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CARTRIDGE LOADING MACHINE.

No. 398,650. Patented Feb. 26, 1889.

Fig. 1.

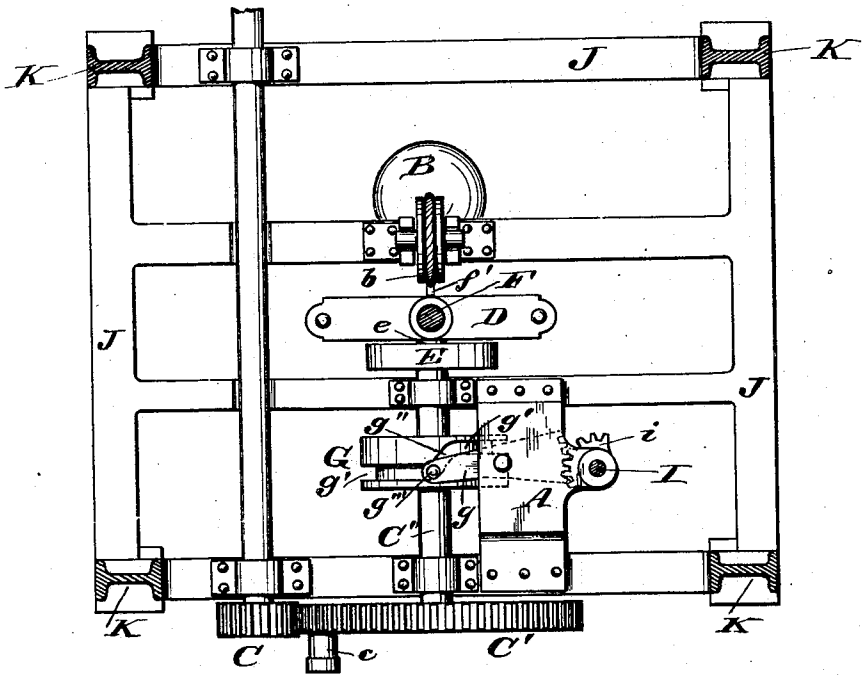
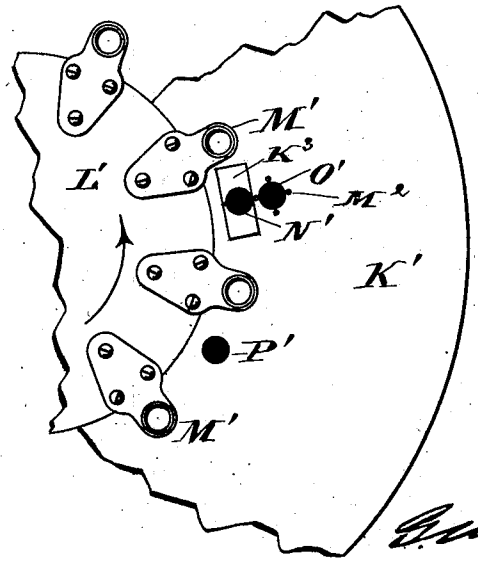


Fig. 5.



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Fig. 2.

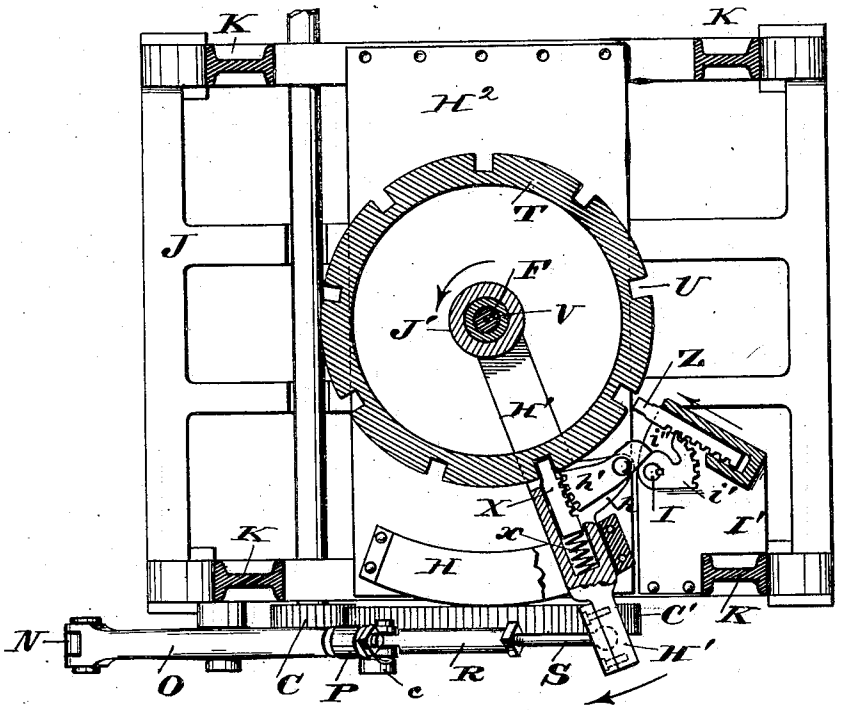
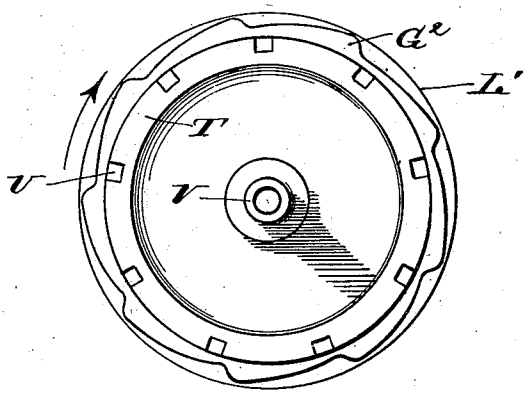


Fig. 6.



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Fig. 4.

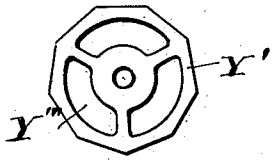
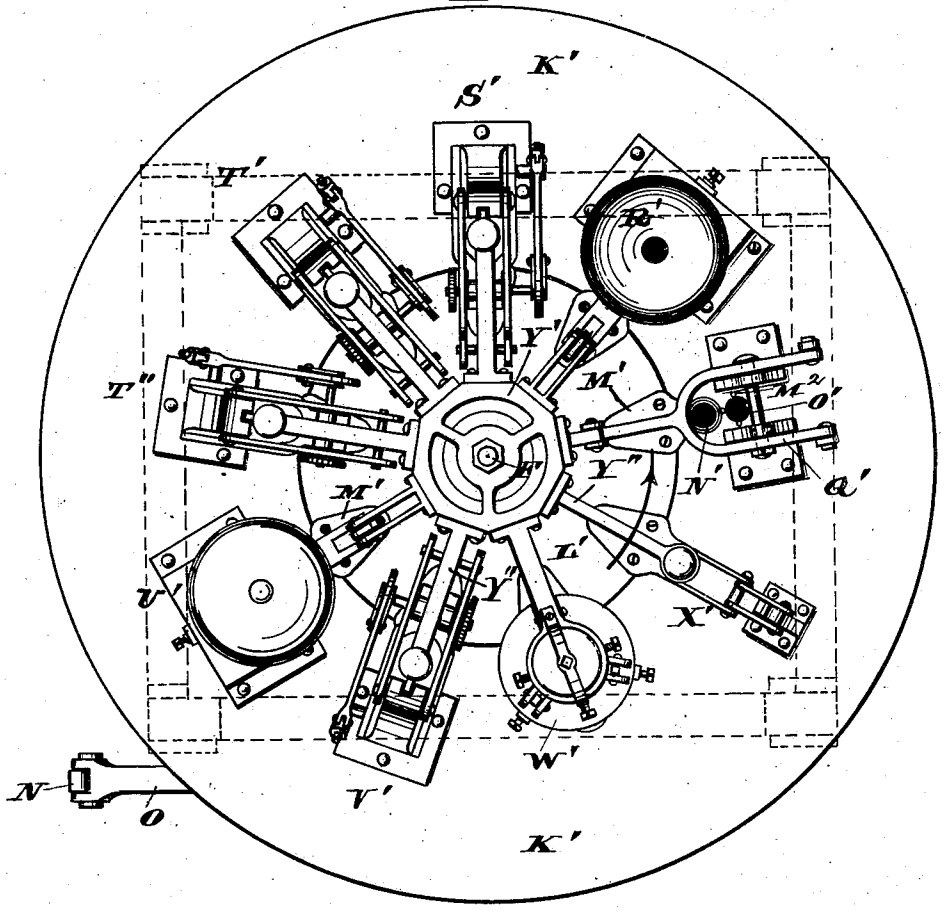


Fig. 3.



