

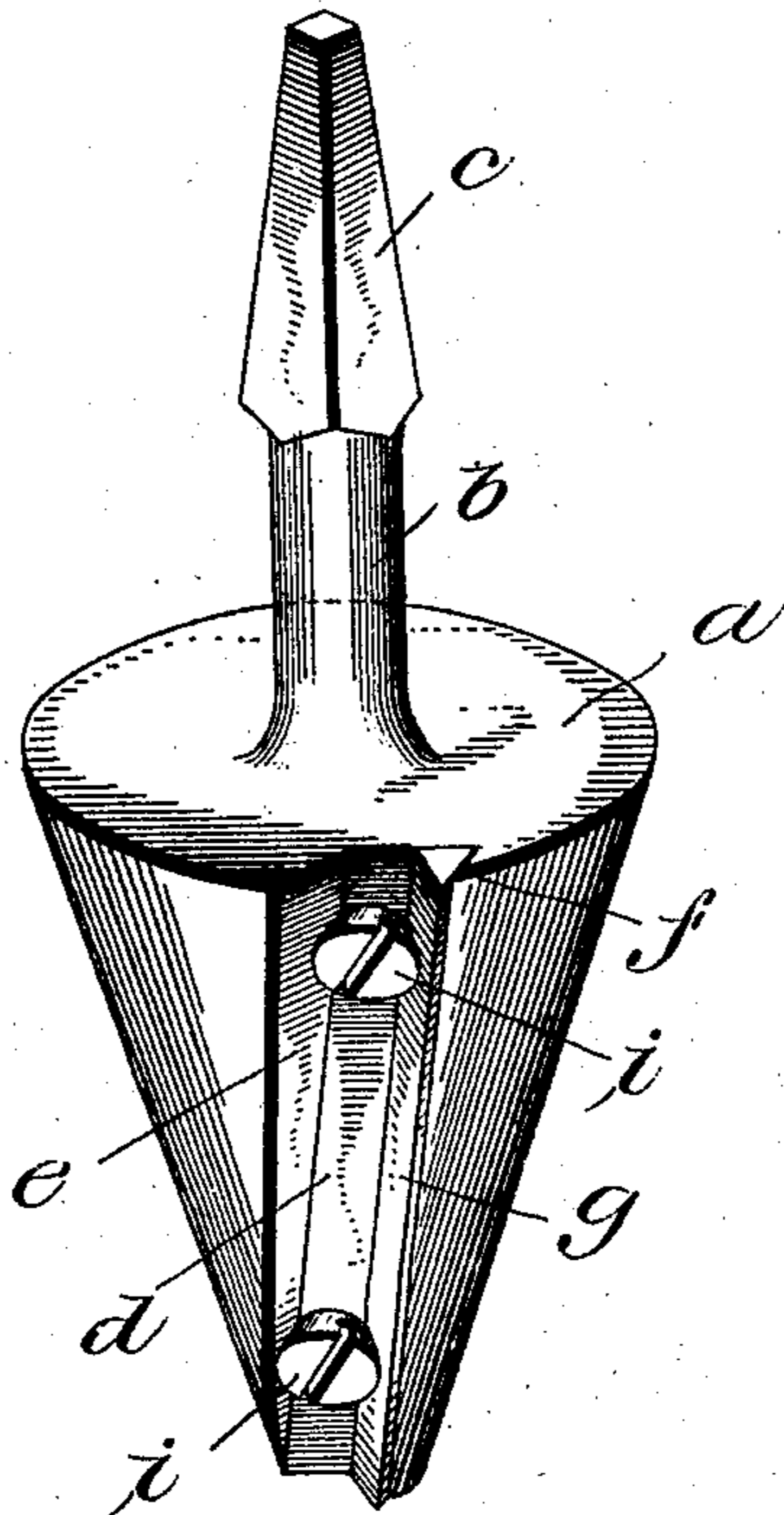
No. 806,011.

PATENTED NOV. 28, 1905.

