(No Model.) 2 Sheets—Sheet 1.

L. F. BRUCE.

CHARGER FOR CARTRIDGE FEED CASES.

No. 265,241. Patented Oct. 3, 1882.

Fig 1

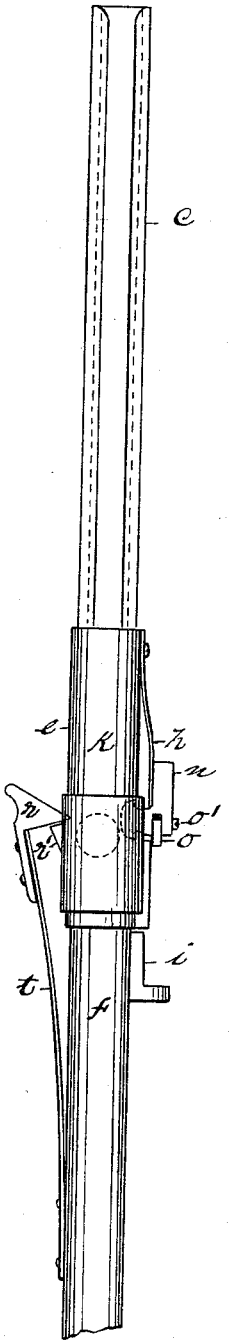


Fig 2

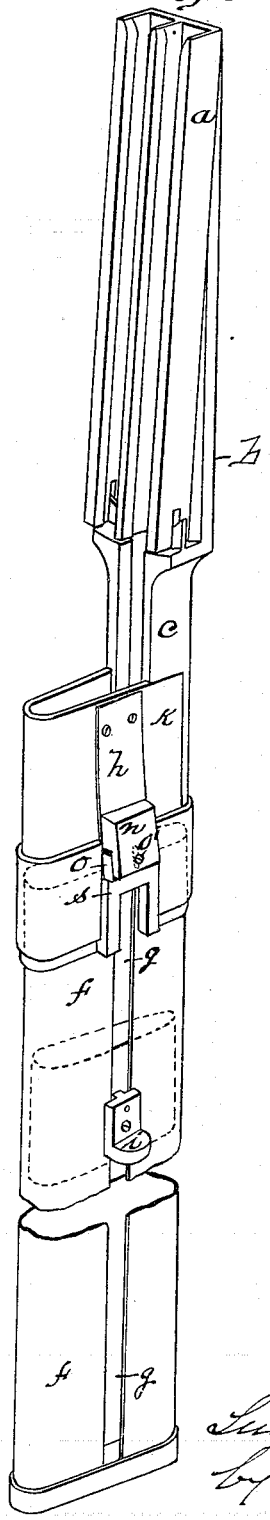
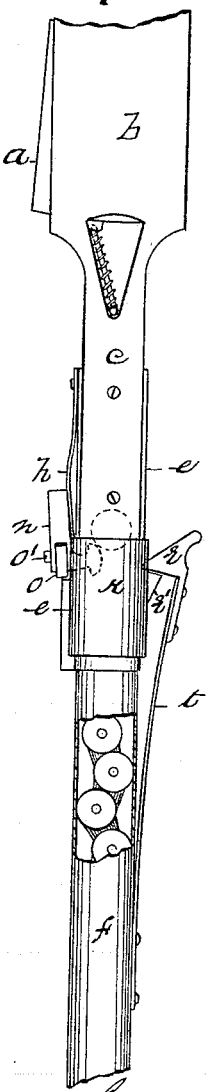


Fig 3



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(No Model.) 2 Sheets—Sheet 2.

