Oct. 31, 1950 J. R. JONES ET AL 2,527,678

COMPRESSOR FOR FILING DEVICES

Filed April 7, 1948 2 Sheets-Sheet 1

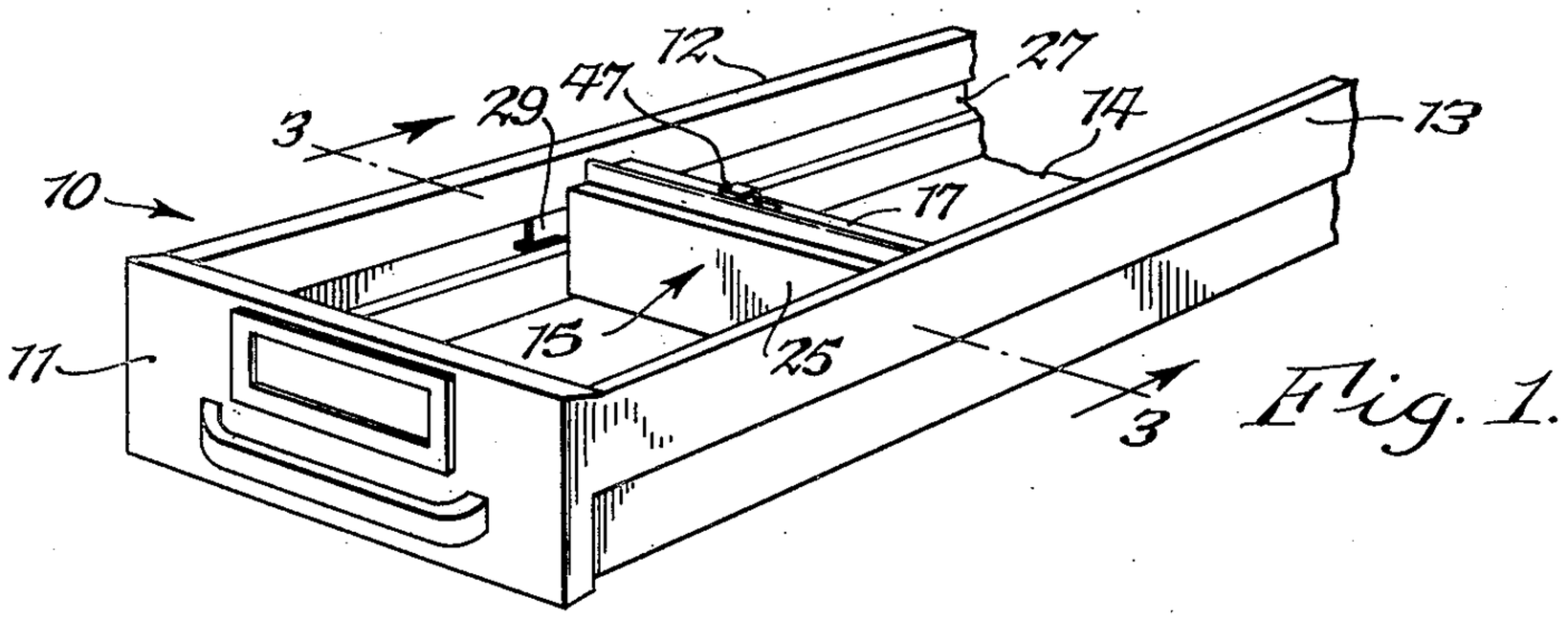

Fig. 1.

