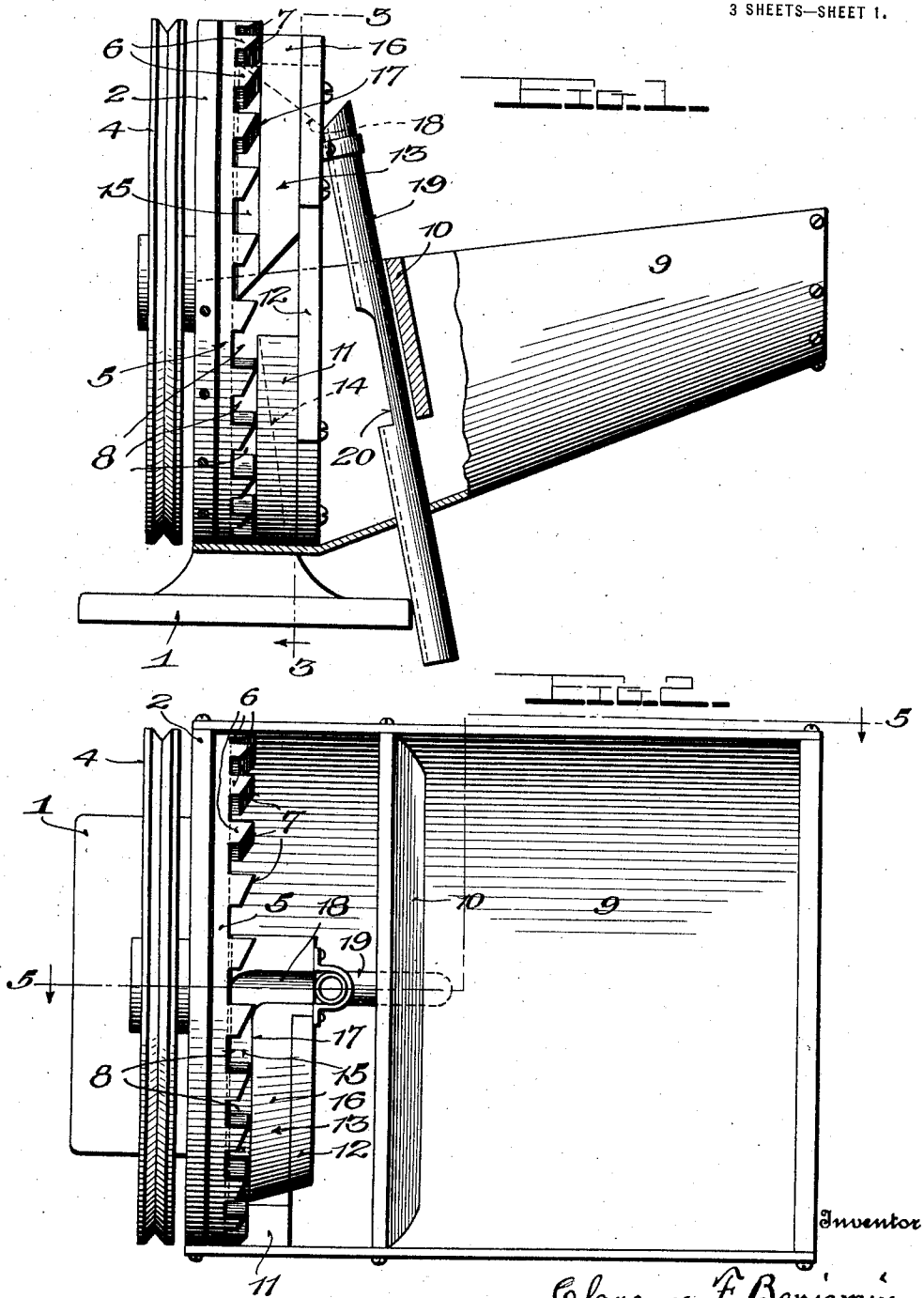


C. F. BENJAMIN.  
MACHINE FOR DROPPING BULLETS, &c.  
APPLICATION FILED SEPT. 18, 1919.

1,340,432.

Patented May 18, 1920.  
3 SHEETS—SHEET 1.



