

No. 850,023.

PATENTED APR. 9, 1907.

F. LEWIS.  
THAWING POINT.  
APPLICATION FILED AUG. 6, 1906.

Fig. 1.

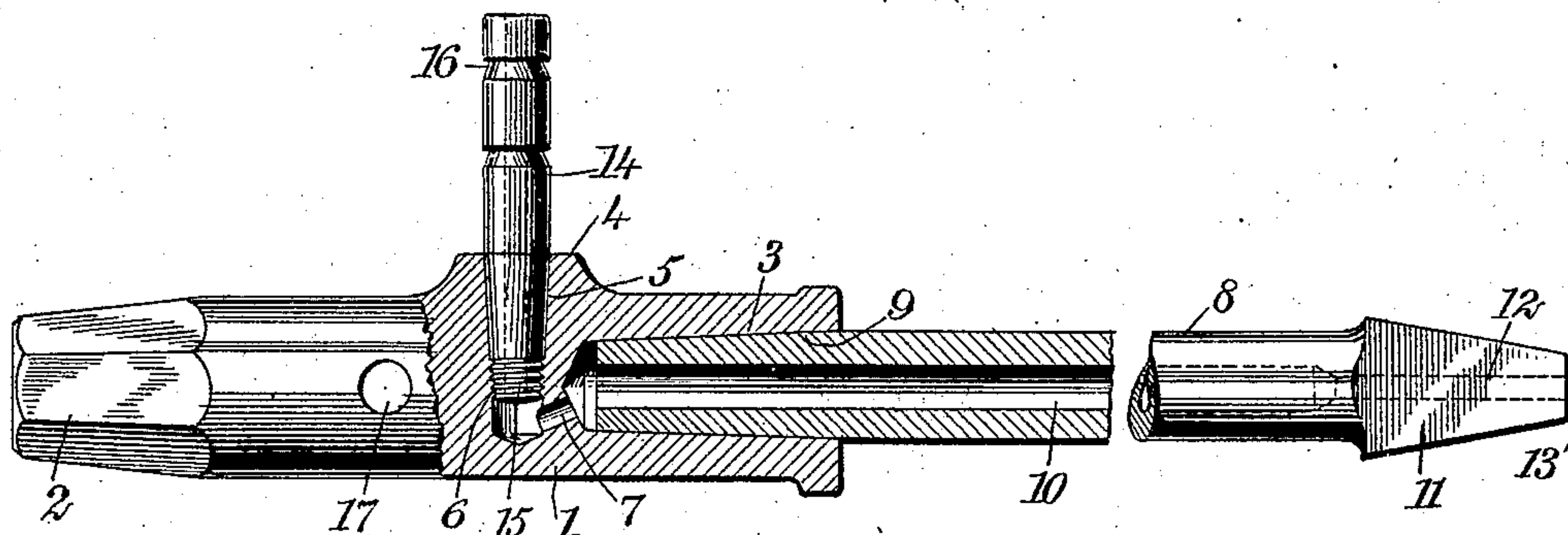


Fig. 2.

