Feb. 28, 1939. R. B. BRINNON ET AL 2,149,206

REAMER FOR TOBACCO PIPES

Filed June 21, 1937

FIG. 1

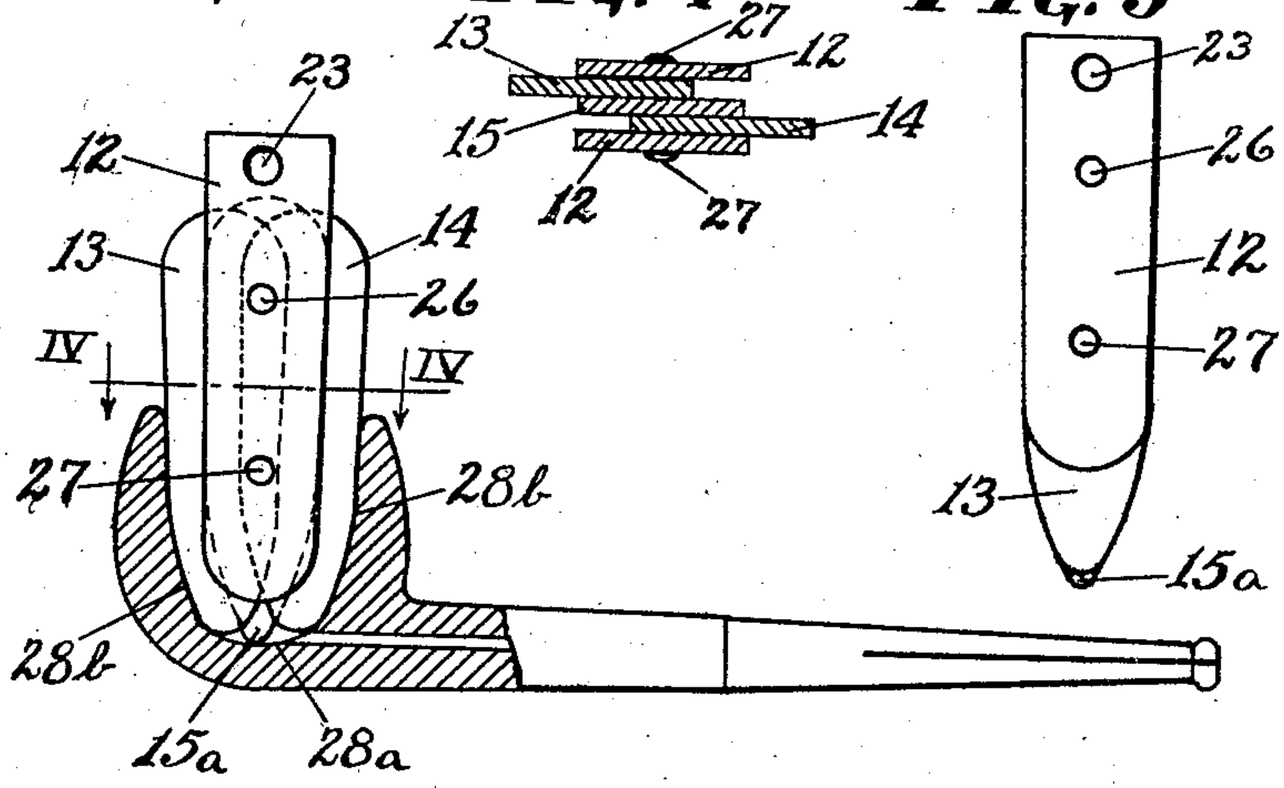


FIG. 4

FIG. 3

FIG. 2

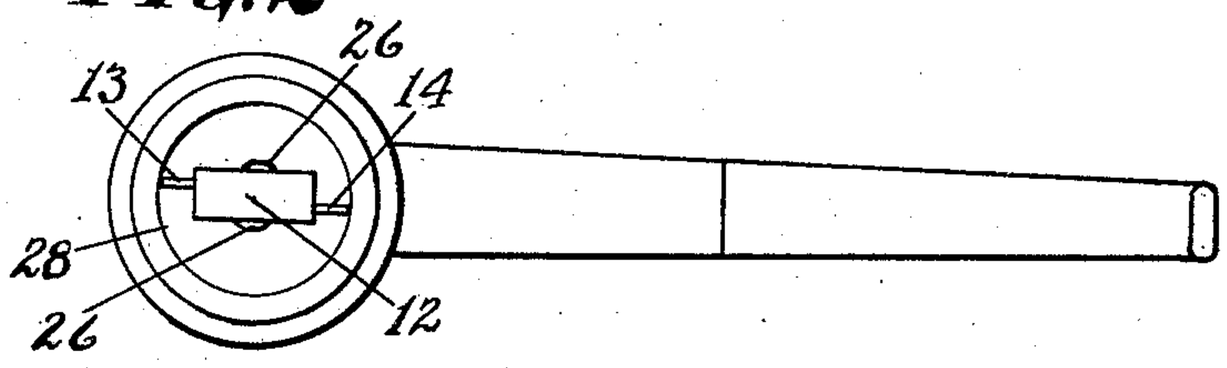


FIG. 6

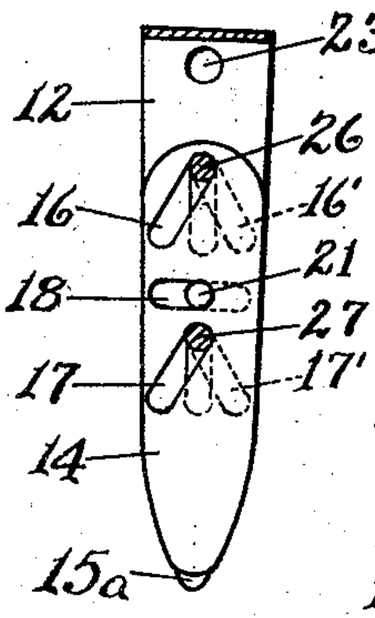


FIG. 5

