

(No Model.)

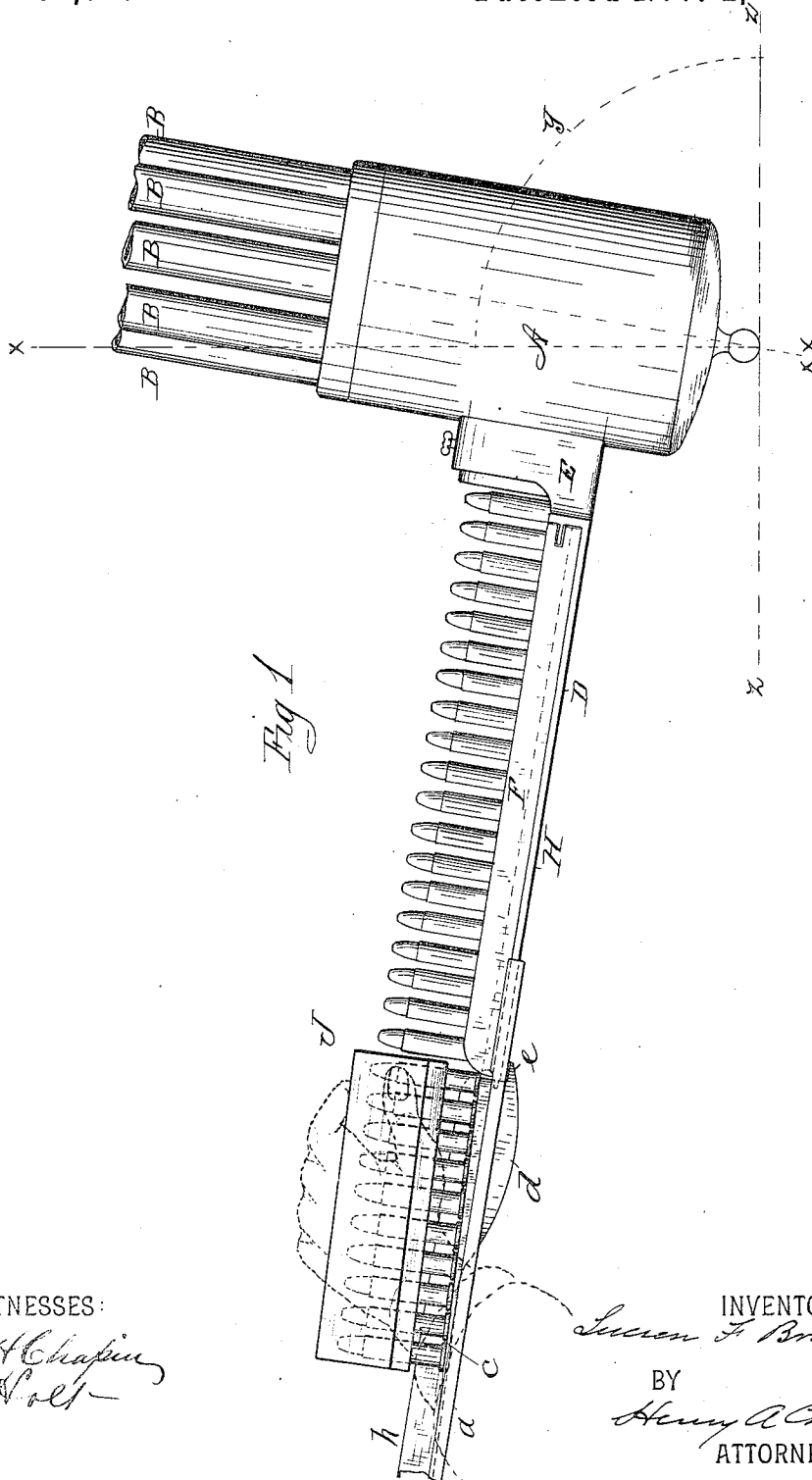
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L. F. BRUCE.

CARTRIDGE FEEDER FOR MACHINE GUNS.

No. 351,960.

Patented Nov. 2, 1886.