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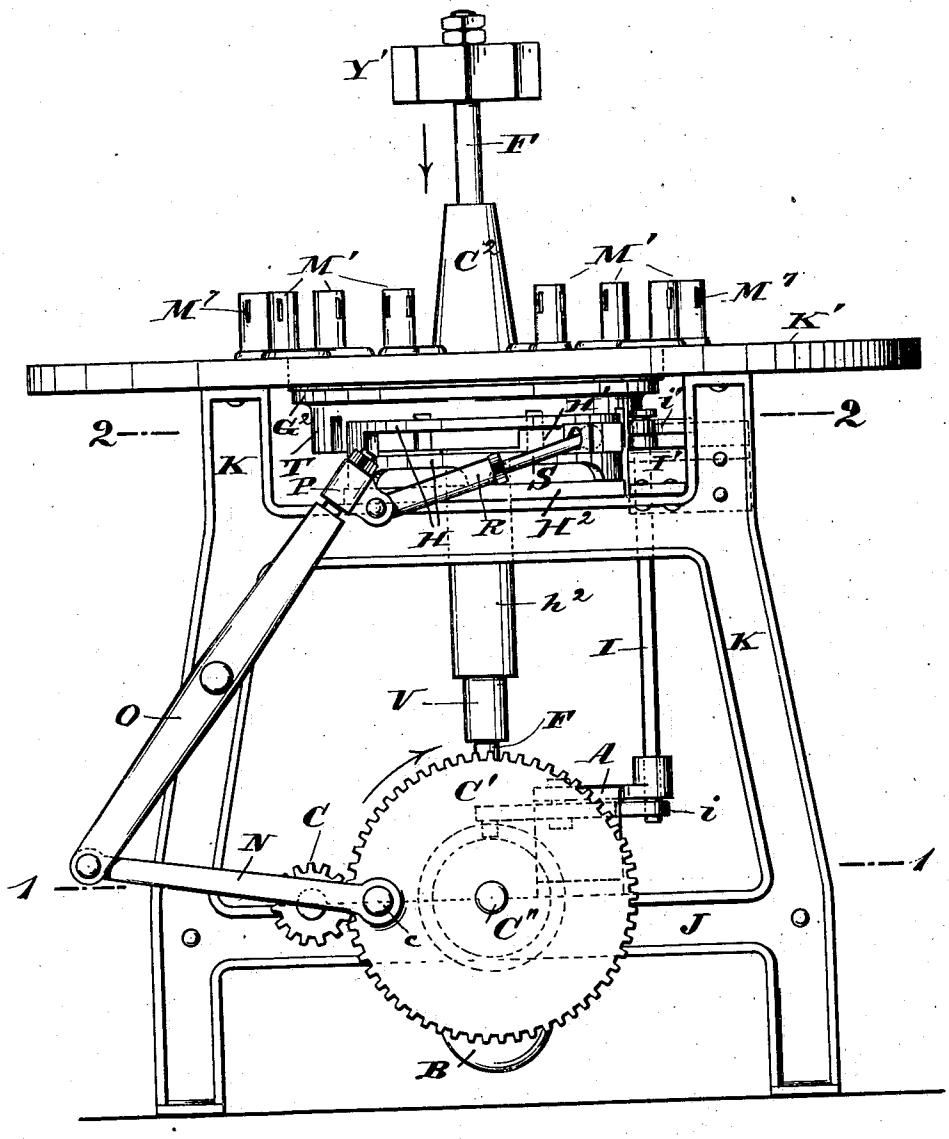
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Fig. 7.



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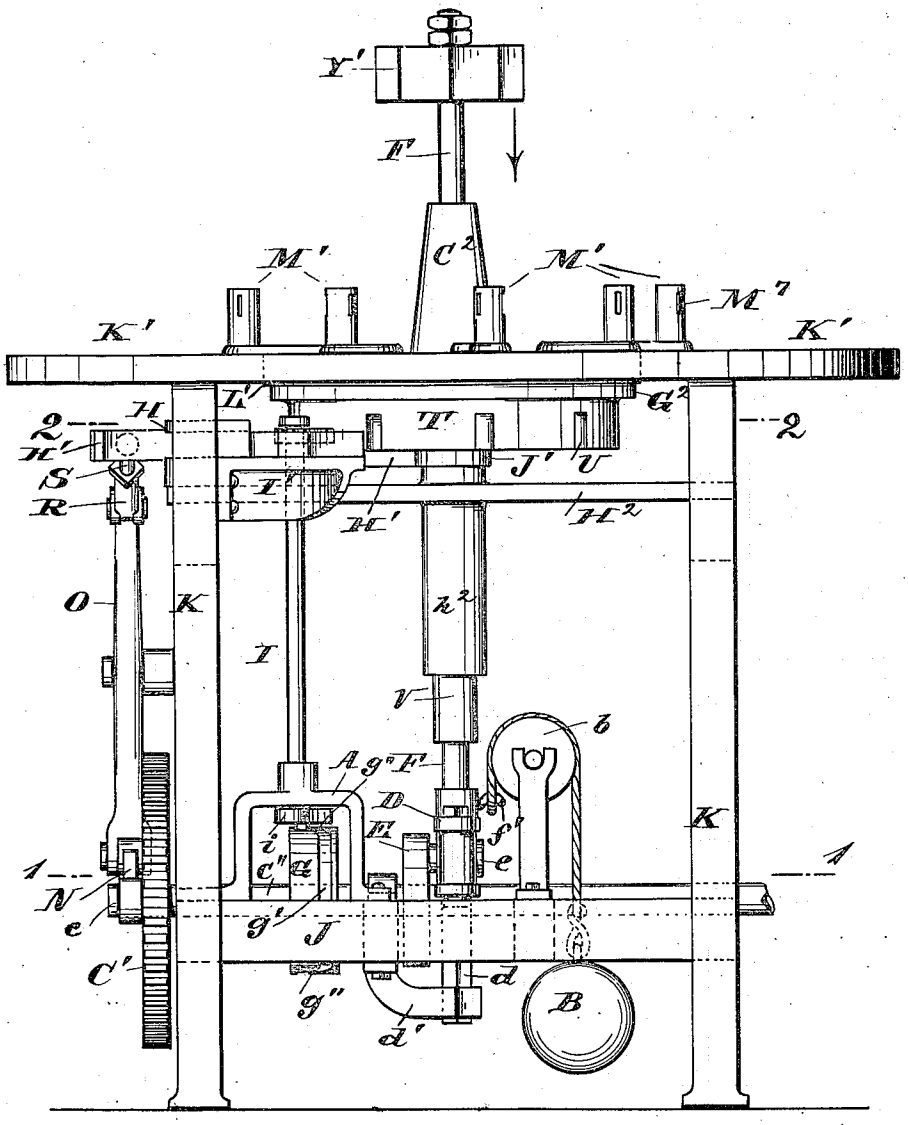
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Fig. 8.



