(No Model.) 3 Sheets—Sheet 1.

L. F. BRUCE.

CARTRIDGE FEEDER FOR MACHINE GUNS.

No. 265,240. Patented Oct. 3, 1882.

Fig. 1

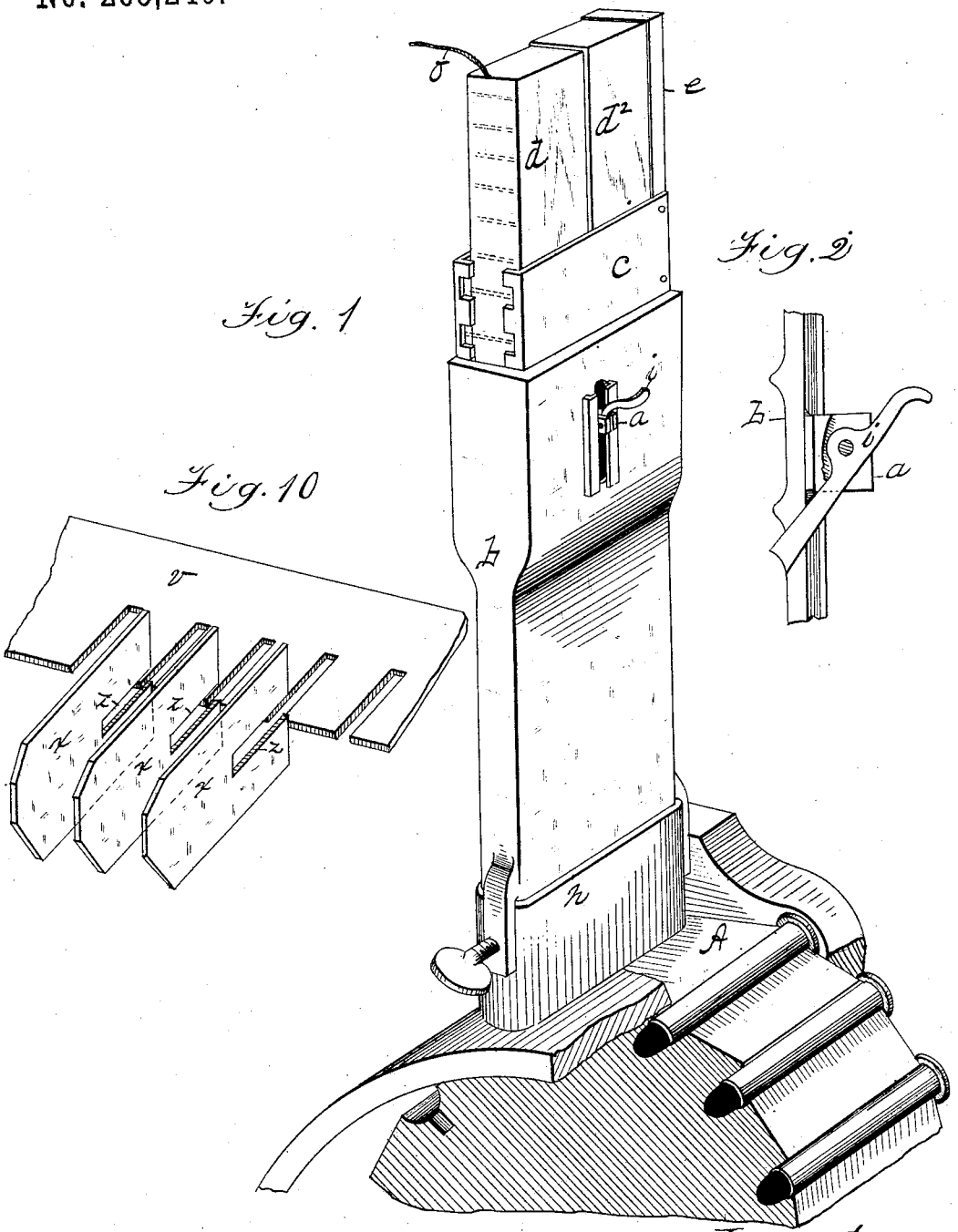

Fig. 2

Fig. 10

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Fig. 3