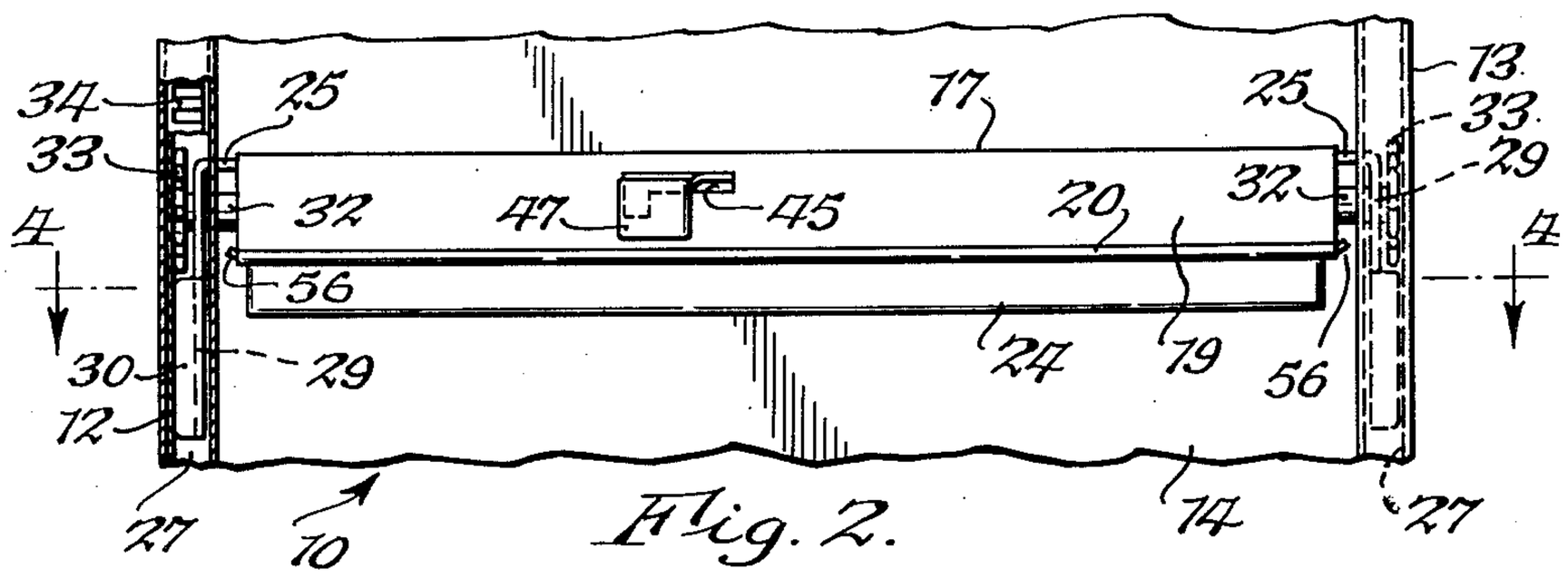

Fig. 2.