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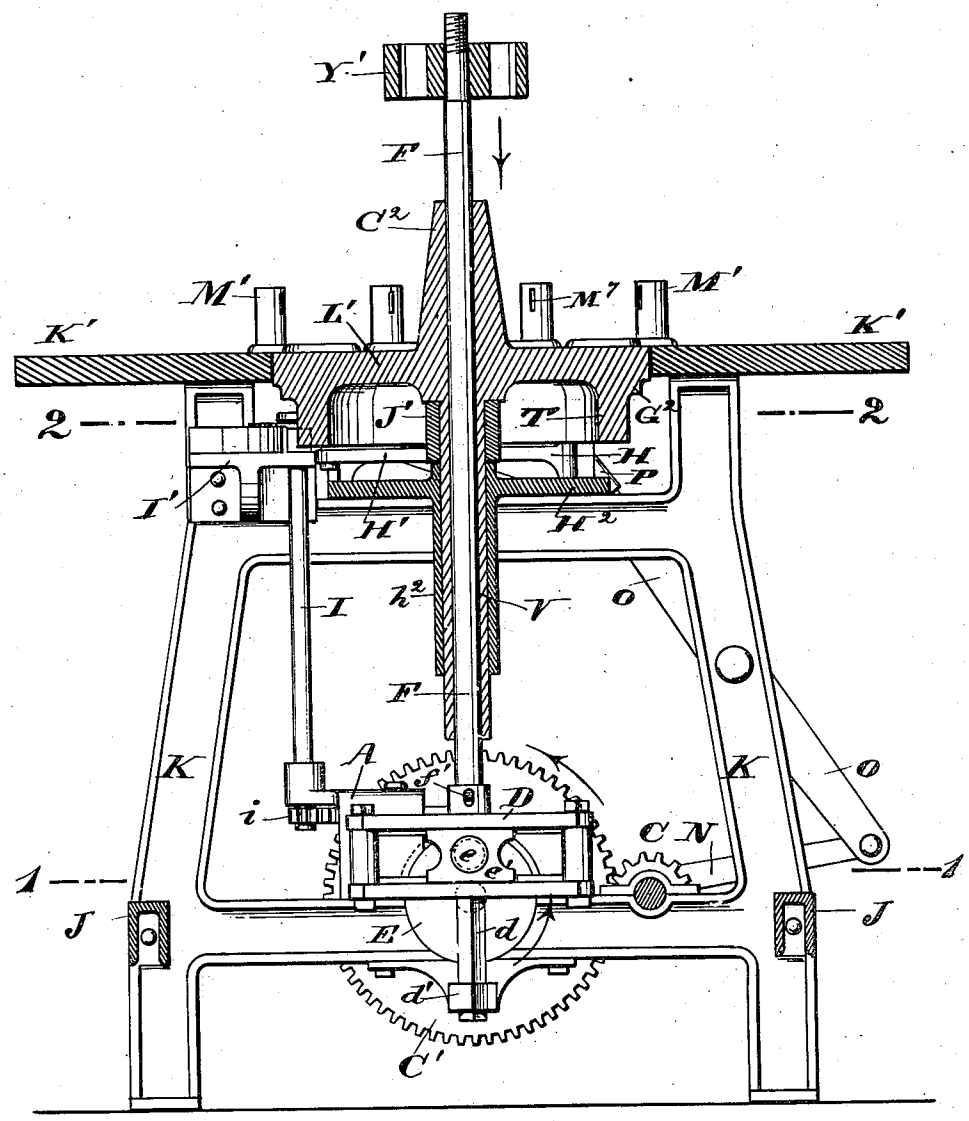
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Fig. 9.



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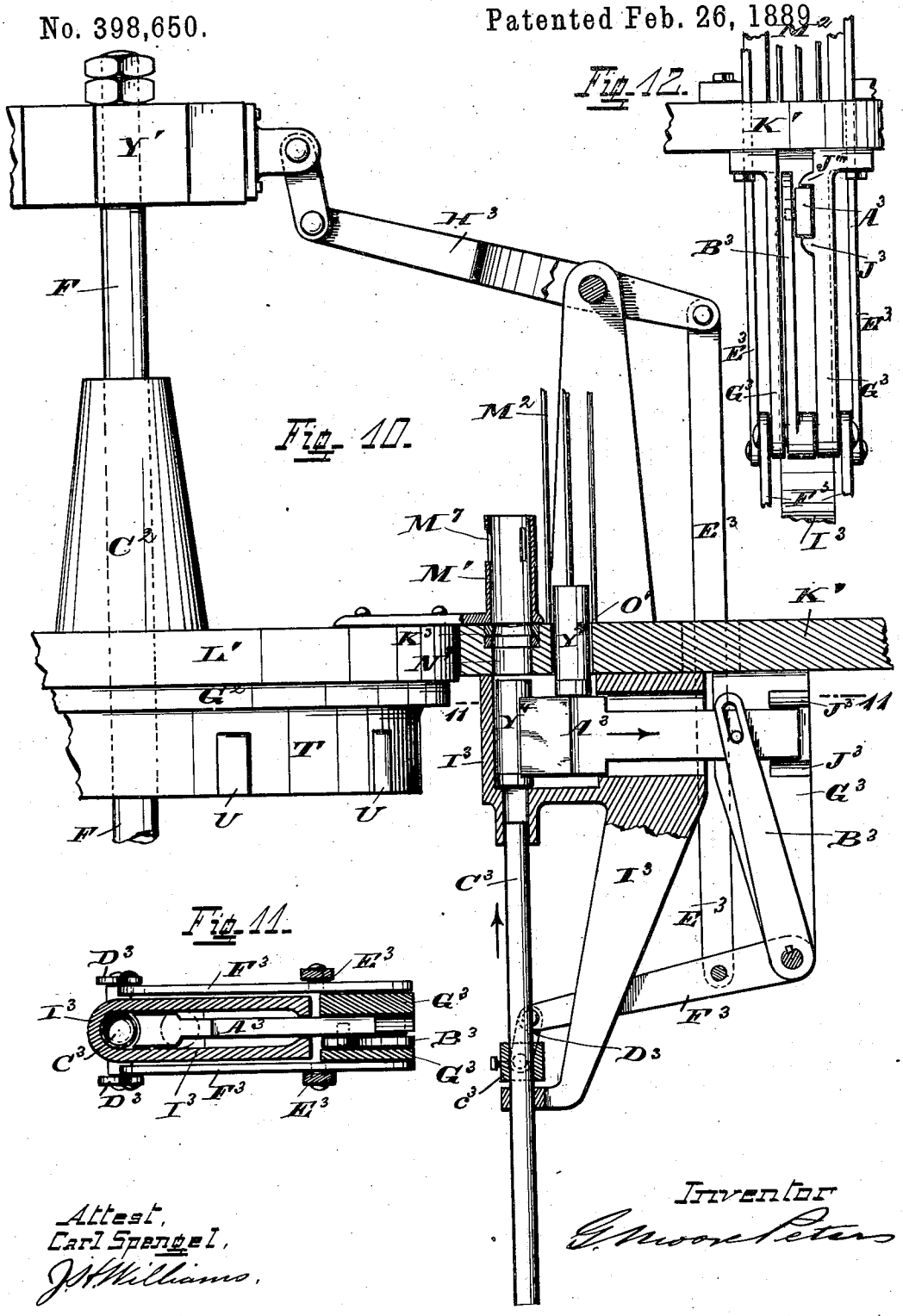
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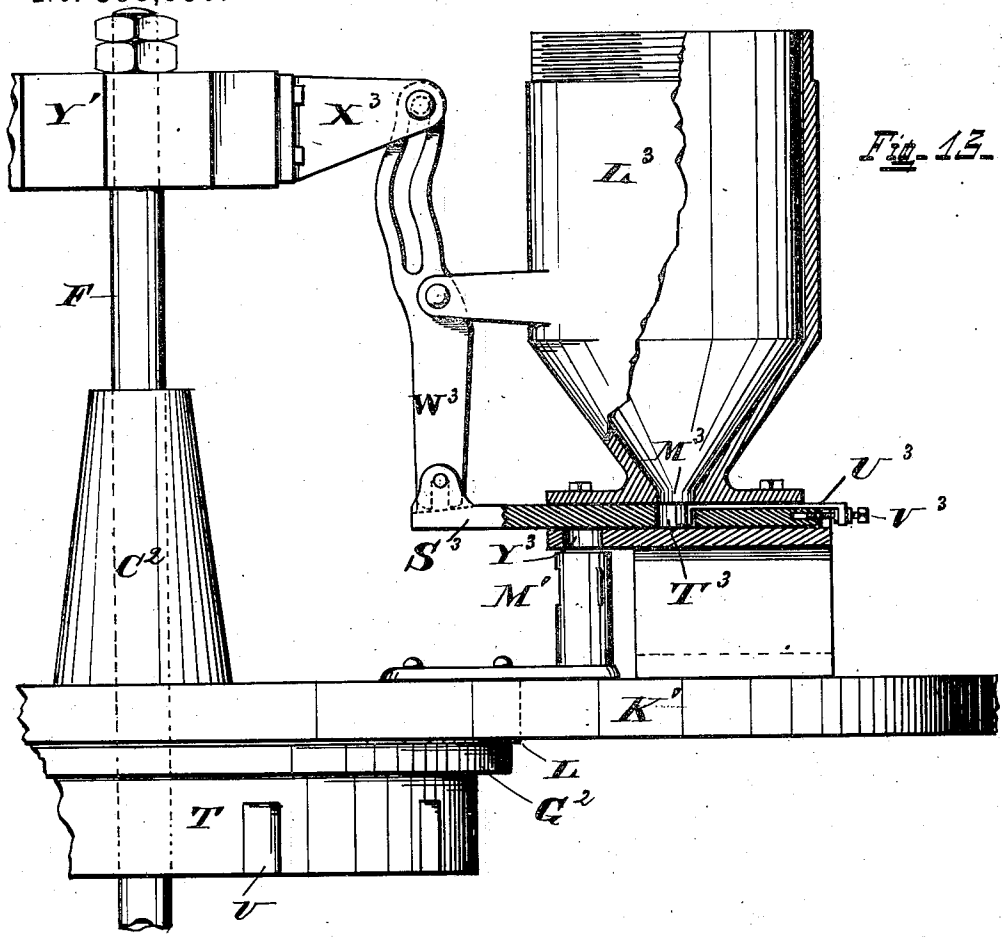


