May 23, 1933. V. A. GRONBERG ET AL 1,910,689

COMPRESSOR LOCK FOR FILING DEVICES

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Fig. 1.

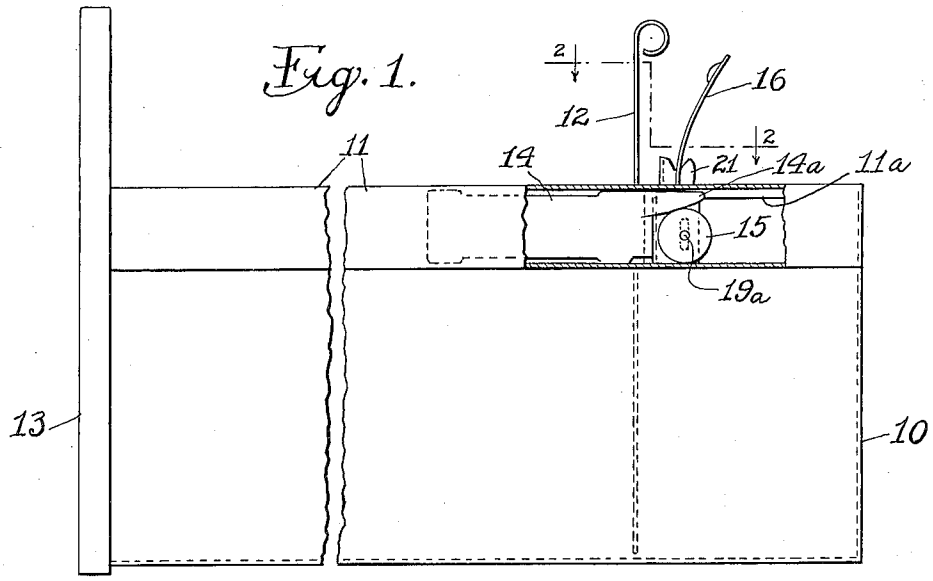


Fig. 2.

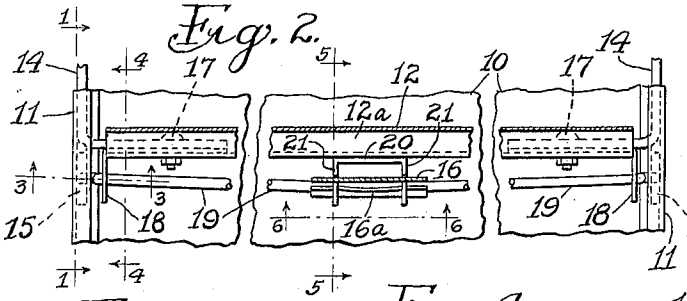


Fig. 5.

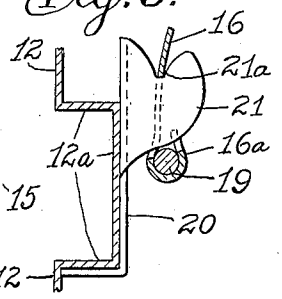


Fig. 3.

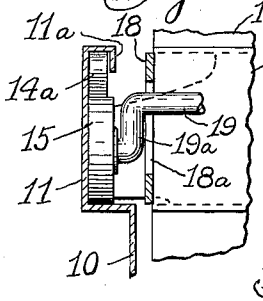


Fig. 4.

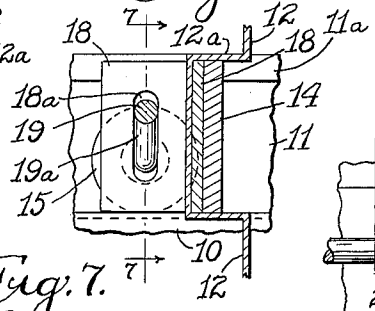


Fig. 6.

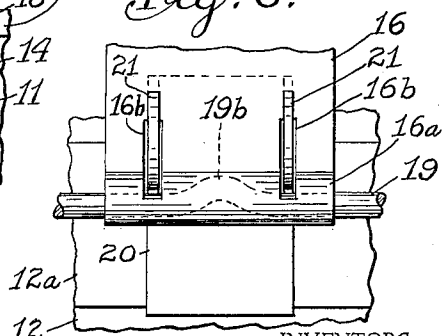
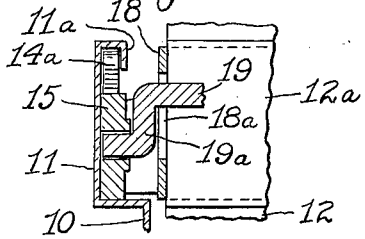


Fig. 7.



