

F. MULLER.

PASTE TUBE.

APPLICATION FILED DEC. 30, 1907.

849,545

Patented Feb. 15, 1910.

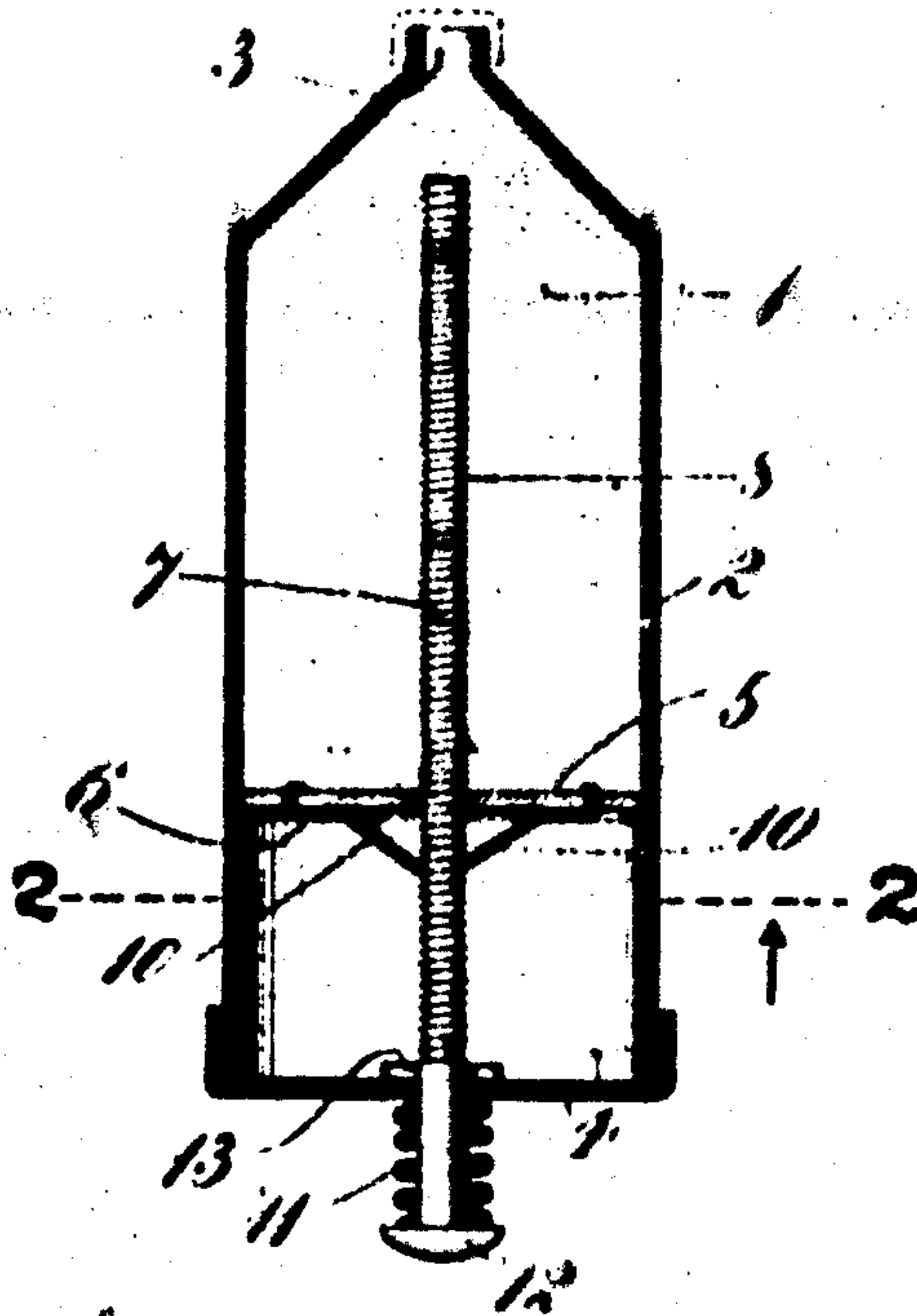


FIG. 1.