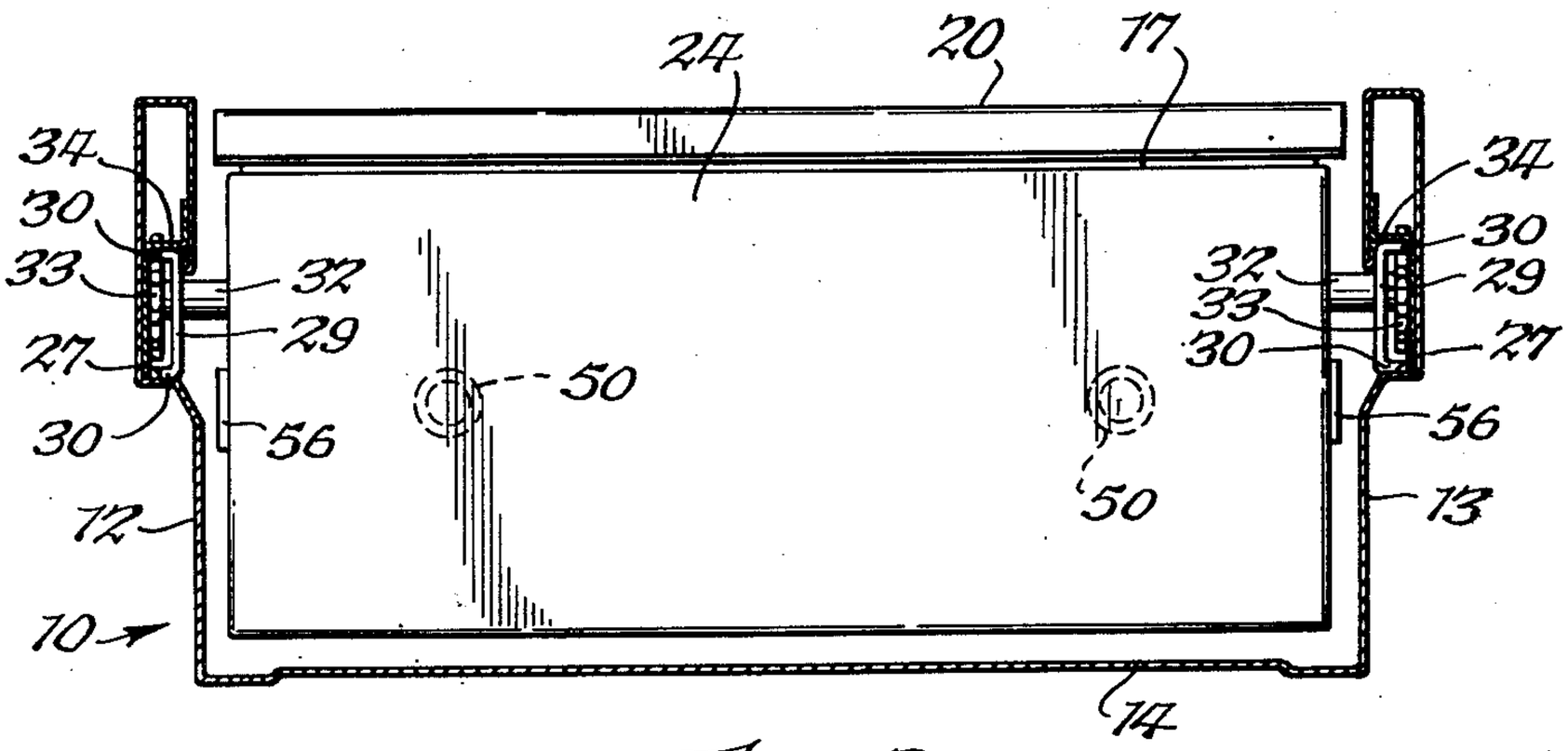

Fig. 3.

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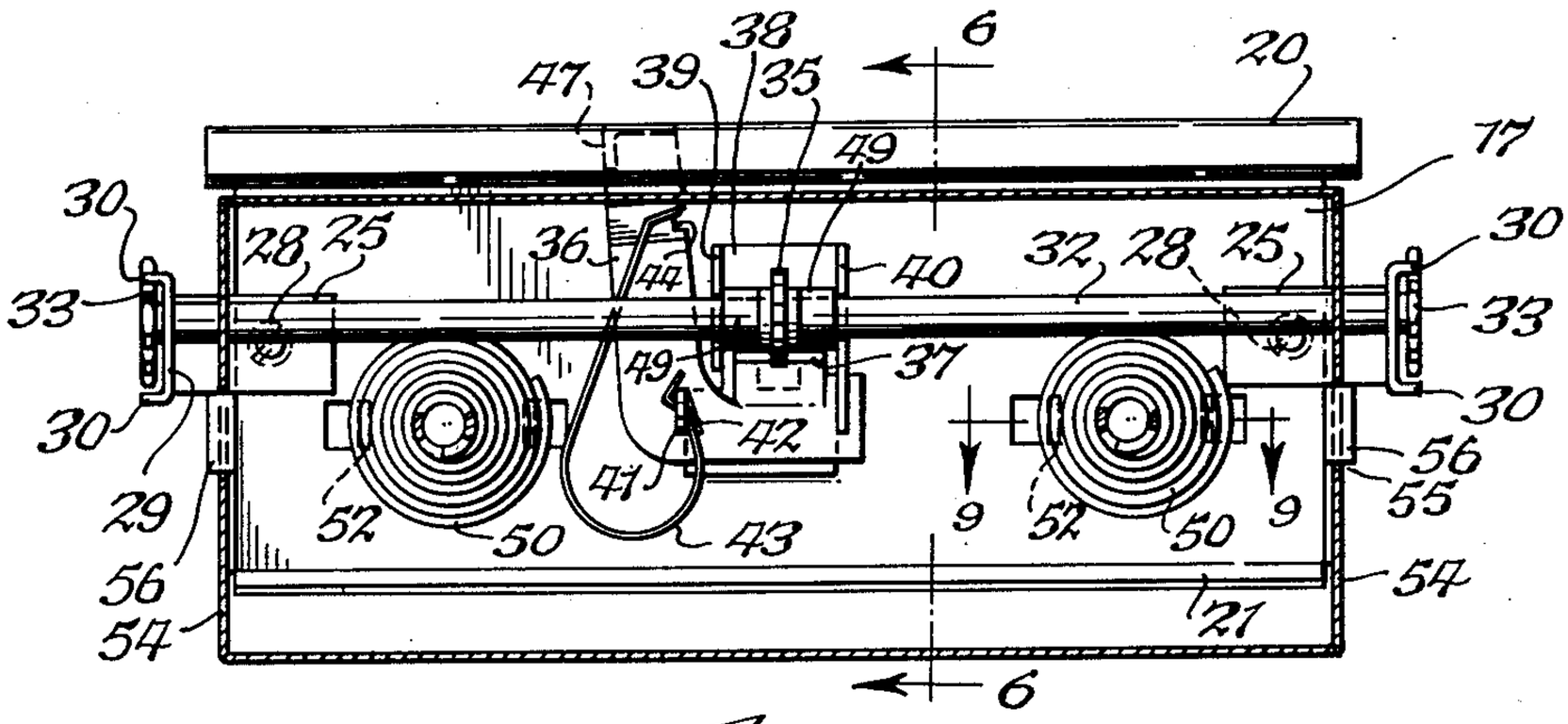