WITNESSES:

Henry A. Chapin
W. C. Holt

INVENTOR

Lucien F. Bruce

BY

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(No Model.)

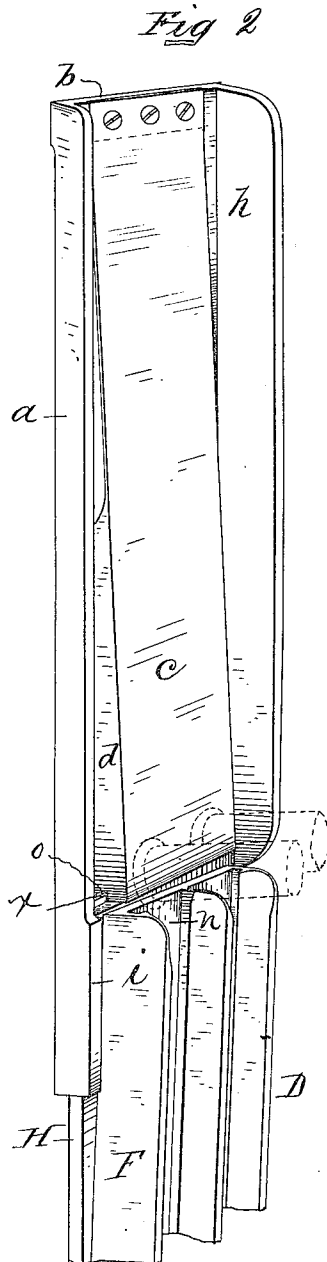
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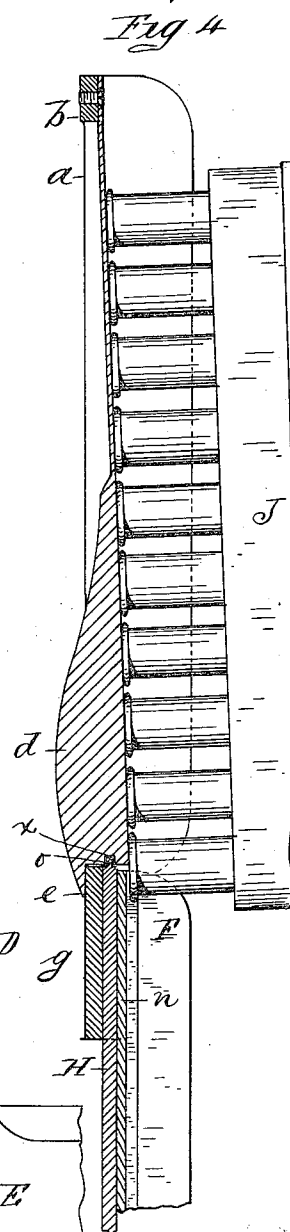
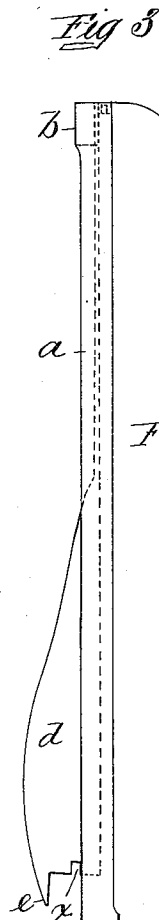
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WITNESSES:

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UNITED STATES PATENT OFFICE.

LUCIEN F. BRUCE, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE
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CARTRIDGE-FEEDER FOR MACHINE-GUNS.

SPECIFICATION forming part of Letters Patent No. 351,960, dated November 2, 1886.

Application filed December 7, 1885. Serial No. 184,877. (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 Cartridge-Feeders for Machine-Guns, of which the following is a specification.

This invention relates to improvements in cartridge-feeders for machine-guns, and is in the nature of an improvement on the feeder for which a patent was granted to me September 20, 1881, No. 247,158, to which reference may be had, the object being to provide by said improvement means whereby cartridges may be put into said patented feeder, or into others having like grooves for receiving cartridges, with the required rapidity, while the gun to which the feeder is attached is being fired at an excessive elevation.

