

No. 817,913.

PATENTED APR. 17, 1906.

W. C. HARTMANN.  
DRIVING MECHANISM FOR CENTRIFUGAL SEPARATORS.

APPLICATION FILED OCT. 17, 1904.

2 SHEETS—SHEET 1.

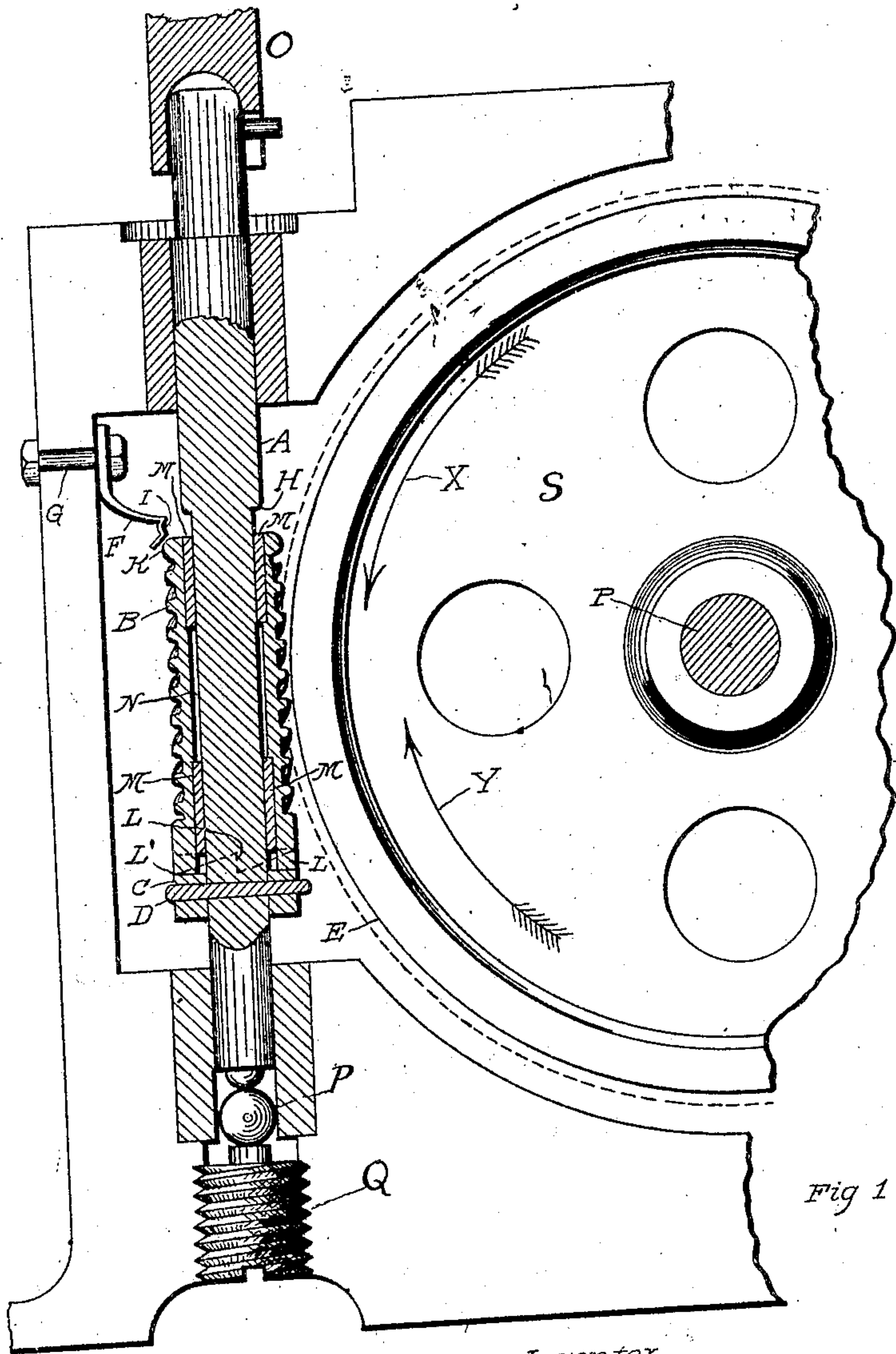


Fig 1

Witnesses:

Cecil King,  
Bertha Chase

Inventor

William C. Hartmann

By Attorney

Clark C. Wood

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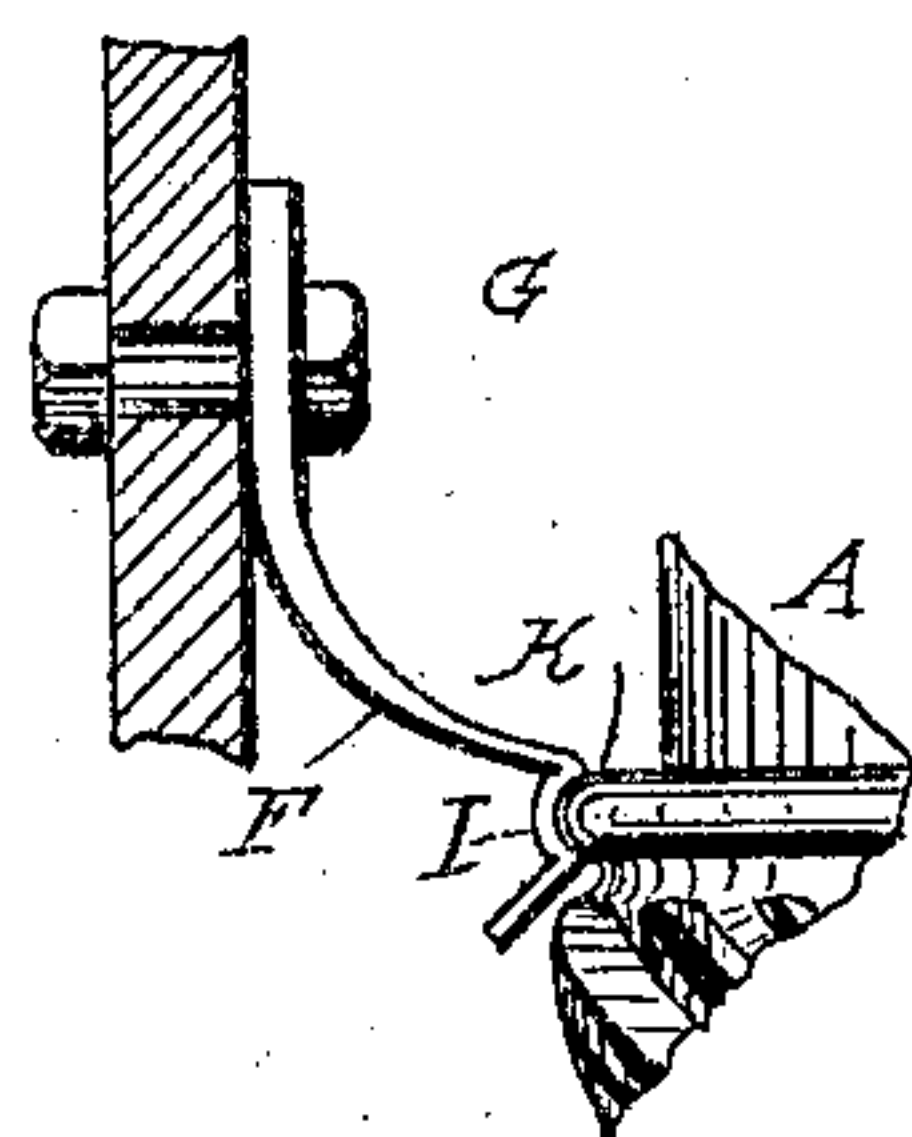


Fig. 3.