Fig. 4.

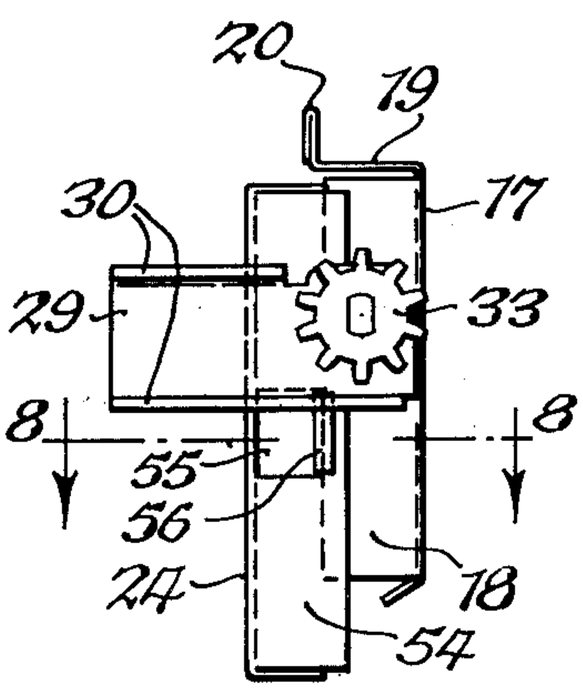

Fig. 7.