Fig. 13.

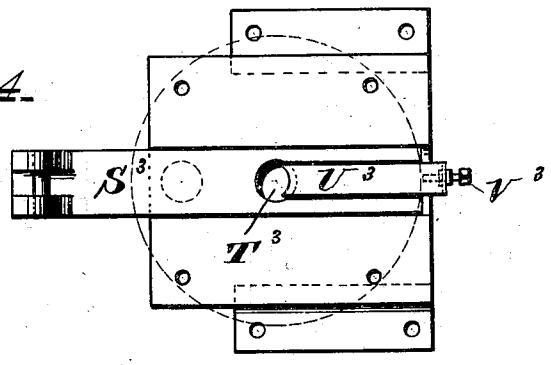


Fig. 14.

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Fig. 15.

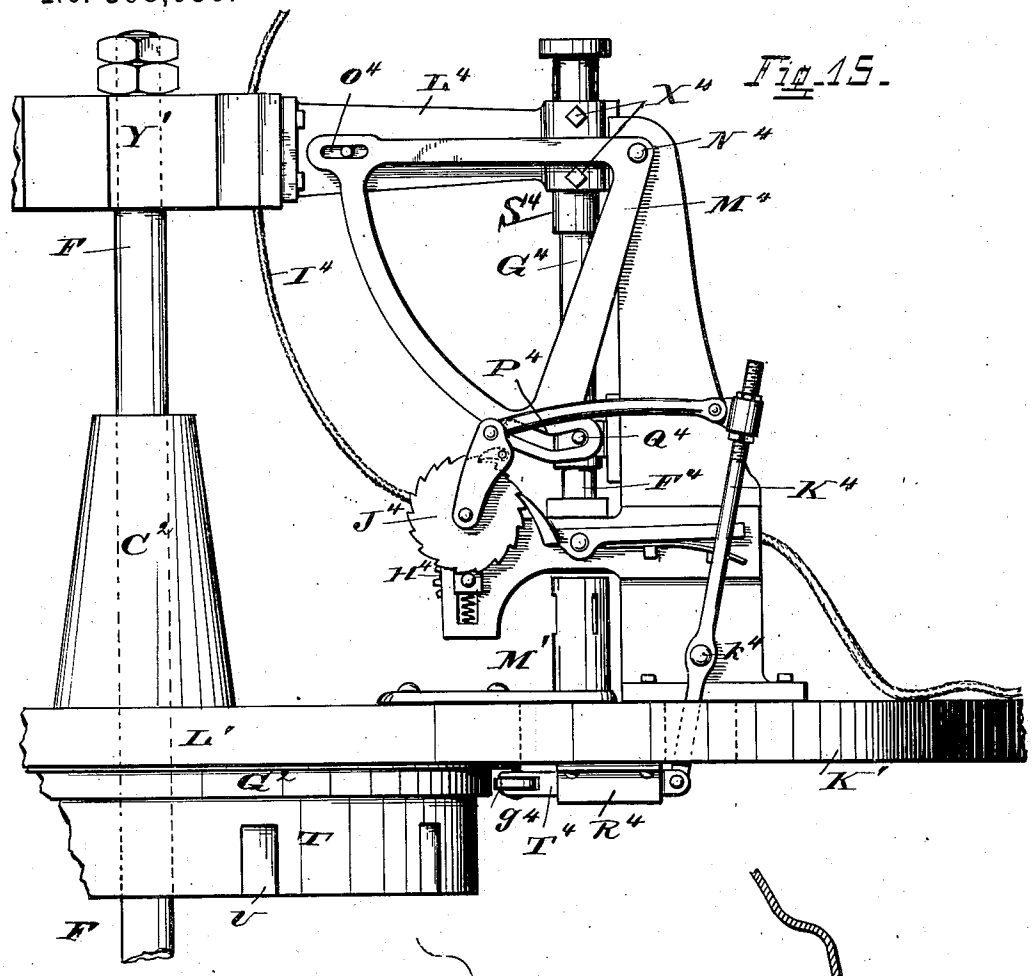


Fig. 16.

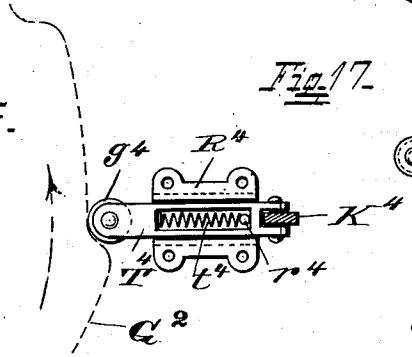
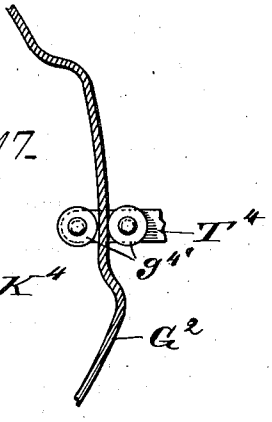


Fig. 17.