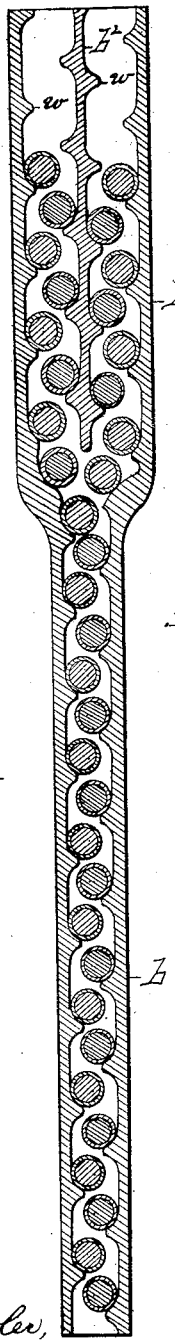


Fig. 4

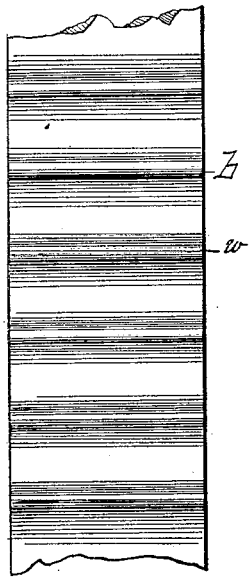
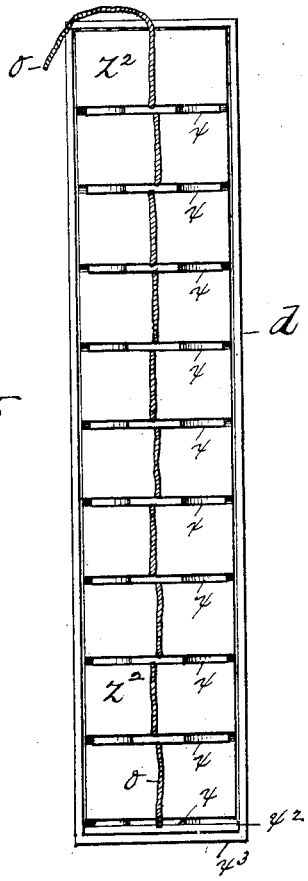


Fig. 5



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(No Model.) 3 Sheets—Sheet 3.