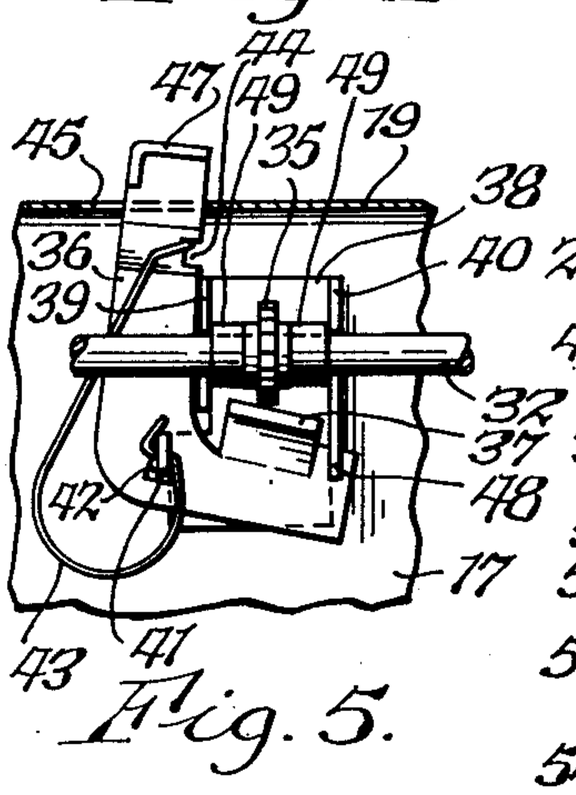

Fig. 5.

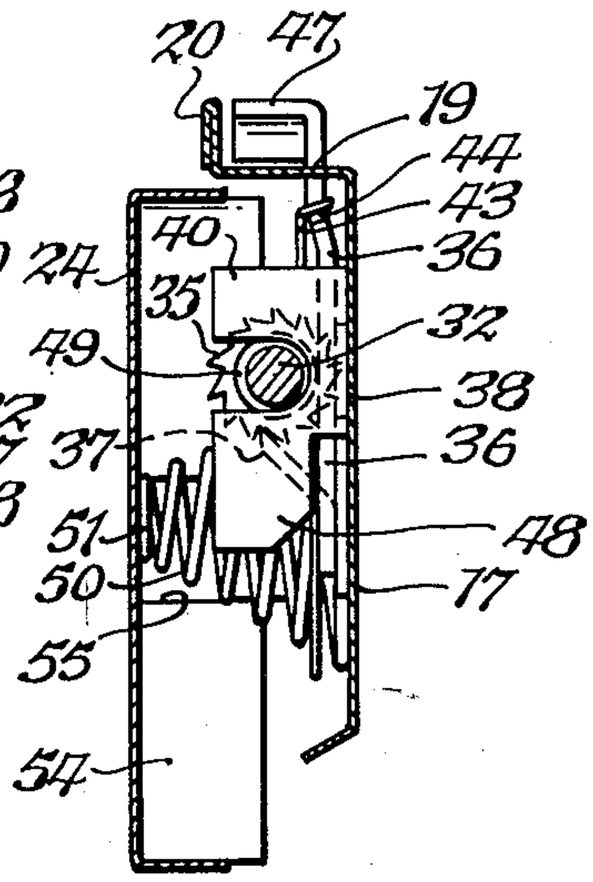

Fig. 6.

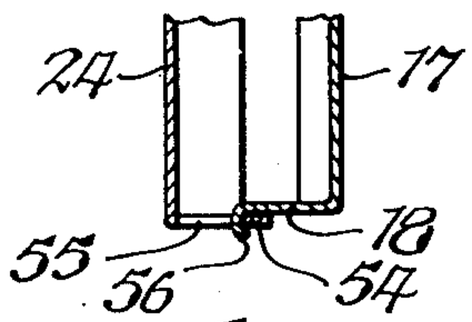

Fig. 8.

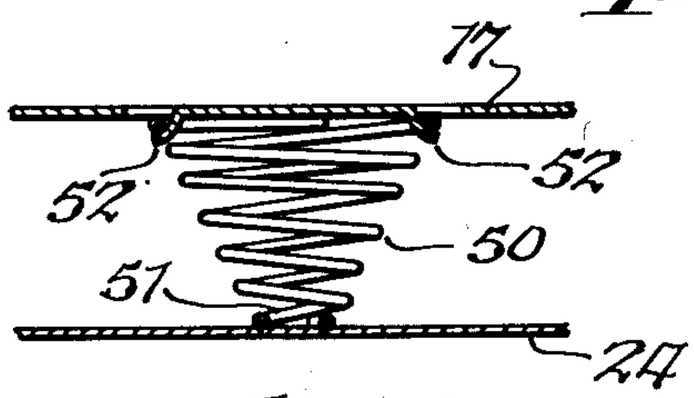

Fig. 9.