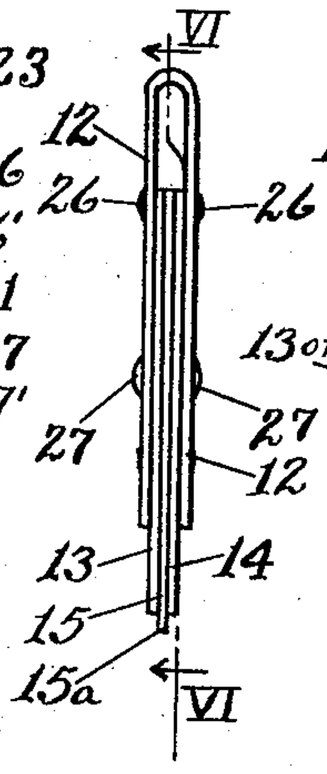


FIG. 8

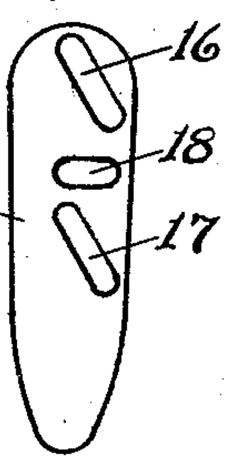


FIG. 7

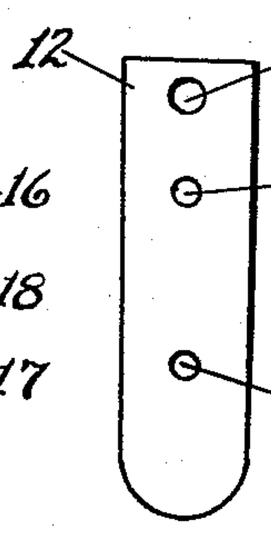


FIG. 9

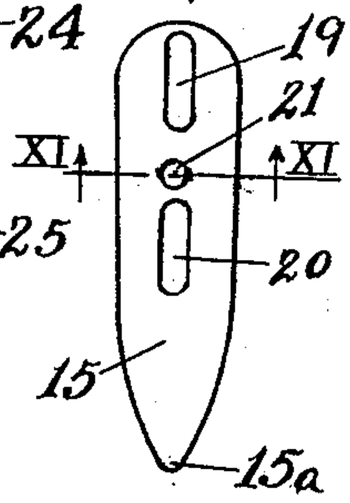


FIG. 10

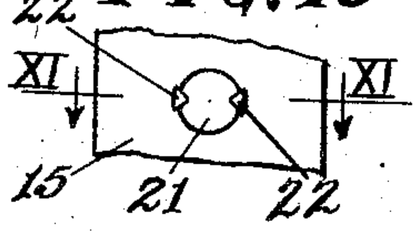
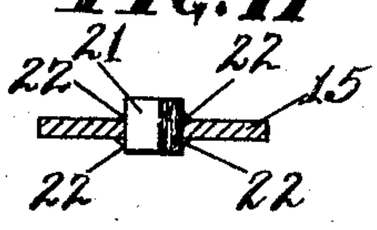


