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HOLE BURRING TOOL

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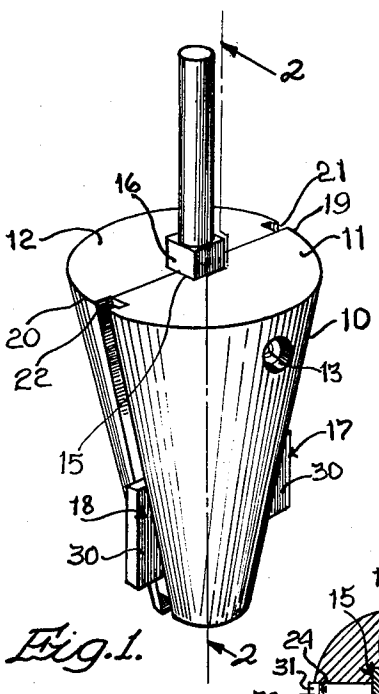


Fig. 1.

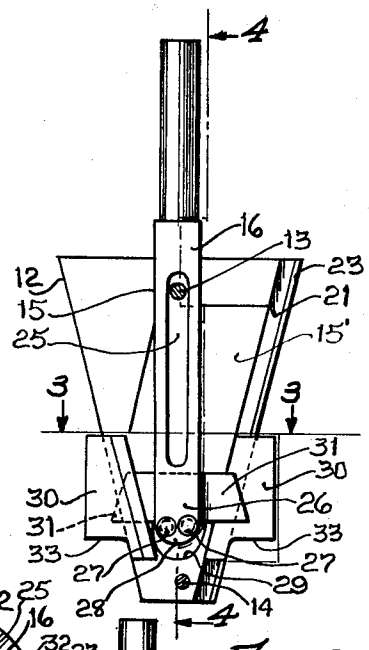


Fig. 2.

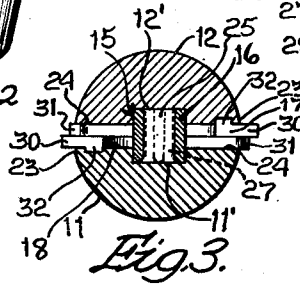


Fig. 3.

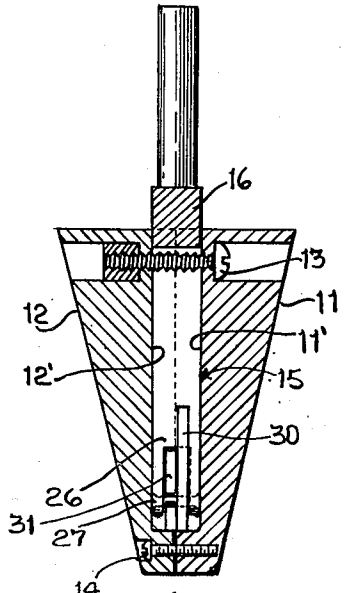


Fig. 4.

Fig. 5.

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HOLE BURRING TOOL

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3 Claims. (Cl. 77—73.5)

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This invention relates to certain new and useful improvements in a hole burring tool and has for its principal object a tool that can be used for burring holes of various diameters.

Another equally important object of this invention is to provide a tool of this character that is highly efficient in use and economical in manufacture.

Among the several objects of the invention is to provide a burring tool that is capable for use in holes of various diameters, whereby the burring blades are adapted to slidably engage the top edge of the hole that is to be burred.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will best be understood by reference to the accompanying drawings showing the application of my invention, and in which:

Fig. 1 is a perspective view of the burring tool embodying my invention;

Fig. 2 is a sectional detail view taken substantially on lines 2—2 of Fig. 1;

Fig. 3 is a sectional detail view taken substantially on line 3—3 of Fig. 2;

Fig. 4 is a side sectional detail view taken substantially on line 4—4 of Fig. 2; and

Fig. 5 is a side elevational view similar to Fig. 2 but showing the parts in different position.

To accomplish the objects of my invention I provide a conical shaped body 10 comprising two parts 11 and 12 held together by any suitable means, such as screws 13 and 14. These parts 11 and 12 provide confronting grooves 11' and 12' respectively, which, when the two parts 11 and 12 are connected together, provide a bore 15, wherein a shaft 16 is contained. Each body part 11 and 12 has on its confronting flat surfaces, hollowed out portions 15' of slightly less depth than the grooves 11' and 12', forming the bore 15. These hollowed out portions 15' are so located that when the body parts 11 and 12 are fitted together the hollowed out portions 15' will be located on either side of the bore 15.

The body parts 11 and 12 have formed in their peripheral edges 19 and 20, channels 21 and 22, which are cut so as to leave a protruding lip 23 extending into the channels 21 and 22. These channels 21 and 22 are so constructed that when the body parts 11 and 12 are joined to form the conical body 10, the channels 21 and 22 will be on opposite sides of such body 10.

