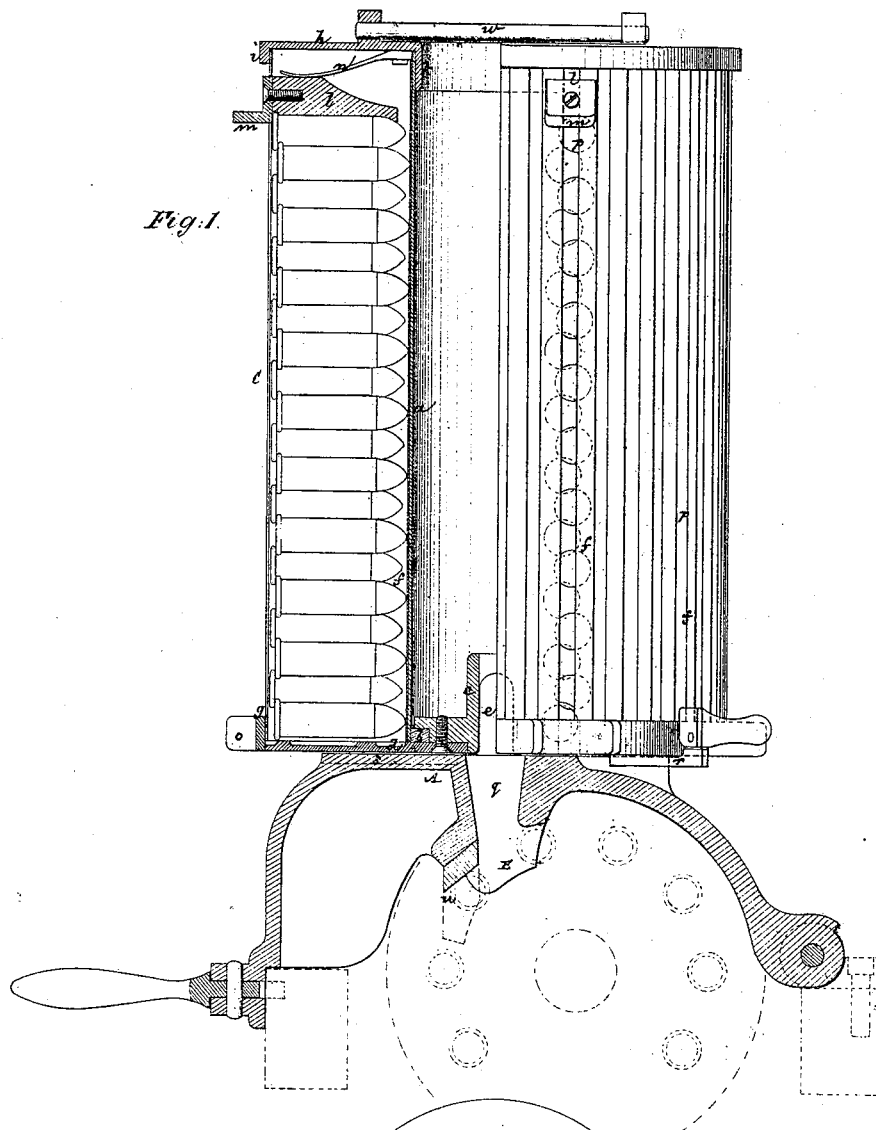


L. W. BROADWELL.

FEEDER FOR REPEATING FIRE ARMS.

No. 110,338.

Patented Dec. 20, 1870.