FIG. 11



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REAMER FOR TOBACCO PIPES

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Application June 21, 1937, Serial No. 149,389

2 Claims. (Cl. 131—13)

Our invention relates to an improvement in tobacco pipe reamers. The object of our reamer is to provide a device that will expand uniformly in a pipe bowl so that the reamer may be turned to scrape or ream the burnt or caked tobacco from the wall of the pipe bowl. Another object is to provide a reamer of the kind mentioned that will automatically adjust itself to the pipe bowl when placed therein.

Quite often a pipe bowl will not cake evenly, therefore the reamer should, and our improved reamer will adjust itself to the shape of the bowl rather than to the shape of the cake therein.

These and other objects will be more fully explained as this description progresses.

Now referring to the accompanying drawing; Fig. 1 is a side view of a pipe, partly shown in section and illustrating how the pipe reamer is applied and used. Fig. 2 is a plan view of the elements shown in Fig. 1. Fig. 3 is a side view of our improved pipe reamer. Fig. 4 is a sectional view taken along the line IV—IV in Fig. 1. Fig. 5 is an edge view of the reamer. Fig. 6 is a sectional view taken along the line VI—VI in Fig. 5. Fig. 7 is a side view of the outside frame element of the reamer. Fig. 8 is a side view of the reamer blades. Fig. 9 is a side view of the expansion operator blade. Fig. 10 is an enlarged detail side view of the central portion of the expansion operator blade showing in detail the pin that operates the reamer blades. Fig. 11 is an enlarged detail sectional view through the operator blade, the view being taken along the line XI—XI in Figures 9 and 10. In the drawing, similar numerals of reference designate the same part throughout the several figures of the drawing.

The device comprises a U-shaped housing element 12 in which is positioned a pair of reamer blades 13 and 14. Between the reamer blades 13 and 14 is positioned an operating blade 15.

The lower end and side portions of the reamer blades 13 and 14 are curved to fit the contour of the pipe bowl as shown in Fig. 1. Both of the blades 13 and 14 are identical. These blades are provided with pairs of slots 16 and 17, 16′ and 17′, that are parallel to each other and are positioned at approximately a 15 degree angle with respect to the center line of the blade. At 18 is a slot in each of the scraper blades 13 and 14 that is positioned intermediate the slots 16 and 17, and intermediate the slots 16′ and 17′, and is at right angles with the center line of the blade.

The expansion operator blade, (see Fig. 9), is the same width as the U-shaped frame element 12 and the reamer blades 13 and 14. The blade 15 is provided with a pair of slots 19 and 20 that are positioned one above the other and on the center axis of the blade 15. In the blade 15 and intermediate the slots 19 and 20, and on the center axis of the blade 15 is a pin 21 that projects on each side of the blade 15 the distance of the thickness of the blades 13 and 14. The pin 21 is rigidly attached to the blade 15 by any suitable method; in the drawing the attachment is shown as being made by making small earlike portions 22 out of the pin 21 and against the sides of the blade 15. The blade 15 is slightly longer from the pin 21 to the lower tip of the blade than the reamer blades are from the slot 18 to the lower point of the blade 13 or 14, the object of which will later be made obvious.

Both sides of the U-shaped frame element 12 are provided with holes 23, 24 and 25 and the holes are so positioned that the holes register with each other in each side of the U-shaped piece 12.

Now to assemble the reamer, reamer blades 13 and 14 are placed, one on each side of the expansion operator blade 15, in such a position that the pin 21 enters the slot 18 in each reamer blade 13 and 14 and the slots 16 and 17 in the blade 13 run to one side of the center line of the blade and the slots 16′ and 17′ in the blade 14 run to the opposite side of the center line of the blade. The three blades 13, 14 and 15 being so assembled, are now slipped between the sides of the U-shaped frame element 12 in such a position that a rivet 26 may be passed through the holes 24 in the U-shaped frame element 12 and the slots 16 and 16′ in the reamer blades 13 and 14 and the slot 19 in the expansion operator blade 15; and another rivet 27 may be passed through the holes 25 in the U-shaped frame element 12 and through the slots 17 and 17′ in the plates 13 and 14. The rivets 26 and 27 are then riveted to rigidly hold the sides of the U-shaped frame element 12 together and allow just enough clearance between the three blades 13, 14 and 15 and the sides of the U-shaped frame element 12 that the blades 13, 14 and 15 may be easily shipped up and down between the sides of the U-shaped frame element 12. It will be understood that the pin 21 fits in the slot 18 in the blades 13 and 14 as closely as possible without binding therein. Likewise, the rivets 26 and 27 fit in the slots 16 and 17, 16′ and 17′, in the reamer blades 13 and 14, and in the slots 19 and 20 in the expansion operator blade 15 as closely as possible without binding therein so that the assembly of the three blades 13, 14 and 15 may be moved

