J. R. SANDAGE.

AUTOMATIC TOY PISTOL.

APPLICATION FILED FEB. 10, 1916.

1,203,274. Patented Oct. 31, 1916.

Fig. 1.

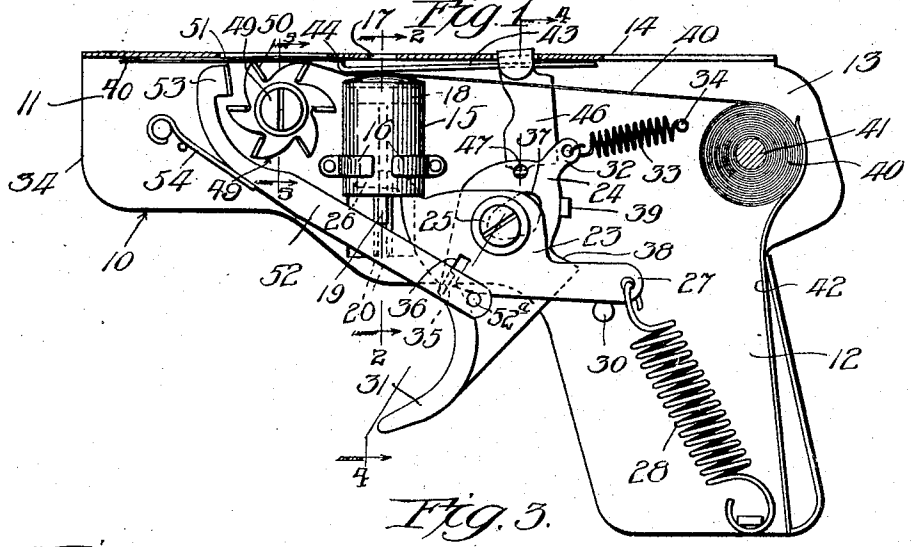


Fig. 3.

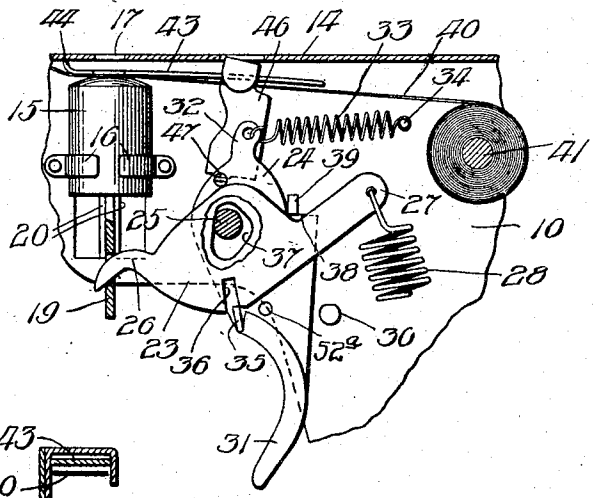


Fig. 2.

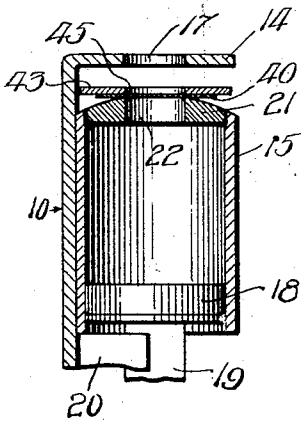


Fig. 4.

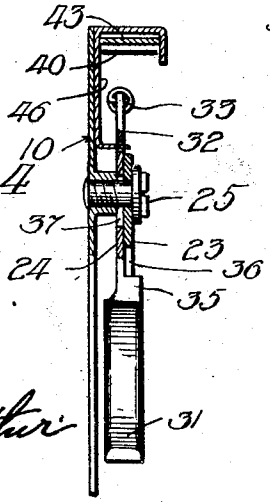
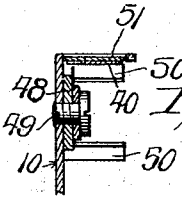


Fig. 5.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC TOY PISTOL.