In the drawings forming part of this specification, Figure 1 is a side elevation of the breech portion of a Gatling gun, in which the barrels are secured, having applied thereto cartridge-feeding devices embodying my improvements, this figure showing parts of several barrels in connection with said breech portion, and the latter, as represented by the dotted diagram drawn thereon, being shown as it stands at an elevation of eighty degrees, thereby illustrating the position of the cartridge-feeder at said elevation, the latter being shown with its upper end broken off and with cartridges thereon, and a box of the latter with the outlined form of the hand of the operator, illustrating the manner of manipulating said box to place the cartridges on the feeder. Fig. 2 is a perspective view of the part of the feeder embodying my improvements and the upper end of said patented feeder, portions of two cartridges being shown in dotted lines thereon. Fig. 3 is a side elevation of the feeder together with a portion of the breech part of the gun. Fig. 4 is a vertical section on a line to the left of the partition between the two cartridge-grooves, Fig. 2, showing in side elevation a box of cartridges (with the bottom broken off) in the position in which it is placed on the feeder by the operator.

It will be understood that the extension or

cartridge table referred to must be as long at least as the regulation box or packing-case in which cartridges are transported, or the cartridges beyond the end thereof in the packing-case would drop out; also, that but one side rest is required on this table, against which rest the packing-case will be pressed before the cartridges are conveyed to the guiding-groove.

It is well known that the cartridges which are ordinarily used in machine-guns are packed for transportation and service use in paper boxes of about twenty each, (ten in a row,) bullet ends down, and separated from each other by suitable partitions. To place said cartridges in the feeder the operator removes the cover of the box, and, holding the latter above the end of the feeder, turns the box so that the plane of the base of the grooves in the feeder and the plane of the primed ends of the cartridges coincide, and then the box is moved toward the gun, carrying the heads of the two rows of cartridges into the grooves of the feeder, and then drawing the box off from the cartridges.

The above-described manipulation of cartridges in connection with said patented feeder, when the latter stands nearly perpendicular on a gun but slightly elevated, is easily performed; but when the gun is being fired (as is now frequently the practice) at a great elevation—say at eighty degrees, more or less—for the purpose of dropping projectiles behind fortifications, the said patented feeder cannot be used with any efficiency, for the reason that under such conditions the cartridge-box must be turned so nearly bottom side up to engage the cartridges in the grooves of the feeder that they fall out of the box before they reach the latter, and the main purpose of this invention is to provide, in conjunction with a groove feeder of the class herein referred to, an extension or cartridge table projecting beyond the end of the grooved portion of said feeder, having no cartridge-grooves thereon, on which the cartridges are placed heads down, as shown in Fig. 1, regardless of the inclined position (more or less) of the feeder, and from thence are carried into the grooves of the latter.

In the drawings, A indicates a portion of the

breech of a machine gun, and B portions of the barrels thereof.

D is the feeder, secured by its foot E to said breech, the short single groove *b* of said patent, below the "vibrating double-grooved conductor or *a*" thereof, (herein indicated by F,) which receives the cartridges from the conductor, extending from under the lower end of the latter through the feeder-foot E, to guide the cartridges into the gun, as described in said patent. Said short single groove is not shown in the drawings of this application.

H is the support or back, which extends upward from said single-grooved lower part of the feeder, on which is pivoted the vibrating double-grooved cartridge-conductor F, the latter being constructed substantially as described and shown in said patent, whereby, by its swinging movement on said back, first the lower end of one and then the other of its grooves is brought over the upper end of said single groove, and thereby cartridges are received from the conductor F into the latter, and by it directed to the firing devices of the gun.

