A. VON HENRIQUEZ.

FEEDING DEVICE FOR MACHINES FOR LOADING CARTRIDGES.

APPLICATION FILED APR. 24, 1913.

1,242,086.

Patented Oct. 2, 1917.

2 SHEETS—SHEET 1.

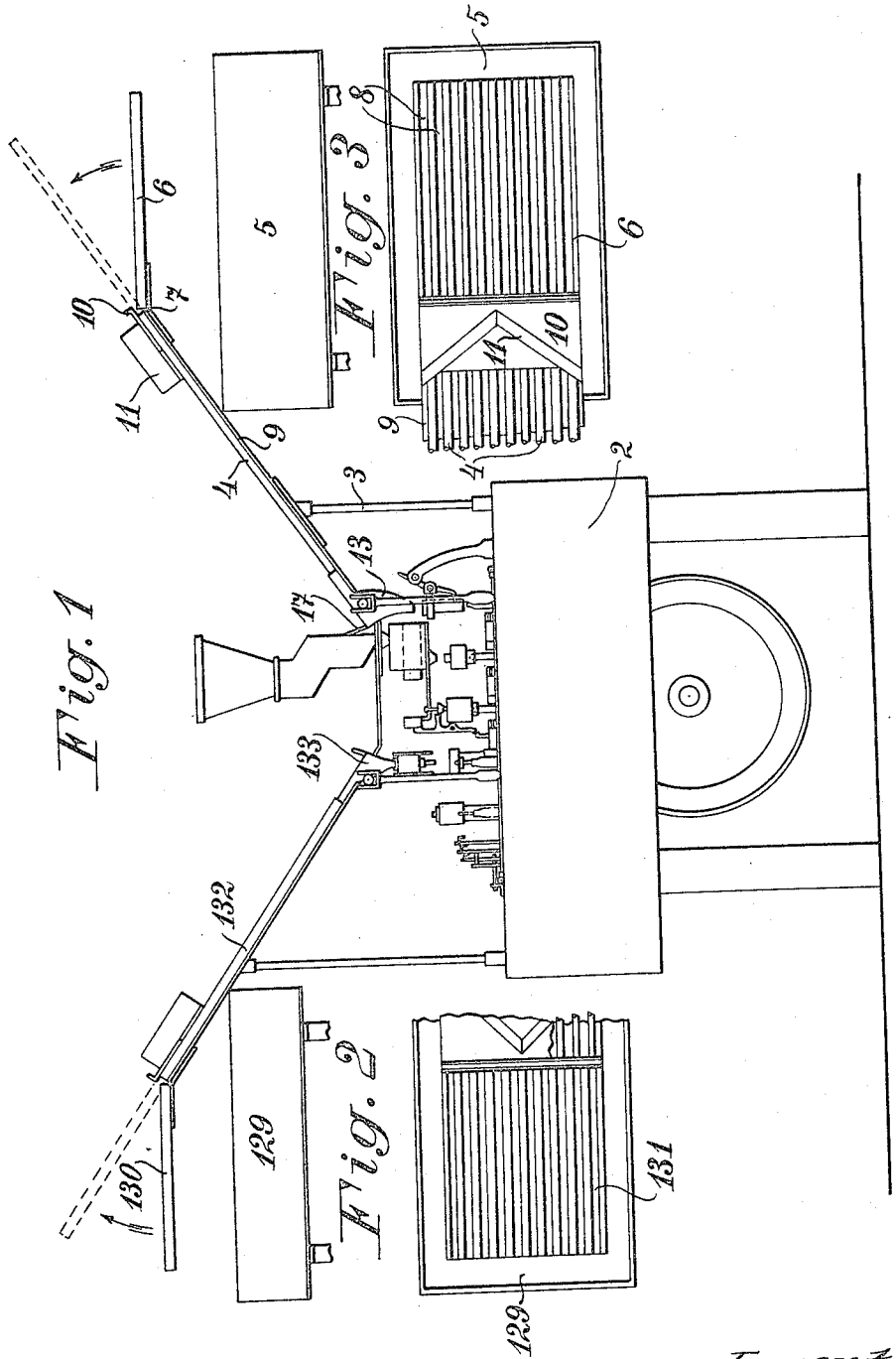

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Fig. 4

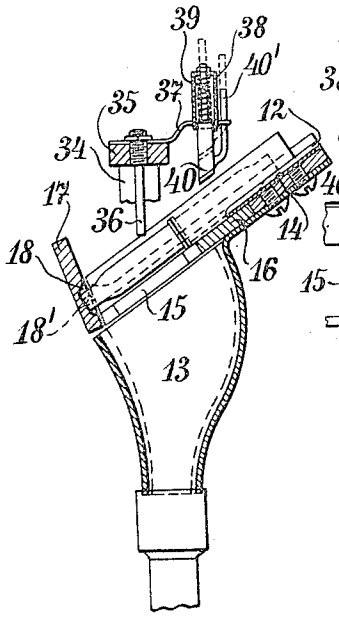


Fig. 5

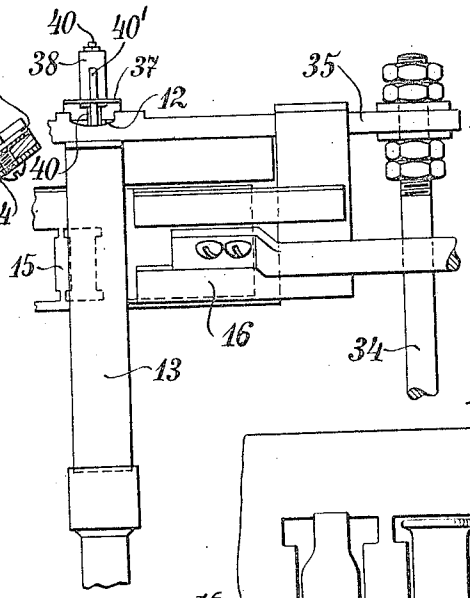


Fig. 7.

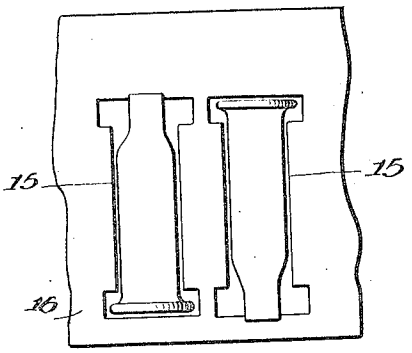
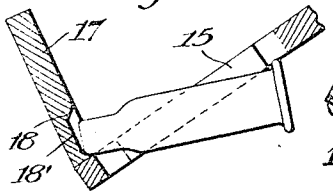
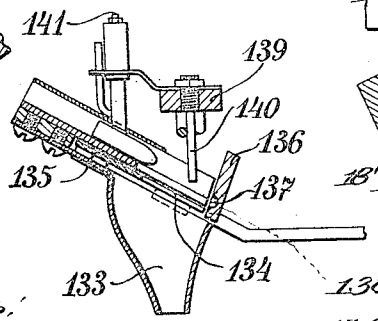


Fig. 6

Fig. 8.





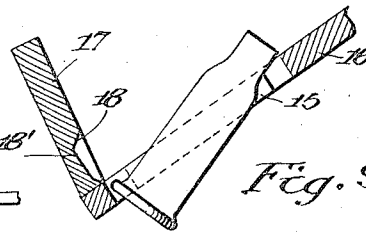


Fig. 9.

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UNITED STATES PATENT OFFICE.

ALFONS von HENRIQUEZ, OF WIENER NEUSTADT, AUSTRIA, ASSIGNOR TO BERNHARD WETZLER, OF VIENNA, AUSTRIA.

FEEDING DEVICE FOR MACHINES FOR LOADING CARTRIDGES.

1,242,086. Specification of Letters Patent. Patented Oct. 2, 1917.

Original application filed September 21, 1911, Serial No. 650,594. Divided and this application filed April 24, 1913. Serial No. 763,310.

To all whom it may concern:

Be it known that I, ALFONS von HENRIQUEZ, a subject of the Emperor of Austria, residing at Wiener Neustadt, Lower Austria, have invented certain new and useful Improvements in Feeding Devices for Machines for Loading Cartridges, of which the following is a specification.