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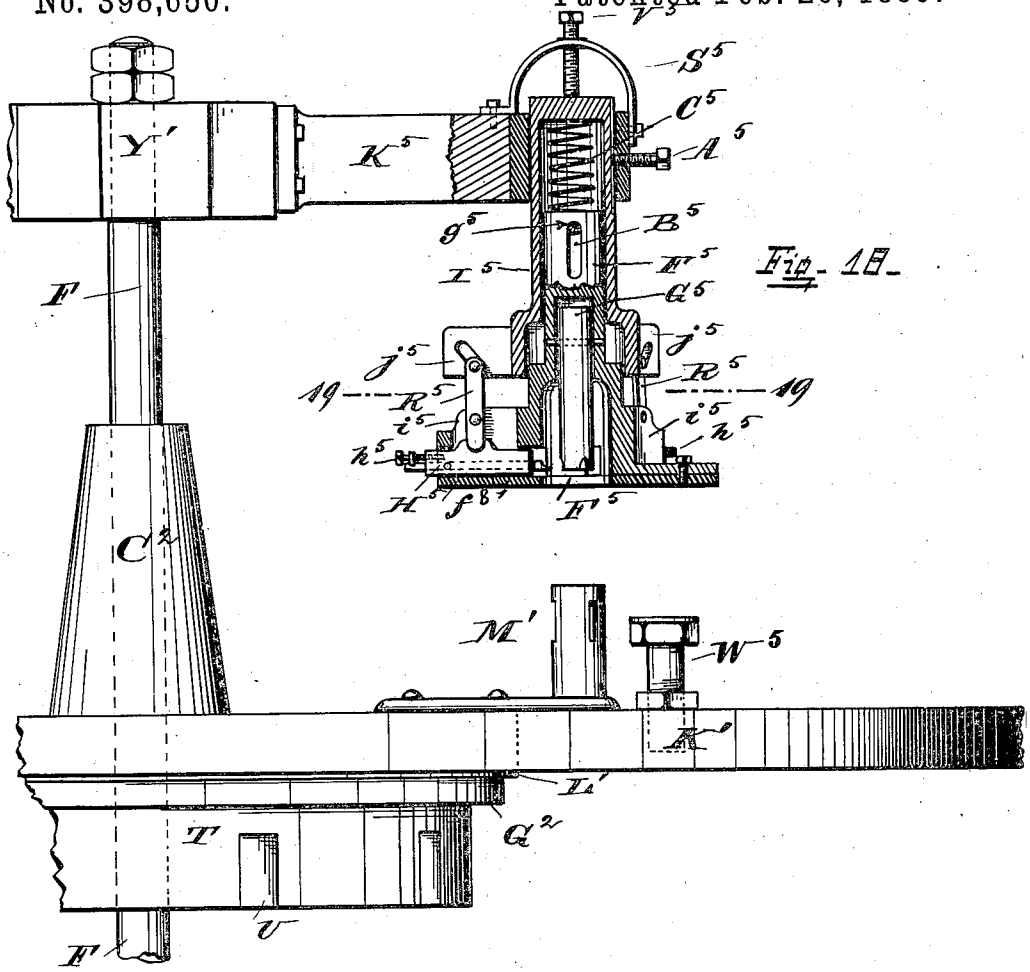


Fig. 18.

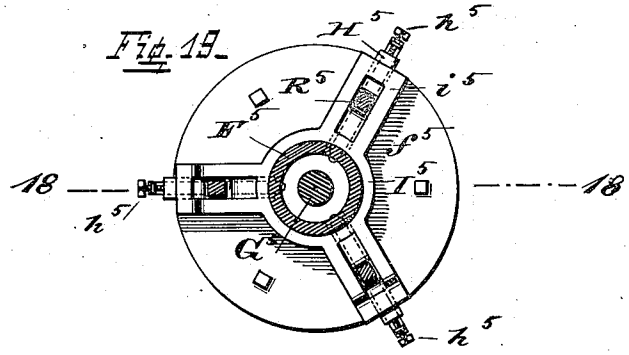


Fig. 19.



Fig. 20.

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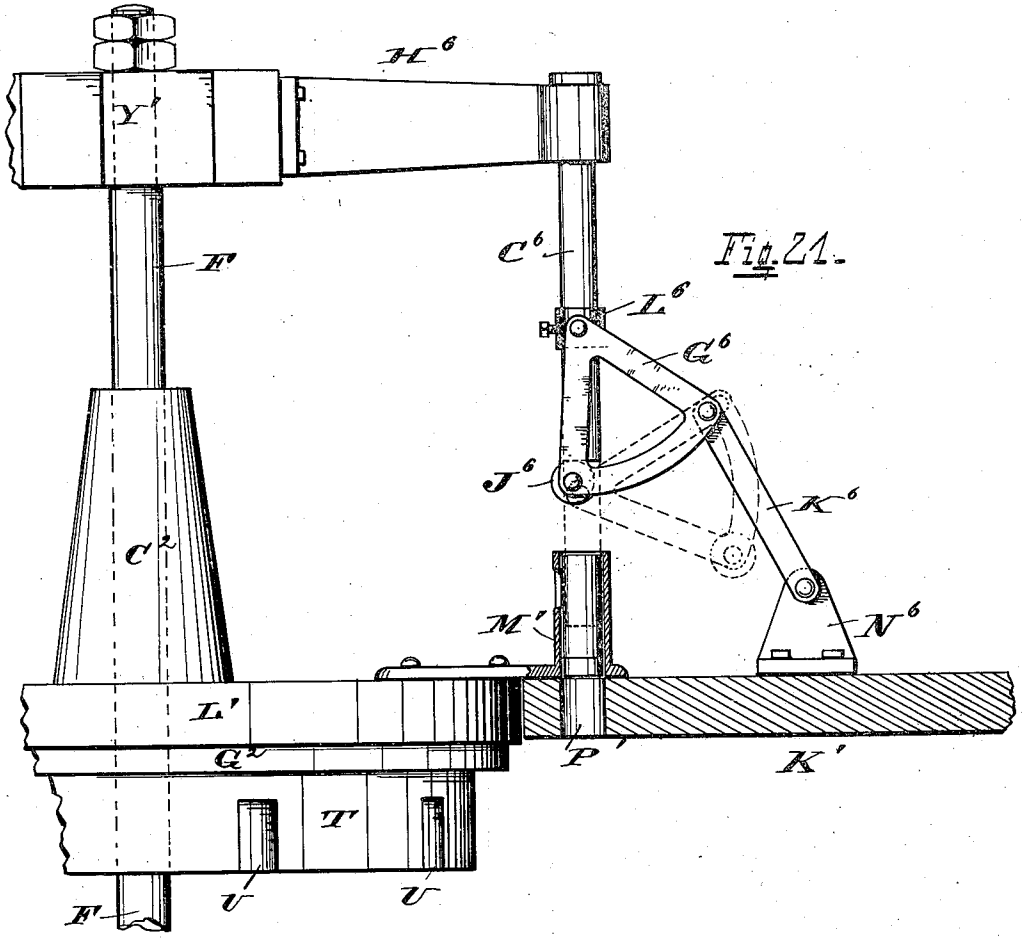


Fig. 21.

Fig. 22.

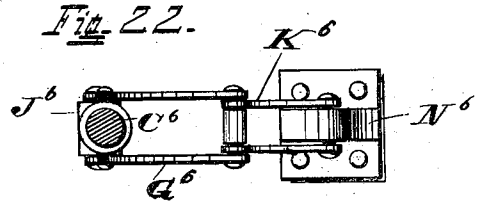
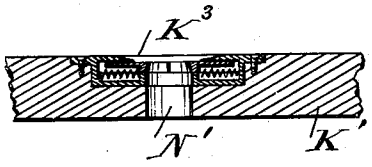


Fig. 23.



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G. M. Peters

UNITED STATES PATENT OFFICE.

GERSHOM MOORE PETERS, OF CINCINNATI, OHIO.

CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 398,650, dated February 26, 1889.

Application filed August 25, 1888. Serial No. 283,698. (No model.)

To all whom it may concern:

Be it known that I, GERSHOM MOORE PETERS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Cartridge-Loading Machines; and I do hereby 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.

My invention relates to cartridge-loading machines, and is an improvement on the machines patented to me March 29, 1887, No. 360,043, and June 5, 1888, No. 383,905.

In the application here presented it will be particularly noted that the cam-wheel heretofore used and described and claimed in said patents is dispensed with, and the driving apparatus for actuating the rotating table and filling devices consists of crank movements, whereby the action is rendered more positive and regular.

