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E. G. MASON

2,037,036

CAN PIERCING DEVICE

Filed June 24, 1933

FIG. 1.

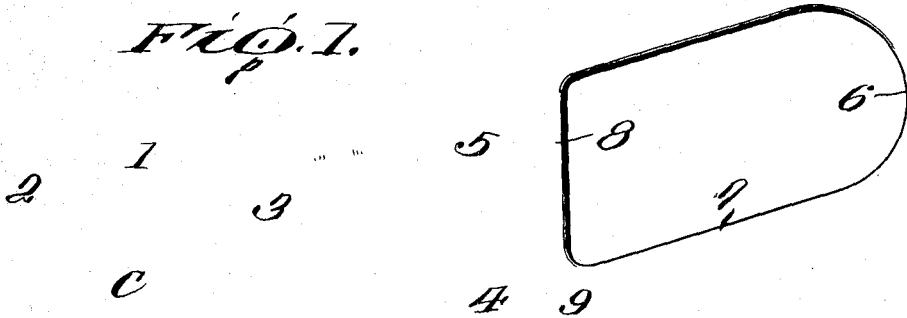


FIG. 2.

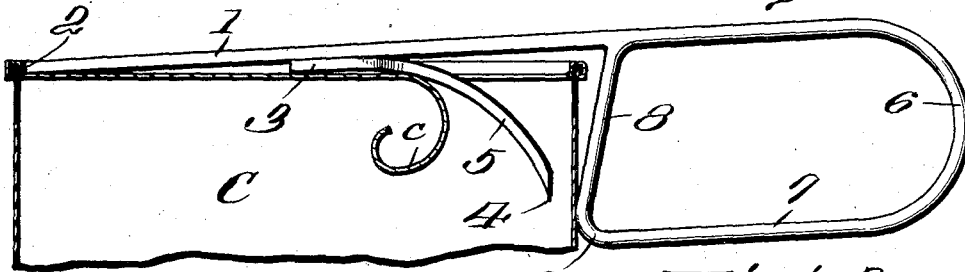


FIG. 3.

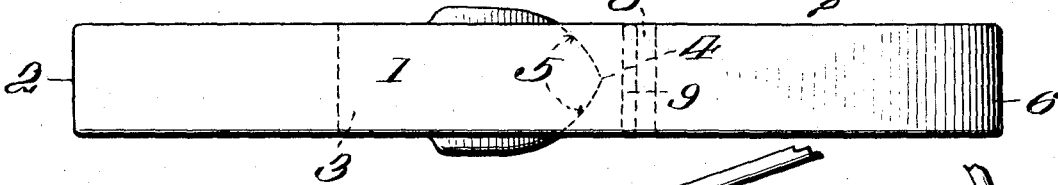


FIG. 4.

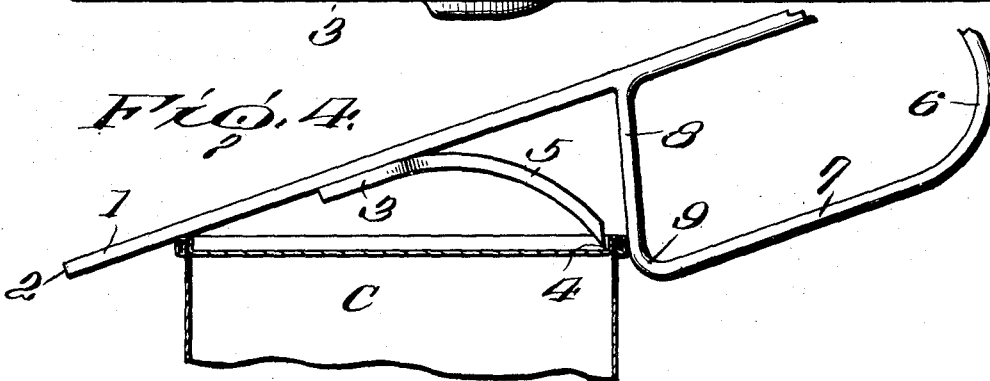
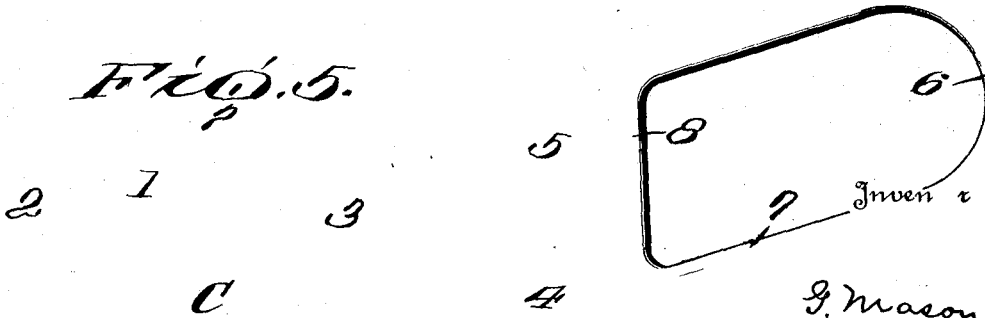