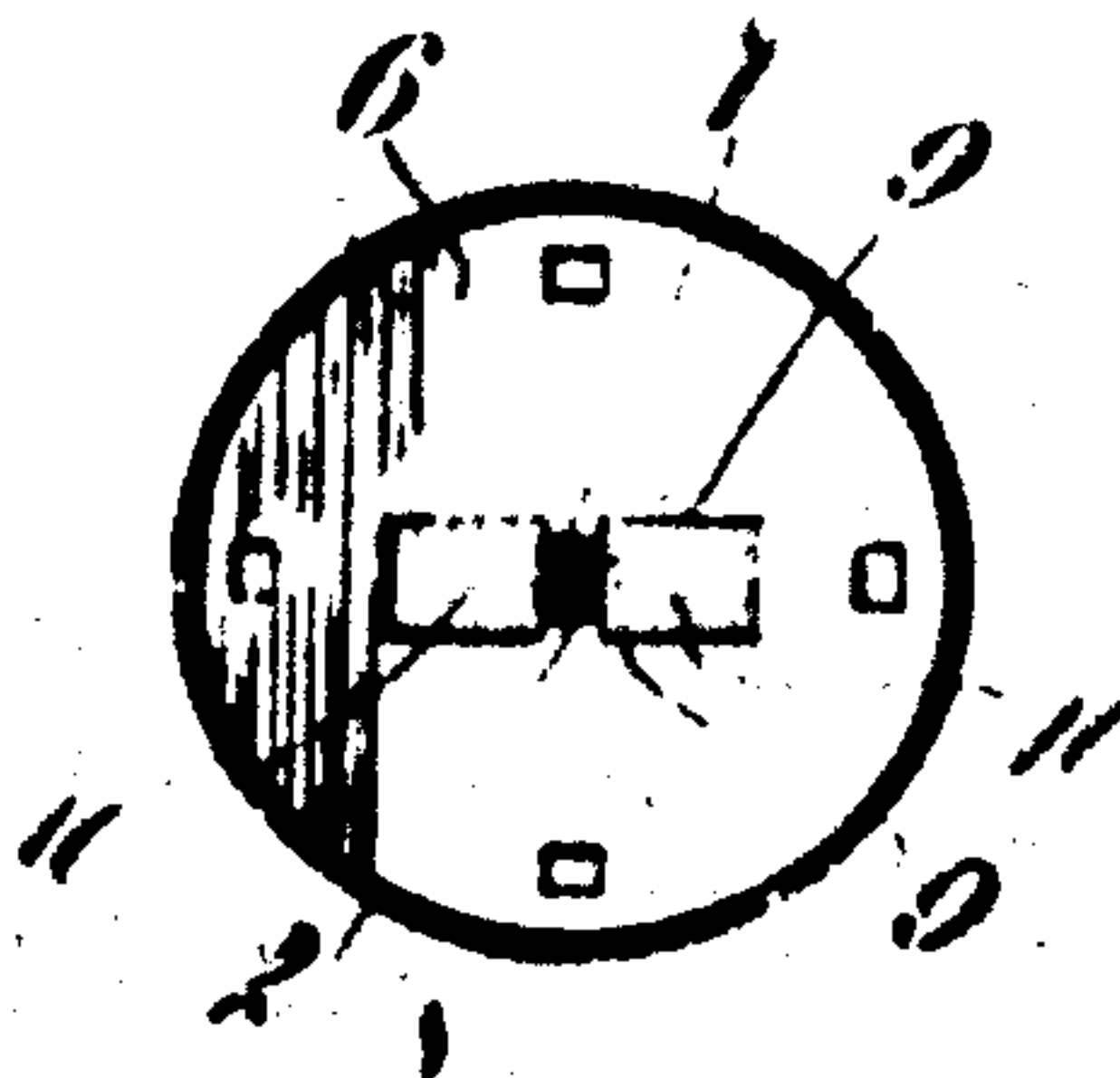


FIG. 2.

WITNESSES:

Joseph T. Brown
Mary A. O'Brien

INVENTOR:

Friedrich Muller.

By E. S. Chadwick,
Attorney.

UNITED STATES PATENT OFFICE.

FRIEDERICH MULLER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO WALTER L. CLARK, OF NEW YORK, N. Y.

PASTE-TUBE.

949,515.

Specification of Letters Patent.

Patented Feb. 15, 1916.

Application filed December 30, 1907. Serial No. 408,677.

To all whom it may concern:

Be it known that I, FRIEDERICH MULLER, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Paste-Tubes, of which the following is a specification.

This invention relates to paste tubes and like receptacles of that type in which a sliding piston is provided within the tube for expelling the contents of the latter through a suitable outlet; my improvements being intended to provide a simple and efficient arrangement of piston and piston-operating means for such a tube, whereby any desired portion of the contents of the tube may be expelled at will by the user.

A paste tube containing my improvements as preferably constructed is illustrated in the accompanying drawings, in which—

Figure 1 is a central, longitudinal section through the tube and its piston, and Fig. 2 is a cross-section on the line 2—2 in Fig. 1.