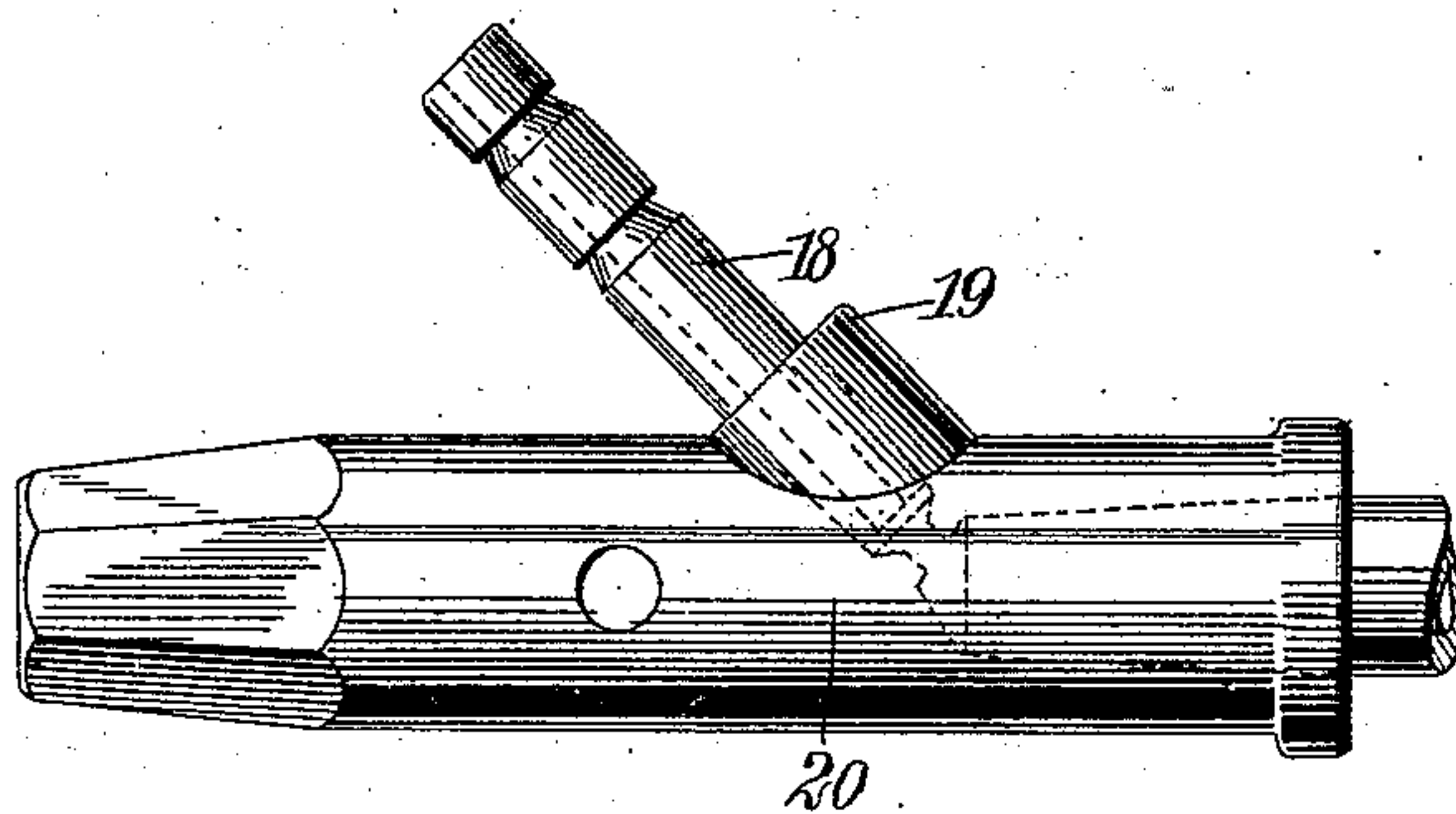
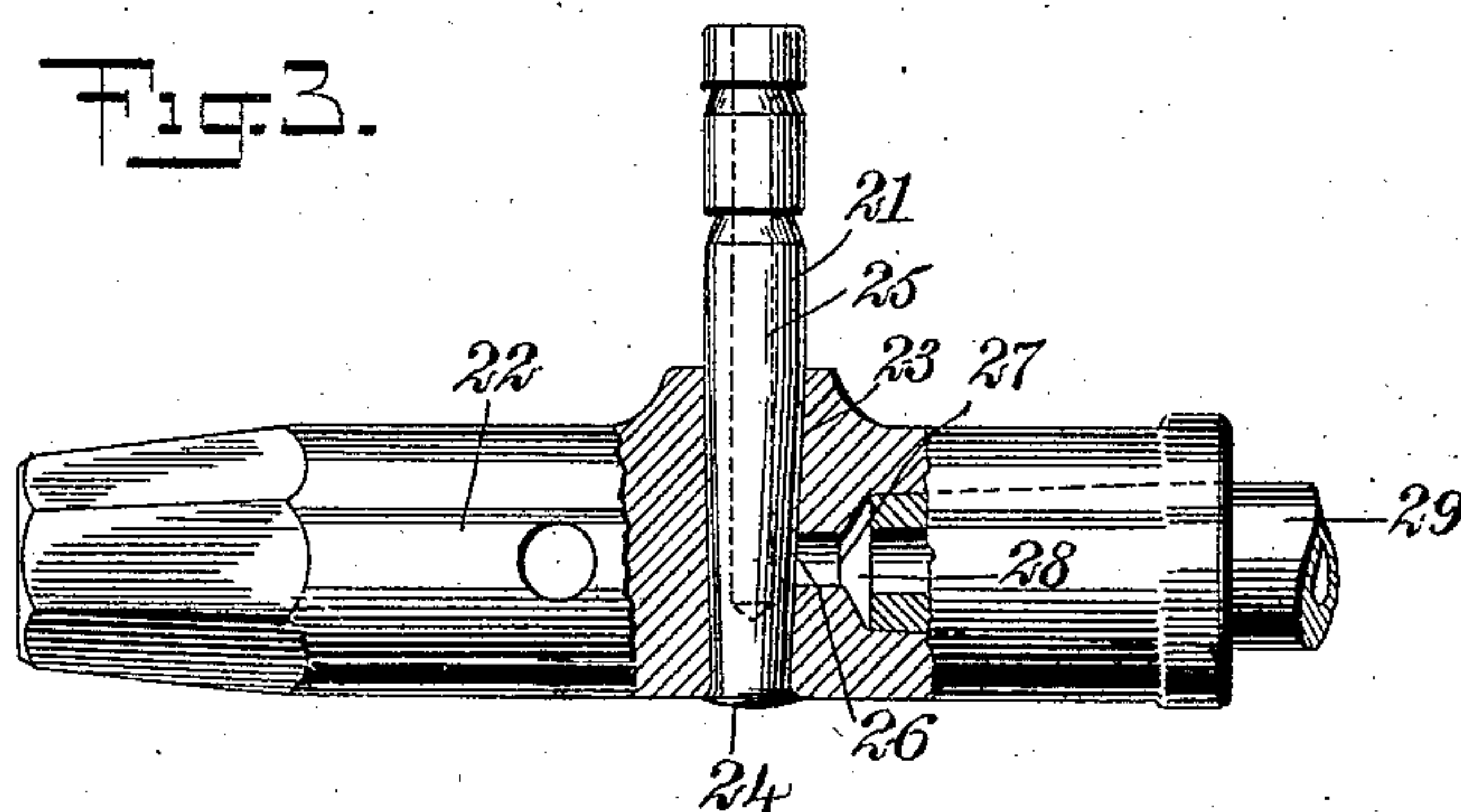