This invention relates to feeding devices by which empty cartridge cases and projectiles are delivered in rows to a machine for loading cartridges. The present application is a division of my co-pending application Serial No. 650,594 filed Sept. 21, 1911.

One construction of a feeding device according to this invention is illustrated in the accompanying drawings.

Figure 1 is a diagrammatic side elevation of a complete cartridge loading machine together with the devices for delivering the cartridge cases and projectiles thereto.

Figs. 2 and 3 show in plan parts of these delivering devices.

Figs. 4 and 5 are detail views of parts of the feeding device for the cartridge cases to a larger scale showing the devices in vertical transverse section and an elevation respectively.

Fig. 6 shows the device for feeding the projectiles in vertical transverse section.

Fig. 7 is a top plan view of the shell delivery controlling slide, and

Figs. 8 and 9 show, respectively, the positions of the cartridge cases or shells in passing through the slots in the slide, the cartridge case being presented neck-foremost in Fig. 8 and base-foremost in Fig. 9.

Upon the table 2 are mounted supports 3 which carry devices 4 for delivering the cartridge cases to the machine and beneath which is arranged a receptacle 5 containing the cartridge cases to be loaded.

From the receptacle 5 the cases to be charged are thrown onto a plate 6 which is pivoted at 7 to the devices 4 and is formed with longitudinal parallel grooves 8 of suitable width for the reception of the cartridge cases, see Fig. 3; the cartridge cases thrown on the plate 6 assume longitudinal positions in the grooves 8 with their bases pointing to the front or rear, the number of the grooves in the plate 6 corresponding to the number of cartridges to be simultaneously dealt with during each working stage of the machine. Any cartridge cases lying transversely, or over each other on the plate 6 are swept with the flat hand of the operator into the grooves 8 or, if the grooves be full, they are swept over the side edges of the plate 6 and fall back again into the receptacle 5.

If now the plate 6 be rocked upwardly by hand about its hinge 7 into the position indicated in dotted lines in Fig. 1, the cartridge cases slide down out of each groove 8 into the corresponding case delivering device 4. These are constituted by a row of case delivering tubes which are arranged upon an inclined bed-plate 9 and are made of glass or other suitable transparent material so that any interruptions in the supply can be immediately detected. Above the tubes is arranged an angle plate 10 adapted to hold up any cartridge cases which do not slide properly down the grooves 8. On this plate 10 is an angularly bent deflector plate 11 the upwardly projecting inclined faces of which extend from the rear downwardly so that any cartridge cases which may have jumped out of the groove 8 or have been forced out of said grooves, fall thereon and slide back into the receptacle 5.

From the case delivering tubes the cartridge cases pass into guide troughs 12 on a plate 14 which is fixed to a row of hoppers 13, one of which is shown in Fig. 4, and from the troughs the cases fall into the hoppers 13. At the top of each hopper 13, in line with the sliding bottom of the corresponding trough 12, is a tooth 15 on a slide 16 which extends across the whole row of hoppers 13 so that the cartridge cases coming out of the guide troughs 12 are received on the teeth 15 between the side walls of the corresponding hoppers 13.

Opposite the cartridge case delivering devices 4 a cross bar 17, which extends across the whole row of hoppers, is arranged over the upper forward edge of the hoppers 13, such bar being formed with recesses 18 corresponding to the mouths of the downwardly sliding cases and the depth of which, added to the length of the adjacent slide teeth 15, corresponds to the length of a cartridge case. The arrangement is therefore such that all the cases which slide base foremost down the tubes of the devices 14

strike against the face of the cross bar 17, but those cases which slide down mouth foremost strike against the inner walls of the recesses 18. The mouths of the cartridge cases that slide down base foremost rest at the rear upon the solid portion of the slide 16 and the bases thereof rest at the front upon the teeth 15 of each slide, whereas the mouths of the cartridge cases that slide down mouth forward rest at the front in the recesses 18 and the bases of such cartridge cases rest at the rear upon the tooth 15 of the slide 16.

For cylindrical cartridge cases without a neck or a rim the cross bar 17 is also provided with projections 18', which, in the case of cartridge cases with their mouth foremost project into the mouths thereof while they abut against the ends of cartridge cases that slide down base foremost as shown, respectively in Figs. 8 and 9.