Witnesses:
 Geo. Haynes
 R. R. Ralston

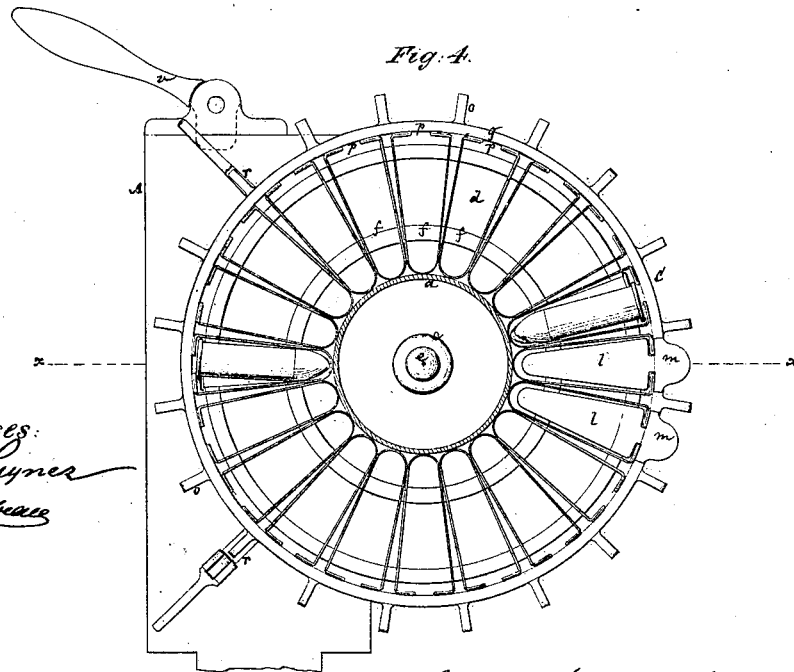
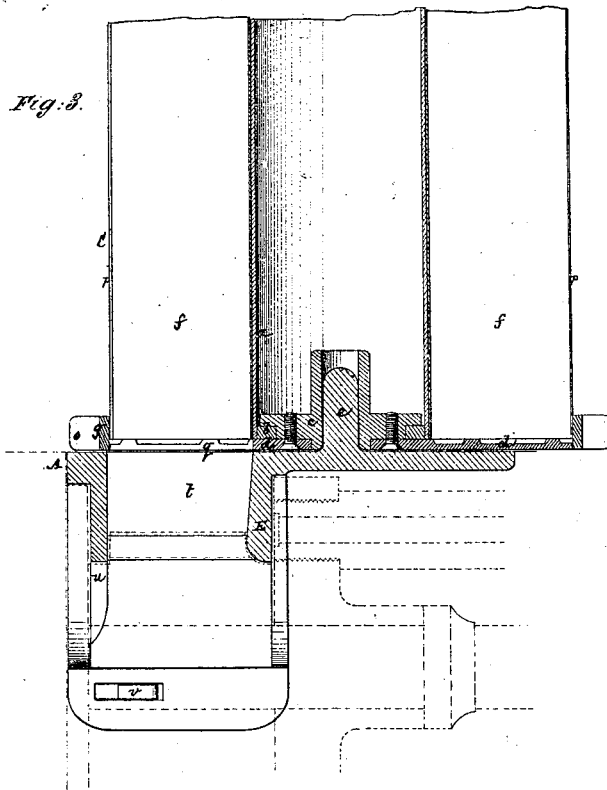
Lewis Wells Broadwell
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UNITED STATES PATENT OFFICE.

LEWIS WELLS BROADWELL, OF CARLSRUHE, GRAND DUCHY OF BADEN.

IMPROVEMENT IN FEEDERS FOR REPEATING FIRE-ARMS.

Specification forming part of Letters Patent No. **110,338**, dated December 20, 1870.

To all whom it may concern:

Be it known that I, LEWIS WELLS BROADWELL, a citizen of the United States of America, now residing in Carlsruhe, Grand Duchy of Baden, have invented a new and useful Improvement in Feeding-Cylinders for Gatling and other Guns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a partially-sectional elevation of my improved feeding-cylinder and its table or support as applied to a Gatling gun; Fig. 2, a plan of said table detached; Fig. 3, a vertical section of the same at right angles to Fig. 1, through the line *x x* in Fig. 4, which represents a horizontal section through the feeding-cylinder.

Similar letters of reference indicate corresponding parts.

My invention consists in a revolving feeding-cylinder for Gatling and other machine guns, which is composed of a tube having arranged radially around it feeding-chambers tapering inward, the whole being suitably braced top and bottom, and connected with the tube for travel on or over a fixed bottom plate, and around a bush or journal working on a central pivot, which also occupies a fixed relation separate and distinct from that of the bottom plate to which the bush is secured, and which has a feed-hole made in or through it.

The invention also includes a special and advantageous construction of a table or support, in combination with the revolving feeding-cylinder; likewise a downward projection or lip on said table for preventing the premature entry of the cartridges into the barrels of the gun.

