

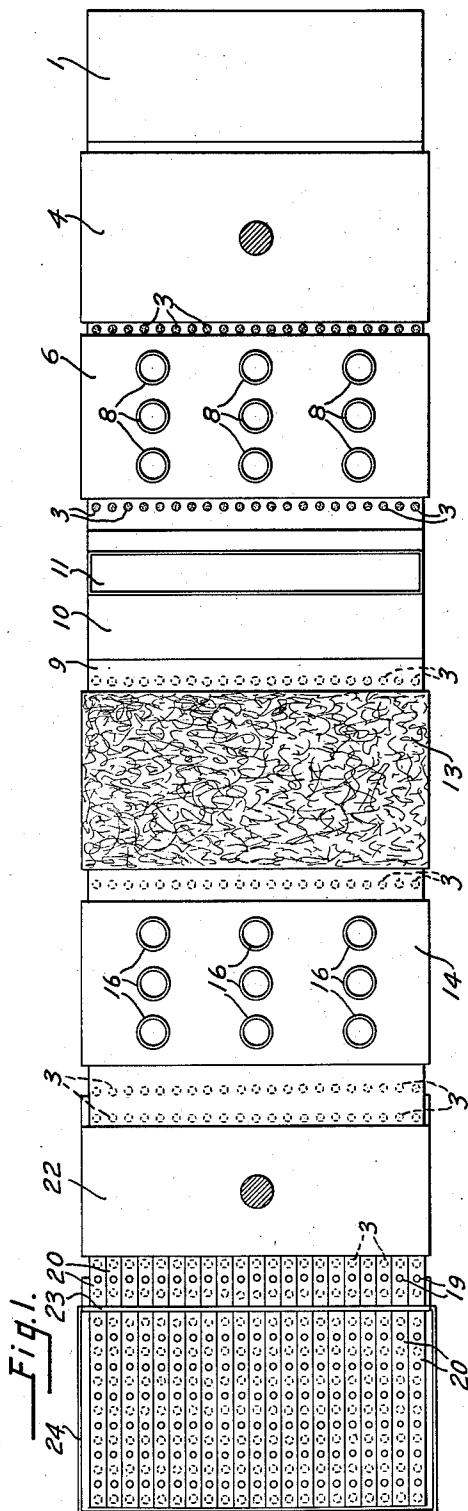
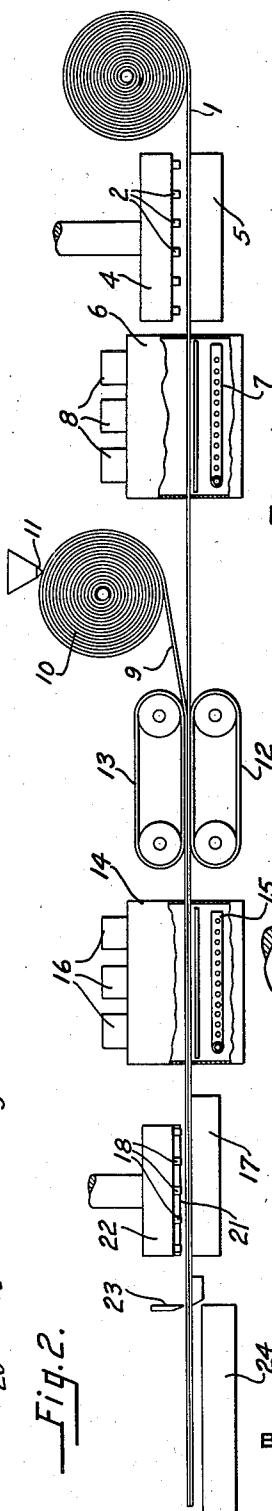
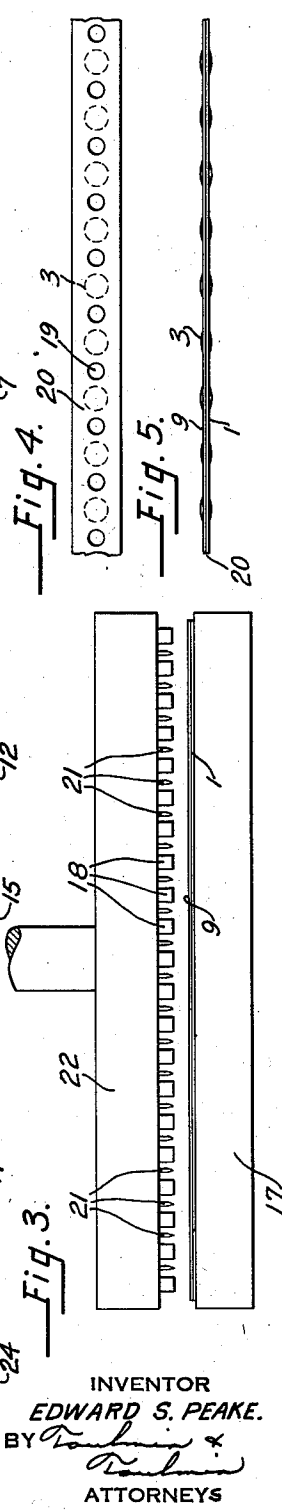
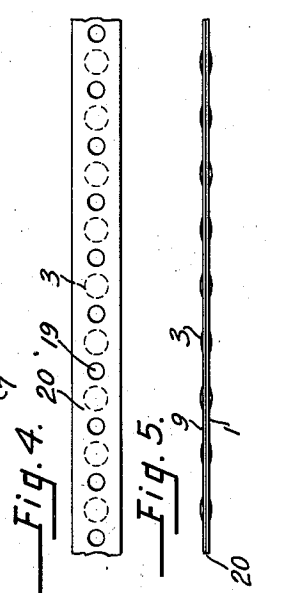
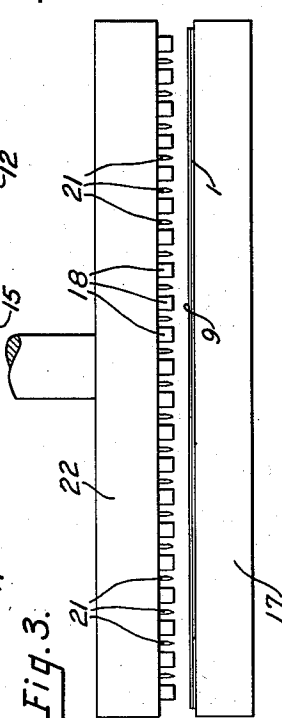
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METHOD AND APPARATUS FOR THE MANUFACTURE OF AMMUNITION

