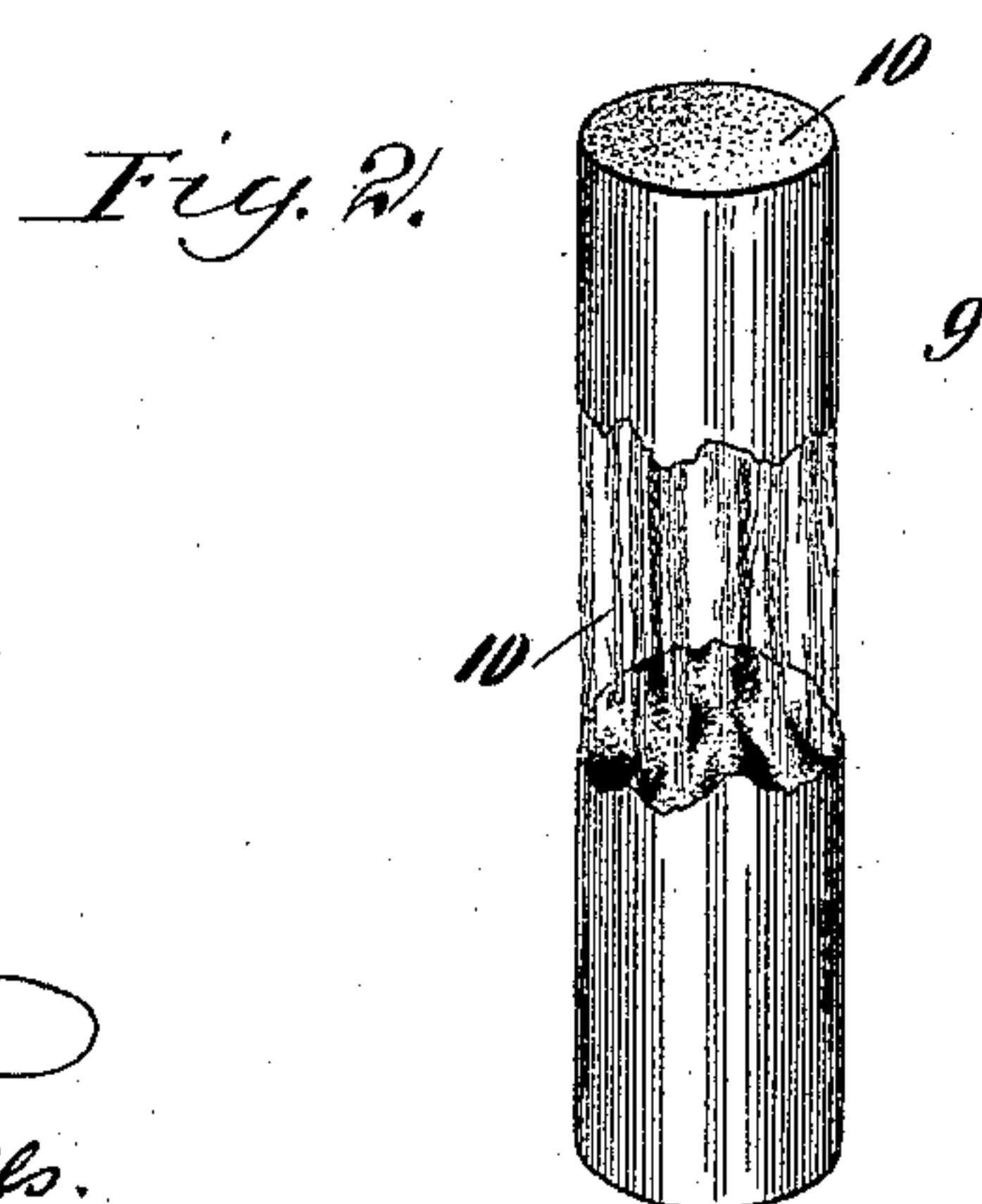
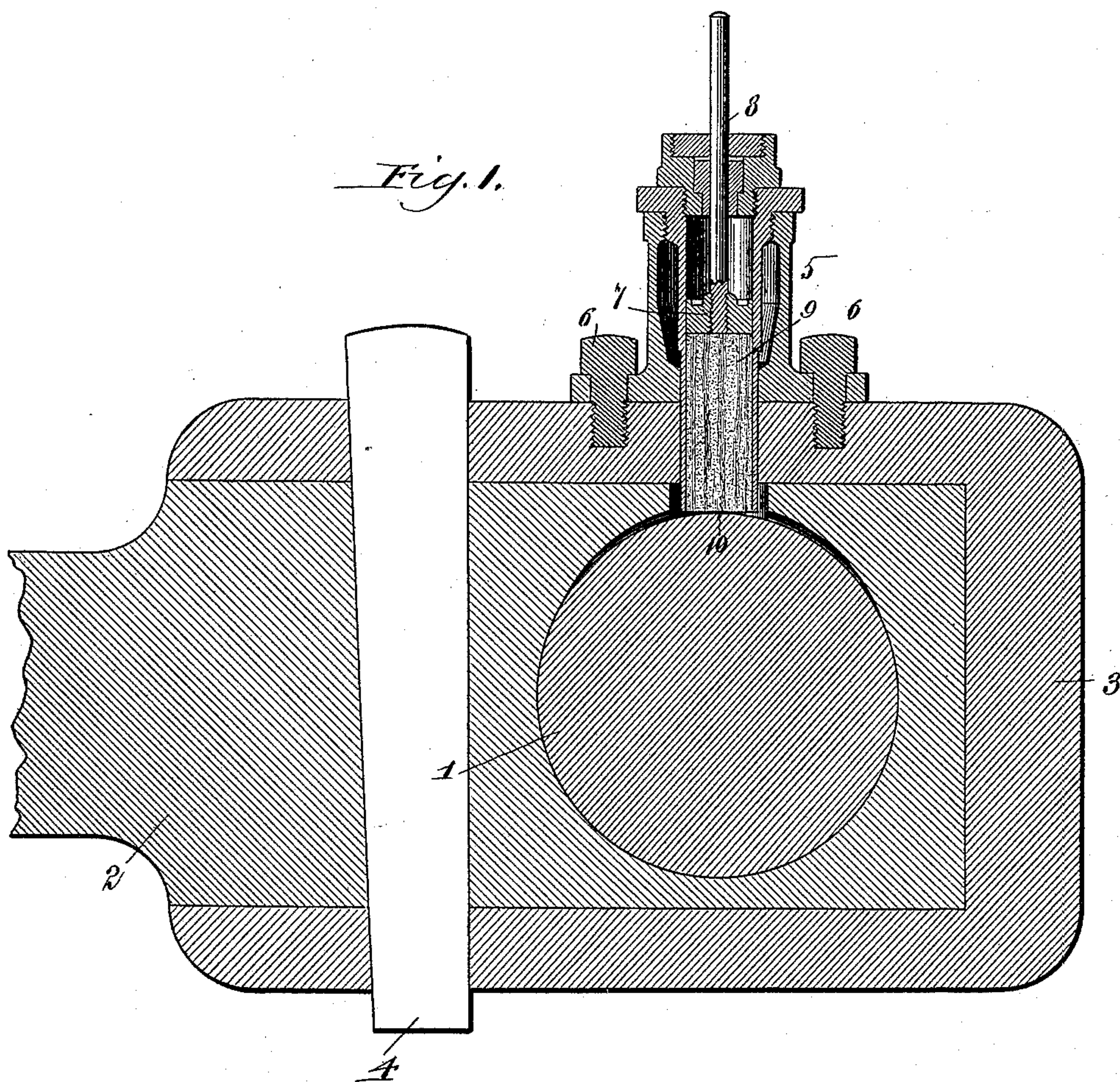


