link and plate, whereby pressure of drawer contents applied to the plate below its pivotal connection with the support will automatically lift the latch out of engagement with the follower locater and cause the plate to recede in the drawer until the pressure of the drawer contents is overcome by the force of the spring, whereby the latter will push the latch downwardly to engage a new rear portion of the follower locater.

4. In a filing drawer, means for automatically regulating the filing space relative to the drawer head, comprising, in combination with the drawer head and the drawer bottom having a medial channel, a follower locater arranged in said channel and comprising a strip having spaced rack teeth thereon, guides at each side of the rack adjacent the side walls of the medial channel of the drawer bottom, shoes slidable in said guides, a support mounted on said shoes, a follower plate pivoted on a horizontal

axis below its transverse center to said support, a latch slidable in the support, a spring for normally urging the latch toward the rack, and a link hinged to the plate below the point of pivotal connection between the plate and the support, said link being connected with the latch above the plane of the hinged connection between the link and the plate, whereby pressure of drawer contents applied to the bottom edge of the plate will automatically lift the latch out of the rack and cause the plate to recede in the drawer until the pressure of the added drawer contents is overcome by the force of the spring, whereby the latter will push the latch downwardly to engage a new rearward portion of the rack.

5. In a filing drawer, the combination with the drawer bottom having follower locater means thereon, a support slidably mounted in the drawer bottom over said follower locater means, a latch carried by the support, a spring for constantly urging the latch toward the locater means, a follower plate hinged below its transverse center on a horizontal axis to the support, and a link having its opposite end portions pivotally connected respectively to the plate below the latter's connection with the support and to the latch above the plane of the links connection with the plate, thereby normally to maintain the plate tilted rearwardly and whereby movement of the plate toward a vertical plane on its pivotal connection with the support will cause the said latch to disengage said locater means and permit shifting of the plate in the drawer.

6. In a file drawer, the combination with a drawer bottom having follower locater means thereon, of a support slidably mounted on the drawer bottom over said follower locater means, said support including an open substantially rectangular frame, a latch slidably mounted in the frame, a spring confined between a portion of the frame and a portion of the latch constantly to urge the latch toward the locater means, a follower plate pivoted on a horizontal axis to the frame, and a link having its opposite end portions pivotally connected respectively to the plate below the latter's connection with the frame and to the latch above the plane of the link's connection with the plate, thereby normally to maintain the plate tilted rearwardly and whereby movement of the plate toward a vertical plane on its pivotal connection with the frame of the support will cause the said latch to disengage said locater means and permit shifting of the plate in the drawer.

7. In a filing drawer, the combination with the drawer head and bottom wall provided with a channel, of a follower locater in the channel, a pair of guides in the channel at each side of the follower locater, shoes slidable in the guides, a frame having upper and lower cross pieces provided with slots, depending lug portions carried by the frame and having foot portions secured to said shoes, a latch slidable in the slots of the frame, a spring confined between the upper cross piece of the frame and a portion of the latch constantly to urge the latch toward the follower locater, a follower plate hinged below its transverse center on a horizontal pivot to the upper cross piece of the frame, and a link pivotally connected at one end to the rear portion of the plate below its horizontal hinge axis, said link having its other end pivotally connected with the latch at a point above the plane of the pivotal connection between the plate and the link, thereby normally to maintain the plate tilted rearwardly, and whereby movement of the plate to a vertical position will cause the link to lift the latch out of engagement with the follower locater means.

8. In a filing drawer, the combination with a drawer having a drawer head and a bottom wall provided with the channel, of a follower locater in the central portion of the channel, a pair of guides in the channel at each side of the follower locater, shoes carrying rollers slidable in said guides, a frame having upper and lower cross pieces provided with slots, depending leg portions carried by the frame and having foot portions secured to said shoes, a latch including a blade portion and a shank portion and having an opening substantially at the junction of said blade and shank portions, the shank of the blade being slidable in the slot of the upper cross piece of the frame and the blade being slidable in the lower cross piece of the frame, a spring confined between the upper cross pieces of the frame and the heel of the blade constantly to urge the lower end of the blade toward the follower locater, a follower plate hinged below its transverse axis on a horizontal pivot to the upper cross piece of the frame, and a link pivotally connected at one end to the rear portion of the plate below its horizontal hinging axis, said link having its other end projecting into said opening in the blade and pivotally connected with the blade at said opening, said link normally maintaining the plate tilted rearwardly whereby movement of the plate on its horizontal pivot axis to a vertical position will cause the link to lift the latch out of engagement with the follower locater means.

9. In a filing drawer or the like, means for automatically regulating the filing space relative to the drawer head, comprising, in combination with the drawer, follower locater means in the drawer, a space regulating follower slidable in the drawer relative to said locater means and including a follower plate supported on a horizontal axis located above the lower edge of the plate, a locater engaging latch, and means below said axis providing a connection between the plate and the said latch, said means upon movement of the plate about said axis controlling the engagement and disengagement of the latch from the said locater means.

10. In a filing drawer or the like, means for automatically regulating the filing space relative to the drawer head, comprising, follower locater means in the drawer, a space regulating follower including a support slidable in the drawer relative to said locater means and having a portion disposed above the bottom of the drawer, a follower plate connected by a horizontal hinge to the support so that the top and bottom portions of the plate are movable relative to the support, a locater engaging latch carried by the support, and means providing an operating connection between the plate and the latch, said means being located between the bottom edge of the plate and the hinge whereby movement of the plate will cause the latch to engage and disengage said locater means.

CLARENCE W. STRAUBEL