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UNITED STATES PATENT OFFICE

2,527,678

COMPRESSOR FOR FILING DEVICES

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Application April 7, 1948, Serial No. 19,586

1 Claim. (Cl. 129—28)

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This invention relates to improvements in files or filing devices for tabulating cards, papers, or other elements, and more particularly this invention relates to compressors or followers mounted for adjustment to different positions, in or on the file receptacle or holder for compressing the elements closely together to maintain them in flat condition.

One of the objects of this invention is to provide a compressor of improved construction which can be easily and conveniently operated to hold the file contents under compression, which can be easily released to afford access to the file contents, and which is of strong and durable construction. Another object of this invention is to provide a compressor of this type of improved construction for applying a resilient force against the file contents. It is also an object of this invention to provide a compressor of this type with a spring plate of novel construction and arrangement for compressing the file contents. Other objects and advantages of this invention will appear from the following description and the novel features of the invention are set forth in the claim.

In the accompanying drawings:

Fig. 1 is a fragmentary perspective view of a file drawer or container having a follower or compressor embodying this invention applied thereto.

Fig. 2 is a fragmentary top plan view thereof, partly in section, and on an enlarged scale.

Fig. 3 is a transverse sectional elevation of the file drawer or container, the section being taken approximately on line 3—3, Fig. 1.

Fig. 4 is a transverse sectional elevation of the follower or compressor, on line 4—4, Fig. 2.

Fig. 5 is a fragmentary transverse sectional elevation similar to a portion of Fig. 4, but showing parts of the follower or compressor in released position to permit the same to be moved in a direction to release the pressure on the file contents.

Fig. 6 is a longitudinal sectional elevation of the follower or compressor, approximately on line 6—6, Fig. 4.

Fig. 7 is a side elevation of the follower or compressor on a similar scale.

Fig. 8 is a fragmentary section thereof, on line 8—8, Fig. 7.

Fig. 9 is a fragmentary sectional plan view thereof, approximately on line 9—9, Fig. 4.

In the preferred embodiment of this invention which is illustrated in the drawings, 10 represents the file holder or receptacle which in the form shown is a shallow drawer or tray adapted to hold tabulating or other cards or elements and having a front end wall 11, side walls 12 and 13, and a bottom 14. These walls and the bottom may be constructed and secured together in any suitable or desired manner. The file holder itself does not constitute a part of this invention.

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15 represents in general a follower or compressor which is slidably arranged in the holder or receptacle in any suitable or usual manner. This compressor or follower includes an upright wall or plate 17 at the back or rear of the follower having forwardly extending side flanges 18 and an upper forwardly extending flange 19, the end of which may be turned up and doubled or rolled over as indicated at 20 to provide a finished appearance. The back wall may also be provided with a forwardly extending flange 21 at the lower edge thereof.

The compressor also includes a front wall or plate 24 which is resiliently mounted on the back wall 17 of the compressor as will be hereinafter more fully described. These two walls define between them a chamber in which certain mechanism for controlling the operation of the compressor is contained.

The compressor or follower may be mounted for longitudinal adjustment in the file receptacle in any suitable or usual manner. In the construction shown for this purpose, angle-shaped guide arms 25 are suitably fixed at opposite ends of the compressor back plate 17 in such a manner as to project into and slide in longitudinal guideways 27 formed in the side walls 12 and 13 of the receptacle or drawer 10. These angle-shaped members each include a substantially flat portion which may be secured to the front face of the back wall 17 in any suitable manner, for example, by means of bolts, screws, or similar fastenings 28, Fig. 4. These angle-shaped guide arms have legs or portions 29 which project into the guideways and which are formed with outwardly extending flanges 30 which cooperate with the upper and lower faces of the guideways to facilitate the sliding of these guide arms in the guideways.

32 represents a transverse shaft journalled in the compressor, for example, in apertures formed in the parts 29 of the angle-shaped guide arms 25. Toothed pinions 33 are secured to the ends of the transverse shaft 32, which pinions mesh with racks 34 extending longitudinally in the guideways 27, these racks as shown being formed by longitudinal flanged strips welded in the

guideways 27 and having horizontally disposed webs with spaced perforations which form between them the rack teeth for meshing with the teeth of the pinions 33. The meshing engagement of these pinions with the parallel racks at the opposite sides of the receptacle maintains the compressor in parallelism with itself in its adjustments forwardly and rearwardly of the receptacle.