1,203,274. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed February 10, 1916. Serial No. 77,425.

To all whom it may concern:

Be it known that I, JACOB R. SANDAGE, a citizen of the United States, and a resident of St. Joseph, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Automatic Toy Pistols; and I do hereby declare that the foregoing is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the reference characters marked thereon, which form a part of this specification.

This invention relates to improvements in toy pistols, and more particularly to toy pistols of that character commonly known as pneumatic or compression pistols whereby a sharp report or explosion is produced by the rupture or breaking of a sheet or film of frangible material, such as paper, by subjecting said sheet to a sudden impact of air which is compressed within a chamber or cylinder and through the medium of a spring actuated plunger or piston and suitable trigger mechanism.

The device to which this invention relates is of the so-called pneumatic type of toy pistol, but differs from the devices heretofore placed on the market, in that it embodies several distinctive features, in the manner of operation and in its general appearance, such as would be calculated to produce a harmless toy pistol, attractive to persons of immature years. To further this end the device is preferably constructed so as to carry out, so far as possible, a resemblance between the same and the well known and distinctive type of automatic revolver or firearm, not only in the exterior appearance but also in its mode of operation, by incorporating in its construction the so-called "automatic" feature, namely, an arrangement of parts which permits successive operation or "firing" of the pistol by a pulling of the trigger. In other words, the pistol is automatically "reloaded" by the action of the trigger mechanism in the act of "firing" the previous "charge."

The features mentioned, together with others, will be clearly understood from the more detailed description of the device hereinafter set forth and in connection with the accompanying drawings, in which—

Figure 1 is a view in side elevation of the supporting member upon which the mechanism of the pistol is mounted; Fig. 2 is an enlarged sectional view taken on line 2—2 of Fig. 1 and showing the construction of the cylinder and parts adjacent; Fig. 3 is a fragmentary view in elevation, showing the trigger mechanism in position to release, and further showing the construction of the trigger mechanism; Fig. 4 is a vertical sectional view taken on line 4—4 of Fig. 1; and Fig. 5 is a vertical sectional view showing the feeding mechanism.

Referring now to the construction of as much of the device as is shown in the drawings and as is necessary for the purposes of this invention, the operative parts thereof are mounted on a supporting member or plate 10, preferably of sheet metal and preferably formed in outline to resemble the contour of the usual automatic firearm. The supporting member 10 with the mechanism thereon is preferably adapted to fit within a casing (not shown) which itself closely resembles a firearm of the type hereinbefore referred to. If desired, however, the supporting plate may be fashioned so as to constitute one side or part of the complete device, there being provided a similar or corresponding side, serving as a closure, to incase the mechanism and to complete the device.

As before suggested, the supporting member 10 of the pistol is formed to carry out the resemblance to the modern automatic firearm having a comparatively short barrel portion 11, a short handle 12, an offset portion 13 extending rearwardly and above the handle, in fact possessing all the features of bluntness and compactness that distinguish the so-called automatic firearm. Extending longitudinally of the member 10, and integral with its upper margin, is provided an integral flange 14 extending at right angles to said member or plate and from the face thereof upon which the parts of the device are mounted.

Referring more in particular to the mechanism of the device, the air compressing means comprises a cylinder 15, forming the compression chamber and arranged transversely of the barrel portion 11 and substantially midway of the length of the supporting member. The cylinder is rigidly mounted or fixed upon said supporting member in any suitable manner, as for instance straps 16, 16, secured to said member 10 and surrounding the cylinder. The

upper end of the cylinder is spaced a short distance from the flange 14 of the plate 10 and in axial alinement with a circular aperture 17 formed in said top wall, the interior of said cylinder having communication with the atmosphere through said aperture, in a manner hereinafter to be set forth. Movably mounted within the cylinder is a piston 18 (Fig. 2) having a piston rod 19 attached thereto and extending from the lower and open end of the cylinder, there being preferably provided guide members 20 secured to the supporting plate immediately below the cylinder and adapted to engage the piston rod in its movement relative to the cylinder.