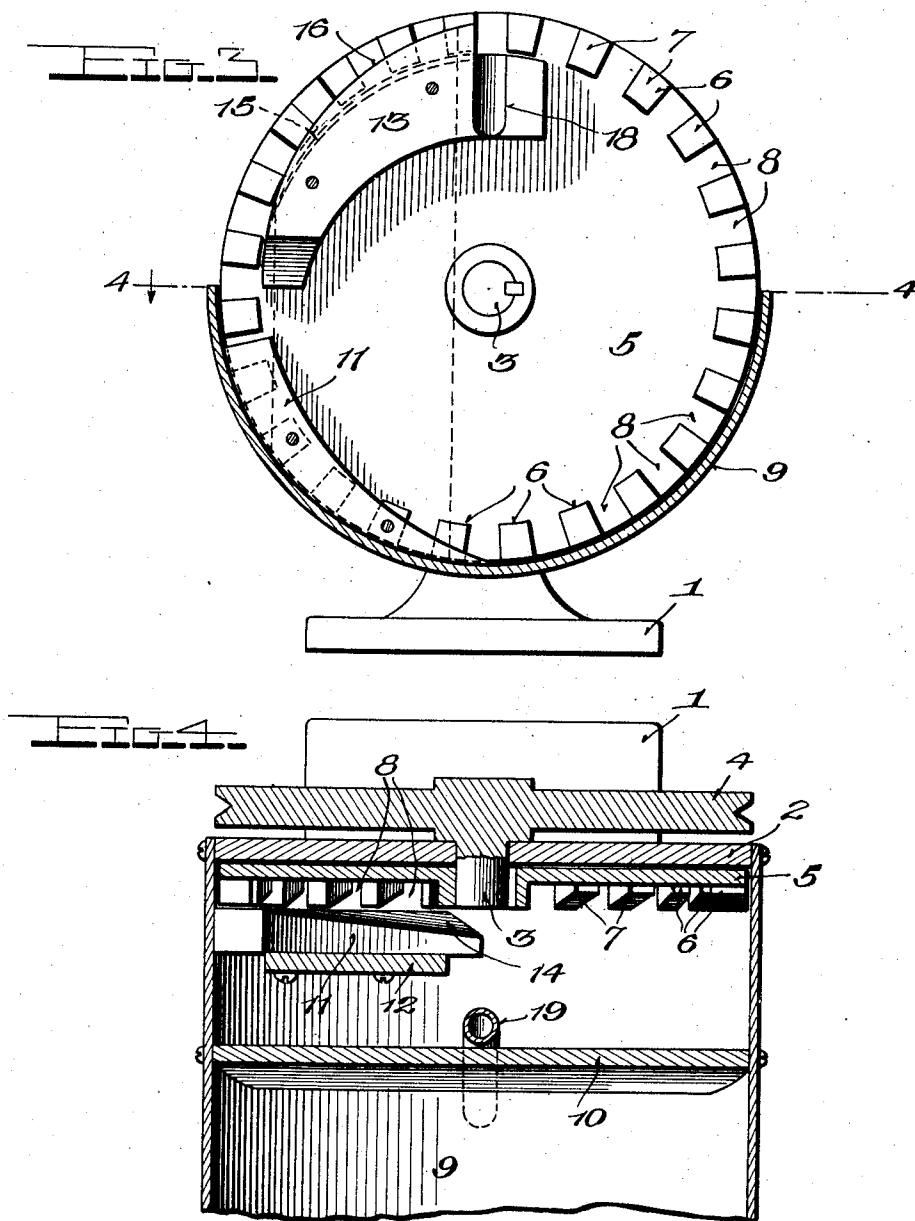
Inventor  
Clarence F. Benjamin  
By *[Signature]* Attorney

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Charles F. Benjamin, Inventor

