Nov. 23, 1937. J. GORA 2,099,806

METHOD OF FORMING A POPGUN BARREL

Filed Aug. 14, 1935 2 Sheets-Sheet 1

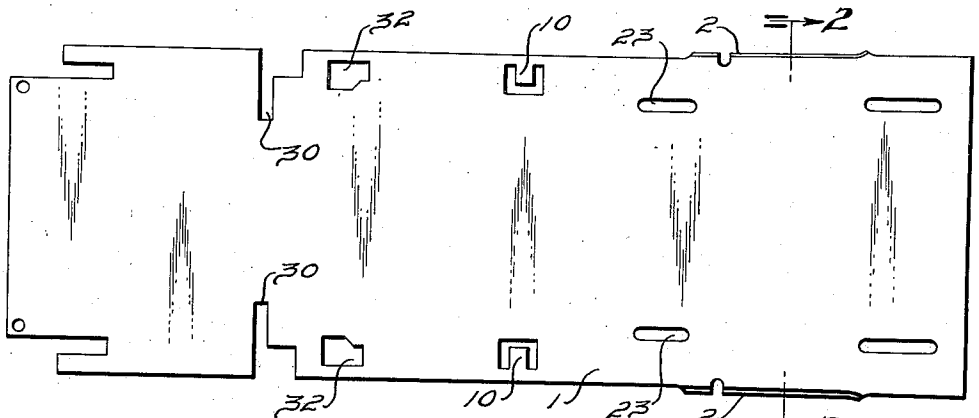


Fig. 1.



Fig. 2.

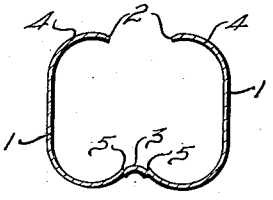


Fig. 3.

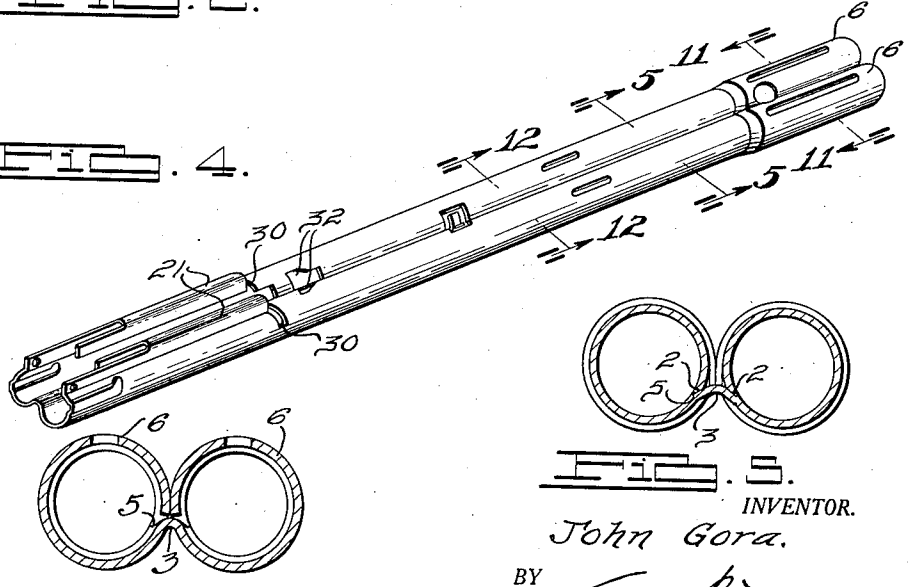


Fig. 4.

Fig. 5.

Fig. 11.