The upper end of the cylinder adjacent to the flange 14 is provided with a head 21 preferably of a material of a pliable nature such as leather, which fits within the end of said cylinder and is provided with a central aperture 22 in alinement with and spaced from the aperture 17 in the top wall of the casing and having substantially the same diameter.

The piston is operatively connected to and actuated by a spring and trigger mechanism constructed and arranged in the following manner: Pivotally mounted upon the supporting plate 10 and at a distance to the rear of and slightly below the lower end of the cylinder 15 are two relatively movable trigger members 23 and 24, both rotatively mounted upon a pivot pin 25 and comprising comparatively thin plates cut in suitable form and arranged in superposed relation. The uppermost member, 23, which by reason of its function may be designated the lever member of the trigger mechanism, is provided with arms 26 and 27, the arm 26 extending forwardly and attached directly to the piston rod 19 preferably by the provision of a hooked extremity upon said arm, which engages an aperture in the piston rod located substantially midway of its length. The other arm, 27, of the lever member extends rearwardly in the opposite direction and is connected to one end of a comparatively strong tension spring 28 of the coil form, said spring being located in the handle of the pistol and rigidly connected at its opposite end to the supporting plate adjacent to the base of said handle. The lever member is designed to have a limited rotative movement under the action of the tension spring 28 and the remaining parts of the trigger mechanism, as is hereinafter pointed out, its movement in a clockwise direction and under the tension of said spring being limited by a stop member 30 located adjacent to the path of movement of the arm 27 of said lever member and in position to engage the lower edge thereof. The undermost member, 24, of the trigger mechanism, which may be termed the release member of the trigger mechanism, is arranged transversely of the lever member, its lower extremity projecting downwardly and beyond the lower margin of the supporting plate, said projecting portion being fashioned in the usual manner to form the trigger finger 31, or what is generally considered the "trigger." The upper end of the release member 24 is provided with a short arm 32, there being attached to the end thereof a small coil tension spring 33 fixed at its opposite end to a pin 34 mounted upon the supporting plate and located rearwardly of the arm 32. The purpose of this spring is to exert a tension on the release member opposing the pressure of the operator's finger upon the trigger finger 31 in pressing the same rearwardly in the act of "firing" the pistol. The lever member 23 and release member 24 coöperate in the following manner to produce the complete trigger mechanism. The release member 24 is provided adjacent to the base of the trigger finger 31 with an integral lug 35 arranged in a generally longitudinal relation to the release member and radially with respect to the pivot pin 25. This lug is adapted to engage a notch 36 formed in the lever member 23 and within the lower margin thereof. It is obvious that, when the notch 36 is engaged by the lug 35, the two members 23 and 24 will be connected together in such a manner that the same will rotate about the pivot pin 25 as a unit under the action of the spring or pressure of the operator's finger upon the trigger finger 31. These members, however, are arranged so that, when the trigger finger is drawn or pressed rearwardly to its fullest extent, the lever member will be automatically disconnected from the release member, thereby permitting the piston to be actuated by the spring 28. To accomplish this end the release member 24 is provided with an elongated and enlarged, central aperture 37 (Fig. 3), through which the pivot pin 25 extends, said aperture being substantially triangular in shape and of a size sufficient to permit the movement of the member in a direction transverse to said pivot pin and more particularly in a direction of the major axis of the release member, which extends generally in alinement with the trigger finger 31. The release member is further provided with a projection 38 formed on the margin thereof and located on the side adjacent to the arm 27 of the lever member 23. This projection 38 is adapted to engage a lug or stop member 39 fixed to the casing and arranged to prevent further rotative movement of the release member 24, when the same has been moved rearwardly, by pressure upon the trigger finger, to substantially its fullest extent to the position shown in Fig. 3. The function of the coacting projection 38 and