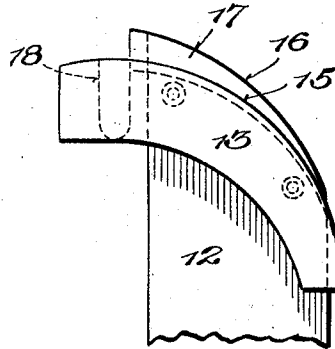
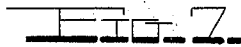
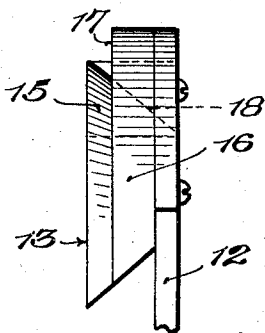
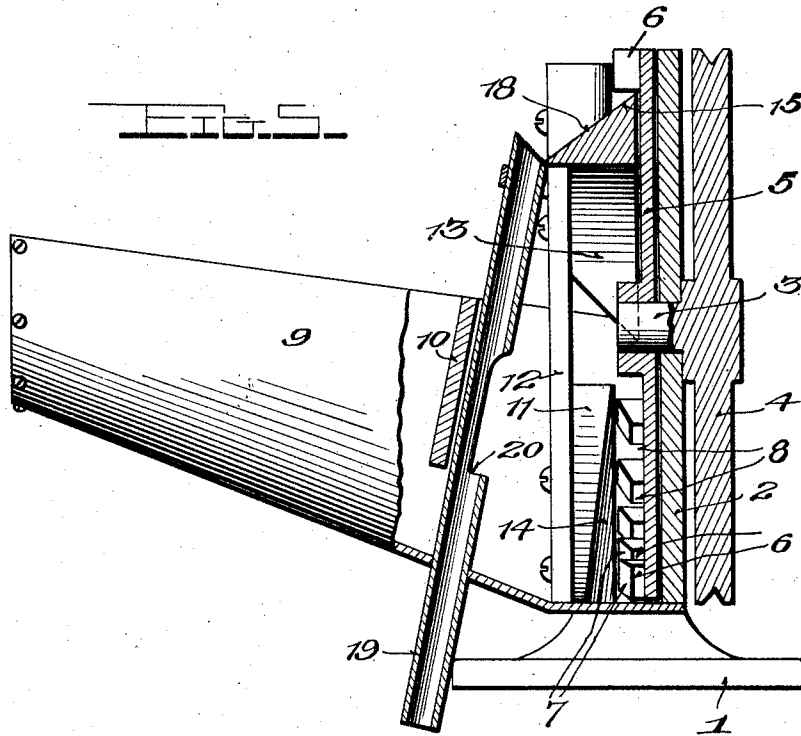
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Inventor  
Clarence F. Benjamin  
By *H. W. Miller*  
Attorney

# UNITED STATES PATENT OFFICE.

CLARENCE F. BENJAMIN, OF MILFORD, CONNECTICUT.

MACHINE FOR DROPPING BULLETS, &c.

1,340,432.

Specification of Letters Patent. Patented May 18, 1920.

Application filed September 18, 1919. Serial No. 324,648.

*To all whom it may concern:*

Be it known that I, CLARENCE F. BENJAMIN, a citizen of the United States, residing at the town of Milford, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Dropping Bullets, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in a machine for dropping bullets or slugs point downwardly, the principal object being to provide improved means for taking the bullets or slugs from a supply, such as a hopper, and delivering them always point downwardly to a machine for swaging, lubricating, assembling or other purposes.

The invention further resides in a rotary selector for removing the articles singly from a mass, and also in means located along the path of the selector for positioning the bullets thereon to insure proper delivery of the same.

Further, the invention is found to reside in the features of construction and the arrangements and combinations of parts hereinafter described and claimed, reference being made to the accompanying drawings, wherein—

Figure 1 is a side elevation of the improved machine with a portion of the hopper broken away to show more clearly the arrangement of parts;

Fig. 2, is a top plan view thereof;

Fig. 3 is a transverse vertical section therethrough on line 3—3 of Fig. 1

Fig. 4 is a horizontal section on line 4—4 of Fig. 3;

Fig. 5 is a longitudinal section on line 5—5 of Fig. 2; and

Figs. 6 and 7 are, respectively, edge and side elevations of the upper guard and guide.

In greater detail the invention comprises a base 1 carrying a circular upright support 2 formed with a central journal bearing for the shaft 3 of a drive pulley or wheel 4. The shaft extends through its journal bearing and has fixed thereto a selector or pick-up wheel 5 which has an annular series of teeth 6 on its outer face adjacent the periphery thereof. The outer faces of the teeth are beveled forwardly and outwardly, as indi-

cated at 7, whereby guiding faces are provided to aid in turning and causing the bullets to lie radially in the recesses or pockets 8 between the teeth.

An inclined hopper 9, semi-circular in cross section, is secured at its lower end about the lower half of the circumference of support 2 and is provided with a transverse partition 10 above its bottom to prevent the bullets crowding too high against the pick-up wheel and possibly choking the apparatus.