For releasably holding or securing the compressor in its different adjustments lengthwise of the receptacle or drawer, a ratchet wheel 35 is suitably secured on the transverse shaft 32, and means are provided for engaging the ratchet wheel 35 for releasably holding the compressor against movement rearwardly or in the direction away from the file contents. These latching means in the construction illustrated by way of example, include a bell crank lever 36 having a latch or dog 37 which is movable into and out of engagement with the ratchet wheel 35 by swinging the lever 36. In the construction shown for this purpose, the dog or latch member 37 is formed by an integral part of the lower portion of the lever 36 as shown in Figs. 4, 5, and 6.

The ratchet lever 36 is mounted on a lever guide member or bracket suitably secured to the back wall 17 of the follower or compressor and includes flanged plate or guide bracket having a flat face 38 welded or otherwise secured to the back plate 17 of the compressor and having side flanges 39 and 40 extending forwardly from the back plate and recessed to receive the transverse shaft 32. This lever guide bracket also has an outwardly extending projection or lug 41 formed thereon which forms a pivot or fulcrum for the lever 36. For this purpose, the lever 36 is provided with an angle-shaped aperture 42 therein into which the flange or projection 41 extends. This flange or projection also has an aperture therein through which one end of a spring 43 extends, the other end of the spring being bent into substantially U-form and entering into a notch 44 formed on the lever 36. This spring when in operative position is under tension so that it urges the upper end of the lever 36 to the left in Figs. 4 and 5, thus bringing the dog or latch part 37 of the lever normally into engagement with the teeth of the ratchet 35. By means of the construction described, the spring 43 serves the twofold purpose of urging the lever 36 into locking position and also, by passing through the hole in the lug 41, this spring prevents the lever from becoming disengaged from the pivot lug 41 of the lever guide.

The upper end of the lever 36 extends through a slot 45 in the upper flange 19 of the back plate 17 of the compressor or follower, and the upper end of the lever may be bent or flanged-over, as shown at 47, to form a knob or handle by means of which this lever may be manually actuated. When the lever is in the position shown in Fig. 4, due to the action of the spring 43, the dog or latch portion 37 thereof is in engagement with a tooth of the ratchet wheel 35, and thus prevents the shaft 32 from turning in a direction to permit the follower or compressor to move rearwardly out of engagement with the file contents. When the lever is actuated by a thumb or finger, to move the same to the right in Fig. 4, the lever will then occupy the position shown in Fig. 5, in which the dog or latch portion 37 thereof will be out of engagement with the ratchet wheel 35, and thus permit free backward movement of the compressor. It will be obvious from Fig. 6, that the

dog or latch is so positioned with reference to the ratchet wheel 35 that the follower or compressor may at any time be moved forwardly into position to compress the contents of the file without actuating the ratchet lever 36, since the teeth of the ratchet wheel 35 will cause the lever to swing sufficiently to permit the ratchet wheel to turn in a clockwise direction in Fig. 6.

In order to further guide the lever in its movement into and out of latching position, the flange 40 of the ratchet lever guide is provided with a projection or extension 48 forming a slot in which the lower end of the lever is confined against displacement out of its operative positions. The lever is thus securely held in its correct positions on the back plate or wall 17 by the projection 48, the slot 45 in the upper flange 19 of the back plate of the compressor, and by the spring 43 which holds the middle portion of the lever in correct position relatively to the lug 41.

The flanges 39 and 40 further serve to limit or restrict endwise movement of the transverse shaft 32. This is accomplished by providing sleeves or collars 49 at opposite sides of the ratchet wheel 35, which sleeves or collars are of such lengths as to engage the ratchet wheel and the flanges 39 and 40, thus restricting lengthwise movement of the shaft.