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## THAWING-POINT.

No. 850,023.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed August 6, 1906. Serial No. 329,374.

*To all whom it may concern:*

Be it known that I, FREDERICK LEWIS, a citizen of the United States, and a resident of Fairbanks, Alaska, have invented a new and Improved Thawing-Point, of which the following is a full, clear, and exact description.

In gold-mining operations which are conducted in frozen soil it is customary in practice to thaw the earth by means of tubular thawing-points, which are driven into position and which afford means for conducting steam to the frozen earth. After treating the earth in this manner it becomes softened and may be readily removed.

The object of this invention is to produce a device for this purpose which will be simple in construction and durable in operation.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the device, a portion of the same being shown in cross-section and broken away. Fig. 2 is a side elevation showing a portion of the device to illustrate a modified form which the invention may take; and Fig. 3 is substantially a side elevation, a portion of which is shown in section and broken away. This view shows another modified form of the invention.

Referring more particularly to the parts, 1 represents a head, which is preferably massive and of substantially cylindrical form, as shown. One extremity of this head is tapered, as indicated at 2, so as to adapt the head to receive the blows of a hammer or sledge. The opposite end of the head is formed into a tapered socket 3, and near the inner extremity of this socket a boss 4 is formed on the side of the head, in which there is a tapered nipple-socket 5. Near the inner extremity of this socket screw-threads 6 are formed, and beyond this point a port 7 is formed which connects the nipple-socket 5 with the socket 3 aforesaid. In the socket 3 there is attached a tubular bit 8, which is formed with a tapered shank 9, which is driven or shrunk in the socket 3. The bore 10 of this bit extends continuously from one end of the bit to the other, so that it communicates with the interior of the socket 3, af-

fording means for conducting steam toward the outer end of the bit, which is enlarged to form a point 11. The outer extremity of the bore 10 is slightly reduced, as indicated at 12, at and near the point where it emerges on the end face 13 of the point 11. In the nipple-socket 5 there is attached a nipple 14, which is tapered to fit the socket, as indicated, its inner extremity being provided with screw-threads 15, which are received in the threads 6. This nipple 14 is tubular, as indicated, and provided on its outer portion with circumferential grooves 16, which facilitate the attachment of hose for conducting steam to the point. Through the body of the head 5 a transverse opening 17 is formed, into which a bar may be passed to facilitate the withdrawal of the device, if it should become fastened in the earth. In practice the bit 8 is of considerable length, which is usually about eight feet.

In using the device it should be understood that the point 11 is driven into the frozen earth by means of a sledge or hammer, and steam is allowed to pass into the interior of the point. This steam, which escapes at the point 11, thaws the frozen ground and enables the device to be driven further in.

By constructing the device as described if injury occurs to any of the parts they may be readily replaced.

Attention is called to the fact that there is no necessity for welding of the parts together, and this feature is considered advantageous, as the repeated welding which is now practiced on devices of this class is very injurious to the integrity of the materials.

In Fig. 2 I illustrate a modified form, in which the nipple 18 is placed at an inclination of about forty-five degrees, projecting toward the rear. In other respects the construction of the device is substantially the same as that of the first form. In this instance I seat the nipple in an inclined boss 19, projecting integrally from the body of the head 20.

In Fig. 3 I illustrate another form of the invention, in which the nipple 21 passes completely through the head 22, lying in a tapered socket 23, the inner end of the nipple 21 being riveted over, as at 24, so as to prevent its withdrawal. With this form the bore 25 of the nipple does not extend entirely through the same, but near its end is formed with a lateral opening 26, which communicates with the port 27, and this port 27 opens

communication with a socket 28, which receives the inner end of the bit 29.

Having thus described my invention, I claim as new and desire to secure by Letters  
5 Patent—

A thawing-point consisting of a massive head having a solid body and having a main socket formed in the lower end thereof, a  
10 tubular bit received in said socket and having a point adapted to penetrate the earth, said head having a nipple-socket on the side thereof inclined downwardly and communi-

cating with said first socket, and a removable tubular nipple received in said nipple-socket opening to said main socket and adapted to  
15 have a hose attached thereto.

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

FREDERICK LEWIS.

Witnesses:

CHAS. FISHER,  
L. L. JAMES.