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Fig 4

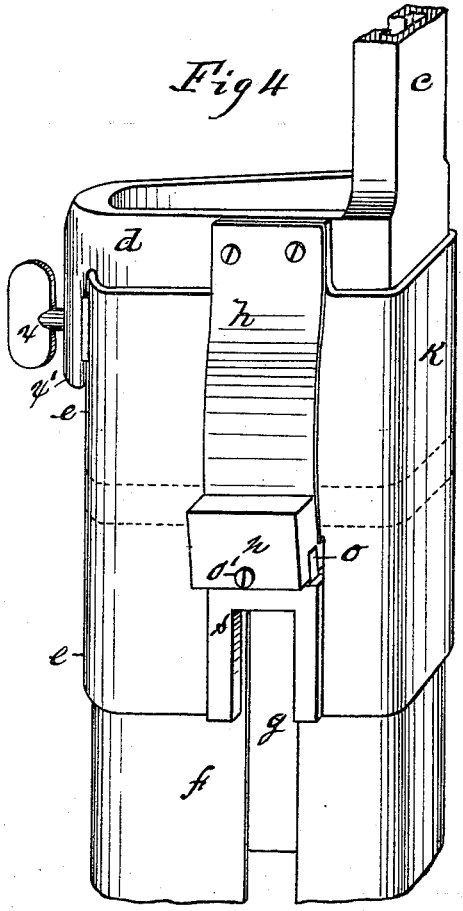


Fig 5

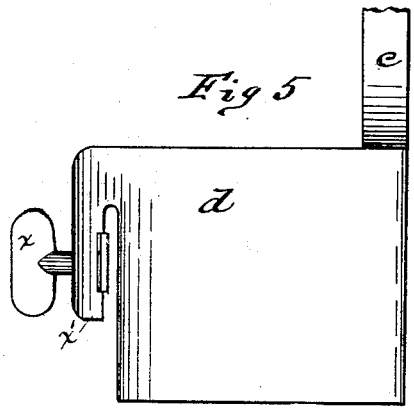


Fig 6

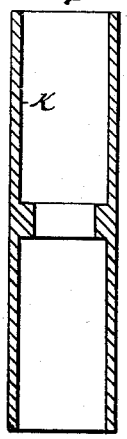


Fig 9

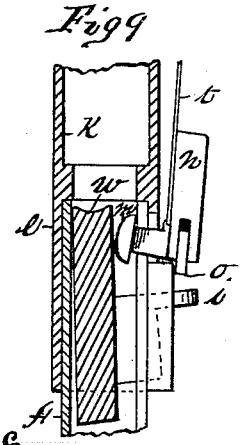


Fig 7

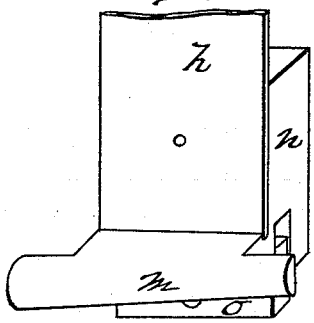
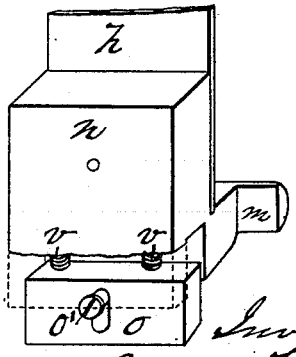


Fig 8



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LUCIEN F. BRUCE, OF SPRINGFIELD, MASSACHUSETTS.

CHARGER FOR CARTRIDGE FEED-CASES.

SPECIFICATION forming part of Letters Patent No. 265,241, dated October 3, 1882.

Application filed January 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, LUCIEN F. BRUCE, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Feed-Mouths for Machine-Gun Feed-Cases, of which the following is a specification.

This invention relates to the construction of improvements in feed-mouths for facilitating the work of charging the feed-cases of machine-guns, the object being to provide devices to be temporarily attached to the open end of said feed-cases, through which cartridges can be passed rapidly for filling them, and which will compel the cartridges to take such a position within said cases as will insure their unobstructed and proper discharge therefrom when the cases are placed in the ordinary manner upon one of said guns to feed cartridges to it.

In the drawings forming part of this specification, Figure 1 is a front elevation, showing the upper end of a feed-case having applied thereto a feed-mouth embodying my improvements and provided with a single-grooved cartridge-guide. Fig. 2 is a perspective view of the feed-mouth and case having attached thereto a double-grooved cartridge-guide. Fig. 3 is a rear elevation, partly in section, of the parts shown in Fig. 2, showing the position of cartridges in the feeder. Fig. 4 is a side elevation, partly in section, of the upper end of the feed-case and of the feed-mouth and foot of the cartridge-guide, showing a construction of the two latter parts slightly modified as compared with those shown in Figs. 1, 2, and 3. Fig. 5 is a side elevation of the cartridge-guide foot. Fig. 6 is a vertical section of the feed-mouth, Fig. 4, taken a little to one side of the center. Figs. 7 and 8 are front and rear views of the cam, cam-block, and spring of the feed-mouth. Fig. 9 is a front elevation, partly in section, of the central portion of the feed-mouth, showing the position of the feed-case plunger when carried up into said mouth.