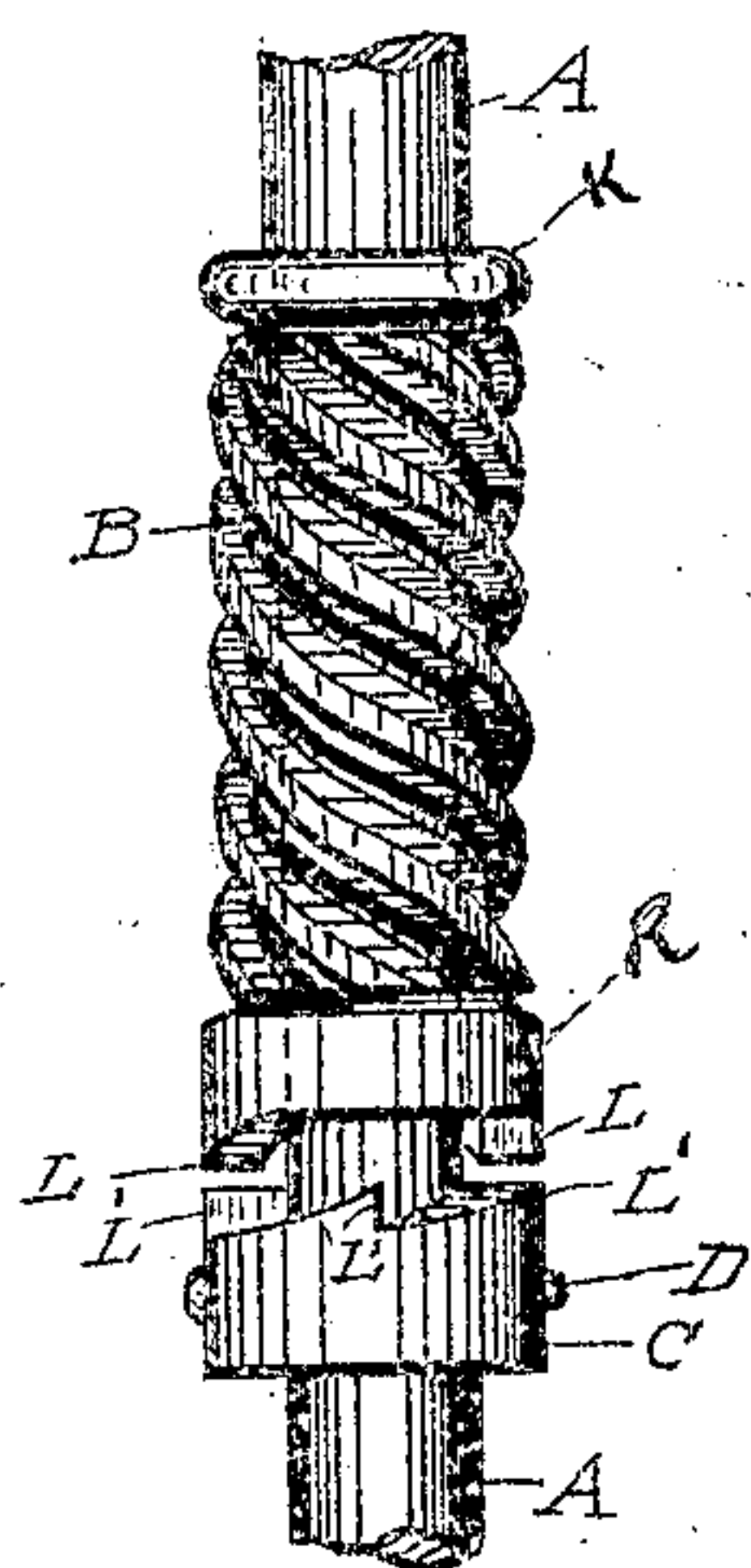


Fig. 2.

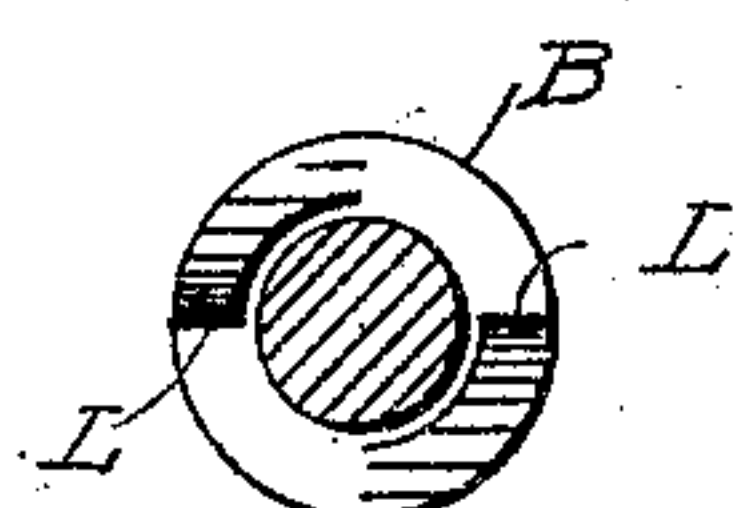


Fig. 4.

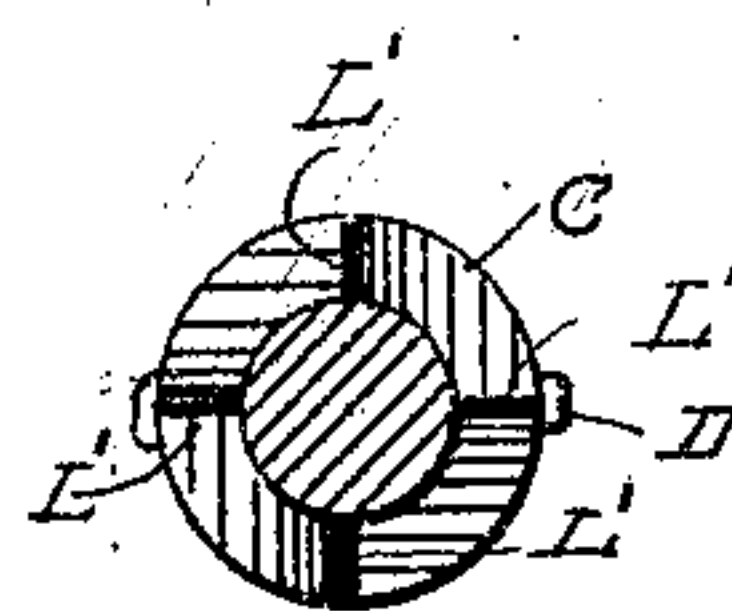


Fig. 5.