From the foregoing description, it will be evident that by means of this construction, the latch release mechanism comprises only a guide member or bracket, a lever, and a spring, and the upper end of the lever extends into a position above the flange 19 of the rear wall of the compressor where it is readily accessible. The mechanism is compact and simple in construction and very effective in operation.

The front plate or wall 24 of the compressor is yieldingly mounted in such a manner that it will be normally maintained in upright position, to exert pressure against the file contents. The plate 24, however, is also yieldingly mounted so that it can accommodate itself to irregularities in the file contents. In the construction shown by way of example for this purpose, the compressor plate or front wall 24 of the compressor is yieldingly supported by means of springs, such as a pair of spiral coil springs 50 which are conveniently arranged near the opposite sides of the compressor and within the chamber formed by the front and back walls of the compressor. The small ends 51 of the spiral springs are welded or otherwise rigidly secured to the front wall or plate 24 and the larger ends of these spiral springs may be rigidly secured to the back plate 17 in any suitable manner, for example, by means of lugs 52 stamped out of the back plate and bent over against the largest coils of the springs as clearly shown in Figs. 4 and 9.

The front plate 24 may be held in such relation to the back plate as to place the springs 50 under initial compression, and for this purpose, the front plate 24 is provided with side flanges 54 having rectangular openings or recesses 55 provided therein, and the side flanges 18 of the back plate of the compressor have elongated lips 56 formed thereon which are bent over to extend through the openings or recesses 55. By means of this construction, the compression plate 24 may be held against farther outward movement by the lips 56 of the back plate 17 in such a manner that the springs 50 will be under compression when the follower is out of engagement with the file contents. When additional pressure is applied to the follower or compressor by moving

the same against the file contents, the springs 50 can be further compressed, since the openings or recesses 55 are of sufficient length in the direction of movement of the front plate 24 to permit such movement relatively to the lips 56. The lips and openings, consequently, serve as guides for the movement of the front plate 24 when the springs 50 are compressed by pressing the compressor against the file contents.

By means of the mounting of the front plate 24 of the compressor herein described, a very simple and efficient construction is produced in which the front plate 24 is normally held in its operative position by means of the springs 50 in combination with the lips 56 extending through the apertures 55 of the side flanges of the compressor plate. These lugs also serve to normally hold the compressor plate in substantially parallel relation to the back plate 17, and the front wall 11 of the drawer or container, so that very effective compression of the contents results. The construction described also has the advantage that the operating parts of the compressor, with the exception of the pinions 33, are confined in the chamber between the front and back walls thereof, so that these parts are protected against injury by foreign objects and the users of the file are also protected from injury by contact with these operating parts.

It will be understood that various changes in the details, materials, and arrangements of parts which have been herein described and illustrated in order to explain the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention, as expressed in the appended claim.

We claim as our invention:

In a compressor for use in a filing case having racks on the sides thereof, said compressor having a transverse shaft rotatably mounted thereon and having toothed wheels secured to the ends thereof for engagement with said racks on said filing case, that improvement in said compressor which includes front and rear plates arranged

in spaced relation to each other and forming between them a chamber, a bell crank lever fulcrumed within said chamber and having one arm thereof extending upwardly to the upper portion of said compressor for swinging said lever about its fulcrum, a ratchet wheel rigidly mounted on said shaft within said chamber and having ratchet teeth, a pawl on said lever movable into and out of engagement with said ratchet teeth when said lever is swung about its fulcrum, and a lever guide bracket secured on said rear plate and having a pair of flanges extending outwardly therefrom at opposite sides of said ratchet wheel, sleeves extending about said shaft and arranged between said ratchet wheel and said flanges for limiting the movement of said shaft in the direction of its length, one of said flanges having an extension adjacent to said latch and forming a guide slot for said lever to guide the same in its movement about said fulcrum, a projection extending outwardly from said guide bracket and forming the fulcrum of said lever, and a spring secured to the outer portion of said projection for holding said lever from becoming disengaged from said projection, the other end of said spring being connected with said lever for normally urging the same into a position in which said latch engages the teeth of said ratchet wheel.

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