

No. 713,579.

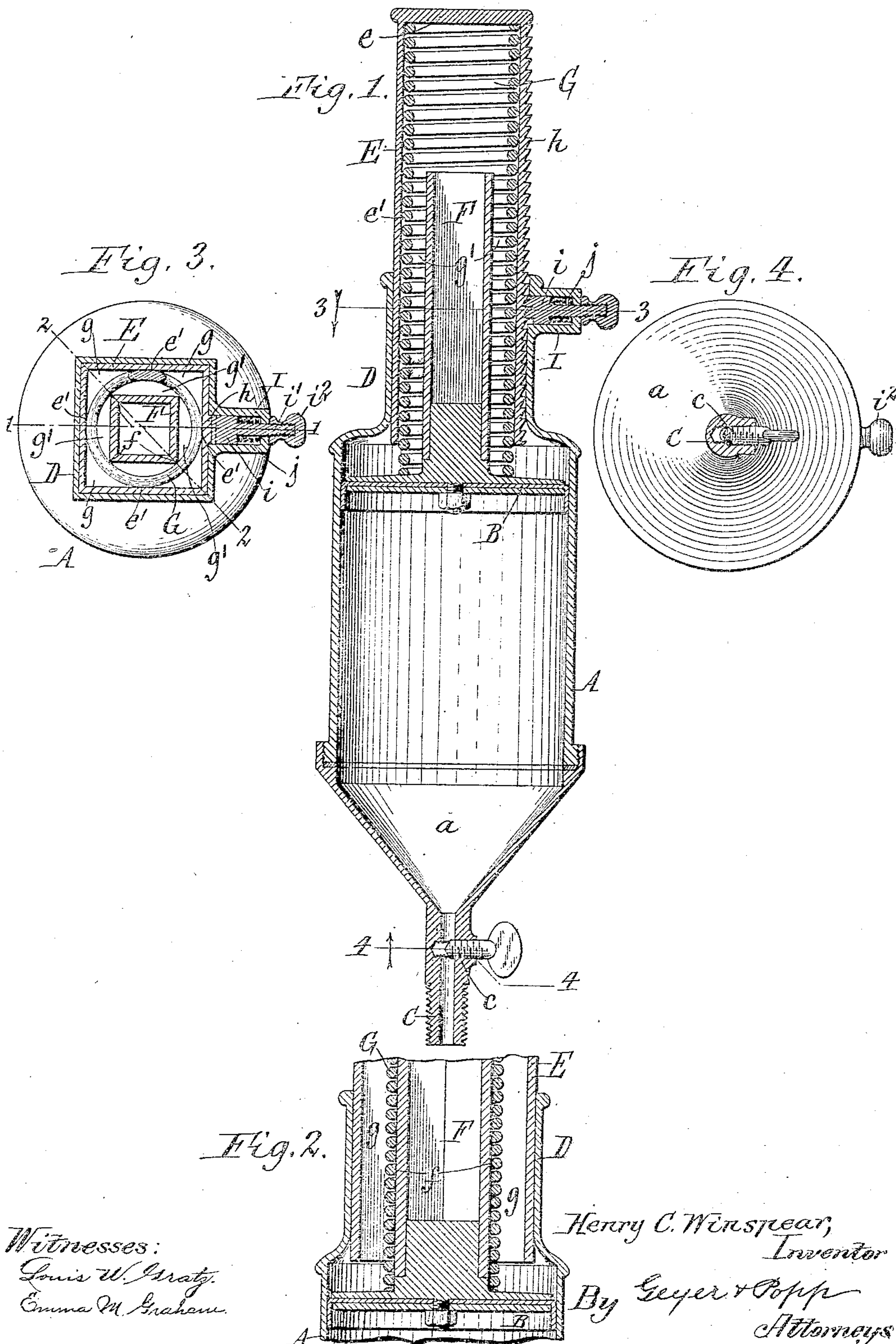
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H. C. WINSPEAR.

GREASE CUP.

(Application filed Apr. 17, 1902.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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GREASE-CUP.

SPECIFICATION forming part of Letters Patent No. 713,579, dated November 11, 1902.

Application filed April 17, 1902. Serial No. 103,294. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. WINSPEAR, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Grease-Cups, of which the following is a specification.

This invention relates to a grease-cup of that class in which the grease is discharged by a spring-pressed plunger.

One of the objects of my invention is to provide a grease-cup of this character in which the tension device and guide for the plunger are so organized that the plunger is guided perfectly in the barrel and the use of a light spring is permitted which can be easily set by the attendant.

Another object of my invention is to provide a take-up device for the tension device which can be readily adjusted and which reduces the possibility of admitting dust into the barrel of the grease-cup to a minimum.

In the accompanying drawings, Figure 1 is a sectional elevation of a grease-cup embodying my improvements, the section being taken in line 1 1, Fig. 3. Fig. 2 is a fragmentary sectional elevation of the grease-cup in line 2 2, Fig. 3. Fig. 3 is a horizontal section in line 3 3, Fig. 1, looking downward. Fig. 4 is a horizontal section in line 4 4, Fig. 1, looking upward.

Like letters of reference refer to like parts in the several figures.