Each body part 11 and 12 has formed therein, on its edges opposite the channels 21 and 22, a

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cut-out portion 24, the purpose of which will be hereinafter described.

The shaft 16 has an elongated slot 25 formed therein in which is journaled the screw 13. The shaft 16, on its sides opposite the elongated slot 25, terminates in a bifurcation 26. The open sides of the bifurcated end portion 26 correspond to the sides of the conical body 10 that have the channels 21 and 22 formed therein. In this bifurcation 26, on pintles 27, ride the legs 31 of the burring blades 17 and 18. When the shaft 16 is inserted to the full length of the bore 15 the shaft end 28 rests in a curved seat 29. This curved seat 29 together with the screw 13 which is journaled in the slot 25 serves to limit the movement of the shaft 16 in the body 10.

The burring blades 17 and 18 each consist of cutting heads 30, with legs 31 extending therefrom. At the inner portion of each cutting head 30 there is an enlarged base 32, which base 32 will ride in the channels 21 and 22. The lip 23 of each channel will override the enlarged base 32, thereby securing the cutting heads 30 in a slidable relation with respect to the peripheral edges 19 of the conical body 10. The cutting heads 30 each have a cutting edge 33 on their lower side.

The legs 31 of the burring blades 17 and 18 extend into the hollowed out portions 15' of the body parts 11 and 12, and pass through the bifurcated end 26 of the shaft 16 and ride alongside each other on the pintles 27. The extremities of the legs 31, when the shaft 16 is extended into the body 10 so as to cause the shaft end 28 to rest in the curved seat 29, will protrude from the body 10 through the cut-out portions 24. The legs 31 are of such length that the ends will never ride off the pintles 27.

It can readily be seen that movement of the shaft 16 into or out of the body 10 will cause the blades 17 and 18 to move in either an upwardly and outwardly, or a downwardly and inwardly direction. This by reason that the blades 17 and 18 ride in the channels 21 and 22 and are held on the peripheral edge 19 of the body 10 by the protruding lip 23 of the body parts 11 and 12 and the enlarged base 32 of the blades 17 and 18, which rides in the channels and behind the lip 23. Therefore when the shaft 16 is raised, the legs 31 of the blades 17 and 18 which rest on the pintles 27 will be drawn upwardly, the cutting heads 30 will be caused to ride in the channels 21 and 22, and their movement will be upwardly and outwardly, pulling the legs 31 outwardly across the pintles 27. But

in all positions of the blades 17 and 18 in the channels 21 and 22, the cutting edges 33 will present the same surfaces to any work engaged.

The mode of operation of the afore-described burring tool is as follows:

The cone-shaped body 10 is inserted into a pre-stamped hole of any diameter, in any type of metal work piece. The body 10 is inserted until the diameter of the hole is filled by the body. The shaft 16 is then lowered and the blades riding in the channels 21 and 22 are brought into contact with the metal work piece so that the cutting edges 33 now engage the edge of the hole. By rotating the shaft 16, the edge of the hole is cleared of any irregularities or burrs caused by the stamping operation.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A tool comprising a conical shaped body having a center bore in said body, a shaft slidably journaled in said bore, said shaft having its inserted end bifurated, burring blades, means to slidably secure said blades to said bifurcated end of said shaft for lateral movement with respect thereto when said shaft is slidably moved in said bore, means for slidably containing said blades on the peripheral edge of said body, said last named means including channels formed in the peripheral edge of said body, said channels provided with a protruding lip extending into said channels and means for slidably containing said blades in said channels to the rear of said lip, and means for limiting the movement of said shaft in said bore.

2. A burring tool comprising a conical shaped body formed in two parts each having hollowed out portions, means for securing said body parts together, said body having a center bore provided by said hollowed out portions, channels formed in opposite peripheral edges of said body parts so when the parts are secured together said channels and said hollowed out portions are on opposite sides of said bore, a shaft slidably inserted in said bore, said shaft having its inserted end bifurcated, burring blades, means for slidably securing said blades in said bifurcated end of said shaft, means for slidably containing said blades in said channels on the peripheral edge of said body when said shaft is slidably moved in said bore, and means for limiting movement of said shaft in said bore.

3. A burring tool comprising a conical body formed in two parts each having hollowed out portions, means for securing said parts together to provide a center bore in said body, channels formed in opposite peripheral edges of said body parts so when the parts are secured together said channels and said hollowed out portions are on opposite sides of said bore, a shaft slidably inserted in said bore, said shaft having its inserted end bifurcated, burring blades, said blades having cutting heads with an enlarged base portion and a leg extending therefrom, means for slidably securing said leg in said bifurcated end of said shaft, means for slidably containing said enlarged base portion in said channels and said cutting heads on said peripheral edge of said body for lateral movement thereon when said shaft is slidably moved in said bore, and means for limiting the movement of said shaft in said bore.

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