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METHOD AND APPARATUS FOR THE MANUFACTURE OF AMMUNITION

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7 Claims. (Cl. 86—1)

My invention relates to an apparatus and process for the manufacture of ammunition and particularly cap ammunition for toy weapons.

It is the object of my invention to provide a process for the rapid manufacture in multiple of a plurality of strips of ammunition with spaced dots of ammunition carried in a waterproof container between which dots of ammunition are provided openings for the feeding of the ammunition strips in the pistol.

In particular, it is my object to provide a mechanism and process for manufacturing in broad sheets the product in question and of delivering it in a plurality of relatively narrow strips in such lengths as may be desired without any part of the apparatus and the product being touched by hand.

This is particularly desirable as it permits the operator to stay at a remote point from the machine with the minimum chance of injury due to explosion.

Referring to the drawing:

Figure 1 is a top plan view of the apparatus practicing the process;

Figure 2 is a side elevation thereof;

Figure 3 is an end elevation of the combined puncher and cutter;

Figure 4 is a top plan view of the completed strip;

Figure 5 is a side elevation thereof.

Referring to the drawing in detail, 1 is a roll of supporting paper which is unwound to pass beneath a spotting press having projections 2 on which a supply of explosive in liquid condition has been placed. The ammunition spots indicated at 3 are thus printed at spaced intervals transversely and longitudinally of the sheet 1. The projections 2 are carried on the head 4 of the press. The base 5 is provided for supporting the sheet, such base being comprised of some soft material forming a relatively soft pad. The printed sheet then passes into the dehydrator cabinet 6, heated by the burner 7 having vents 8 where it is dried. It thence passes beneath the thin covering tissue sheet 9 which is rolled at 10 and the under face of which has a coating of glue applied by the glue spreader 11.

This glued sheet 9 is applied to the ammunition sheet by passing between the hard rubber belt 12 and the felt belt 13. The composite sheet then passes into a second drier or dehydrator 14 having the heater 15 and vent pipe 16. The completed dried sheet then passes over a die base 17 where it is punched by the punches 18 to form the feed holes 19. It is also slit in strips 20 by

the longitudinal cutters 21. The punches and cutters are carried by the head 22. If desired, the completed strips may be either rolled or may be cut in lengths by the knife 23 and dropped into the packing box 24.