(No Model.)

F. F. SWAIN.  
LUBRICANT.

No. 424,233.

Patented Mar. 25, 1890.



Witnesses  
*W. Parker*  
*Fredk. H. Mills.*

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*Fred F. Swain*  
By *Wm S. Baker*  
Atty.



# UNITED STATES PATENT OFFICE.

FRED F. SWAIN, OF CHICAGO, ILLINOIS.

## LUBRICANT.

SPECIFICATION forming part of Letters Patent No. 424,233, dated March 25, 1890.

Application filed October 15, 1889. Serial No. 327,112. (No model.)

*To all whom it may concern:*

Be it known that I, FRED F. SWAIN, of Chicago, Illinois, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

My invention relates to lubricating-candles, such, for example, as are used in the cup shown in Patent No. 313,964, granted to me March 17, 1885, in which in the accompanying drawings I have shown my invention.

Figure 1 is a sectional side view of a connecting-rod head with crank-pin and lubricator-cup with candle therein. Fig. 2 shows one of the candles with its ends pulled apart to expose the fibers.

In the drawings, 1 is a crank-pin.

2 is the end of the connecting-rod.

3 is the strap.

4 is the key.

5 is the lubricator-cup, secured by screws 6.

7 is the piston in the cup, and 8 its guide-stem.

9 is the lubricating-candle, composed of tallow or other suitable solid.

10 are fibers of asbestos or other suitable fibrous material distributed throughout the body of the candle.

The candles are commonly made of plain tallow or other homogeneous material or compound which is soft or fusible at a comparatively low temperature; but it has been found in practice that they are liable to be consumed too rapidly, especially with journals which are inclined to heat. To avoid this rapid consumption, I distribute fibers, as 10, through the mass of the candle. These fibers should be of a flexible non-fusible material, and one which offers little frictional resistance. Being such, they will work through the journal without deleterious effect, and will also act to effect a more uniform distribution or feed of the lubricant to the journal as required under ordinary conditions of use, and at the same time tend to prevent excessive consumption or waste. I consider asbestos the best material for the fibers, as its fiber is infusible and breaks up readily and assists in the lubrication of the journal.

In using the terms "fusible" and "infusible," as above, I have done so simply with reference to the degree of temperature ordinarily experienced or met with in the running of machinery where constant lubrication is required; hence by the term "a lubricant fusible at a comparatively low temperature" I mean one which is fusible sufficiently for purposes of lubrication at the temperature to which it will be raised under ordinary conditions of use, and by "a non-fusible fiber" I mean one which will not be fused at that same temperature and under the same conditions; and while, as above stated, I prefer asbestos it is also true that other fibers of like general character—such as cotton, linen, or silk—may be substituted therefor, it only being necessary in this respect that the fibers employed should be somewhat of a stringy nature, and still be very flexible and capable of being torn apart with the exercise of but little force. Preferably such fibers should be distributed with more or less uniformity throughout the body of the candle, and also in a general way should run lengthwise through the candle; but good results may be secured even with the fibers running crosswise of the length of the candle or at random in all directions and without any particular effort at uniformity of distribution; hence such modifications are included within the scope of the present invention, as hereinafter claimed.

What I claim is—

1. A lubricating-candle composed of a lubricating solid fusible at a comparatively low temperature, and having combined therewith a fiber of asbestos running lengthwise of the candle distributed through its substance, substantially as set forth.

2. A lubricating-candle composed of a lubricating solid fusible at a comparatively low temperature, and having combined therewith a fiber of asbestos distributed through its substance, substantially as set forth.

FRED F. SWAIN.

Witnesses:

W. S. BATES,

EDWD. C. CARTER.