In the drawings, 2 indicates a rigid tubular receptacle having an outlet 3 at one end and closed at its opposite end by means of a cap 4. Within the tube 2, behind the material contained therein, is located a piston consisting of a disk 5, of cork or similar semi-elastic material, and a metallic backing 6 secured to the disk 5 and serving to reinforce and stiffen the latter. These disks 5 and 6 are centrally perforated to receive a piston-operating rod 7 which also passes through a central perforation in the cap 4 and projects a short distance beyond the exterior of the latter. This rod 7, which extends longitudinally within the tube 2 from one end of the latter to the other, or substantially so, is provided along its length with circumferential ridges or teeth 8, and the central portion of the disk 6 is slit as at 9 to provide two or more tongues 10 which are symmetrically disposed around or on opposite sides of the rod 7 and slant backward and inward from the plane of the disk, as shown in Fig. 1, so that their free ends bear against the sides of the rod with a light spring pressure due to the elasticity of the metal and engage the ridges 8 formed thereon.

For operating the rod 7 in one direction, I prefer to provide a coiled spring 11 sur-

rounding the exposed outer portion of said rod and located between a head 12 secured thereto and the outer face of the cap 4, so that if said rod is pushed inward the spring will be compressed and will throw the rod outward when released. A collar 13 secured to the rod within the tube 2 serves to limit the backward or outward movement of said rod by coming in contact with the inner face of the cap 4.

In use, when the user desires to expel a portion of the contents of the tube 2, he pushes the rod 7 forward or inward, whereupon the free ends of the tongues 10 are engaged by the ridges 8 on the rod, and given a tendency to approach each other, whereby said rod is tightly gripped between them. The piston is thus connected to and forced forward with the rod, and expels some of the contents of the tube through the outlet 3, the quantity so expelled being dependent, of course, upon the distance through which the rod is pushed forward. When the rod is released the spring 11 throws it backward and the tongues 10 slip over the ridges formed on the rod, the piston being held stationary by its frictional engagement with the tube 2.

I prefer to form the ridges 8 by cutting a continuous screw-thread on the rod 7, since in such case the piston can be forced forward not only by pushing the rod in an end-wise direction but also by rotating said rod in the proper direction, the tongues 10 acting like a nut on the screw-thread and rearward movements of the rod being prevented by the collar 13. With this arrangement, the contents of the tube may be discharged in equal pre-determined increments by repeatedly pushing the rod 7 forward as far as it will go, or any desired portion of such contents may be expelled by rotating the rod as above described.

It will be observed as one of the advantages of my invention, that the construction above described is exceedingly simple and inexpensive; also that the clutch connection between the piston and its operating rod is of such a nature as to maintain the plane of the piston at right angles to the direction of its movement, inasmuch as the spring tongues are symmetrically disposed around said rod and bear against the same at a little distance behind the point at which the rod

passes through the cork disk, so that the effect of a relatively long bearing of the piston on said rod is secured.

I claim as my invention:---

5 1. In a device of the character described, the combination with a tubular receptacle having an outlet, of a piston mounted to slide therein and comprising a yielding disk and a reinforcing metallic backing therefor, 10 said backing being formed to provide integral spring tongues which slant backward therefrom and point toward each other, and a longitudinally-extending rod passing through said piston and between the free 15 ends of said tongues, said rod being provided with circumferential teeth or ridges cooperating with said tongues to form a clutch.

20 2. In a device of the character described, the combination with a tubular receptacle having an outlet, of an externally screw-threaded rod extending longitudinally within the receptacle and passing through one 25 end of the same and a piston mounted to slide in said receptacle and perforated to receive said rod, said piston being provided with spring tongues adapted to engage the threads on the rod.

30 3. In a device of the character described, the combination with a tubular receptacle

having an outlet, of an externally screw-threaded rod mounted to rotate in said receptacle and also to move longitudinally therein, without rotation, a piston arranged 35 to slide in said receptacle and perforated to receive the rod, and spring clutch members carried by said piston for engaging the threads on the rod when the latter is either rotated or pushed forward.

4. In a device of the character described, 40 the combination of a tubular receptacle having an outlet at one end and a cap closing its other end, an externally screw-threaded rod passing through said cap and extending 45 longitudinally within the receptacle, said rod being arranged to have a limited end-wise movement, a spring for operating said rod in one direction and a piston arranged to slide in the receptacle and perforated to 50 receive said rod, said piston having opposed spring tongues extending backward therefrom and arranged to engage the threads on the rod at their free ends.

In testimony whereof, I have hereunto subscribed my name this twenty-third day 55 of December, 1907.

FRIEDERICH MULLER.

Witnesses:

GEO. H. WILDER,
CHARLES S. ROBBINS.