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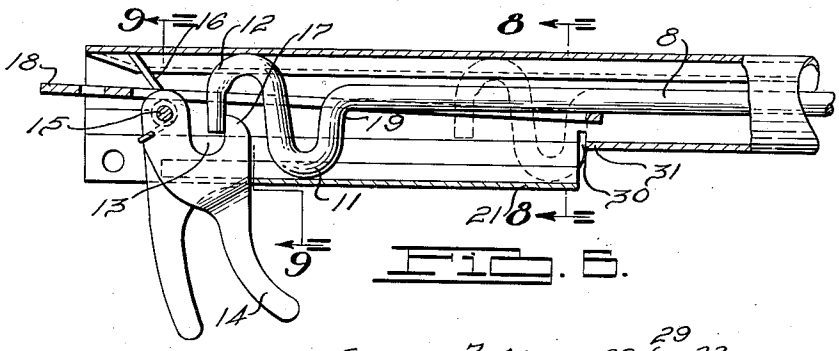


FIG. 6.

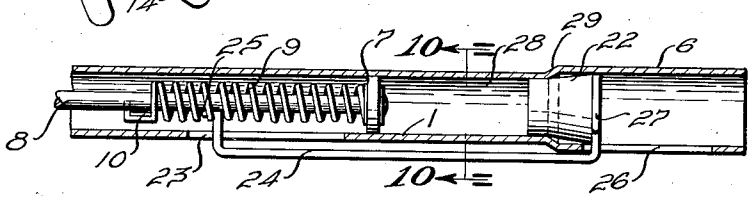


FIG. 7.

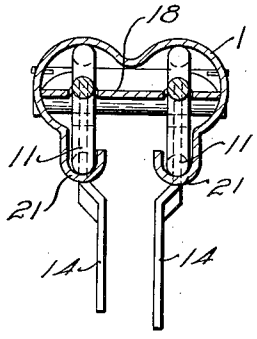


FIG. 8.

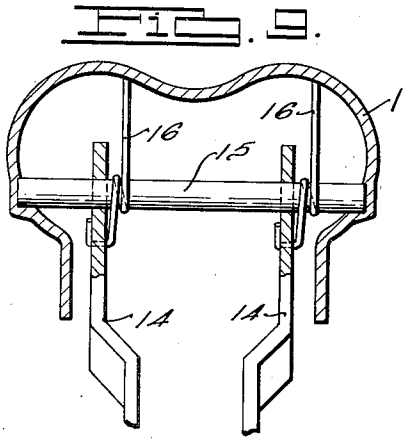


FIG. 9.

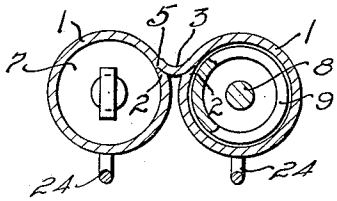


FIG. 10.

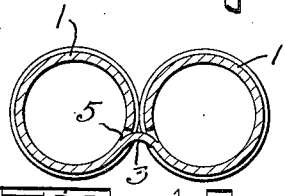


FIG. 12.

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METHOD OF FORMING A POPGUN BARREL

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Application August 14, 1935, Serial No. 36,077

4 Claims. (Cl. 113—116)

This invention relates to popgun barrels and the object of the invention is to provide a popgun barrel comprising a single sheet of metal formed to shape a double barrel and arranged so that the compression chamber is a sealed cylindrical chamber in each barrel, thus eliminating the necessity of providing a cylindrical insert for each barrel.

A further object of the invention is to provide a double barrel for a popgun formed from a single sheet of metal in which the portion of the sheet forming the compression chamber is accurately fitted to prevent air leakage while the remainder of the barrel is not fitted sufficiently close as to prevent air leakage.

Another object of the invention is to provide a double barrel formed from a single sheet of metal of the character described and having guide members for the piston rods formed from the same sheet integrally with the barrels.

A further object of the invention is to provide a double barrel popgun formed from a flat metal sheet and having a longitudinal rib formed centrally thereof and the opposite edges of the sheet being rolled inwardly against the rib, the edges of the sheet being beveled through a portion of their length and the rib being provided with shoulders against which the beveled edges seat to provide air tight compression chambers.

These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a plan view of a sheet metal blank from which the barrel is made.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

Fig. 3 is a section through the sheet during the forming process.

Fig. 4 is a perspective view of the completed gun barrel.

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 4.

Fig. 6 is a section through the barrel showing one of the piston rods mounted in the guide.