Any suitable means may be provided for operating the presser head 4, the punch and cutter head 22 and for feeding the strip of paper so that the heads will be intermittently operated and the sheet of paper intermittently fed, the paper being fed while each head is in elevated position, and being fed intermittently so that all parts of the sheet will be similarly acted upon.

Method

My method, therefore, comprises unwinding a relatively broad strip of paper as, for instance, about eight inches wide, then printing upon it while in moist condition a plurality of spots of explosive material of any desired character, then drying these spots on the paper and then applying a cover, preferably thin, which has had applied to it an under coating of adhesive; then squeezing the cover on top of the ammunition sheet thus formed, drying the adhesive and then severing into final form as well as punching the sheet.

In order that the problem of this process may be understood, it will be realized that the explosive is highly sensitive as it is a material used for percussion caps in cap pistols. In view of the highly sensitive character of the material, it is a difficult problem to punch the holes 19 equidistant between the ammunition spots 3 in such a manner as to not touch the spots and ignite the entire sheet. It is, therefore, necessary to have a continuous synchronous process traveling at a uniform speed and carefully timed so as to prevent the explosion and ignition of the material passing through the machine.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

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

1. The method of producing cap ammunition, as a continuous operation consisting of the following successive steps, supplying an ammunition sheet, printing upon it simultaneously an area of spaced rows of ammunition spots, immediately thereafter drying the sheet, pasting a cover sheet thereon, redrying the sheet, punching a plurality of apertures in the sheet between the ammunition

spots, and shearing the sheet into strips between the rows of the ammunition spots.

2. The method of manufacturing cap ammunition, as a continuous operation consisting of the following successive steps, providing a relatively broad sheet, imprinting in a single operation a plurality of rows of ammunition spots while the ammunition material is in moist condition, immediately thereafter drying the combined strip and ammunition spots, applying a glue-coated cover sheet to the ammunition sheet with its spots, pressing the cover sheet and ammunition sheet to one another, immediately thereafter drying the compressed sheet.
3. The method of manufacturing cap ammunition, as a continuous operation consisting of the following successive steps, providing a relatively broad sheet, imprinting in a single operation a plurality of lines of ammunition spots while the ammunition material is in moist condition, immediately thereafter drying the combined strip and ammunition spots, applying a glue-coated cover sheet to the ammunition sheet with its spots, pressing the cover sheet and ammunition sheet to one another, then drying the compressed sheet and simultaneously punching the resulting sheet between the spots of each line and severing the sheet between the lines of spots and perforations in the strips.
4. The method of manufacturing cap ammunition, as a continuous operation consisting of the following successive steps, supplying an ammunition sheet, moving the sheet step by step, applying a plurality of rows of ammunition spots to the sheet between the steps while the sheet is at rest, drying the sheet, applying a cover to the sheet, compressing the cover, immediately thereafter redrying the composite sheet with its cover and perforating the sheet between the ammunition spots of each row while it is at rest between the steps of movement.

5. The method of manufacturing cap ammunition, as a continuous operation consisting of the following successive steps, supplying an ammunition sheet, moving the sheet step by step, apply-

ing a plurality of ammunition spots to the sheet between the steps while the sheet is at rest, immediately thereafter drying the sheet, applying a cover to the sheet, compressing the cover immediately thereafter, redrying the composite sheet with its cover, perforating the sheet between the ammunition spots while it is at rest between the steps of movement, and severing the sheet in strips simultaneously with punching them.

6. An apparatus for manufacturing cap ammunition in a continuous operation having, in combination, means of supplying an ammunition sheet, means of printing a plurality of moist spots of ammunition in transverse and longitudinal rows, means for drying the sheet so printed, said means being located in such close relationship to the printing means as to operate immediately following the printing operation, means of gluing the under side of a cover sheet, means of applying the glued surface of the glued sheet to the ammunition sheet over the spots, means for pressing the sheets together, means to dry the composite sheet immediately following the pressing operation, and means to perforate the sheet between the rows of spots in one direction.

7. An apparatus for manufacturing cap ammunition in a continuous operation having, in combination, means of supplying an ammunition sheet, means of printing a plurality of moist spots of ammunition in transverse and longitudinal rows, means of drying the sheet so printed located in such close proximity to the printing means as to operate immediately following the printing operation, means of gluing the under side of a cover sheet, means of applying the glued surface of the glued sheet to the ammunition sheet over the spots, means to dry the composite sheet located in position for operation upon the ammunition sheet immediately following the combining of said sheets, means to perforate the sheet between the rows of spots in one direction, and means to slit the sheet parallel to the rows of perforations.

EDWARD S. PEAKE.