C. M. BURDETTE.

CONE PULLER.

APPLICATION FILED MAY 9, 1919.

1,320,378. Patented Nov. 4, 1919.

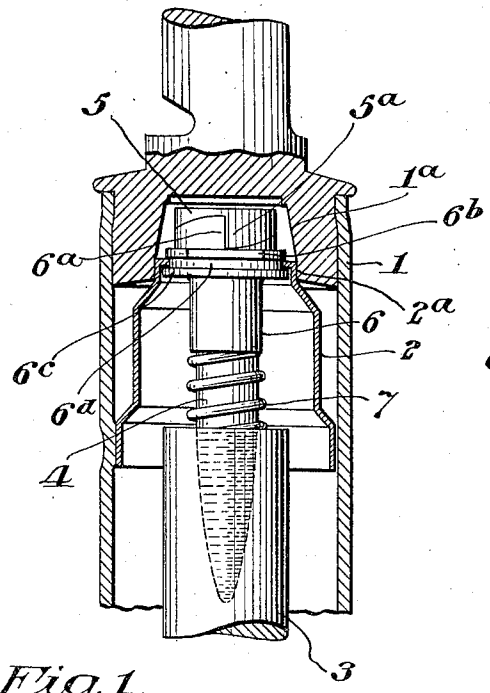



Fig. 1.

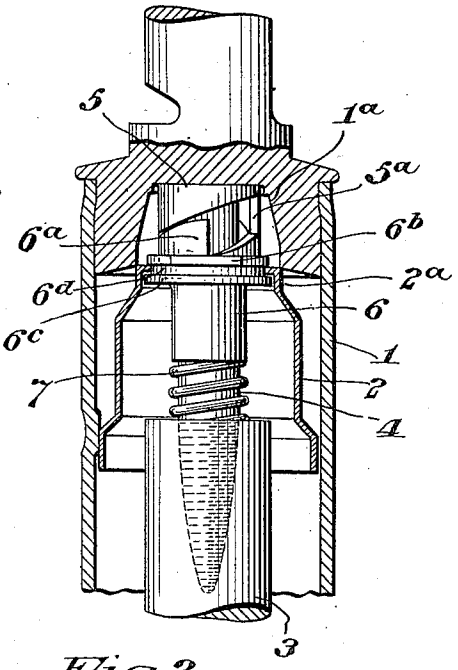



Fig. 2.

Fig. 3.

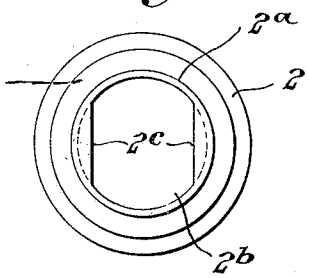



Fig. 5.

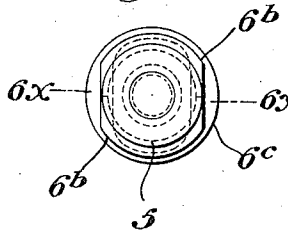
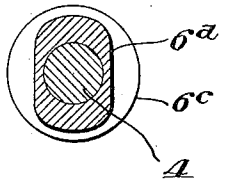



Fig. 7.



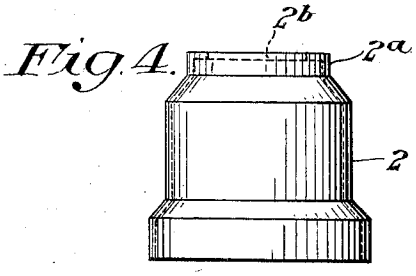




Fig. 4.

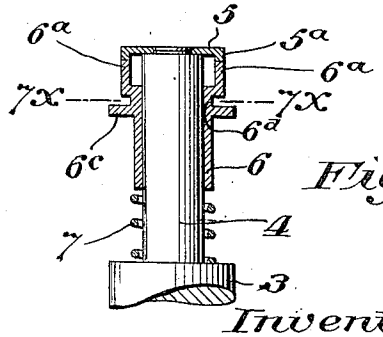



Fig. 6.

Inventor:
C. M. Burdette
By Chas. N. Butler
Attorney.

# UNITED STATES PATENT OFFICE.

CRONIN M. BURDETTE, OF WEST CHESTER, PENNSYLVANIA, ASSIGNOR TO THE SHARPLES SEPARATOR COMPANY, OF WEST CHESTER, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## CONE-PULLER.

1,320,378. Specification of Letters Patent. Patented Nov. 4, 1919.

Application filed May 9, 1919. Serial No. 296,027.

*To all whom it may concern:*

Be it known that I, CRONIN M. BURDETTE, a citizen of the United States, residing at West Chester, in the county of Chester and State of Pennsylvania, have invented a new and useful Cone-Puller, of which the following is a specification.

My invention is designed especially for placing and pulling the "cones" used in the bowls of centrifugal separators, but it will be understood that it is not limited to such use.

The characteristic features of the invention are comprised in its means for effecting an engagement with a device set or to be set in a cavity, as the interior of a tubular bowl or the like, and in pulling such device from its engagement by a turning movement which effects a wedging action whereby it is moved longitudinally.