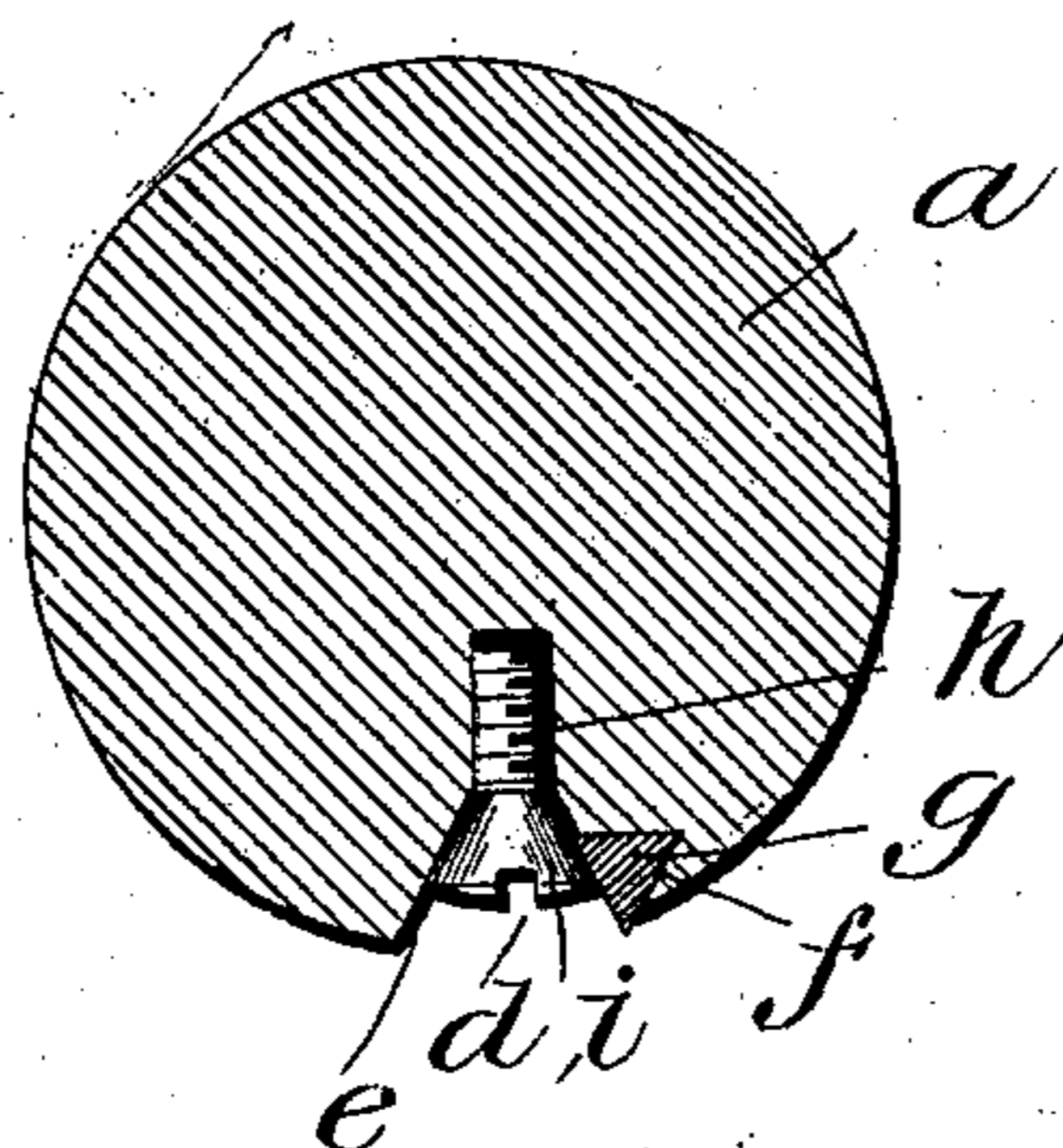
A. J. SMART.  
REAMER.

APPLICATION FILED FEB. 11, 1905.

*Fig. 1.*



*Fig. 2.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## REAMER.

No. 806,011.

Specification of Letters Patent.

Patented Nov. 28, 1905.

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*To all whom it may concern:*

Be it known that I, ALBERT J. SMART, a citizen of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Reamers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to reamers, more particularly to reamers for removing the bur left by cutting-off tools inside the walls of pipes and tubes when they are divided into sections; and the objects of the invention are to improve the construction of such devices and increase their efficiency of operation with simplicity of parts and cheapness of manufacture.

Other objects of the invention are to provide a reamer that will cut smoothly and will be adapted to any size of pipe or to removing the burs from a great number of the same size of pipe without the necessity of resharp-  
ening the cutter used or replacing that cutter by a new one.