stop member 39 will be understood from the following. Prior to reaching the position in which said projection and stop member come into contact, the lever and release members are connected together through the medium of the locking lug 35 of said lever member and the notch 36 of the release member, the latter being rotated about the pivot pin with the lowermost portion of the elongated slot 37 into bearing engagement with said pin, by reason of the upward and rearward force exerted on said release member by the spring 33. When the projection 38 engages the fixed lug 39, the release member is withheld from further rotation. The continued pressure upon the trigger finger 31, however, results in these members acting as a fulcrum, so that the effect of said continued pressure upon the trigger finger is a transverse movement of the release member in a downward direction and relative to the pivot pin, to the end that the latter passes from the bearing position at the lower end of the slot 37, as shown in Fig. 1, to the upper end of the slot (Fig. 3), and thence to the opposite side of the slot and at the upper end thereof. This movement of the release member 24 relative to the pivot pin 25 is accompanied by a similar movement of the same relative to the lever member 23, with the result that the lug 35 of said release member is moved out of engagement with the notch 36 of said lever member, thereby suddenly releasing the lever member, which is instantly actuated by the spring, in a manner to rotate the same in a clockwise direction and to force the piston 19 upwardly within the cylinder with great rapidity and force.

As hereinbefore suggested, the frangible material used as a medium to be ruptured by the impact of the air compressed in the cylinder is preferably paper in the form of a strip 40, which is fed from an adequate supply in the form of a roll rotatively carried upon a suitable spindle or reel 41 mounted upon the supporting plate at the rearwardly offset portion 13 thereof and immediately above the handle. A flat spring 42 is secured at one end to the supporting plate adjacent to the base of the handle and yieldingly engages the surface of said roll of paper, and thereby serves to control the feed of the paper from said roll and to keep the strip taut as it leaves the same.

The paper strip 40 as it is fed from the roll extends forwardly beneath the flange 14 of the supporting plate and in contact with the upper end or head of the cylinder 15, said strip being of a width sufficient to cover completely the aperture 22 in said head of the cylinder. Passing beyond the cylinder, the strip engages a feeding mechanism, which will hereinafter be set forth in detail. Referring, for the present, to the paper strip and its relation to the cylinder, it is obvious that the opening at the upper end thereof must be sealed by an imperforate portion of the paper strip in order that leakage of air may be avoided during the compression of the air within the cylinder, inasmuch as loudness and sharpness of the report, due to the sudden rupture of the paper film by the compressed charge of air, is dependent upon a maximum pressure being created within the cylinder previous to the rupture of said film. For this reason, it is advantageous to clamp or retain the paper tightly against the opening in the cylinder during the upward or compression stroke of the piston within the cylinder, and, furthermore, it is equally important that the paper strip not be so retained at other intervals, for the reason that the strip must be free to be moved by the feeding mechanism in order to replace a ruptured portion of the paper strip by an imperforate portion. To accomplish this purpose, a movable clamping member is provided, having the form of a flexible plate 43 loosely retained in a position adjacent to the under surface of the flange 14 of the supporting plate and extending between and into the space separating the head of the cylinder and said flange. The forward end of the plate terminates immediately beyond the cylinder, and is provided with a short, upwardly turned flange 44, which bears against said flange 14 immediately forward of the aperture 17 therein, and acts to space the plate from said flange and also as a fulcrum, as will hereinafter appear. The plate extends rearwardly beyond the cylinder, and is provided with an aperture 45 therein, adapted to register with said apertures 22, 17 in the cylinder head and in the flange 14 of the casing, respectively. The free end of the plate terminates a distance rearwardly of the cylinder and above the trigger mechanism, said free end being free to be moved upwardly and downwardly. Adjacent to the rear and free end of the plate 43, the same is attached to a transversely arranged connecting link or strap 46 having at its upper end a yoke member, which straddles the plate, extending over the upper side thereof. The lower end of the connecting strap is pivotally connected to the release member 24 of the trigger mechanism by means of a pin which engages an aperture in said member, as at 47, located adjacent to the upper margin thereof. It will be seen that by this construction the flexible plate is connected to the trigger mechanism and is actuated thereby; thus, when the release member is moved downwardly through the coaction of the shoulder 38 and stop member 39, as hereinbefore described, the plate will be drawn downwardly by the force exerted thereon through the strap 46.