FIG. 5.



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UNITED STATES PATENT OFFICE

2,037,036

CAN PIERCING DEVICE

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Application June 24, 1933, Serial No. 677,488

1 Claim. (Cl. 164—119)

In the application filed by Herbert Schrader, February 17, 1933, Serial No. 657,305, there is shown and described a can piercing device in the form of a hand tool having between the ends thereof a cutter which includes a piercing point and cutting edges receding therefrom toward the end of the hand tool. In operation, the end of the hand tool is placed in contact with the double seam which locates the piercing point of the cutter adjacent the double seam at a diametrically opposed point, so that the opening is formed close to the double seam.

The present invention has to do with an improvement in the can piercing device of the Schrader application, and has for its object to provide a tool of the character shown in said application which can be used on containers of different diameters for forming an opening therein adjacent the double seam.

A further object of the invention is to provide a tool of the above character with means for protecting the hand of the operator from contacting with the piercing point of the cutter when handling the tool, and with means for locating the piercing point relative to the double seam so that the opening when formed is so close to the double seam that the entire contents of the container may be readily drained from the opening.

In the drawing—

Figure 1 is a view showing the can piercing device as applied to a container preparatory to cutting an opening therein;

Fig. 2 is a view similar to Fig. 1, but showing the opening formed by the cutting tool;

Fig. 3 is a plan view of the can piercing tool;

Fig. 4 is a view showing the can piercing tool applied to a container of smaller diameter than shown in Figures 1 and 2, and the manner in which the piercing point is located relative to the double seam preparatory to the cutting of the end, and

Fig. 5 is a view similar to Fig. 4, but showing the cutting tool as applied to a container of larger diameter than that illustrated in Figures 1 and 2, and the locating of the piercing point of the cutter adjacent the double seam for cutting.

In the application above referred to, there is shown a can piercing tool in the form of a bar which carries a cutter attached to the bar intermediate the ends thereof. This cutter has a piercing point and cutting edges leading therefrom toward the end of the bar which is to contact with the double seam. When the cutter is applied, the piercing point enters the end of the container adjacent the double seam and will cut the end

along a line adjacent the double seam and along lines substantially parallel with each other extending toward the center of the container so as to sever the metal and roll the same back to form an opening through which the contents of the container may be readily dispensed. The present invention has to do with an improvement in this type of cutter. Instead of providing the end thereof which is to contact with a double seam with means for hooking over the double seam, the end terminates preferably in a right angle shoulder which may be placed against the double seam, or against a can end back from the double seam, or the end portion may be placed so as to rest on the double seam, and in each case it is held in contact with the container during piercing by placing the palm of the hand on this end of the piercing tool. The cutter is shaped similar to that of the Schrader application, and has a piercing point and cutting edges extending toward this shouldered end of the tool, which cutting edges are so disposed as to cut the metal along diverging lines, rolling the metal therebetween so as to provide a relatively wide opening. The bar carrying the cutting tool is formed into a loop serving as a handle for the operator to grasp while forcing the cutter into the container. The inner leg of the loop of the handle performs two functions. It extends away from the bar supporting the cutter a greater distance than the piercing point, so that it, in a measure, covers the piercing point and protects the operator's hand from contacting with the piercing point, or the piercing point contacting with the support on which the cutting tool is placed, which would be likely to dull the cutting point. The other function of this leg of the handle is to locate the piercing point adjacent the double seam. When the tool is applied to the container, this leg is caused to contact with the double seam, and this will properly place the piercing point adjacent the inner side of the double seam.