Witnesses:

Cecils King.  
Bertha Chase

Inventor

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# UNITED STATES PATENT OFFICE.

WILLIAM C. HARTMANN, OF LANSING, MICHIGAN, ASSIGNOR TO OMEGA SEPARATOR COMPANY, OF LANSING, MICHIGAN.

## DRIVING MECHANISM FOR CENTRIFUGAL SEPARATORS.

No. 817,913.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed October 17, 1904. Serial No. 228,850.

*To all whom it may concern:*

Be it known that I, WILLIAM C. HARTMANN, a citizen of the United States, residing at Lansing, county of Ingham, and State of Michigan, (having my post-office address at Lansing, Michigan,) have invented certain new and useful Improvements in Driving Mechanism for Centrifugal Separators, of which the following is a specification.

My invention relates to driving mechanism for centrifugal cream-separators; and its purpose is to make a simple and efficient device by the operation of which the gearing and driving mechanism will instantly become disengaged from the worm-spindle when the propelling force ceases to be applied and the bowl will continue its revolutions independently of the gearing, which will remain at rest.

Figure 1 is a vertical section of the worm-spindle, worm-wheel, and worm of a centrifugal separator to which my device is applied. Fig. 2 is an elevation of the worm and ratchets. Figs. 3, 4, and 5 are detailed views of the different parts of Figs. 1 and 2.

A, Figs. 1 and 2, is a worm-spindle of a centrifugal separator, to the upper end of which the bowl-stem O is attached in the usual manner. The shaft revolves at its lower end on the double ball-bearing P, which may be adjusted by means of the screw Q. A worm B, cut in the usual form, is adapted to slide and revolve freely on the worm-spindle A. This worm carries at its lower end a collar R, having on its lower face ratchet-teeth L, adapted to engage with similar ratchet-teeth L' on a collar C, firmly secured by a pin D or other suitable means to the worm-spindle A. A shoulder H is formed on the worm-spindle A to limit the upward movement of the worm B. While it is not an essential feature of my invention, I prefer to introduce bushings M near each extremity of the worm B for the purpose of getting a smoother freer motion of the worm on the worm-spindle A.

A collar or enlarged portion K is formed at the upper extremity of the worm B to engage with a depression I, formed in a spring F, so that when the worm is raised it will be held in its position until pressed downward by the operation of the worm-wheel S.

The operation of the device is as follows: Suppose the worm to be in the position

shown in Fig. 3, in which the worm is held in its elevated position by the spring F. If the worm-wheel S is caused to revolve in the direction indicated by the arrow X, the first effect will be to press the worm-gear B downward, releasing it from the spring F, and to make it revolve on the worm-spindle A, thus bringing the ratchet-teeth L into engagement with the ratchet-teeth L' and compelling the worm-spindle A to revolve with the worm. If, however, the worm-wheel S is retarded or stopped or given a reverse motion in the direction indicated by the arrow Y, the teeth of the worm B immediately act on the teeth of the wheel S as inclined planes, raising the worm B until it is stopped by the shoulder H, in which position the ratchet L is disengaged from the ratchet L', leaving the worm stationary, the worm-spindle A continuing its revolutions by its own momentum until it gradually comes to rest.

Of course the form of the ratchet-teeth L and L' may be changed, or a pin may be employed in place of the teeth, without departing from the spirit of my invention.

I claim—

1. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve and move lengthwise on the said spindle, a ratchet attached to said spindle, and a ratchet attached to said worm, adapted to engage with the ratchet attached to the spindle, and automatically-released means for holding said worm at the limit of its movement in one direction, substantially as described.

2. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve and move lengthwise on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm, adapted to engage with the ratchet attached to the spindle, and automatically-released means for holding the said worm at the limit of its movement in one direction, and means for limiting the upward motion of said worm, substantially as described.

3. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm adapted to engage with the ratchet attached to the spindle, means for



limiting the upward motion of said worm, and means for retaining said worm in its elevated position, substantially as described.

4. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm adapted to engage with the ratchet attached to the spindle, means for limiting the upward motion of said worm, means for retaining said worm in its elevated position, and a bushing between the said worm and the worm-spindle, substantially as described.

5. The combination with a worm-wheel, and a worm-spindle, of a worm mounted to

freely revolve upon and slide lengthwise of said spindle, means engaging said worm to hold it at the limit of its movement in one direction, and releasable by engagement of the worm and worm-wheel and means constructed to be thrown into and out of operative engagement by the endwise movement of said worm.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM C. HARTMANN.

Witnesses:

HARRIET L. LAWRENCE,  
C. C. Wood.