This downward movement of the plate is accompanied by a bending or flexing of the same, which effects a clamping of the paper strip 40 against the head of the cylinder, it being noted that said strip passes immediately below the forward end of said plate and between the same and the head of the cylinder.

It is to be further pointed out that, during the rotative movement of the trigger members in the act of pressing the trigger finger, the free end of the clamping member 43 is swung downwardly by reason of its connection with the release member 24 of the trigger mechanism, but that the actual clamping of the paper strip is accomplished simultaneously with the releasing of the lever member 23, by reason of the abrupt downward and endwise movement of the release member in the act of releasing the lever member, as before described. It is this movement of the release member which bends the flexible plate, thus yieldingly clamping or holding the strip against the cylinder, it being particularly noted that the actual clamping action takes place the instant before the lever member is released. This feature is of importance, inasmuch as the feeding mechanism operates in such a manner that it is necessary that the paper strip be free to move during substantially the entire rearward movement of the trigger finger.

Referring now to the feeding mechanism, the same comprises a feed wheel 48 pivotally mounted upon a pivot pin 49 secured to the supporting plate 10 in a suitable manner, and located immediately forward of the cylinder 15 and on the opposite side thereof from which the paper is fed, said wheel being further arranged adjacent to the top flange 14, so that its periphery is substantially in tangential relation to said flange. The feed wheel 48 consists of a plurality of radially arranged arms each having transversely arranged blades 50 of a width substantially equal to the width of the paper strip and adapted to contact with the paper strip and to move the same lengthwise and in a forward direction upon the rotation of the feed wheel.

In order to facilitate the feeding of the paper strip and to prevent the tearing or cutting thereof by reason of its contact with the edges of the several blades 50, it is proposed to provide a yieldable or flexible member arranged tangentially to the periphery of the feed wheel and throughout the portion thereof engaged by said paper strip. Said yieldable member preferably consists of a thin flexible strip or sheet of metal 51 secured to the under side of the flange 14 and extending longitudinally and throughout the portion thereof immediately above the feed wheel. This flexible strip 51 bears yieldingly upon the paper strip 40 as it passes between said strip and the blades of the feed wheel, thus permitting the latter to securely grip the paper strip, yet in such manner as to avoid tearing or cutting the same, as before stated. As a preferable construction, a rectangular portion of the flange 14 immediately above the feed wheel is removed and the flexible strip extended across the same, thereby closing said aperture and replacing the otherwise non-yielding portion of the flange. The purpose of said aperture is obviously to provide sufficient space to permit the metal strip to bend or yield to accommodate the paper strip and to assume a curvature corresponding to the circumferential contour of the feed wheel. As shown in the drawings, the flexible strip is fixed to the top wall at its forward end only, extending rearwardly over said aperture and terminating beyond the same.