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Fig. 6

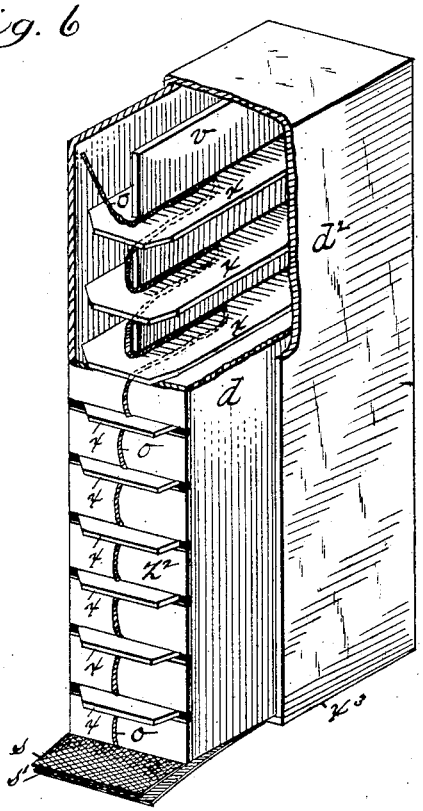


Fig. 7

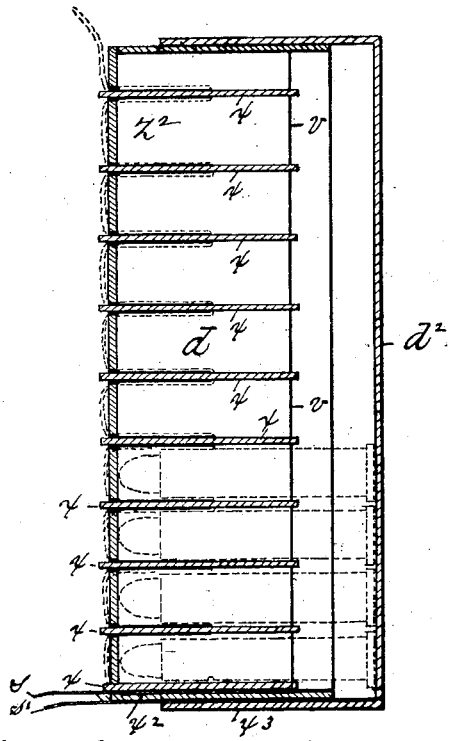


Fig. 8

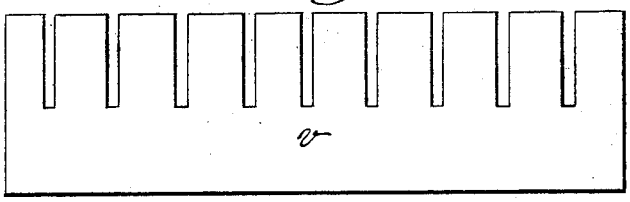
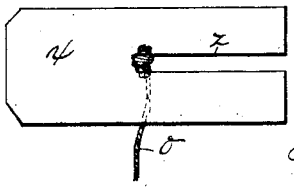


Fig. 9



Witnesses;

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UNITED STATES PATENT OFFICE.

LUCIEN F. BRUCE, OF SPRINGFIELD, MASSACHUSETTS.

CARTRIDGE-FEEDER FOR MACHINE-GUNS.

SPECIFICATION forming part of Letters Patent No. 265,240, dated October 3, 1882.

Application filed February 18, 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 Cartridge-Feeders for Machine-Guns, of which the following is a specification.

This invention relates to improvements in cartridge-feeders for machine-guns and in cartridge-boxes in which to pack and transport cartridges which are intended to be used for charging said guns, the object being to supersede the ordinary cartridge-feeders, in which the cartridges are hung by their rims in vertical grooves and slide downward in an inclined position toward the gun, by providing a feeder in which the cartridges are compelled to move downward in a horizontal position, one above the other, and not in contact, but following each other in rapid succession, and being made to drop in proper position into the gun without the interposition of any separate cartridge-straightening devices, such as are often employed with the above-named grooved feeders; and, also, to provide an improved feeder for receiving the contents of a cartridge-box in two lines into two fixed vertical channels, which lead into a single channel, which leads directly to the interior of the gun; and, furthermore, to provide a cartridge-box adapted to have its contents dropped simultaneously in two lines through one end of the box into two channels of a machine-gun feeder.

In the drawings forming part of this specification, Figure 1 is a perspective view of a cartridge-feeder constructed according to my invention, shown in position upon a section of a gun, and illustrating the position of the box of cartridges previous to dropping its contents into the feeder. Fig. 2 illustrates detail parts in connection with a section of one side of the feeder. Fig. 3 is a vertical section of the feeder through its walls and channels transversely, and showing the positions of the cartridges therein while passing through it. Fig. 4 is a face view of a section of the inner wall of the feeder. Fig. 5 is a plan view of the bottom of a cartridge-box constructed according to my invention, having its thin outer covering removed. Fig. 6 is a perspective view, partly in section, of said box and cover. Fig. 7 is a view of said box and cover with one side removed. Fig. 8 is a plan view of the central partition of said box. Fig. 9 is a plan view of one of the transverse partitions of said box. Fig. 10 is a perspective view of a section of said central partition and several of said transverse partitions.