Fixed relative to the hopper and wheel support is a lower combined guard and guide 11 and spaced above this by an upright support 12 is an upper combined guard and guide 13 having flat arcuate faces across which the pick-up teeth move with their bullets. The lower or outer guard has a downwardly and inwardly beveled guide face 14 inclining in the direction of movement of the wheel and toward the latter whereby to shift a projecting bullet inwardly between the teeth and concurrently to turn the bullets up on end or radial of the wheel, the beveled faces 7 of the teeth coöperating therewith. The incasing hopper serves to retain the bullets in their pockets 8 against outward radial displacement until they reach the horizontal when they encounter the upper guard 13 located at the inner side of the annular series of teeth. This guard has a track face 15 underlying the radial pockets of the wheel to support the bullets therein against inward displacement and an eccentric portion 16 forming a vertical, confining wall 17 overlying the outer ends of the teeth. The track face 15 inclines downwardly from the wheel increasingly more in the direction of travel and leads to a chute 18 into which the bullets drop from their pockets point downwardly.

This is effected in the following manner:—Should the bullet be already pointing downwardly the point will ride outwardly on face 15 and tilt the bullet away from the wheel at the lower end so that when the chute is reached the bullet merely glides downwardly thereinto. If the bullet is point upwardly in the pocket the butt end will ride on the upper edge of face 15 whereby the bullet will tilt outwardly, when the vertical wall 17 is passed, and turn over into the chute with the point down.

The chute discharges into a conveying

tube 19 which is slightly tilted from the vertical and extends down through the hopper to a convenient point of discharge. Should the bullets be feeding too fast and  
 5 back up into the tube, the latter is provided with a cut-out 20 in its lower side within the hopper through which the bullets may drop back into the hopper upon being arrested at the opening or cut-out by the bullets filling  
 10 the lower end of the tube. In practice, the impetus given the bullet in its discharge from the pick-up wheel causes it to hug the outer wall of the tube and carry past the cut-out, the latter only functioning when  
 15 the bullets are arrested at the opening by the backing up of bullets in the lower end of the tube.

It will further be noted that the lower guard has its inner face eccentric, tapering  
 20 from the upper end downwardly to a point, whereby surplus bullets will ride thereon and finally drop back into the hopper and not become trapped or tend to choke the feed.

25 What is claimed is:

1. A machine of the class described, comprising a support, a shaft journaled thereon, a pick-up wheel having an annular series of outwardly beveled teeth adjacent its  
 30 periphery on one side face, and means co-operating with the beveled ends of the teeth to arrange the articles properly between the teeth.

2. A machine of the class described, comprising a support, a shaft journaled thereon, a pick-up wheel having an annular series of outwardly beveled teeth adjacent its  
 35 periphery on one side face, a guard arranged alongside the path of travel of the teeth and having a face beveled inwardly and toward the periphery of the wheel, and means for supplying bullets or slugs to the wheel.

3. A machine of the class described, comprising a support, a shaft journaled thereon, a pick-up wheel having an annular series of outwardly beveled teeth adjacent its  
 45 periphery on one side face, a guard arranged alongside the path of travel of the teeth and having a face beveled inwardly and toward the periphery of the wheel, a

second guard spaced to the rear of the first guard along the path of the teeth and disposed on the inner side of the teeth to support articles therebetween, said second  
 55 guard having a cam portion forming a retaining wall beyond the ends of the teeth, and means for supplying articles to the pick-up wheel.

4. A machine of the class described, comprising a support, a shaft journaled thereon, a pick-up wheel having an annular series of outwardly beveled teeth adjacent its  
 60 periphery on one side face, a guard arranged alongside the path of travel of the teeth and having a face beveled inwardly and toward the periphery of the wheel, a second guard spaced to the rear of the first guard along the path of the teeth and disposed on the inner side of the teeth to support  
 65 articles therebetween, said second guard having a cam portion forming a retaining wall beyond the ends of the teeth, a chute located at the end of the second guard, and means for supplying articles to  
 75 the wheel.

5. A machine of the class described, comprising a support, a shaft journaled thereon, a pick-up wheel having an annular series of outwardly beveled teeth adjacent its  
 80 periphery on one side face, a guard arranged alongside the path of travel of the teeth and having a face beveled inwardly and toward the periphery of the wheel, a second guard spaced to the rear of the first  
 85 guard along the path of the teeth and disposed on the inner side of the teeth to support articles therebetween, said second guard having a cam portion forming a retaining wall beyond the ends of the teeth, 90  
 means for directing the course of the articles subsequent to leaving the wheel including means for returning surplus articles to a supply for the wheel, and means for supplying articles to the wheel. 95

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE F. BENJAMIN.

Witnesses:

F. W. SMITH,  
 M. T. LONGDEN.