Referring now to the means for rotating the feed wheel, there is provided an endwise movable bar 52 pivotally connected at one of its ends to the release member 24 adjacent to the upper end of the trigger finger 31 by a suitable pin and hole connection 52^a. From the point of connection with the trigger finger the bar extends forwardly and upwardly and terminates in a curved end portion surrounding the forward portion of the feed wheel 48, said bar being provided at its end with a hooked member 53 facing toward said feed wheel. A suitable leaf spring 54 is mounted adjacent to the end portion of the bar and acts to maintain the same in a position adjacent the periphery of said feed wheel. The bar 52 with its hooked extremity is arranged to be actuated by the trigger mechanism each time the trigger is pressed rearwardly in the act of "firing" the pistol, said bar being moved endwise and its hooked extremity engaging an arm of the feed wheel and rotating the same sufficiently to advance or draw the paper strip forwardly, and to thereby remove a ruptured portion of the paper strip and replace it by an imperforate portion of the paper strip over the aperture of the cylinder 15.

From the description of the several parts constituting, and coöperating to form, the complete device, it is to be noted that the same are actuated, directly or indirectly as the case may be, by the manipulation of a single member, namely, the trigger finger, and, furthermore, the several parts are so arranged as to be operated at the proper instant to secure the desired result. This will appear from the following description of the operation of the device. In Fig. 1 the several parts are shown in position before the trigger is pressed rearwardly to "fire" the pistol, or immediately after the pistol has been "fired." In this position a

ruptured portion of paper strip is in contact with the cylinder, resulting from the previous "firing" of the pistol, and the piston is at the upper end of the cylinder. In this position also the clamping member 43 is loosened so that the paper strip can be moved, and the feed bar 52 is in position to engage an arm 50 of the feed wheel. Now, as the trigger is pressed rearwardly, the piston is drawn down, thereby drawing in a quantity of air, which is possible owing to the presence of the ruptured portion of the paper strip as well as the absence of any clamping action exerted on the paper strip. Simultaneously with the downward movement of the piston, the feed wheel is rotated, thereby moving the strip of paper forwardly until the aperture in the cylinder is again covered by an imperforate portion of paper strip, and at the same time the clamping member is being drawn downwardly but not sufficiently to clamp the paper in position. When the trigger finger reaches the position shown in Fig. 3, the lever member is about to be released, and a further pressure will effect the release of the lever member in the manner hereinbefore described, and in so doing transmit to the clamp member the final downward movement necessary to flex the same and thus firmly clamp the paper over the head of the cylinder. The feed mechanism having completed its operation of drawing or advancing the paper strip, it is apparent that, although both feeding and clamping operations are accomplished during the movement of the trigger finger, under the pressure exerted by the operator, the actual clamping is not effected until after the feeding has been accomplished and immediately before the piston is released. As before stated, the release of the trigger mechanism effects a compression of air within the cylinder by the spring actuated piston, with the result that the paper strip is ruptured with a loud and sharp report. Upon releasing the trigger finger, the release member resumes its original position under the action of the spring 33, the other parts being simultaneously moved to their original positions, and the pistol is again ready to be "fired" by pressing the trigger finger.

From the foregoing description of the construction of the device embodying the features of the invention, it is apparent that the several operations, namely, the compression of the air within the cylinder, the feeding of the paper strip, and the clamping of the paper strip, are accomplished entirely and automatically by the movement of the trigger in the act of "firing" the pistol, thereby eliminating the use of separate and independent cocking and release devices, such as employed in the usual form of toy pistols and rifles of pneumatic type.

The details of construction of the device embodying the features of my invention may obviously be varied or modified without departing from the spirit of my invention, and for that reason I do not wish to be limited in the scope of my invention, except in so far as specifically pointed out in the appended claims.

I claim as my invention:

1. In a device of the character described, the combination of a compression chamber provided with an opening, a spring actuated piston in said chamber, trigger mechanism operatively connected with said piston, and means for advancing a strip of frangible material into position to close the opening in said chamber, and actuated by said trigger mechanism.

2. In a device of the character described, the combination of a compression chamber provided with an opening, a piston in said chamber, a spring acting on said piston to move it in one direction, trigger mechanism operatively connected with said piston and spring and acting to move said piston in the opposite direction and to release the same, and feeding mechanism adapted to advance a strip of frangible material into position to close said opening of the chamber and operable by said trigger mechanism simultaneously with the movement of said trigger mechanism toward releasing position.