The aforesaid extension to the feeder D or cartridge-table consists of a metallic frame, *a*, having a rectangular opening in it, and at the upper end of said opening to the cross portion *b* of the frame *a* is attached one end of a tongue, *c*, the latter being of metal and flexible for a certain distance below its attached end, and from its lower end upward it is made thicker, as at *d*, and has the lip *e* thereon and the groove *x* at its lower end. The lower cross portion of the frame *a*, below the free end of the tongue *c*, is indicated by the letter *g*. On one side of frame *a* is the rib or border *h*, standing at right angles to the flat side of the tongue *c*, a narrow rib being provided on the opposite side of said frame. At the lower end of frame *a*, on each side thereof, is formed a lip, *i*, which extends over the side of the back H, forming grooves in the frame, which the edges of the latter enter, and thereby provision is made for sliding frame *a* up and down on said back, the position of said frame when slid up or extended being shown in Figs. 1, 2, and 4, and when drawn down in Fig. 3. A thin projection, *o*, is made on the upper end of the back H, which enters the groove *x* in the lower end of the tongue *c*.

The operation of my improvements is as follows: The feeder, when not in use, is carried with its parts in the position shown in Fig. 3—that is to say, with said cartridge-table drawn downward behind the back H—and to so place said extension the latter is moved upward slightly from the position shown in Fig. 2 sufficiently to disengage the lower end of tongue *c* from the projection *x* on back H. When the said end of the tongue is pushed backward to carry it clear of the upper end of the back, and then the entire cartridge-table, frame *a*, and tongue *c* are pushed downward to the position shown in Fig. 3, and when the feeder is to be used said extension is drawn

upward far enough to bring the end of the tongue *c* above said projection *o*, when the tongue is sprung over the end of the back H to bring the groove *x* over said projection *o*, when said table is moved downward to engage the tongue with the said projection, as shown in Figs. 2 and 4, thereby securing the lower end of said tongue in such a position that its said end is brought into substantially the same plane as the base *n* of the two grooves in the conductor F. The operator then takes the box J of cartridges, (first removing the cover thereof,) and, turning it onto the table *a*, in the position shown in Figs. 1 and 4, moves the cartridges toward the end of the conductor F, carrying their heads into the grooves thereof, and forcing them to pass through and out of said conductor into the gun, the cartridges in this case, when the feeder is but little inclined, as in Fig. 1, acting under the force imparted by the hand of the operator much as they do when the feeder is so much elevated that they move down the conductor by gravitation. The border *h* on the extension *a* is located on the edge of the latter opposite to that near which the operator stands, and serves as an abutment or guard to prevent the cartridges from being pushed off laterally when they are being rapidly placed on the extension or cartridge table, and moved on to the conductor F. If desired, the table *a* may be secured in its extended position, giving the feeder permanently the form shown in Fig. 1; but it is much more conveniently packed for transportation when the table can be slid down behind the back H.

It is obvious that the feeder, for all uses in a perpendicular position, or nearly so, may be as conveniently employed with the table *a* extended or not. Said cartridge-table may be used with equal advantage in connection with a fixed double-grooved conductor, or with one which has a vibratory motion, as above described.

I am aware that a cartridge feed-case has been patented having flaring side guides and back extending above the channels which receive the heads of the shells, the back being also extended.

What I claim as my invention is—

1. The improvement in feed-cases for machine-guns, which consists of the combination, with the double-grooved cartridge-conductor, of a table extended beyond the end of said conductor a distance at least equal to the length of the service packing-case, said table having a rest at one side, substantially as described.

2. A cartridge-table for cartridge-feeders for machine-guns, consisting of a rectangular frame provided with a sliding connection, substantially as described, whereby said frame engages with the back H of the feeder, a flexible tongue having a groove in its lower end, secured by one end thereof to one end of the opening in said frame and capable of a vibratory movement in the latter, combined with the double-grooved conductor of said feeder,

and the back thereof having a projection on its end to enter said groove in the tongue, substantially as set forth.

3. An extension cartridge-table for machine-
5 gun feeders, consisting of a rectangular frame, substantially as described, having a lip, *i*, on each edge thereof for engagement with the back of the feeder, and the rib *h* thereon, com-

bined with the tongue *c*, secured by one end to said frame, and having its opposite end en- 10 gaging with said back, substantially as set forth.

LUCIEN F. BRUCE.

Witnesses:

H. A. CHAPIN,
WM. H. CHAPIN.