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Fig. 8.

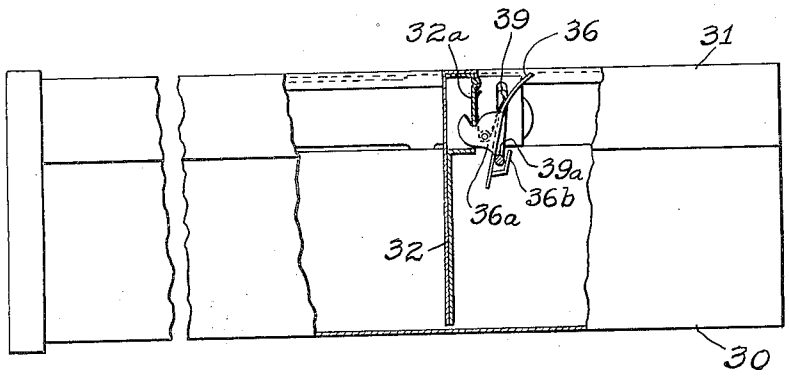


Fig. 9.

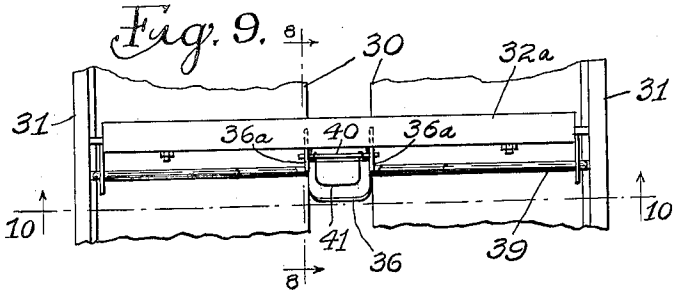
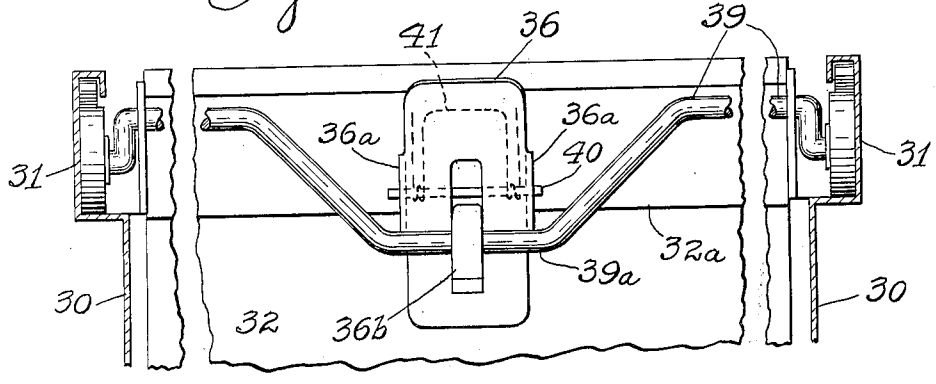


Fig. 10.



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UNITED STATES PATENT OFFICE

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COMPRESSOR LOCK FOR FILING DEVICES

Application filed November 9, 1932. Serial No. 641,856.

Our invention relates to an improved construction of compressor lock for filing devices, by which the compressor is supported and guided by devices carried by the upper portions of the side walls of the trays or drawers containing the compressors, the construction providing for free movement of the compressors towards the fronts of the trays or drawers, and cooperating locking devices preventing back movement of the compressors by improved friction means, without the use of racks, locking perforations, or similar means heretofore employed in the art for this purpose. The friction means of our invention are readily disengaged by pressing a convenient member carried by the compressor, for which condition the compressor may be moved freely in either direction in the tray or drawer.

Our invention will best be understood by reference to the accompanying drawings illustrating preferred embodiments thereof, in which

Fig. 1 shows a filing drawer in side elevation, with a part of the upper portion of its side wall broken away along the line 1—1 in Fig. 2, to show a part of the locking mechanism employed for the compressor,

Fig. 2 is a plan view of a portion of the filing drawer shown in Fig. 1, the upper portions of the compressor and of the member for releasing the locking devices, being shown in section in this view, along the line 2—2 in Fig. 1,

Fig. 3 is a sectional view to an enlarged scale, of a part of the construction shown in Fig. 2, taken along the line 3—3,

Fig. 4 is a sectional view to an enlarged scale, of a part of the construction shown in Fig. 2 taken along the line 4—4,

Fig. 5 is a sectional view to an enlarged scale, of a part of the construction shown in Fig. 2, taken along the line 5—5,