The device will be hereinafter more fully described in the specification and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the driving or actuating mechanism. Fig. 2 is a horizontal sectional plan of the parts or elements for actuating the revolving table. Fig. 3 is a top plan view of the tables with the several filling devices. Fig. 4 is a top plan view of the head-block on the central shaft. Fig. 5 is a top plan view of the shell-cases and the openings in the stationary table for entering and extracting shells. Fig. 6 is a top plan view of serrated flange for operating the feed-ratchets on the wad-cutters. Fig. 7 is a side view of the machine as an entirety, the filling device being removed. Fig. 8 is a front view of the same. Fig. 9 is a vertical section of the same. Fig. 10 is a side sectional view of the shell-placing apparatus. Fig. 11 is a top sectional view of the shell-carrying devices, and Fig. 12 is a rear view of the same. Fig. 13 is a side elevation, partly in section, of the powder and shot hopper and feed therefor. Fig. 14 is a top plan view of the same. Fig. 15 is a side elevation of the wad cutter and placer. Fig. 16 is a top view of the device for actuating the feed-ratchet, and Fig. 17 is a modification of the same. Fig. 18 is a side sectional view of the shell-indenting mechanism, and Fig. 19 is a top sectional view of the same. Fig. 20 is a perspective view of one of the indenting-points. Fig. 21 is a side view of the extractor and inking device with the shell-case and shell in section. Fig. 22 is a top sectional view of the same, and Fig. 23 is a sectional view of opening to the shell-case.

As in my former machines before referred to, the stationary table and the various parts making up the driving apparatus are supported by an iron frame-work, K. The main pinion C, Figs. 1, 7, and 9, is driven by a suitable pulley connected with the motor and meshes with a cog-wheel, C′, provided with a crank-pin, *c*. A shaft, C″, Fig. 1, passes through the cog-wheel C′, cam-wheel G, and crank-wheel E. The latter is provided with a crank-pin, *e*, moving or playing in a yoke, D, to operate perpendicularly the central shaft, F, connected with the filling devices on the table. For the purpose of balancing the shaft F and its attachments, and to relieve any uneven strain on the crank-pin *e*, there is suspended a ball, B, attached to the yoke D by means of a chain or wire rope passing over the sheave *b* and secured to a hook, *f*″, on the yoke. The cam-wheel G, placed midway on the shaft C″, operates a lever, *g*, pivoted to the plate A, which forms a bearing for the vertical shaft I. This cam-wheel has a groove, *g*′, Figs. 1 and 8, running straight for nearly one-half of its periphery, first on one side of its face and then on the other side, with abrupt ogee cams *g*″ connecting the straight parts and placed at opposite points. In this groove plays a pin or, preferably, a roller, *g*‴, connected with the lever *g*, causing it to move from right to left and from left to right with each revolution of the cam-wheel. The outer end of the lever *g* is toothed and geared into the cog-segment *i*, attached to the shaft I, whereby the shaft I is made to turn back and forth with the movement of the lever *g*.

As in my former machines, I have a central shaft and a hollow shaft surrounding it; but in the present device the hollow shaft V is an extension of the revolving table. This shaft has an arm or lever, H′, pivoted thereto by

means of a collar or sleeve, J', the revolving table being supported by means of a heavy plate, H^2, which also furnishes extended bearings for the hollow shaft V. On the under side of the revolving table a rim, T, is cast or made integral therewith, said rim having notches U, (nine in number,) corresponding to the number of filling devices or movements necessary to complete a revolution of the revolving table, and into these notches bolts X and Z move in and out, in the manner and for the purpose hereinafter set forth.

The link N, Fig. 7, is connected to gear-wheel C' by means of the crank-pin *c*, and this link is pivoted to lever O, by means of which the lever O is given a movement back and forth with each revolution of the wheel C'. This lever O is also connected by means of the swivel P and the adjustable pitman R S with the lever or arm H', Figs. 2 and 7, causing it also to be moved back and forth with each revolution of the wheel C'. The lever H' is slotted centrally, as shown in Fig. 2, and in this slot is inserted an engaging-bolt, X, having a spring, *x*, in its rear. This lever H', through the intervention of the bolt X, actuated by the spring *x* and engaging in turn the notches U as it moves forward, causes the revolving table to move forward one-ninth of its revolution. When H' reaches the end of its forward movement, and when the crank-pin *c* is in its dead-center, as shown in Fig. 2, and at the instant the revolving table is brought to a standstill, the cone-shaped bolt Z is thrown forward into an advance notch U, thus holding the revolving table stationary where the dead-center of the crank-wheel left it and in position for the filling devices to enter the shell-cases. The bolt Z is operated by the cog-segment *i'*, which in turn is operated through the intervention of shaft I and its connections, before described, by means of the cam-wheel G, the abrupt portions of its groove being so arranged as to become effective at the exact moments when the crank-pin *c* is on its dead-centers. A projection, *h*, on the lever H' furnishes a pivot and support for the lever *h'*, which is toothed and geared to the bolt X. As the lever H' finishes its forward movement, it brings the outer end of the lever *h'* against the tooth-segment *i'*, which is provided with a cam, *i''*, and by means of which, in throwing in the bolt Z, the lever *h'* is so pressed upon as to throw out the bolt X, and to hold it out long enough for the lever H' to move backward and out of line with the notch just vacated.

As the lever H' reaches the end of its backward stroke and the bolt X comes into line with the next notch to be engaged by the action of the spring *x*, the bolt is thrust in ready to give the table one more move. At the same instant the cam-wheel G operates to throw out the bolt Z, setting the table free. It will thus be seen that the revolving table is started and stopped on the dead-centers of a crank-wheel, thus avoiding all sudden shocks and rebounds, and affording an easy, noiseless, and positive movement.

The order and relation of the filling devices do not differ materially from those shown in my former patents. In the present machine there are nine such devices, (instead of eight, as heretofore.) In Fig. 3 there is shown a stationary table, K', supporting the filling devices, a revolving table, L', carrying the shell-cases M', a central shaft, F, for operating the filling devices, the head-block Y' on same, from which radiate arms Y'', connecting with the filling devices, a shell-placer, Q, a powder hopper and feed, R', a pasteboard-wad cutter and placer, S', a felt-wad cutter and placer, T', a second felt or pasteboard wad cutter and placer, T'', as may be desired, a shot hopper and feed, U', a cutter and placer, V', of pasteboard wad over the shot, an indenter, W', and an inker and extractor, X'.

In the present machine the wad-strips pass to the cutters through the openings Y''', (see Figs. 4 and 15,) instead of through openings in the arms, as heretofore, thus avoiding too abrupt a bend in the wad-strips.

The method of conducting the shells to the placer and extracting them after being filled is of the same general principle as in my former patents.

In Fig. 5 is shown a part of the stationary and revolving tables, a section of the wires M^3 forming the cage for conducting the shells to the placer, the opening O' of the placer, the opening N', through which the shells are shoved upward into the shell-cases, and the spring-catches K^3 for holding the shell in position until the case is moved forward, and the opening P'', through which the shell is extracted after being filled. The rotating table is provided with a notched flange, T, and serrated flange G^2, for operating the feed-wheels of the wad-cutters. The crank-wheel C', by which the revolving table is operated, is shown in side view, Fig. 7.

In order to show more fully the support A for the shaft I as well as the wheel G, with its abrupt cams *g''*, a front view of the machine, Fig. 8, has been provided. Here, also, is shown the arrangement of the crank-wheel E, the bearing *d'* for the square extended portion *d* of the yoke D of the central shaft, F, the counterbalancing-ball B, and the plate H^2, supporting the revolving table.

In my present device the revolving table has cast integral with it an upper bearing, C^2, and a lower long hollow shaft, V, affording an extended bearing for the shaft F. It also forms a bearing for the collar J', to which is secured the arm H', by means of which and its bolt X the table is intermittently rotated, as shown in Fig. 2. The supporting-plate H^2 is also provided with an integral downwardly-projecting bearing, h^2, for the hollow shaft V. The block *e'*, Fig. 9, has a central bearing for the crank-pin *e*, and slides back and forth on the bearings of the yoke D as the

crank-wheel E is turned, imparting an up-and-down movement to the shaft F. The throw of the crank E or the movement up and down of the shaft F is determined by what is necessary to lift the rammers of the wad-placing devices out of the shell-cases in time for the movement of the rotating table and to hold them out until it is finished. The throw required is about five inches, the top of the shell-cases being the center of the movement up and down for the lowest loads.