Fig. 7 is a view of the compression chamber and piston mounted therein.

Fig. 8 is a section taken on line 8—8 of Fig. 6.

Fig. 9 is an enlarged section taken on line 9—9 of Fig. 6.

Fig. 10 is a section taken on line 10—10 of Fig. 7.

Fig. 11 is an enlarged section taken on line 11—11 of Fig. 4.

Fig. 12 is an enlarged section taken on line 12—12 of Fig. 4.

The sheet metal blank 1 from which the gun barrel is formed is shown in Fig. 1 and this blank at one end is provided with side portions having beveled edges 2 shown in Figs. 1 and 2. This blank shown in Figs. 1 and 2 is then formed with an upwardly extending rib 3 shown in Fig. 3 and the remaining portion is provided to form the inturned edges 4. At the time that the rib 3 is formed, longitudinal shoulders 5 are formed on opposite sides thereof extending longitudinally of the rib and the beveled edges 2 are formed to seat on the shoulders 5, as shown in Fig. 5. This provides a cylindrical compression chamber and, by means of the beveled edges 2 seated on the shoulders 5 of the rib 3, cylindrical compression chambers are formed which are practically air tight throughout the length of the beveled edges 2.

The muzzle portions 6 of the barrel are of larger diameter than the compression chambers and the edges of these portions are not beveled and seat on top of the rib 3 as shown in Fig. 11. The portion of the barrel which contains the piston spring and piston rod is shown more particularly in Fig. 12 and the edges 7 of these portions are spaced slightly from the shoulders 5 of the rib 3 as there is no need to make this portion of the barrel air tight and thus the only portion of the barrel which is air tight is the portion having the beveled flanges 2 which seat on the shoulders 5. Consequently, in rolling the barrel to the form shown in Figs. 4, 5, 10, 11, and 12 the barrel is rolled to bring the beveled edges 2 into tight engagement with the shoulders 5 of the rib 3 while the remaining portions of the barrel are not so tightly fitted as will be understood from the said figures.

As shown in Fig. 7, a leather piston 7 is fitted into the compression chamber and is provided with a piston rod 8. A coiled spring 9 is positioned about the piston rod 8 and engages against the piston 7 at one end and also seats on the inturned lug 10 at the opposite end. The end of the piston rod 8 opposite the piston 7 is shown more particularly in Figs. 6 and 8 and is provided with a portion 11 having a return bent end 12 adapted to seat in the notch 13 in a trigger 14. Each trigger 14 is mounted on a shaft 15 shown more particularly in Fig. 9 while a spring 16 is provided tending to turn the trigger 14 in a counter-clockwise direction on the pin 15 shown in Fig. 6. Each trigger 14 is provided with a curved face 17 over which the end 12 of the piston rod 8 is adapted to ride as this rod

is drawn to the left of Fig. 6. A slotted plate 18 is provided for drawing the piston rods of both barrels back at the same time, the plate 18 being shown more particularly in Figs. 6 and 8.

The end of the slot in this plate engages the shoulder 19 of each trigger as shown in dotted lines in Fig. 6 and this plate 18 is drawn back when the gun is cocked. While not here shown, the plate 18 is connected to the gun butt so that as the gun butt is cocked this plate 18 is drawn to the left of Fig. 6. In the position shown in full lines in Fig. 6, when the trigger 14 is pulled, the trigger is turned on the pivot 15 releasing the rod 8 to action by the spring 9 which throws the rod 8 to the dotted position shown in Fig. 6 so that the rod travels longitudinally of the slot in the plate 18. The portion 11 of each rod rides in a channel 21 formed integrally with the rear of the gun barrel as shown in Figs. 1 and 8. These channels 21 maintain the piston rods 8 in proper position to be engaged by the respective trigger 14 and by means of the slots in the plate 18 either trigger may be released independently of the other and will only discharge the cork in the respective barrel. In fact, with the arrangement shown, even when only one trigger has been released to release its rod and plunger, the gun may be re-cocked without disturbing the other trigger or piston rod which may be in the cocked position. As shown in Fig. 7 a cork 22 is positioned within the enlarged muzzle 6 of the gun and fits into the end of the compression chamber 28. A slot 23 is provided in each barrel to the rear of the respective compression chamber 28 and a retainer rod 24 is provided having an end 25 engaged between the coils of the spring 9. As shown in Fig. 7, this retainer rod 24 extends forward and through a slot 26 provided in the enlarged muzzle 6 and the end of the rod is formed with a loop 27 engaging the cork 22 to hold it in the end of the compression chamber.