Referring more in detail to the drawing, the improved can piercing device includes a body portion 1 which is in the form of a bar or plate which is longitudinally extended. One end of the plate is cut so as to provide a right angle shoulder 2. Attached to the under side of this bar or body portion 1 is a cutting blade 3 which is secured to the bar in any suitable way. Said cutting blade 3 has a piercing point 4 and cutting edges 5, 5 which diverge from the piercing point. The cutting blade is curved from the point of attachment to the body portion 1 to the piercing point. The body portion 1 is curved at 6 downwardly, thence

backwardly at 7 and thence upwardly at 8 to form the inner leg of the loop. This inner leg 8 is preferably attached to the body portion by welding or in any other suitable way, so that it is rigidly held in a predetermined position relative to the body portion 1. This forms a loop handle for the operator to grasp in the handling of the tool. The length of the leg is greater than the distance between the body portion 1 and the piercing point 4. The bar is curved between the sections 7 of the handle and this inner leg 8 as indicated at 9. The distance between the piercing point 4 and the leg 8 is slightly greater than the width of the double seam.

The piercing tool is adapted to be used with containers of any diameter. In Figures 1 and 2, the container which is indicated at C, is of such a diameter that when the end 2 of the tool is placed against the double seam, the piercing point will contact with the end at a point diametrically opposed to the point of contact between the bar or body portion 1 and the double seam. It is not essential that the end 2 shall rest against the double seam for the positioning of the piercing point, for the reason that the leg 8 may be brought into contact with the outer face of the double seam before the piercing point contacts with the end of the container, and this will position the piercing point so that it will escape the double seam and enter the container end close to the double seam. The operator places the palm of one hand on the end 2 of the body portion 1 and grasps the loop handle with the other hand. Holding the end 2 against the container end, pressure is applied so as to force the piercing point through the metal, and for cutting the metal and rolling back the cut portion as indicated at c in Fig. 2.

In Fig. 4 of the drawing, the cutter is shown as applied to a container of a smaller diameter than that shown in Figures 1 and 2, and in this case, the body portion 1 extends over the double seam and is pressed by the palm of the hand against the double seam as a supporting fulcrum, while the operator grasping the handle of the piercing tool, forces the same downwardly. The leg 8 of the handle serves to position the piercing point so that the container will, with certainty, be cut close to the double seam and form an opening in the end through which the entire contents may be drained, without any trapping of the oil therein.

In Fig. 5 of the drawing, the piercing tool is shown applied to a container of larger diameter than shown in Figures 1 and 2. In this case, the end 2 of the piercing tool is placed against the end of the container wherein it contacts therewith, and this position is determined by the leg 8 contacting with the outer face of the double seam, and thus properly positioning the piercing point

so that it will enter the end close to the double seam. This leg 8, while shown as straight, is inclined slightly, so that the upper end thereof, as viewed in the drawing, is substantially the same distance from the end 2 of the body portion 1 as the lower end of the leg. This leg could be curved about the end 2 as a center, but this is not necessary. The essential feature is that the leg shall be spaced from the piercing point so as to locate the piercing point relative to the double seam for the initial penetration of the end. Inasmuch as the body portion 1 is inclined when the piercing point first contacts with the container end, a downward pressure on the handle tends to force the leg 8 into contact with the double seam during the entire cutting operation, and the leg is shaped so as to permit the cutter to be forced into the container without contacting with the side wall of the body portion of the container. While the leg 8 serves as a locator for the piercing point, it also serves as a means for protecting the piercing point. When the tool is placed on the support therefor, the handle will contact with the support and hold the piercing point out of contact therewith. This prevents dulling the point through laying the tool on the concrete coping or road bed. It also protects the hand of the operator from contacting with the piercing point and being injured thereby.

It is obvious that minor changes in the shaping of the parts may be made without departing from the spirit of the invention as set forth in the appended claim.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is—

A piercing cutter for containers comprising a longitudinally extending body portion bent so as to form a handle loop having the inner leg portion extending substantially at right angles to the body portion intermediate the ends thereof so as to act as a gauge, said cutter being curved away from the body portion and having a piercing point at its free end with cutting edges diverging therefrom, said piercing point being disposed adjacent the inner leg of the handle portion and spaced therefrom a distance slightly greater than the thickness of the double seam joining the can end to the can body, whereby said leg when placed against the outer face of the double seam will position the piercing point so as to cut the metal close to the inner side of the double seam, said inner leg of the handle portion being extended away from the body portion of the cutter a greater distance than the piercing point of the cutter so as to protect said point.

EUGENE G. MASON.