The relation of the cranks for moving the table and the shaft F is as follows: The crank *c* is so arranged that it starts to throw the table just as the crank *e* has lifted the rammers out of the shell-cases, and completes the throw or movement just as the rammers are about to enter again. Then, while the rammers are in the cases, the crank *c* operates to throw the arm H′ back to get a new hold on the notched rim T. In Patent No. 383,905 the sliding block for moving the shell beneath the shell-case had a complete circular pocket into which the descending shells dropped. Here the horizontally-sliding block A^3, Fig. 10, is open and semicircular in form at its inner end, the shells Y^4 descending in a perpendicular manner to the block through the cage M^2. This construction enables me to dispense with the cam-slotted blades described in said patent and give the block A^3 a regular and continuous movement with the piston C^3, inasmuch as it is not required to remain stationary while said piston passes up through it and back again, but can proceed to move backward to its original position as soon as it has deposited the shell in line with the piston. To accomplish this the block A^3 is provided with an arm extending backward and pivoted to the lever B^3, which in turn is rigidly connected at right angles with the lever F^3, which, through the intervention of link D^3 and adjustable sleeve c^3, actuates the piston C^3, all the parts being operated by the central shaft, F, through the connecting parts Y′, H^3, and E^3. It will thus be seen that as the piston C^3 descends the block A^3 moves forward and carries the shell into position for entering the shell-case M′. As the piston rises the block is moved back for another shell, which drops in place as soon as relieved of its bearing on top of the block, the movements of the piston and shell-block being so timed with reference to each other that the former will be out of the way as the shell is brought into position for entering. The block A^3 works in a guide or pocket, I^3, which forms a guide for the passage of the shell to the shell-case and a bearing for the piston. The rear extension or arm of the block slides in guide-bearing J^3 on the supporting-pieces G^3. (Shown in Figs. 11 and 12.)

In Patent No. 383,905 the powder and shot hopper had a sloping bottom and flange cast in the hopper to guide the powder or shot to the feed-opening, and was opened and closed by a feed-wheel. In the present machine these devices are dispensed with, the powder and shot descending directly through a narrow opening, M^3, to the feed-slide S^3. The hoppers are screw-threaded at top for the connecting-pipe for the purpose stated in said patent. In the present device the feed-slide S^3 is operated directly and in unison with the movements of the other parts by the central shaft, F, through the intervention of the ogee cam-slotted lever W^3 and connecting-arm X^3, having a roller on its outer end which plays in said slot. By this construction the number of parts is reduced and the feed-plate is actuated in a more positive and certain manner. The feed-slide has an opening, T^3, Fig. 13, graduated to any size charge by means of a sliding plate, U^3, having its inner end bent down into the opening T^3 and occupying one side, (see Fig. 14,) the outer end having a micrometer-screw, V^3, by which it is regulated. As the slide is moved forward the contents of the opening T^3 are deposited through the opening Y^8 into the shell contained in the case M′.

The wad cutters and placers are three or four in number, according to the number of wads required. Each consists of a tubular cutter, F^4, actuated by the cam-slotted bell-crank levers M^4, Fig. 15, and the interior rammer, G^4, actuated directly by the arm L^4, attached to the head-block Y′. A pin or roller, O^4, on the arm L^4 and a pin, Q^4, on the guide of the rammer play in the slots of the lever M^4 and direct the movements of the cutter and placer. The pressure of the rammer on the load, regulated by a nut and spring in the head of the arm L^4, as set forth in the patent before referred to, is now dispensed with as unnecessary, the rammer-head S^4 being made to fit snugly in the arm-head and held firmly when set for various loads by the set-screws X^4. The tell-tale device, as shown in the former Letters Patent, may also be dispensed with, and the wad-strip, instead of passing through an opening in the arm attached to the head-block, is made to pass through the head-block and give considerable curvature to said strip, which is not only an advantage in feeding, but prevents liability of breaking the material as it is being fed to the wad-cutters. The feed-wheels H^4 are also differently operated from those shown in the former patents. In the present device the lever K^4, instead of being bell-shaped, (see Fig. 34, Patent No. 383,905,) is straight and pivoted at k^4 and operated by the horizontal slide T^4, having bearing in a plate, R^4, secured to stationary table K′. This slide T^4 has a roller, g^4, which plays against the serrated flange G^2 of the rotating table L′, Fig. 6, by means of the coiled spring t^4, lying in the slot in the slide and pressing against the stop r^4 at the rear of the bearing-plate, as shown in detail in Fig. 16. Thus a horizontal movement back and forth is given the slide, and this imparts movement to the ratchet J^4. Should it be desired to give a more positive movement to the slide T^4, the serrated flange G^2 may be bent downward and embraced

by two rollers, g^4, as shown in Fig. 17. It has also been found advantageous to have a direct and positive movement for the shell-indenter, and to this end the cam-slotted arms shown in Patent No. 383,905 are dispensed with and the device is suspended directly from the arm K^5, Fig. 18, into which it is fitted, and is adjusted to the various loads and firmly held in place by means of the set-screws V^5 A^5. The head-piece I^5 is bored out, and into this as a socket is fitted a secondary head-piece, F^5. In this is firmly set the rammer G^5, having depressions at the lower ends for receiving the indenting-points. This secondary head-piece F^5 also furnishes support and bearings for the indenters. The form of this portion is more clearly shown in top plan view, Fig. 19, the circular disk f^5 having three or four equidistant lugs, i^5, cast thereon and trimmed out as bearings for the indenter-heads H^5. A secondary plate, f^8, Fig. 18, is bolted underneath f^5, which may be removed when it is required to take out or insert the indenter-heads. The head F^5 is suspended on a pin, g^5, passing through I^5, but by means of the slot B^5 is allowed to give back under pressure on the coiled spring C^5. A stop, W^5, is fastened to the stationary table and made adjustable to the various loads by a screw and jam-nut. The primary head-piece I^5 has extensions f^5, with diagonal slots for the passage of pins connecting the levers R^5, pivoted to F^5 and operating the indenter-heads H^5. As the device descends and strikes the stop W^5, the head-piece F^5 gives back on the spring C^5, thus causing the indenter-points to be thrust in by means of the levers R^5 moving in the diagonal slots before mentioned. The indenter-points are regulated as to depth by means of the screws h^5 taking hold of the head H^5. The indenter now consists of a projecting rounded blade, Y^5, or knife-edge extension, by which a clean cut is made in the side of the shell, the shouldered surface X^5 serving to press in and give form to the indentation after being cut from the side.

In my present device the extractor and inking mechanism is much simplified. As shown in Fig. 21, the extractor-rod is operated directly by the arm H^6 of the head-block, and thus directly and positively by the central shaft. The inking-roller J^6, for inking the die on the end of the extractor-rod, is operated by means of the triangular lever G^6, pivoted at its inner end to the collar L^6, attached by set-screws to the extractor-rod C^6, and pivoted at its outer end to the swinging link K^6, which in turn is pivoted to the lug N^6, fastened to the stationary table K'. It will thus be seen that as the extractor-rod C^6 is moved up and down the roller J^6 is caused to roll across the die and ink it perfectly. The shells are thus marked as extracted. The spring-catches for holding the shells as they are shoved into the shell-cases, Fig. 23, do not differ materially from those shown in my former patent referred to.

From the drawings and description it will be seen that many of the complex mechanical movements in the former patents have been dispensed with, and the devices for actuating the rotating table, the filling devices, the wad cutters and placers, the shell placer and extractor, and the inking mechanism have direct and united action and positive movements, and therefore the tendency to "catch," with accompanying breakage of parts, is reduced to a minimum.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cartridge-loading machine, the combination, with the primary actuating mechanism, of a cam-wheel having opposite cams, a vertical oscillating shaft, I, connected with the table locking and releasing mechanism, and a pivoted lever one end of which is in engagement with the said cam-wheel and the other in gear with the shaft I, substantially as described.