When the trigger is released, the rod 8 moves from the position shown in full lines in Fig. 6 to that shown in dotted lines. This moves the piston 7 forward and the retainer rod 24 at the same time and as the air pressure builds up in the compression chamber 28 the cork 22 is discharged from the end of the compression chamber but is retained in the enlarged muzzle 6 by the loop 27 on the retainer rod 24. A sloping shoulder 29 is provided between the enlarged muzzle 6 and the compression chamber 28 so that when the gun is again cocked the piston rod 8 is drawn to the left of Fig. 7 and the retainer rod 24 is also drawn to the left as the compression spring 9 is compressed. During this movement, the loop 27 again engages the end face of the cork 22 and pushes the cork back into the end of the compression chamber 28, the sloping shoulder 29 acting as a guide to guide the cork back into the compression chamber.

As will be noted from Figs. 1, 4, and 6 each barrel is provided with a slot 30 at the end of the respective guide channel 21 and the adjacent portion 31 of the barrel comes at the end of each guide channel so that in the fired position the portion 11 of the respective piston rod 8 engages the end 31 of the respective barrel portion and the end of the corresponding slot in the plate 18 at about the same time to provide a limit for forward movement of the piston rod 8. It will thus be seen that the entire barrel is formed from a single stamping to provide an enlarged muzzle 6, an air tight compression chamber 28, guide channels 21 and a barrel portion between the guide channels 21 and the compression chamber. The barrel is also provided with apertures 32 shown in Figs. 1 and 4 to which a cover and trigger guard (not here shown) may be secured.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, provides a one piece barrel construction including a compression chamber, is very cheap to manufacture and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. A method of forming a popgun barrel consisting in stamping a blank with parallel edges from a sheet of metal, beveling the parallel edges through a minor portion of their length, rolling the parallel edges inwardly to the center of the sheet and forming a raised rib in the center of the sheet, forming a shoulder on each side of the raised rib and seating the beveled edges of the barrel tightly on said shoulders to form compression chambers and shaping one end of the blank to provide parallel guide channels extending in spaced parallel relation on the underside of the formed barrels.

2. A method of forming a popgun barrel consisting in stamping a blank from a sheet of metal, forming a raised longitudinal rib extending centrally through the blank and parallel with the edges of the blank, forming a shoulder in the metal on each side of the rib, inturning the edges of the blank against said rib, beveling each edge of the blank to fit tightly against the respective shoulder and the portion of the rib above the shoulder and forming a pair of guide channels in the sheet extending in parallel relation at a distance from said beveled edges.

3. A method of forming a popgun barrel consisting in forming a rib longitudinally of a sheet of metal and spaced equi-distantly from the side edges thereof, forming a longitudinal shoulder on each side of the rib and rolling each edge of the sheet to bring the edge into engagement with the rib, beveling a portion of each edge to fit tightly against the respective shoulder to form a pair of compression chambers and forming a guide channel in one end of each barrel and an enlarged muzzle in the opposite end thereof.

4. A method of forming a popgun barrel consisting in forming a longitudinal rib centrally of a sheet of metal, inturning the side edges of the sheet against said rib, forming a longitudinal shoulder in the metal on each side of the rib, beveling a portion of each edge of the sheet to fit tightly against the shoulder and portion of the rib above the shoulder to form a compression chamber, forming an enlarged muzzle at one end of each barrel, the edges of the muzzle portion when inturned seating in top of the rib and the portion of each barrel between the muzzle and compression chamber being tapered.

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