If now the slide 16 in the line of the filling hoppers 13 is pushed so far laterally in an outward direction that the holes therein between its teeth 15 are brought into register with the free open ends of the hoppers 13, all the cartridge cases on the slide consequently fall into the hoppers base downward irrespective of whether their mouths point to the front or to the rear, for in either case the bases lose their support first.

Simultaneously with the operation of the slide 16 a bar 35 arranged above the hoppers 13 and provided with downwardly projecting pins 36 is lowered. Attached to the bar 35 by means of light carrier plates 37 are guide sleeves 38 in which spring-pressed pins 40 are arranged to slide. The downward movement of the bar 35 forces the pins 36 against the empty cartridge cases falling through the openings in the slide 16, so that the proper downward tilting thereof is accelerated, while the spring pressed pins 40, which are prevented from rotating by means of guide arms 40' sliding in recesses in the corresponding guide plates 37, hold the next succeeding cartridge cases fast in the troughs 12 by the inclined concave under surfaces of the plungers bearing upon them so that these adjacent cartridge cases and all the cartridge cases in the same rows located behind them are prevented from sliding after the cartridge cases falling into the hoppers.

The bar 35 is now moved upwardly and the slide 16 is moved inwardly so that its teeth 15 are again brought over the open mouths of the hoppers 13. In a manner similar to that hereinbefore described with reference to the cartridge cases, the projectiles are thrown out of receptacles 129 onto plates 130 formed with grooves 131, see Figs. 1 and 2, into which grooves the projectiles fall with their points directed to the front or to the rear and from which the projectiles slide into guides 132 that lead them into hoppers 133, see Fig. 6. The mouths of the hoppers 133 are closed by the teeth 134 of slides 135 and are opened by the openings between the teeth of the slide coming into register with the open mouths of the hoppers, when the slide is operated. Cross bars 136 against which the projectiles strike may be provided with recesses 137, see Fig. 6, or with perforations 138, as shown in dotted lines in Fig. 6 for the points of the projectiles. The projectiles accordingly fall in like manner to the cartridge cases without exception with the base downward through the corresponding hoppers 133, push pins 140 attached to a bar 139 and spring plungers 141 acting in the same way as the analogous parts of the corresponding devices for controlling the delivery of the cases.

The details of construction of the improved devices for delivering cartridges or projectiles can be other than in the example hereinbefore described without departure from the invention, as set forth in the appended claims.

Claims.

1. In a cartridge loading machine, the combination of a container for parts of the cartridges, a feed plate located above said container and provided with a series of laterally spaced longitudinal grooves which occupy the same plane on the upper side of said plate and are adapted to receive such parts of the cartridges, a catching plate extending transversely across the tops of the grooves of the feed plate, and a guard on the upper side of said catching plate having sides which diverge angularly in directions downwardly and outwardly toward the opposite sides of the feed plate.

2. In a machine for filling cartridges, means for feeding cartridge cases thereto comprising, in combination, a supply hopper, an inclined feed plate leading to said hopper, and a set of guiding tubes on said feed plate for conducting the cartridge cases to said hopper, such tubes being transparent to permit observation of the cartridge cases contained therein.

3. In a cartridge loading machine, means for supplying cartridge cases thereto comprising, in combination, a supply hopper, means for feeding cartridge cases thereto in a direction transverse to the hopper, and means for regulating and controlling the entrance of the cartridge cases into the hopper embodying a reciprocatory slide arranged at the entrance of said hopper to receive the cartridge cases in reclining position and having a toothed opening through which the case may enter the hopper while the opening in the slide is above the hopper.

4. In a cartridge loading machine, means

for feeding cartridge cases thereto comprising, in combination, a receiving hopper, a guide for conducting cartridge cases endwise thereto, a controlling slide arranged between said guide and hopper and having an opening through which the cartridge case may pass into the hopper, and an abutment arranged in alinement with said guide and having a recess to receive the mouth of a cartridge case, the combined depth of said recess and length of the opening in the slide being equal to the length of the cartridge case.

5. In a cartridge loading machine, means for feeding cartridge cases thereto comprising, in combination, a receiving hopper, a guide for supplying cartridge cases thereto, an abutment arranged in alinement with said guide and having a recess to receive the mouth of a cartridge case, and a controlling slide interposed between said guide and hopper and having an opening formed with opposed teeth between which the body of the case may pass into the hopper, the length of the opening in the slide combined with the depth of said recess corresponding to the length of the cartridge case.