In its preferred form, the mechanism comprises a handle or shaft provided with a stem terminating in a bearing having helical wedging segments, in combination with a spring pressed sleeve movable on said stem, provided with wedging segments coacting with the segments aforesaid to effect a longitudinal movement of said sleeve against the action of the spring, and clutching means for effecting an interlocking engagement with the device to be manipulated.

In the accompanying drawings, Figure 1 is a broken sectional elevation of the top of a separator bowl in combination with my improved mechanism in engagement with a circular division wall or "cone" in operative position in the bowl; Fig. 2 is a view of the same illustrating a second position of the mechanism and "cone" which has been detached from its engagement in the bowl by turning the handle or shaft of the mechanism; Fig. 3 is a top plan view of the detached "cone"; Fig. 4 is a side elevation of the detached "cone"; Fig. 5 is a top plan view of the "cone" manipulating device or "puller"; Fig. 6 is a longitudinal sectional elevation taken on the line $6^{\times}$—$6^{\times}$ of Fig. 5, and Fig. 7 is a sectional view taken on the line $7^{\times}$—$7^{\times}$ of Fig. 6.

The mechanism illustrated in the drawing comprises a tubular bowl 1 having a socket $1^a$ in the head thereof, in combination with a "cone" or circular partition 2 having a head $2^a$ set therein, the "cone" head containing an oblong opening $2^b$ having the inwardly projecting flanges $2^c$ on opposite sides thereof.

The "puller" or extracting and replacing device of my invention comprises the handle or shaft 3 provided at an end thereof with a stem 4 having a head 5 on which are helical segments or wedging jaws $5^a$. A sleeve 6 is placed on the stem 4 and is provided with the helical segments or wedging jaws $6^a$ adapted for engagement with the similar jaws $5^a$, with the oblong flange or oppositely projecting flanges $6^b$ adapted to pass through the opening $2^b$ there to be turned into lapping engagement with the flanges $2^c$, with the circular flange $6^c$, having a diameter larger than the distance between the flanges $2^c$ and with the oblong section $6^d$ between the parts $6^b$ and $6^c$. A coiled spring 7, disposed on the shank 4 between the handle 3 and the sleeve 6, acts to move the latter along the shank and press the jaws $6^a$ against the jaws $5^a$.

In operation, with the head $2^a$ of the cone 2 set in the socket $1^a$ of the bowl 1, the extracting device is inserted and initially occupies the position illustrated in Fig. 1, the part 5 bearing against the top of the bowl and the section $6^d$ registering with the flanges $2^c$ which now lie between the flange $6^c$ and the plane of the flanges $6^b$. The handle or shaft 3 being turned to the right, the section $6^d$ engages the flanges $2^c$ and the flanges $6^b$ lap the flanges $2^c$, the turning movement of the sleeve 6 relative to the "cone" 2 being limited thereby. Upon further turning the handle 3, the jaws $5^a$ are moved angularly with relation to the jaws $6^a$, which retracts the sleeve 6 on the shank 4 against the action of the spring 7, the "cone" 2 being thereby detached from its frictional engagement in the socket $1^a$ and being removed from the bowl by withdrawing the extracting device. To replace the "cone" in the bowl, such "cone" may be engaged on the extracting device with the flanges $2^c$ in registration with the oblong section $6^d$ and in bearing engagement with the flange $6^c$. The tool with the "cone" thereon is then thrust into the bowl so as to seat the head of the "cone" in the socket. If necessary, the tool or extracting device is

turned so that the flanges $6^b$ will pass through the opening $2^b$ when such tool can be withdrawn.

It will be understood that for the purpose of assembling the device, the handle 3 may have its stem 4 screwed therein after the sleeve 6 and spring 7 have been placed on the stem, or the head 5 may be fixed on the stem after the spring and sleeve have been placed thereon.

Having described my invention, I claim:—

1. In a device of the character described, a handle having a stem provided with a wedging jaw, in combination with a sleeve on such stem, said sleeve having a wedging jaw coacting with said wedging jaw first named, and means for limiting the turning movement of said sleeve with said handle, whereby said jaws move said sleeve longitudinally on said stem.

2. In a device of the character described, a sleeve having means for interlocking it with a device to be operated thereby, in combination with a handle having a part thereon extending through and adapted to turn in said sleeve, said sleeve and part having coacting devices whereby said sleeve is adapted to be moved longitudinally on said part by turning said handle.

3. In a device of the character described, the combination of a handle having a head, a sleeve on a section of said handle, and a spring for pressing said sleeve toward said head, said head and sleeve having coacting means whereby said sleeve is moved longitudinally by turning said handle relatively thereto.

4. In a device of the character described, the combination with an article having an aperture therein, of a handle having a part with a head thereon adapted to pass through said aperture, and a sleeve movable on said part and having a clutching member adapted to pass through said aperture, a member adapted to bear against said article when said sleeve is turned and a member coacting with said head, whereby said sleeve is movable longitudinally to pull said device on turning said handle.

In testimony whereof I have hereunto set my name this 30th day of April, 1919.

C. M. BURDETTE.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**