In the drawings, *f* is the feed-case of a machine-gun.

t is a spring on the side of said case, having a hook, *r*, on its upper end.

w is a plunger adapted to be moved up and down in said case by the thumb-piece *i*, which is attached thereto through a slot in the side of said case, as shown.

s is a slotted projection on the side of case *f*, at the upper end of said slot therein.

e is the feed-mouth, whose lower end fits onto the end of case *f*.

h is a spring secured to one side of the mouth *e*.

n is a cam-block secured to the lower end of spring *h*.

o is a sliding block in the lower edge of block *n*.

v v are springs between blocks *n* and *o*.

o' is a stop-screw in block *n*.

m is a cam located within the passage down through mouth *e* and secured to the inner side of the block *n*.

c is a single-grooved cartridge-conductor secured to the mouth *e*.

a and *b* are double-grooved cartridge-conducting devices, likewise secured to mouth *e*.

d is a foot to said conductors. *x'* is an arm thereon, and *x* is a binding-screw.

Like letters refer to like parts in the several figures.

The feed-case *f* is of the form and description ordinarily used with the Gatling and other similar machine-guns, into which are placed cartridges preparatory to firing them. In placing said cartridges in said feed-case as heretofore practiced, directly into one open end thereof, without the employment of any devices for causing them to assume a proper relative position within said case, and one which would insure an unobstructed delivery of the cartridges from thence to the gun when taken very rapidly by the latter while being fired, many of said cartridges were likely to be misplaced and to assume a position which obstructed the proper feed thereof; but by the employment of the improvements herein described the above objections and inconveniences are obviated, and said cases can be filled much more rapidly than heretofore. The open end of the feed-case *f* extends only as far as the under side of the hook *r* on the end of spring *t*, as shown in dotted lines in Fig. 2, said hook serving, besides providing means for securing mouth *e* to said case, to spring over the end of said case after it is filled and prevent the cartridges from escaping there-

from, and to secure the case to the gun when inverted and placed thereon to have the cartridges fired. Within the feed-case *f*, which has a slot, *g*, in one side of it, is a plunger-block, *w*, (shown in dotted lines in Fig. 2,) to one side of which is secured (reaching through said slot) a thumb-piece, *i*, and by seizing the latter said plunger is easily moved in case *f* from end to end thereof. The relation of said plunger to certain operative parts of the feed-mouth *e* is shown in Fig. 9, as will be more fully expressed hereinafter.

The feed-mouth *e* consists of an outer case, K, adapted to fit upon the open end of the feed-case *f*, the latter entering the former about to the point shown in dotted lines in Fig. 2, the two being temporarily secured together by the hook *r*, which engages with a projection, *r'*, on the side of said feed-mouth, or in a suitable notch or groove formed in said side. Upon one side of said case K is secured a flat spring, *h*, to the lower end of which is secured a cam-block, *n*, which extends below the end of said spring, and a cam, *m*, is secured to the rear side of said block *n* and projects into the passage down through the feed-mouth. The side of case K is properly perforated to allow of the connection of said cam to block *n* and of a vibratory movement of said cam in a direction transverse to the cartridge-passage through mouth *e*.

The lower edge of the cam-block *n* has fitted into it a vertically-sliding block, *o*, which is secured thereto by a stop-screw, *o'*, which enters a vertical slot in said block *o*, and the latter is forced downward by a spring or springs, *v*, placed between its upper edge and said block *n*. The face of said cam *m* is curved, as shown, and is somewhat tapering from end to end.

The feed-mouth *e* is adapted to have the single or double grooved cartridge-conductors attached directly to it, as in Figs. 1, 2, and 3, or to have said conductors attached to a suitable tubular foot, *d*, as in Figs. 4 and 5, the latter being arranged to be secured temporarily to one end of said mouth by the screw *x* through the arm *x'*, between which and the edge of said foot one edge of the feed-mouth enters, as shown in Fig. 4.