To the accomplishment of these objects and such others as may hereinafter appear the invention comprises the novel construction hereinafter described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, showing the preferred embodiment thereof, in which—

Figure 1 is a perspective view of the reamer; and Fig. 2 is a sectional view of the reamer, taken on line 2-2 of Fig. 1.

Referring to the drawings, *a* denotes the body portion of the reamer, which is preferably of conical form, provided at its base with a shank *b*, suitably squared, as at *c*, for securing in a wrench or chuck for use. In the surface of the body portion *a* is formed a longitudinally-arranged slot *d*, one of its sides being preferably beveled, as shown at *e*, and the other side being undercut, as shown at *f*. Seated in this slot is a cutter *g*, which is preferably straight and of triangular cross-section, each of its edges being sharpened for use in cutting and one of its surfaces being placed snugly against the undercut side *g* of slot *d*. Any suitable wedging means may be provided for holding this cutter in position, the pre-

ferred means being one or more screws *h*, seated in the slot having conical heads *i*, which when the screws are driven home bear against the beveled side *e* of the slot and one of the surfaces of the cutter *g*. An increased smoothness in cutting is obtained by the particular location of the slot *d*, which is angularly disposed with relation to the axis of the body portion *a*—that is, the end of the slot at the small or outer end of the body portion is placed coincident with the axis thereof; but instead of extending directly along this axis the slot bears off to one side, its upper end emerging from the larger or inner end of the body portion at a point somewhat to the right of the axis. By this construction the edge of the cutter is always presented to the burs on a slant, and thus the operation of cutting is made easier.

Particular attention is called to the construction of the groove or slot *d*, which is formed with a plane bottom and with one of its walls (as shown, the undercut wall *f*) of equal height throughout its length, so that when cutter *g* is secured thereunder the cutting edge presented to the work will project evenly therebeyond throughout its length. It should be further noted that with the groove set at an angle, as described, in which a straight cutter is used, the surface in which said groove is cut must be of a nature to permit the wall against which the cutter is placed to be of equal height throughout, and the surface of a cone is peculiarly adapted to this end.

By the use of the triangular cutting-blade it is readily seen that the life of the reamer is prolonged to three times that of a reamer which has its cutting edge cast integral with its body portion or of a reamer which has an inserted cutting-blade with but a single cutting edge, and it is further seen that by loosening the screws *h* the cutter *g* may be easily adjusted longitudinally of the body portion *a*, the opened groove *d* permitting a wide range of adjustment.

The advantages of this construction are apparent, as when a great many pipes of the same diameter are to have their burs removed it is only necessary to shift cutter *g* longitudinally when one particular portion of its length has become dulled and a new sharp portion is presented for further prosecution of the work, and when the whole edge has

become dulled a simple turning of the cutter will make the reamer as good as new, and the sharpening of the blade or the insertion of a new one at this particular time is obviated.

5 It is not desired to be understood that the invention is limited to the details of construction and arrangement of parts herein described and illustrated, as it is manifest that numerous variations and modifications may  
10 be made in the features of construction without departing from its scope and spirit. The right is therefore reserved to all such variations and modifications as properly fall within the scope of the invention and the terms of  
15 the following claims.

I claim—

1. In a reamer, the combination with a body portion of circular section provided with a longitudinally-arranged groove open at both  
20 ends, of a longitudinally-adjustable cutter, triangular in cross-section, seated therein, substantially as described.

2. In a reamer, the combination with a body portion circular in cross-section and provided  
25 with a longitudinally-extending groove on its peripheral surface, of a reversible cutter pro-

vided with a plurality of cutting edges, and cooperating means for securing said cutter in said groove with one of its cutting edges projecting for its full length slightly beyond the  
30 peripheral surface of said body portion and with its other cutting edges lying within said groove in a protected position, substantially as described.

3. In a reamer, the combination with a body  
35 portion, circular in cross-section, provided with a longitudinally-extending groove on its peripheral surface, one side of said groove being undercut, of a reversible cutter, triangular in cross-section, located beneath said  
40 undercut side, and cooperating means for securing said cutter with its main body portion within said groove and with one of its cutting edges only projecting for its full length  
45 slightly beyond the peripheral surface of said body portion, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT J. SMART.

Witnesses:

ROY H. SMART,

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