Oct. 18, 1927. W. DE GARKOVENKO ET AL 1,646,083

CARTRIDGE CLOSING MACHINE

Filed Oct. 25, 1926

Fig. 1.

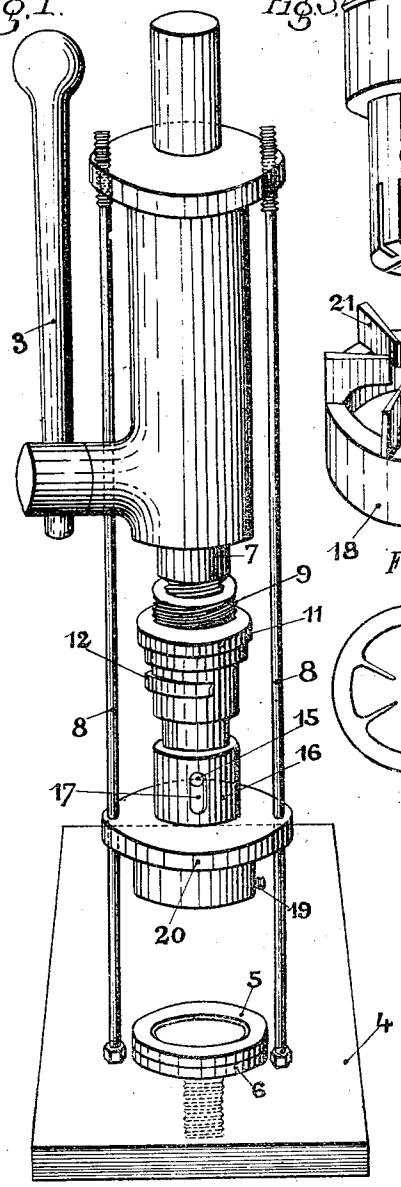
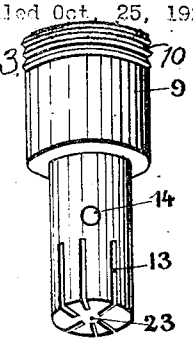


Fig. 3.



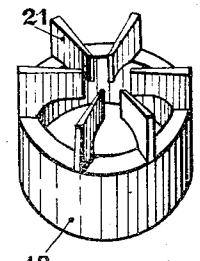


Fig. 4.

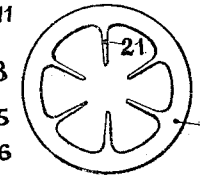
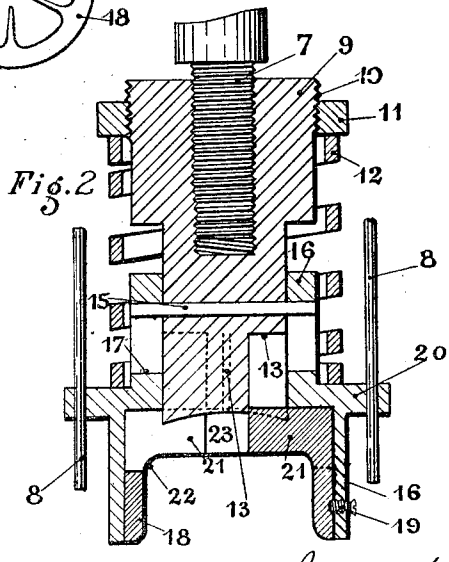


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CARTRIDGE-CLOSING MACHINE.

Application filed October 25, 1926, Serial No. 144,070, and in France October 31, 1925.

This invention relates to cartridges, more especially for chasing purposes and consists in a novel method of closing in one stroke or operation such cartridges built up either of a paper tube or of a metallic tube and charged with small lead or bullets; this closing is obtained by folding and pressing of the paper- or metal-tube of the shell itself in two distinct phases:

1. The folding in shape of a cone of the paper- or metal-tube of the shell itself, and

2. The flattening of this cone and the formation of a pad.

These two phases are realized simultaneously by means of a special automatic press in order to obtain a better form of the closing and to increase the regularity of the folding and also the regularity of the resistance offered so opening this closing at the moment of firing.