The double-grooved cartridge-conductor illustrated in Fig. 2 is constructed and operates to convey cartridges which are placed therein into the single-grooved conductor *c'*, and thence into the upper open end of mouth *e*, in the manner described in my Patent No. 247,158, of September 20, 1881.

The single-grooved conductor *c*, Fig. 1, is grooved in the ordinary manner to hold a series of cartridges by their heads, while their ball ends hang downward, and in which said cartridges slide down when slightly shaken and enter mouth *e*.

The operation of my improvements in filling the feed-case *f* with cartridges is as follows: The cartridge-conductor *a* or *c* is attached directly to the mouth *e*, or by the foot *d* is thereto secured, as above described, and said mouth is then placed upon the end of case *f* and secured by hook *r*, as set forth, and the case thus equipped is held in an upright position, while the cartridges are placed in the double-grooved conductor *a*, two rows at a time, directly from an ordinary paper packing-box, by turning the box so that one end of both rows of cartridge-heads engages each in one of said grooves, when by drawing the box down and then away from said conductor the entire contents of the box will be deposited therein in the position above described. The conductor (single-grooved) *c* is filled in a similar manner, except that one row at a time of the cartridges in said box is deposited therein in quick succession.

Previous to filling said conductors, as above described, it is preferable to carry the plunger *w* up, forcing it between cam *m* and the opposite side of the passage through the feed-mouth *e*, whereby said cam will be driven back and the lower edge of the sliding block *o* be carried far enough beyond the face of the projection *s* on the side of case *f* to allow it to slide down, as shown in Fig. 1, and hold cam *m* back, as seen in that figure. Block *o* is forced up each time case *f* is secured to the feed-mouth *e* by having the end of projection *s* crowded against it.

When said cam stands forward toward the center of the passage through mouth *e*, as in Figs. 2 and 3, there is not room between it and the opposite side of said passage for cartridges to pass, but they will be held up, as shown in a dotted circle in Fig. 3; but plunger *w*, when moved up, as above described, moves said cam back, so that the cartridges can pass by rolling over its face, as shown in Fig. 1. If the cartridges be now shaken down from said conductors into the feed-mouth while said plunger is held up to cam *m*, as above described, they will strike said plunger, and by carrying the latter down in the case *f* the cartridges will follow it down, each one rolling upon cam *m* and assuming the several successive positions within said case shown in Fig. 3, which is essential to their free and rapid exit therefrom to be fired. In practice forty cartridges fill case *f*, and by using a box containing that number cases are very rapidly filled. After said cartridges have been placed in case *f* hook *r* is disengaged from block *r'*, the feed-mouth is removed, and said hook, springing across the end of the case, retains the cartridges therein until it is placed on the gun, as aforesaid.

It was stated above that it is preferable to carry the plunger up against cam *m* before filling the conductors; but that is not necessary, for said cartridges, as they enter the mouth *e*, encounter cam *m* and are stopped in their downward movement, but can be started down by subsequently carrying said plunger up against the cartridges and moving the cam back, as aforesaid; but owing to the presence of said cartridges in the mouth the first-named method of operating is preferable. The same advantages as to an invariable proper placement of the cartridges in case *f*, when the latter are

fed to it through mouth *e* and caused to encounter the cam *m* and roll by it, are gained by feeding said cartridges by hand, one at a time, into said mouth without using the conductors *c* or *a*, and letting them, a few at a time, roll by said cam until the case is filled; but the more rapid way is to use the conductors, as described.

In cases where the conductors *a* or *c* are not available the feed-mouth *e*, constructed as shown in Fig. 4, is employed for hand-feeding, as just described, said mouth being adapted to be used either with or without said conductors.

What I claim as my invention is—

1. The within-described feed-mouth *e* for machine-gun feed-cases, consisting of the tubular case K, having the spring *h* secured to it, which spring supports on its flexible end the cam *m*, and the block *n*, having the sliding block *o* therein, all combined and operating substantially as set forth.

2. The combination, with the cartridge feed-case *f*, having a projection, *s*, thereon at one end of the slot *g* therein, and provided with the plunger *w*, of the feed-mouth *e*, provided with spring-cam *m*, and sliding block *o*, substantially as set forth.

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