3. In a device of the character described, the combination of a compression chamber provided with an opening, a spring actuated piston in said chamber, trigger mechanism operatively connected with said piston, means operable by said trigger mechanism for advancing a strip of frangible material into position to close said opening of the chamber, and means for clamping said strip over said opening in said chamber and operatively connected to said trigger mechanism.

4. In a device of the character described, the combination of a compression chamber provided with an opening, a piston within said chamber, a spring acting on said piston, trigger mechanism operatively connected with said piston and spring and adapted to be manipulated to move said piston against the tension of said spring and to release the same, feeding mechanism for advancing a strip of frangible material over said opening in said chamber, and clamping mechanism acting to hold said strip tightly against the opening in said cylinder, said feeding and clamping mechanism being operable by said trigger mechanism, and during the movement of said trigger mechanism, to release said piston.

5. A toy pistol comprising air compressing means adapted to rupture a film of frangible material, trigger mechanism embracing a trigger finger adapted to be pressed to operate said air compressing means to rupture

said film, and means for advancing a strip of said frangible material and operable by said trigger mechanism, when said trigger finger is pressed.

6. A toy pistol comprising air compressing mechanism adapted to rupture a film of frangible material, means for successively advancing a strip of said frangible material to provide an imperforate film to be ruptured, means for clamping each film in position to be ruptured, and trigger mechanism for effecting the actuation of said air compressing means, embracing a trigger finger, said trigger mechanism being operatively connected with said feeding and clamping means and acting to operate the same simultaneously with the pressing of said trigger finger.

7. A toy pistol comprising spring controlled, air compressing means adapted to successively rupture portions of a strip of frangible material, trigger mechanism operatively connected with said air compressing means and arranged to actuate parts of the same into air compressing position and to automatically release the same to rupture said frangible material, by a continuous pressure upon the trigger finger thereof, feeding mechanism adapted to advance said strip, and clamping mechanism adapted to hold a portion of said strip in position to be ruptured, said feeding mechanism being operable by the trigger mechanism and during the movement of said trigger finger toward releasing position, and said clamping mechanism being operable by said trigger mechanism and simultaneously with the releasing action thereof.

8. In a device of the character described, the combination of a supporting member, a cylinder fixed on said supporting member and provided with an opening, a spring actuated piston in said cylinder, trigger mechanism for operating said piston, means for advancing a strip of frangible material over said opening in the cylinder, and a movable clamping member adapted to hold said strip tightly over said opening of the cylinder, said feeding means and clamping member being operatively connected with said trigger mechanism.

9. In a device of the character described, the combination of a supporting member, a cylinder rigidly mounted on said supporting member and provided with an opening therein, a spring actuated piston in said cylinder, trigger mechanism comprising a lever member operatively connected with said piston, a release member embracing a trigger finger and arranged to actuate said lever member against the tension of the piston actuating spring and to automatically release the same, by a continuous pressure upon said trigger finger, and means for clamping a film of frangible material over said opening in the cylinder, comprising a movable member operatively connected with the said release member.

10. In a device of the character described, the combination of a supporting member, a cylinder rigidly mounted on said supporting member and provided with an opening therein, a spring actuated piston in said cylinder, trigger mechanism comprising a lever member operatively connected with said piston, a release member embracing a trigger finger arranged to actuate said lever member against the tension of the piston actuating spring and to automatically release the same, by a continuous pressure upon said trigger finger, and means for clamping a film of frangible material over said opening in the cylinder, comprising a movable plate mounted adjacent the apertured end of said cylinder, and a link connecting said plate and said release member.