The present invention can be realized either with aid of the usual shells of standard types or of shells with indented borders.

The drawings appended illustrate in the way of an example one executional mode of the invention.

Figure 1 is a perspective of the press for effecting the closing of the cartridge at one time;

Figure 2 is a vertical section of the die and of the matrice combined for this operation;

Figure 3 is a detail perspective of the die;

Figure 4 is in a perspective from below of the matrix.

1. The loaded cartridge is folded in the vertical direction in form of a cone with six folds by a matrice 18 presenting six wings 21;

2. The conical folding is lowered, in the same position and under the same movement, or compressed and brought down into a horizontal plane as at 11, in order to form a circular border or a fastening pad 12, the shell being now totally closed.

This operation is effected at one time by the automatic press (Figure 1) comprising a handling lever 3 movable in the vertical direction. On the plate 4 of the apparatus is fixed, by screwing into the same, a basin 5 destined to receive the shells of 70 mm. of length. In case of shells of 65 mm. of length, an intermediate washer 6 is placed between the basin and the plate. Finally, the movable part of the apparatus is supported by pillars 8.

On the central rod, 7 threaded, of the press is screwed a central die 9 (Figure 1) the head portion whereof carries a threading at 10 receiving a nut 11 destined to regulate the tension of a spring 12 of rectangular section ensuring the return motion of the die.

The tail portion of the die is of somewhat smaller diameter and shows six radial slots 13 and a hole 14 for the passage of the assembling pin 15 disposed diametrically.

This tail slides in the upper part of the matrice 16 presenting two slots 17 for the passage of the pin 25. This upper part abuts into a shoulder 20 guided by the pillars 8 serving also as stops for the upper part 16 in order to denote the passage in the same movement of descending, of conical folding and of horizontal flattening.

The downmost turn of the spring 12 abuts against the shoulder 20.

The basis of the said upper part or of the cap 16 is hollowed in order to receive the matrice 18 fixed by screws 19. The wings 21 of this matrice are narrower towards the center than towards the periphery, and curved or bent, forming at 22 a curved transition of about 3 mm. of radius. In the interior these wings 21 are disposed like a rose-work, as represented in Figure 5.

The cartridge is disposed vertically between the basin 5 and the matrice 18 and thereupon the lever 3 is acted upon in the downward direction. The wings 21 of the matrice form now a cone having six folds, of the upper border of the shell; the cap 16 supporting the matrice being arrested at one moment of its stroke by a stop provided on the pillars 8, the die 9 continues its way alone in the downward direction and compresses the spring 12, the wings 21 passing across the slots 13 of the die. The bottom of this die is slightly concave as indicated in Figure 2.

What we claim, is:—

1. A cartridge closing machine comprising a die, a matrix having upwardly projecting wings, the said die having slots in its lower portion corresponding to said wings, means to hold a loaded cartridge below the matrix, means to operate said die and matrix to form a folded cone on the

upper end of the cartridge shell and means to arrest the descent of the matrix on the cartridge while permitting continued descending movement of the die to insure the closing of the cartridge.

2. A machine for closing cartridges for chasing and the like comprising a die having slots, a matrix having wings to enter said slots, a collared bush to receive said matrix, a spring between said die and said matrix, means to lower said die to transmit its motion through said spring on said matrix, said steps and stops for said bush active to effect by the continued motion of said die the closing of said cartridge by the flattened folded cone formed by the machine at the beginning of its operation.

3. A machine for closing cartridges for chasing and the like as claimed in claim 2 including means to fix said die to said bush to permit the independent continued motion of the said die after the arrest of said matrix, and means to effect movements of die and matrix by one continued stroke.

4. A machine for closing cartridges for chasing and the like, a die as claimed in claim 2, wings including rounded off parts on said wings for the formation of a folded cone at the free extremity of the cartridge to be closed completely by the continued motion of the die alone.

In witness whereof they affix their signatures.

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