In the drawings, A indicates said section of a gun, in which is shown the cartridge-carrier thereof. *n* is a hopper on said section A. *b* is the cartridge-feeder. *c c* is a cartridge-box socket on the upper end of said feeder. *a* is a sliding block. *i* is a pivoted cartridge-starter, pivoted in block *a*. *d* is the cartridge-box. d^2 is the box-cover. *v* is the longitudinal central partition of said box. *z* indicates the transverse partitions of the box. *o* is a cord interlocked with said transverse partitions. x^2 is a removable end of said box. x^3 is a removable end of the box-cover. *s s'* are cloth strips attached respectively to said ends x^2 and x^3 of the box and the cover.

Like letters refer to like parts in the several figures.

In the construction of my improved cartridge-feeder *b* its sides and edges are preferably made of metal, and may be cast in proper form and be united in any convenient manner to form the vertical feeder *b*, whose width transversely from edge to edge is made according to the length of the cartridges which it is to receive and guide downward. The inner adjacent walls of the feeder are provided with transverse corrugations *w*, parallel with each other, as shown in Figs. 3 and 4, and in the upper end of said feeder, which at that point is made thicker therefor, is inserted a partition, b^2, midway between the inner faces of the sides of the feeder. Said partition b^2 has both of its faces corrugated to correspond with the said corrugated sides, and to form at said upper end a double-channeled feeder, each of which channels is open at its upper end, and their lower ends open into a single channel below said partition, which leads directly into the gun. The series of corrugations *w* upon one wall of the feeder—or, in other words, the projecting portions thereof—are made to occupy positions opposite the depressions of said corrugations in the opposite wall, as shown in Fig. 3. A slot is formed in one side of the feeder, in which is fitted, in any convenient manner, a block, *a*, so that it may at will be

moved up and down in said slot; and a hand-lever, *i*, is pivoted in said block *a*, the upper end of which projects outwardly beyond the side of the feeder, and its lower end may be swung into the channel within the feeder. The lower end of the feeder *b* is provided with any suitable fastening or clamping devices, by which it may be secured firmly to the hopper *n* upon the gun A, as shown in Fig. 1. One edge of the feeder is allowed to stand up above the main body thereof, said part being indicated by the letter *e*, and two side pieces joined thereto form therewith a cartridge-box socket on the upper end of the feeder, which is open at one edge, as shown, and the adjacent edges of said opening are provided with notches, as seen in said figure.

The cartridge-box *d*, which is adapted to be used with cartridge-feeders of this class, is of novel construction, inasmuch as it is adapted to drop the cartridges it contains simultaneously into the feeder through one of its ends while the box rests stationary on the feeder in the position shown in Fig. 1, while ordinarily the box-cover is removed, and the heads of the cartridges being engaged in vertical grooves, the box is drawn away from them, leaving the cartridges hanging therein by their rims or heads. Said box *d* has a cloth strip or tearing-tag, *s*, cemented to one end thereof, x^2, whereby the said end may be instantaneously torn off, and one end of the box-cover *d* has also a cloth strip, *s'*, likewise cemented thereto, said end of the cover being indicated by the letter x^3, and it may be torn off in the same manner and at the same time as said end x^2 of the box is removed, as above described, since when the cover is placed on the box the ends x^3 x^2 are placed one over the other, as in Figs. 6 and 7, so that both of said cloth strips *s s'* may be grasped at one movement. A partition, *v*, having therein a series of slots from its lower edge upward, is secured in said box *d* centrally between its sides, and a series of transverse partitions, *x*, having slots *z* therein, are set crosswise on said partition *v*, the slots *z* in the partitions *x* inclosing the upper portion of the partition *v*, while the slots in the last-named partition inclose the lower portions of the partitions *x*. One of said partitions *x* is placed directly against the removable end x^2 of said box, as shown in Fig. 7, so that when said end is removed none of the cartridges can drop out. The said box is provided with a transversely-slotted bottom, z^2, and said slots are directly under the above-mentioned slots in the partition *v*, and the transverse partitions are placed in the box by putting them through said slots in the said box-bottom; but as they are so placed the cord *o* is passed through the slot *z* in each partition *x*, one end being knotted inside of the one next to the end x^2 of the box. Thus said cord runs from what is the bottom partition *x*, when the box is placed on end to discharge the cartridges therefrom, up one side of it, across that portion of the box-bottom between it and the next partition *x*, then down and through slot *z*, and back again to the box-bottom, and so on with all of said transverse partitions until all are looped or attached to said cord and the end is left projecting, as in Figs. 1 and 7. The above-described course of said cord with respect to the partitions *x* is shown in Figs. 6 and 7. After said partitions and cord have been placed in the box, as just described, a thin sheet of paper is cemented over the bottom z^2, giving it the appearance shown in Fig. 1, and retaining said parts in place until they are forcibly removed, as hereinafter described. Said box *d* is filled with cartridges in the usual manner, so that they occupy the positions relative to said partitions shown in Fig. 7 in dotted lines.