Fig. 6 is a sectional view to an enlarged scale, of a part of the construction shown in Fig. 2 taken along the line 6—6,

Fig. 7 is a sectional view of the construction shown in Fig. 4 taken along the line 7—7,

Fig. 8 shows in a view similar to Fig. 1, a card tray equipped with a modified form of our compressor supporting and locking devices, this view being partially in side elevation and partially in vertical sectional view along the line 8—8 in Fig. 9,

Fig. 9 shows in plan view, the compressor construction illustrated in Fig. 8, and

Fig. 10 shows in vertical, sectional view to an enlarged scale, the construction illustrated in Fig. 9, taken along the line 10—10 in that figure.

Similar numerals refer to similar parts throughout the several views.

As shown in Figs. 1 and 2, we illustrate a filing drawer 10 provided at the upper edge portions of its side walls, with outwardly formed channels 11, 11, between which side walls a compressor 12 is located, said compressor being preferably a plate of sheet-metal supported in vertical position in the drawer 10 for movement towards and from the front wall 13 of the drawer. The drawer is preferably made of sheet-metal and the channel portions 11, 11 are made by forming the material of the side walls of the drawer, to the conformations indicated in the drawings.

Each of the channels 11, 11, contains a shoe 14 comprising a bent metal bar having one of its members contained in the corresponding channel 11 and proportioned so that it is freely movable longitudinally in said channel, and at the same time that it is a sufficiently close fit in the channel to prevent substantial movement of the shoe in the channel in any direction excepting longitudinally of the channel. The other member of the shoe 14 extends laterally into the drawer 10 for engagement with the compressor 12 to which

it is rigidly secured as will be described. The guiding and supporting member of the shoe 14 is extended rearwardly in the corresponding channel 11 as illustrated at 14*a*, to constitute a wedge member extending over a roller 15 resting on the bottom wall of the corresponding channel 11, suitable devices being provided to normally hold the roller 15 as near the shoe 14 longitudinally of the channel 11, as the wedge member 14*a* will permit, for which condition movement of the shoe 14 away from the front wall 13 of the drawer, is prevented, since any attempt to move the shoe 14 away from the front wall 13, wedges the roller 15 tightly between the wedge member 14*a* and the bottom wall of the channel 11, the upper edge of the wedge member 14*a* being tightly pressed by such attempted movement, against the upper wall of the channel 11. When it is desired to release the locking means described, movement of the operating member 16 towards the compressor 12, by devices to be described, moves the roller 15 relatively to the wedge member 14*a*, towards the rear end of the drawer 10, and as long as the roller is held in this position by the operating member 16, locking engagement between the wedge member 14*a*, the roller 15, and the upper and lower walls of the channel 11, is prevented and the shoe 14 may be moved freely with the compressor 12 towards and from the front wall 13 of the drawer, as desired.

As indicated in Fig. 2, and more clearly shown in Figs. 4 and 5, the compressor has formed in it, and at substantially the same height as the channels 11, 11, a channel 12*a* projecting rearwardly and extending horizontally across the compressor. The channel 12*a* is proportioned to receive one member of each of the shoes 14 with a snug fit, the shoes being rigidly secured to the back wall of the channel 12*a* by bolts or screws 17, so that the rigid connection of the shoes to the compressor, results in positively supporting the compressor in the drawer, by the fit of the shoes in the channels 11 above described. One member of a bent metal bracket 18 is contained in each end portion of the channel 12*a* with a snug fit between the corresponding shoe 14 and the back wall of the channel, and is rigidly held in place by the corresponding bolt or screw 17, the other member of each of the brackets 18, extending rearwardly in the drawer from the end of the channel 12*a*, to form a support for a metal rod 19 controlling the locking action of the rollers 15. As illustrated in Fig. 4, each of the brackets 18 is provided with a vertically extending slot 18*a* in its rearwardly extending portion, to permit the rod 19 to pass through it, the fit of the rod in the slot being such that practically no movement of the rod horizontally is permitted relatively to the bracket 18, but at the same time that the rod may move freely vertically in the slot 18*a* as may be required by the operation of the locking devices.