Referring to the accompanying drawing, C represents the feeding-cylinder, which is composed, in part, of a metallic tube, *a*, that has attached to its lower end an interior projecting flange or ring, *b*, which is clamped, with freedom to turn in common with the cylinder, between a flanged brass or other suitable metal bush, *c*, and a bottom plate, *d*, which is secured by screws or otherwise to the bush, that forms a journal, and receives up within it a center or pivot pin, *e*, fast to the table A. Arranged in a radial manner around the tube *a*, so as to turn with it, are the cartridge hold-

ing and feeding cases or chambers *f*, of the configuration represented in Fig. 4, having their narrowest portions inward, and of the depth of the tube. Said feeding-cases are secured in position by means of a bottom outside ring, *g*, and a top plate, *h*, made with an external annular flange, *i*, the whole being united by soldering or otherwise, and the top plate, *h*, being similarly fastened by a flange, *k*, to the tube *a*. Each feed or feeding case *f* is provided with a sliding weight, *l*, having an outside lip or hand, *m*, fastened thereto. These weights rest upon the columns of cartridges in the feed-cases, and, when they are brought successively over or in line with the feed-hole in the table A, force the cartridges quickly into the gun. The sliding weights *l* also serve to facilitate the loading or filling of the feed-cases, which, when full, have the cartridges in them held free from rattle or shake, or are protected from injury by means of springs *n*, arranged at the top of each feed-case.

Ribs may be provided on the inside of the cases *f*, for the purpose of reducing friction to facilitate the fall of the cartridges.

Arranged externally around the ring *g*, and fast to it, is a series of flat projections, *o*, corresponding in number to the feed-cases *f*, and disposed opposite the longitudinal slots *p* therein, which admits of the hands *m* being slid up or down. The disposition of the cartridges in the feed-cases is represented in Figs. 1 and 4 of the drawing.

The bottom plate, *d*, has a cartridge delivery or feed opening, *q*, in it, of sufficient area to admit of a cartridge freely passing through it when the cylinder with its feed-chambers are turned to bring a feed-chamber over said opening. At the bottom of this plate are strips or pieces *r r*, which fit into corresponding recesses *s s* in the table A, and whereby the opening *q* is held in line over a feed hole or opening, *t*, in the table.

The table A, on which the cylinder C is supported and turns around the pin *e* as a center of motion, is provided on its under side or interior with an ejector, *u*, which forces the extracted shells from the extractors, and thereby prevents them from interfering with the working of the gun. It is also provided at the forward end of the feed hole or passage *t*

through it with a downward projection or lip, E, which serves, as it were, to close the forward end of said feed-hole and prevent cartridges from prematurely entering the barrels of the gun as said barrels pass such point or feed-hole. This obviates much difficulty and delay in firing the gun, the relation of which latter and its barrels to the table A, feed-hole *t* therein, ejector *u*, and downward projection or lip E is clearly shown in Figs. 1 and 3 of the drawing.

The downward projection or lip E works in a groove cut in the forward end of a revolving cartridge-carrier connected with or forming part of the gun. This projection is made thicker at bottom to form a frictional surface for the points of the balls as the cartridges fall, and thus, or partly at least, counteract the natural tendency of the forward ends of the cartridges to fall quicker than their heads, which are lighter. This causes the cartridges to drop horizontally into the carrier, which is indispensable to the successful working of the gun.

The feed-table A is, furthermore, provided with a hooked lever, *v*, which serves to lock down the table A when the gun is being fired, said hooked lever entering a slot cut for that purpose in the frame of the gun, and being swung out of lock with the frame when required.

The operation of my improved feeder is as follows: A loaded cylinder, C, is taken by a

handle, *w*, at top, and placed on the table A so that the pivot *e* enters the bush or journal *c*, when the cylinder is revolved until the projections *r r* drop into the recesses *s s*. The man sitting on the trail of the carriage then revolves the gun with his right hand, and the cylinder C with his left hand. To revolve the latter he presses with his thumb against a curved projecting end of the one strip or piece *r*, and with his forefinger against the nearest flat projection *o* on the ring *g*, and then brings his finger and thumb together, which, by reason of the piece *r* being fixed, causes the cylinder to be turned, every time such action is repeated being just sufficient to bring a fresh feed-case *f* over the feed holes *q* and *t*, causing their contents to fall into the gun, which is fired in rapid succession.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The revolving feeding-cylinder constructed and operated substantially as described, and for the purpose herein set forth.
2. The table or support A, in combination with the revolving feeding-cylinder, essentially as shown and described.
3. The under projection or lip, E, as shown, and for the object specified.

LEWIS WELLS BROADWELL.

Witnesses:

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JOHN LOVE.