A represents the cylindrical barrel of the grease-cup, and B the plunger, which moves vertically therein. The lower end of the barrel is closed by a conical bottom *a*, which is secured to the barrel by a screw-joint and provided centrally with a discharge-nipple C. In this nipple is arranged a valve *c*, whereby the discharge of grease from the barrel may be regulated. This valve preferably consists of a screw arranged in a screw-threaded opening which intersects the passage of the nipple C.

Projecting upwardly from the central part of the top of the barrel A is a guide-collar D, which is preferably square in cross-section.

E represents a vertically-movable adjusting-sleeve, which is also square in cross-section and guided in the collar D of the barrel. On its upper side the plunger is provided

with a stem F, which is also square in cross-section and projects upwardly into the guide-sleeve.

G represents a spiral spring having its coils arranged in the angular space between the stem and the adjusting-sleeve and bearing at its opposite ends against the top of the plunger and the top of the adjusting-sleeve.

Upon pressing downwardly on the adjusting-sleeve while the plunger bears upon the grease in the barrel the spring G is compressed between the sleeve and the plunger, which causes the spring to press the plunger downwardly on the grease and discharge the same through the nipple of the barrel. As appears in Fig. 3, the relation of the spring G and the adjacent sides of the adjusting-sleeve and plunger-stem is such that the spring bears at intervals on its outer side against the inner receding parts *e'* of the adjusting-sleeve and at intervals on its inner side against the outer salient parts *f* of the stem, thereby separating the spring at intervals by intervening spaces *g g'* from the sleeve and stem. By thus arranging the spring to bear at intervals against the angular interior and exterior surfaces of the sleeve and stem, respectively, the stem is accurately guided in its vertical movement, preventing the plunger from tilting and binding in the barrel and at the same time reducing the frictional contact between the spring and the adjusting sleeve and stem to a minimum, whereby the spring is permitted to expand freely for effectively pressing the plunger downwardly against the grease, enabling a lighter spring to be employed for this purpose.

In grease-cups of this character as heretofore constructed the adjusting-sleeve and plunger-stem were cylindrical in cross-section and the spiral spring was fitted comparatively tight into the annular space between the sleeve and stem in order to properly guide the plunger. This construction is objectionable, because the large area of frictional contact between the spring and the sleeve and stem prevents the spring from expanding freely and necessitates employing a heavy spring to overcome this friction, which is difficult to compress for putting the grease-cup in working condition.

For the purpose of holding the adjusting-

sleeve in position a take-up device is provided which normally permits the sleeve to be depressed for compressing the spring, but prevents the sleeve from rising. This take-up device consists, essentially, of a longitudinal row or series of narrow ratchet-teeth *h*, arranged on one side of the adjusting-sleeve, and a detent-pawl or catch *i*, mounted on the barrel and engaging with the ratchet-teeth. Each of the latter has an inclined or beveled lower side and an abrupt upper side. The pawl is movable laterally in a pocket *I*, formed on the guide-collar of the barrel, and is connected by a rod *i'* with a finger-piece or button *i''*. A spring *j*, interposed between the pawl and the back of the guide-pocket, holds the pawl yieldingly in engagement with the ratchet-teeth. Upon pressing the adjusting-sleeve downwardly the pawl is deflected by the inclined sides of the teeth and returned by its spring into engagement with the abrupt side of the teeth, thereby holding the adjusting-sleeve in any position to which it may be depressed. When it is desired to raise the adjusting-sleeve for refilling the barrel with grease, this may be done by withdrawing the pawl by means of the finger-piece *i''*, so that it clears the teeth of the adjusting-sleeve.

In the cylindrical form of the adjusting-sleeve and guide-collar heretofore in use on grease-cups the ratchet-teeth extended entirely around the circumference of the adjusting-sleeve. This is objectionable, because the spring-pressure of the detent-pawl against one side of the adjusting-sleeve causes the ratchet-teeth on the opposite side to grip against the inner side of the guide-collar, thereby retarding the descent of the adjusting-sleeve and rendering the depression of the same difficult. Furthermore, the large exposed area of the annular ratchet-teeth affords a lodging-place for a considerable amount of dust, which if

gles with the grease and impairs its quality for lubricating purposes. In my improved construction only a narrow row of ratchet-teeth is employed, and as the pawl engages successively with these teeth any dust lodging thereon is liable to be dislodged or compressed, thereby reducing to a minimum the liability of admitting dust to the grease in the barrel.

I claim as my invention—

1. The combination of a barrel, an adjusting-sleeve guided in the top of said barrel and having an angular interior, a plunger arranged in the barrel, a stem projecting upwardly from the plunger into the adjusting-sleeve and having an angular exterior, and a spiral spring bearing at opposite ends against the plunger and the adjusting-sleeve and having its outer and inner sides bearing at intervals against the angular surfaces of the adjusting-sleeve and stem and separated therefrom at intervals by intervening spaces, substantially as set forth.

2. The combination of a barrel provided in its top with a guide-collar which is square in cross-section, an adjusting-sleeve of square cross-section guided in said collar, a plunger arranged in the barrel, a stem of square cross-section projecting from the plunger upwardly into the adjusting-sleeve, and a coil-spring bearing at opposite ends against the plunger and the top of the adjusting-sleeve and having its outer and inner sides bearing at intervals against the receding parts of the adjusting-sleeve and the salient parts of the stem and separated at intervals from the sleeve and stem by intervening spaces, substantially as set forth.

Witness my hand this 12th day of April, 1902.

HENRY C. WINSPEAR.

Witnesses:

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