As more clearly shown in Fig. 3, outside of each bracket 18, the rod 19 is bent to form a crank 19*a*, extending downwardly from the end of the rod 19, and at its lower end loosely engaging a bore in the corresponding roller 15. The relation of the parts is such that when the crank 19*a* is in vertical position or substantially so, the roller 15 is in snug engagement with the under surface of the wedge portion 14*a* and with the lower wall of the channel 11, to lock the compressor against movement rearwardly in the drawer 10. A suitable spring action to be described, is effective when the locking devices are in their locking relation, to tend to move the cranks 19*a* forwardly relatively to the brackets 18, and thus tending to hold the rollers 15 in locking relation with the wedge members 14*a* and the bottom walls of the channels 11. From the construction described, it will be observed that if the rod 19 is rotated to move the cranks 19*a* rearwardly relatively to the brackets 18, the rollers 15 will be moved from locking relation between the wedge members 14*a* and the lower walls of the channels 11.

As illustrated in Figs. 2 and 5, the channel 12*a* has secured to it in any convenient manner, for example by spot welding, a metal bracket 20 having walls 21, 21 bent rearwardly from the opposite vertical edges of its upper portion. Each of the walls 21 is provided with a notch 21*a* in its upper edge, having downwardly converging edges so that the bottom of the notch is substantially as wide as the thickness of the operating member 16. As more clearly shown in Fig. 6, the operating member 16 is slotted as illustrated at 16*b*, 16*b*, to pass over the outer portions of the walls 21, 21 so that the upper edges of the slots 16*a* will rest on the bottoms of the notches 21*a*, 21*a*, to pivotally support the operating member 16. The lower edge portion of the operating member 16 is tightly wrapped around the mid-portion of the rod 19, as illustrated at 16*a* in Fig. 6, so that any movement imparted to the lower end of the operating member 16 is also imparted to the rod 19, the mid-portion of the rod 19 being off-set as illustrated at 19*b*, to insure that the rod will be incapable of movement relatively to the lower portion of the operating member 16. The lower edges of the walls 21 are preferably conformed to extend over and near the rod 19, so that the operating member cannot be moved from the notches 21*a*, 21*a* when the parts are assembled and in use.

As a result of the construction described, it will be observed that movement of the upper portion of the operating member 16 towards the compressor 12, turns the operating member on its pivotal support, and thus imparts movement in two directions to the rod 19,

first, the rod is turned around its axis, by an amount corresponding to the angular movement of the operating member 16, and second, the mid-portion of the rod 19 is moved rearwardly away from the compressor by an amount determined by the angular movement of the operating member 16. The turning movement of the rod, turns the cranks 19*a*, 19*a* to move the rollers 15, 15 to releasing position, and the movement of the rod away from the compressor, springs the rod sufficiently so that its tendency to resume its original position tends to rotate the cranks 19*a*, 19*a* towards their locking relation, with the result that when the operating member 16 is released, the spring action of the rod 19 moves the cranks 19*a*, 19*a* until the rollers 15, 15 engage the wedge members 14*a*, 14*a* and the bottom walls of the channels 11, for which condition, if any attempt is made to move the compressor 12 rearwardly in the drawer, positive locking action between the wedge members, the rollers and the walls of the channels results. At the same time the relation of the parts permits the compressor to move forwardly in the drawer without effort, even with the rollers 15, 15 pressed against the wedge members 14*a*, 14*a* sufficiently to effect locking engagement if rearward movement of the compressor is attempted.

In Fig. 7 we illustrate the looseness of fit of one of the cranks 19*a* in the bore of the corresponding roller 15, which relation we find is desirable to insure that the rollers may assume positions most effectively locking the compressor for the normal condition of the operating devices.

As shown in Figs. 3 and 7, the upper edge wall of each channel 11, is preferably continued downwardly as illustrated at 11*a* adjacent the inner surface of the corresponding shoe, to insure retaining the shoes in the channels.

In Figs. 8, 9 and 10, we illustrate a card tray equipped with our modified compressor locking devices, the construction of the locking devices being substantially the same as above described, with the exception that in this case the mechanism employed to operate the locking devices is somewhat different on account of the compressor necessarily being limited to the height of the card tray. It will be understood that with drawers of the type shown in Fig. 1, the side walls are generally but part of the height of the drawer, so that the compressor extends substantially above the side walls of the drawer, whereas with card trays of the kind illustrated in Fig. 8, the side walls of the tray extend the full height of the tray and somewhat above the contents of the tray, and the compressor cannot therefore extend above the side walls, since it is frequently desirable to pile such trays, one on another. In this construction, the side walls of the tray are provided with channels along their upper edge portions, containing guiding and supporting shoes for the compressor, also locking rollers and a controlling rod extending through slotted brackets carried by the compressor, substantially as above described.