2. The combination, with the primary actuating mechanism, of a crank-wheel, C′ c, a pivoted lever one end of which is linked to the crank of said wheel and the other connected to an adjustable pitman or connecting-rod, R S, a rotating table with a notched rim, and a lever, H′, movable in the plane of the table, connected with the pitman R S, and carrying a spring-pressed bolt to engage the notches of the table, substantially as described.

3. The combination, with the primary actuating mechanism, of a cam-wheel, G, a pivoted lever one end of which is in engagement with said cam and the other provided with a segmental gear, a vertical shaft, I, in gear with said lever and with a reciprocating locking-bolt, Z, and a revolving shell-carrying table provided with a notched rim, with which said locking-bolt engages to lock the table, substantially as described.

4. The combination, with the rotating crank-wheel C′, of a cam-wheel, G, on the same shaft therewith, a vertical shaft, I, carrying a segmental gear, z', a rotating shell-carrying table having a notched rim, a toothed locking-bolt in engagement with the gear z' to lock the table, and a pivoted lever one end of which is in engagement with the cam-wheel and the other with a gear on the shaft I, whereby the latter is intermittently oscillated and the table locked, substantially as described.

5. The combination, with the rotating cam-wheel G and with crank-wheel E, of a vertical shaft, I, carrying a gear, z', an interposed lever one end of which engages the cam-wheel G and the other gears with the gear i, a rotating shell-carrying table provided with a notched rim, a locking-bolt, Z, in gear with the shaft I and adapted to engage and lock the table, and a reciprocating vertical shaft, F, carrying at its lower end a yoke with which the crank-wheel E engages to reciprocate the same, and having its upper end connected

with the shell-charging mechanism, substantially as described.

6. The combination, with the oscillating shaft I and the vertical reciprocating shaft F, connected with the shell-charging device, and suitable mechanism for actuating the same, of a rotating shell-carrying table having a notched rim, a vibrating lever, H′, moving in the plane of the table and carrying a spring-pressed bolt to engage the notches of the table, and a toothed locking-bolt in gear with an oscillating shaft, E, to engage and lock the table after each movement of the latter, substantially as described.

7. The combination, with the cam-wheel G and the crank-wheel E, of a rotating shell-carrying table provided with a notched rim, a lever, H′, movable in the plane of the table and carrying a spring-pressed bolt or pin, X, to engage said notched rim and rotate the table, a vertical shaft, I, in engagement with the cam-wheel G through an intermediate lever, *g*, and with a toothed locking-bolt to engage and lock the table, and a reciprocating vertical shaft the upper end of which carries the various shell-charging mechanism and the lower end connected with the crank-wheel E, substantially as described.

8. The combination, with the rotating table having a notched rim, of a lever, H′, movable in the plane of the table and carrying a bolt, X, to engage and rotate the table, and a locking-bolt, Z, to lock the table, the said bolts X and Z being connected with the primary driving mechanism, such mechanism imparting reciprocations to said bolts, so that they will be alternately advanced into and retracted from the notched rim of the table to rotate, to lock, and to release the same, substantially as described.

9. In a cartridge-loading machine, the combination, with a stationary table supporting the shell-filling devices, of a rotating table having an integral upper and lower extension, which forms an elongated bearing for the shaft which operates the shell-filling devices, substantially as shown and described.

10. In a cartridge-loading machine, the combination, with the rotating table and filling devices, of a central shaft, a head-block adjustably secured thereto, said block having openings for the passage of wad-strips, and arms secured to said head and block, and the filling devices, whereby the filling devices are actuated directly by the central shaft, as set forth.

11. In a cartridge-loading machine, the combination, with the rotating table carrying the shell-cases and provided with a notched rim, of the arm H′, movable in the plane of the table and carrying a bolt, X, a bolt, Z, geared with and actuated by an oscillating shaft, I, the shaft F, operating the various shell-charging mechanisms, a cam-wheel, G, connected with the shaft I by an intermediate lever, *g*, and a crank-wheel, E, connected with the shaft F to reciprocate the latter, the parts being arranged and adjusted, as shown and described, to start the table when the shaft F is at the limit of its upward movement, and to stop the same when said shaft begins its downward movement, substantially as shown and described.

12. In a cartridge-loading machine, the combination, with the rotating table and the filling devices, of a central shaft actuating said filling devices and provided with a counterbalancing-weight which exerts a constant resistance to the downward throw of said shaft, substantially as shown and described.

13. In a cartridge-loading machine, the combination, with the stationary table having openings for the descent and insertion of shells, of a shell-carrier and actuating mechanism therefor, said carrier sliding horizontally beneath the table and having its inner end open and semicircular, as and for the purpose set forth.

14. The combination, with the rotating table carrying the shell-cases, the filling devices, and actuating mechanism therefor, of a shell-carrier having an open inner end, and a shell-placer consisting of a piston moving vertically through the inner end of the carrier-frame to the shell-cases, said carrier and piston being linked and pivotally connected with each other and the central shaft, whereby the piston and carrier are given a regular and continuous movement, the shell being carried forward with the downstroke of the piston, and the carrier moved back with the upstroke of the piston, as set forth.

15. In a cartridge-loading machine, the combination, with the powder and shot hopper, and with a vertical reciprocating shaft, of a charge-slide having a charge-opening, a graduating-slide lying on said charge-slide with its inner end bent down and projecting into the charge-opening, and a cam-lever between the said shaft and charge-slide, whereby the latter is reciprocated by the reciprocation of the shaft, substantially as shown and described.

16. In a cartridge-loading machine, the combination, with the rotating table having a notched rim and suitably actuated, and a wad cutter and rammer operated by the central shaft, as described, of a wad-strip feed operated by a slide, T^4, having a roller engaging the notched rim of the table, said slide being pivotally connected with the ratchet-feed for the wad-strip, whereby the rotating table and ratchet-feed are operated in unison, the ratchet being moved with each intermittent movement of said table, as set forth.

17. In a cartridge-loading machine, the combination of a reciprocating shaft having an arm, K^5, which carries a jam, j^5, a reciprocating indenter, and a lever-connection between said indenter and cam, substantially as shown and described.

18. In a cartridge-loading machine, the com-

bination, with the arm K^5, open at its outer end and actuated directly by the central shaft, F, of an indenting device consisting of a head-piece bored centrally and adjustably secured to said arm, and provided with extensions f^5, having diagonal slots, a secondary head-piece, I^5, a rammer secured therein and having depressions at its lower end, and sliding indenters having links secured thereto and moving in the slots of the extension, as and for the purpose set forth.

19. The combination, with the stationary table having a stop, W^5, on the hollow head I^5, reciprocating toward and from said stop, a secondary head spring-seated within the first, a rammer connected with the secondary head and having depressions at its lower end, and indenting-points connected with and operated by cams on the primary heads, whereby as the indenting device descends and strikes the stop the secondary head will give back against the spring and cause the indenter-points to be thrust forward, as and for the purpose set forth.

20. The combination, with the rammer G^5, having suitable depressions at its ends, of a shell-indenter movable toward and from said rammer and having indenting ends, consisting of a knife-edge extension, Y^5, to cut the shell, and a shouldered surface, X^5, to give form to the indentation after the cut is made, substantially as set forth.

21. In a cartridge-loading machine, the combination, with the rotating table and central shaft suitably actuated, of an extractor and inking device for the wad-marker, consisting of the extractor-rod secured to an arm of the central shaft, a triangular lever pivoted at its upper end to a collar on the extractor-rod, its outer end having a link pivoted thereto and to a lug on the stationary table, the inner lower end having an inking-roller, the vertical movement of the extractor giving a swinging movement to the triangular lever, and thus intermittently inking the die on the bottom of the extractor, as set forth.

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

G. MOORE PETERS.

Witnesses:
J. H. McKIBBEN,
F. C. TUTTLE.