6. In a cartridge loading machine, means for feeding cartridge cases thereto comprising, in combination, a receiving hopper, an inclined guide for feeding a row of cartridge cases to the hopper, means for controlling the entrance of the cartridge cases into the hopper embodying an apertured slide, a device operative successively upon the cases to insure the passage thereof through the aperture in the slide and into the hopper, and a yieldable member operative upon the adjacent cartridge case in the row to prevent movement thereof while the preceding case is being introduced into the hopper.

7. In a cartridge loading machine, means for feeding cartridge cases thereto comprising a receiving hopper, a guide for conducting cartridge cases in an endwise direction thereto, and a slide for controlling the entrance of such cases into the hopper, said slide having an aperture which is enlarged at its opposite ends to permit the bases of the cartridge cases to pass therethrough and having intermediate opposed teeth to permit the passage of the body portions of the cases between them.

8. In a cartridge loading machine, means for feeding cartridge cases thereto comprising, in combination, a receiving hopper, an inclined guide for conducting cartridge cases in an endwise direction thereto, a member arranged at the entrance to said hopper and having an aperture formed with enlargements at its opposite ends to permit the passage of the bases of the cartridge cases therethrough and having opposed teeth to permit the passage of the body portions of the cases between them, and an abutment arranged in alinement with the guide and formed with a recess to receive the mouths of the cartridge cases, said abutment also being operative to engage the bases of the cases. the length of said aperture combined with the depth of said groove corresponding substantially to the length of the cartridge cases.

9. In a cartridge loading machine, means for feeding projectiles thereto comprising, in combination, a projectile-receiving hopper, a guide for conducting projectiles endwise thereto, and a member having an opening across the entrance to said hopper for the passage of projectiles laterally therethrough, and an abutment arranged in alinement with said guide and formed with a recess to receive the points of the projectiles.

10. In a cartridge loading machine, projectile feeding means comprising, in combination, a projectile-receiving hopper, a guide for conducting projectiles endwise thereto, a member arranged at the entrance of said hopper and provided with an opening through which the projectiles may enter the hopper, a plunger operative to force the projectiles successively through said opening and into the hopper, and a yieldable device arranged to engage the adjacent projectile to prevent movement thereof while a projectile is being introduced into the hopper.

11. In a cartridge loading machine, projectile feeding means comprising a receiving hopper, an inclined guide for feeding a row of projectiles endwise to the hopper, an abutment arranged in alinement with and at the bottom of said guide and formed with a recess to receive the points of the projectiles, a reciprocatory slide interposed between said guide and hopper and having an opening for the passage of the projectiles into the hopper, a plunger operative to force the foremost projectile through said opening and into the hopper while such projectile engages the abutment, and a yieldable member to engage the next projectile in the row to prevent movement thereof while a projectile is being introduced into the hopper.

12. In a cartridge loading machine, means for feeding cartridge cases comprising, in combination, a row of receiving hoppers, a feed plate having a row of guides thereon sloping downwardly toward the corresponding row of hoppers, a bar extending transversely of the guides and located beyond the lower ends thereof, and a slide operable above the row of hoppers adapted to receive the cartridge cases in reclining position and movable transversely of the lower ends of the guides, said slide being formed with openings to permit passage of the cartridge

cases laterally therethrough when said openings are in alinement with the respective guides and are above the respective hoppers.

13. In a cartridge loading machine, means for feeding projectiles comprising, in combination, a row of receiving hoppers, an inclined feed plate having a row of guides thereon sloping downwardly toward the corresponding row of hoppers, a bar extending longitudinally of the row of hoppers and transversely below the lower ends of said guides, and a slide located above and movable longitudinally of the row of hoppers and transversely of the guides, the slide having a set of openings for the passage of the projectiles when such openings are in alinement with the corresponding guides and are positioned above the corresponding hoppers.

In testimony whereof I have hereunto set my hand in presence of two suscribing witnesses.

ALFONS VON HENRIQUEZ.

Witnesses:
JOSEF RUBASCHE,
ADA MARIA BERGER.