In the construction shown in Fig. 8, a tray is illustrated at 30, provided with side walls having upper channels 31 and equipped with a compressor 32. The compressor 32 is provided with an upper channel portion 32*a* extending horizontally across the compressor and projecting rearwardly therefrom. An operating member 36 of sheet-metal provided with bent walls 36*a* extending forwardly, is provided to control the operation of the rod 39, which in turn controls the locking rollers. The walls 36*a* are notched at their upper edges and the walls are formed to extend through corresponding slots in the rear wall of the channel 32*a*, to pivotally support the operating member 36 in much the same manner that the operating member 16 is pivotally supported by the walls 21 above described. The rod 39, as more clearly shown in Fig. 10, is provided with a downwardly extending crank 39*a* at its mid-portion, which lies adjacent the lower part of the operating member 36, a tongue 36*b* being formed from the member 36 to extend around the crank portion 39*a*, so that movement of the operating member 36 on its pivotal support will carry the crank portion 39*a* with it. In this manner, the rod 39 is rotated by operation of the operating member 36 to move the locking rollers to their locking and releasing positions. A rod 40 extends through the side walls 36*a* of the operating member, to hold a spring 41 in place between the upper part of the operating member and the channel 32*a*, the spring being under sufficient tension to move the upper part of the operating member rearwardly to in turn move the rollers to their locking position, when the operating member 36 is free from releasing pressure.

The compressor locking devices above described are particularly applicable to drawers, trays and compressors made of sheet metal, although we do not limit ourselves to such constructions. By our improved construction we thus provide compressor locking devices for filing receptacles, carried by their side walls in such a manner that the locking forces are balanced and self-contained on each channel or runway cooperating with the locking devices, so that there are no unbalanced forces on the side walls of the receptacles. Furthermore the side channels do not add expense to the construction, since it is desirable to provide reinforcement and stiffening to the upper edges of the side walls in any event, and this reinforcement and stiffening is effectively pro-

duced by the side channels described. In this way the bottoms of the filing receptacles are not complicated with locking devices of any kind, and are clear, plane surfaces to support the contents of the receptacles, and the locking devices are protected from the accumulation of dirt and foreign matter tending to interfere with their proper and free action, which readily occurs where the locking devices are between the bottoms of the compressors and the bottom walls of the receptacles.

While we have shown our invention in the particular embodiment above described, it will be understood that we do not limit ourselves to this exact construction as we may employ equivalents known to the art at the time of the filing of this application without departing from the scope of the appended claims.

What we claim is:

1. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members.

2. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said channels being at the upper edge portions of said side walls and reinforcing the same.

3. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said channels being at the upper edge portions of said side walls and reinforcing the same, each of said channels having an inner and downwardly extending edge flange overlapping the inner surface of the member of the corresponding shoe therein.

4. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and supporting said rod for turning movement, and an operating member pivotally supported by said compressor and engaging said rod to turn it.

5. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and sup-

porting said rod for turning movement, and an operating member pivotally connected with said compressor and having a portion extending from said pivotal connection and rigidly secured to said rod.

6. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and supporting said rod for turning movement, and an operating member pivotally connected with said compressor and engaging opposite sides of the mid-portion of said rod, said rod being offset at its said mid-portion.

7. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and supporting said rod for turning movement, an operating member pivotally connected with said compressor and loosely engaging opposite sides of the mid-portion of said rod, said rod being offset at its said mid-portion, and a spring tending to move said rod and said rollers to the locking position of the latter.

8. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor and engaging said rollers to move the latter to locking and releasing relations with said wedge members.

9. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, said devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and supporting said rod for turning movement, and an operating member pivotally supported by said compressor and engaging said rod to turn it, said rod being offset at its portion engaging said operating member.

10. Compressor locking means for filing receptacles, comprising the combination of receptacle side walls having longitudinal channels opening towards each other, a compressor in substantially vertical position between said side walls, bent metal shoes each having one of its members rigidly secured to said compressor and its other member in front of said compressor and in one of said channels for sliding movement therein, each of said shoes having a wedge member extending back of said compressor in the corresponding channel, rollers in said channels for locking engagement with said wedge members, and devices carried by said compressor for manual operation to move said rollers from locking engagement with said wedge members, said devices comprising a metal rod extending horizontally adjacent the back surface of the compressor, said rod carrying end cranks engaging bores in said rollers, brackets extending from said compressor and supporting said rod for turning movement,

and an operating member pivotally connected with said compressor and having a portion extending from said pivotal connection and rigidly secured to said rod, said rod also constituting a spring for moving said rollers into engagement with said wedge members.

In witness whereof, we hereunto subscribe our names this 28th day of October, A. D. 1932.

VICTOR A. GRONBERG.
JAMES R. JONES.