11. In a device of the character described, the combination of a supporting member, a cylinder mounted on said supporting member and provided with an aperture at one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, arranged to move said piston against the tension of said spring and to release the same, means for feeding a strip of frangible material over said opening in the cylinder and operated by said trigger mechanism in the movement of said piston thereby, and a plate movably mounted adjacent to the apertured end of said cylinder and operatively connected with said trigger mechanism, said plate being adapted to clamp said strip of frangible material against said apertured end of the cylinder in the movement of said trigger mechanism to release said piston.

12. In a device of the character described, the combination of a supporting member, a cylinder mounted on said supporting member and provided with an aperture at one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, arranged to move said piston against the tension of said spring and to automatically release the same, means for advancing a strip of frangible material over said opening in the cylinder and operated by said trigger mechanism in the movement of said piston thereby, and a flexible member mounted adjacent to the apertured end of said cylinder and operatively connected with said trigger mechanism and adapted to clamp said strip of frangible material against said apertured end of the cylinder during the automatic releasing of said piston by said trigger mechanism.

13. In a device of the character described, the combination of a supporting member, a cylinder mounted on said supporting member and provided with an aperture in one

end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, and means for clamping a film of frangible material over the apertured end of said cylinder, comprising a flexible plate operatively connected at one end with said trigger mechanism and provided with an aperture positioned in alinement with said aperture of said cylinder, said plate being bent into clamping position by the movement of said trigger mechanism.

14. In a device of the character described, the combination of a supporting plate, a cylinder mounted on said supporting plate and provided with an aperture in one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, and means for advancing a strip of frangible material over said apertured end of the cylinder, comprising a rotative wheel mounted adjacent to said cylinder and provided with radial arms adapted to engage said strip, and an endwise movable bar operatively connected with said trigger mechanism and with said wheel to rotate the same simultaneously with the manipulation of said trigger mechanism.

15. In a device of the character described, the combination of a supporting plate, a cylinder mounted on said supporting plate and provided with an aperture in one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, means for advancing a strip of frangible material over said apertured end of the cylinder, comprising a rotative wheel mounted adjacent to said cylinder and engaging said strip, a flexible member mounted upon said supporting plate and arranged to yieldingly press said strip against said wheel, and means operatively connected with said trigger mechanism for rotating said wheel.

16. In a device of the character described, the combination of a supporting plate, a cylinder mounted on said supporting plate and provided with an aperture in one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, a rotative wheel arranged adjacent to said cylinder and adapted to engage a strip of frangible material fed from the opposite side of said cylinder and over the apertured end of said cylinder, and a member operatively connected with said trigger mechanism and adapted to rotate said wheel to advance said strip, when said trigger mechanism is manipulated.

17. In a device of the character described, the combination of a supporting plate, a cylinder mounted on said supporting plate and provided with an aperture in one end thereof, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, a rotative wheel arranged adjacent to said cylinder and adapted to advance a strip of frangible material passing over said aperture of the cylinder, a flexible member mounted on said supporting plate adjacent to the periphery of said wheel and adapted to yieldingly engage said strip in contact with said wheel, and means operatively connecting said wheel with said trigger mechanism to rotate the same when said trigger mechanism is manipulated.

18. In a device of the character described, the combination of a supporting member having a barrel portion and a marginal flange extending longitudinally of said barrel portion, a cylinder rigidly mounted on said supporting member transversely of said barrel portion and provided with an aperture in one end thereof spaced a short distance from said flange, the latter being provided with an aperture in alinement with said aperture of the cylinder, a spring actuated piston in said cylinder, trigger mechanism operatively connected with said piston, and a movable plate interposed between said flange and the adjacent end of said cylinder and operatively connected with said trigger mechanism, for clamping said strip of frangible material against the apertured end of said cylinder.

In testimony that I claim the foregoing as my invention, I affix my signature in the presence of two witnesses, this 7th day of February, A. D. 1916.

JACOB R. SANDAGE.

Witnesses.

LOUIS C. UPTON,

FREDERICK S. UPTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."