up and down between the sides of the U-shaped frame element 12 with as little resistance as possible. The holes 23 in the U-shaped frame element may be employed to receive a key ring or the like so that the reamer may be carried on a key ring, or it may be hung up if desired.

The reamer operates as follows; The blades 13, 14 and 15 are placed in the collapsed and downwardly extended position as shown in Fig. 3, then the reamer entered, blades downwardly, in the bowl 28 of the pipe until the point 15*a* of the blade 15 strikes the bottom 28*a* of the bowl of the pipe and upon the continued downward movement of the U-shaped frame element 12, the reamer blades 13 and 14 are forced to move outwardly by reason of the pin 21 which prevents the reamer blades from moving longitudinally but permits them to move laterally with respect to the center blade 15, therefore as the U-shaped frame element is pushed downwardly the rivets 26 and 27 advance downwardly in the slots 16 and 17 in the reamer blades 13 and 14 and in the slots 19 and 20 in the blade 15, whereupon the reamer blades 13 and 14 are forced to move outwardly until the outer edges and lower end portions of the reamer blades engage the side walls 28*b* of the pipe bowl or the cake positioned thereon.

Now by revolving the reamer in the bowl of the pipe the cake is reamed out and as it is reamed out the reamer blades 13 and 14 will continue to expand to meet the increasing interior diameter of the pipe bowl.

It is obvious that the pin 21 on the blade 15 retains the reamer blades 13 and 14 in equal positions so that one blade cannot take a position higher or lower than the other. In view of this, it is obvious that the reamer blades 13 and 14 must, when they move, travel inwardly or outwardly in equal amounts of movement. Due to the relative position and relationship of the slots 16 and 17, 16′ and 17′, in the reamer blades 13 and 14, it is obvious that the reamer blades 13 and 14 will always be parallel to each other, therefore the outside edges of the reamer blades will always ream a shape corresponding to the shape of the bowl of the pipe regardless of the contour of the cake formed on the walls of the bowl of the pipe. This is a desirable feature because the position of the reamer blades in the wall of the bowl is not altered by the irregular shape of the cake, therefore a good job of reaming may be done without digging into the wall of the pipe bowl at the top or bottom before the cake is removed from the intermediate portion of the pipe bowl.

Such modifications of our invention may be employed without departing from the spirit and intention of the invention as lie within the scope of the appended claims.

Now having fully described our invention, what we claim as new and desire to secure by Letters Patent is;

1. In a reamer device for tobacco pipes; a frame element and three blades positioned in said frame element, said blades being slidably mounted in said frame element, and means in said device whereby the longitudinal movement of one of said blades will cause the other two blades to move inwardly or outwardly in opposite directions from each other.

2. In a reamer for tobacco pipes; a frame element, a pair of reamer blades and an expansion operator blade, said expansion operator blade being positioned between the two reamer blades, and the reamer blades being positioned between the sides of the frame element; a pair of diagonally positioned slots and a transverse slot in each of said reamer blades, said reamer blades being so positioned in relation to each other that the diagonally positioned slots in one of said reamer blades is positioned in the opposite diagonal direction from those in the other reamer blade; said expansion operator blade having a pair of slots that are spaced apart and are positioned on the center axis of the expansion operator blade, a pin on said expansion operator blade, said pin extending on each side of the expansion operator blade the distance of the thickness of the reamer blades, and said pin being positioned in the transverse slot in each of the reamer blades; and a pair of rivets carried by said frame element, said rivets passing through said diagonally positioned slots in said reamer blades and also through the slots in the expansion operator blade so that upon the movement of the expansion operator blade up or down in the frame element the reamer blades will be carried therewith and the sliding motion of the diagonal slots on the rivets will cause the outward or inward movement of the reamer blades.

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