The operation of said cartridge feeder and box is as follows: The box *d* is placed by the operator on its end in the socket *c e* on the feeder, having first torn off the ends x^2 and x^3 of the box and cover by pulling upon the strips *s s'*. By one hand the box is held firmly against the projection *e*, and the end of cord *o* is seized and pulled suddenly in a direction away from the bottom of the box, drawing with it every one of the transverse partitions *x* and letting the cartridges in box *d* drop bodily into the two channels of the feeder *b*, whence they descend, rolling from one side to the other of said channels as they strike the projections of said corrugations, and being meanwhile kept separate from one another by the form and disposition of the latter, and they reach the head of the single channel under the partition b^2 from the side ones, one after the other—that is to say, the positions of the cartridges in the two channels at the top of the feeder do not coincide, the said projections of the corrugations being so arranged as to permit the cartridges in one channel to be enough in advance of those of the other to cause a cartridge to pass first from one side and then the other into the single channel below under the lower end of the partition b^2. Thus the contents of said two channels flow steadily down and form a single line in the lower channel leading to the gun.

It will be seen that the projections upon the corrugated sides of the feeder maintain the cartridges always in a horizontal position while they move downward, so supporting them that the weight of their balls cannot cause them to assume any other position than that just named.

Usually the vibrating motion imparted to the feeder by the gun while being fired is sufficient to cause the cartridges to flow uninterruptedly through the feeder; but should any stoppage of the cartridges occur they can be readily started by seizing the lever *i*, pressing its lower end against a cartridge, and, pressing downward, force it and those near it down through the feeder. Block *a*, being movable in the side of the feeder, allows of moving lever *i* up and down therein for the above-named purpose.

If desired, any convenient stop device may

be applied to the feed for the purpose of arresting the movement of the cartridges toward the gun, such as a pin or like implement passed through one side into the channel.

The above-described cartridge-box socket upon the upper end of the feeder *b* is made with an opening in one edge, so that the cord *o* may be drawn unobstructedly from one end of the box to the other, and the said notches in the borders of said opening permit said transverse partitions *x* to be drawn from the box across the opening in said socket without hinderance.

What I claim as my invention is—

1. A cartridge-feeder for guns having a cartridge-channel therein inclosed on all sides, and whose adjacent widest walls are provided with a series of transverse corrugations, substantially as set forth.

2. A cartridge-feeder for guns having a cartridge-channel therein whose adjacent walls are provided with a series of transverse corrugations parallel with each other, the projecting portions of which upon one wall are located opposite the depressions in the opposite wall, substantially as set forth.

3. A cartridge-feeder for guns having two cartridge-channels therein, side by side, whose adjacent walls are provided with a series of transverse corrugations, and a single cartridge-channel, provided with like corrugations, located below said two channels, with which the latter communicate, substantially as set forth.

4. In combination with the feeder *b*, having a vertical slot in its side, the block *a*, movable in said slot, and the lever *i*, pivoted to said block, substantially as set forth.

5. The within-described cartridge-box for machine-gun feeders having a central partition between its sides, provided with a series of slots from its lower edge upward, a series of slotted transverse partitions, a cord engaging with said last-named partitions, having its free end extending outside of said box, and means, substantially as described, for removing one end of said box, all as set forth.

LUCIEN F. BRUCE.

Witnesses:
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R. F. HYDE.