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Patented May 31, 1892.



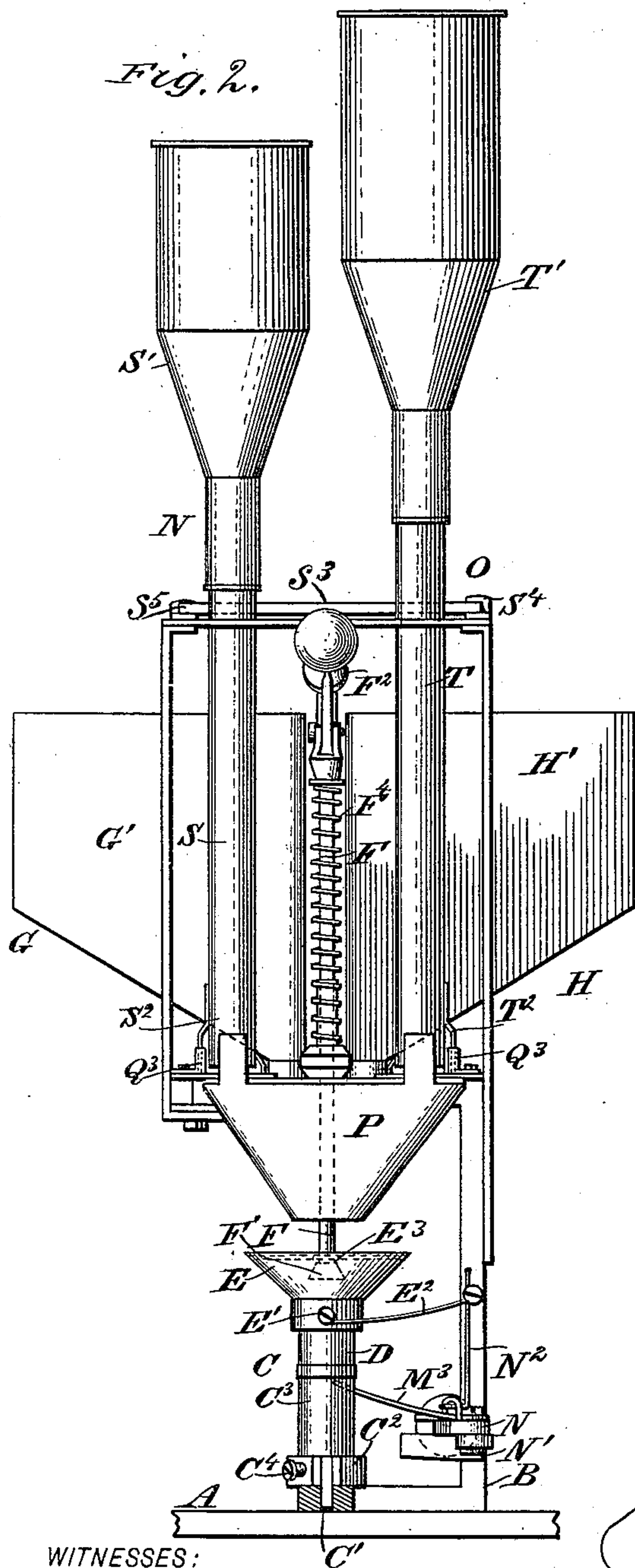
(No Model.)

3 Sheets—Sheet 2.

W. H. HAMNER.
CARTRIDGE LOADER.

No. 476,048.

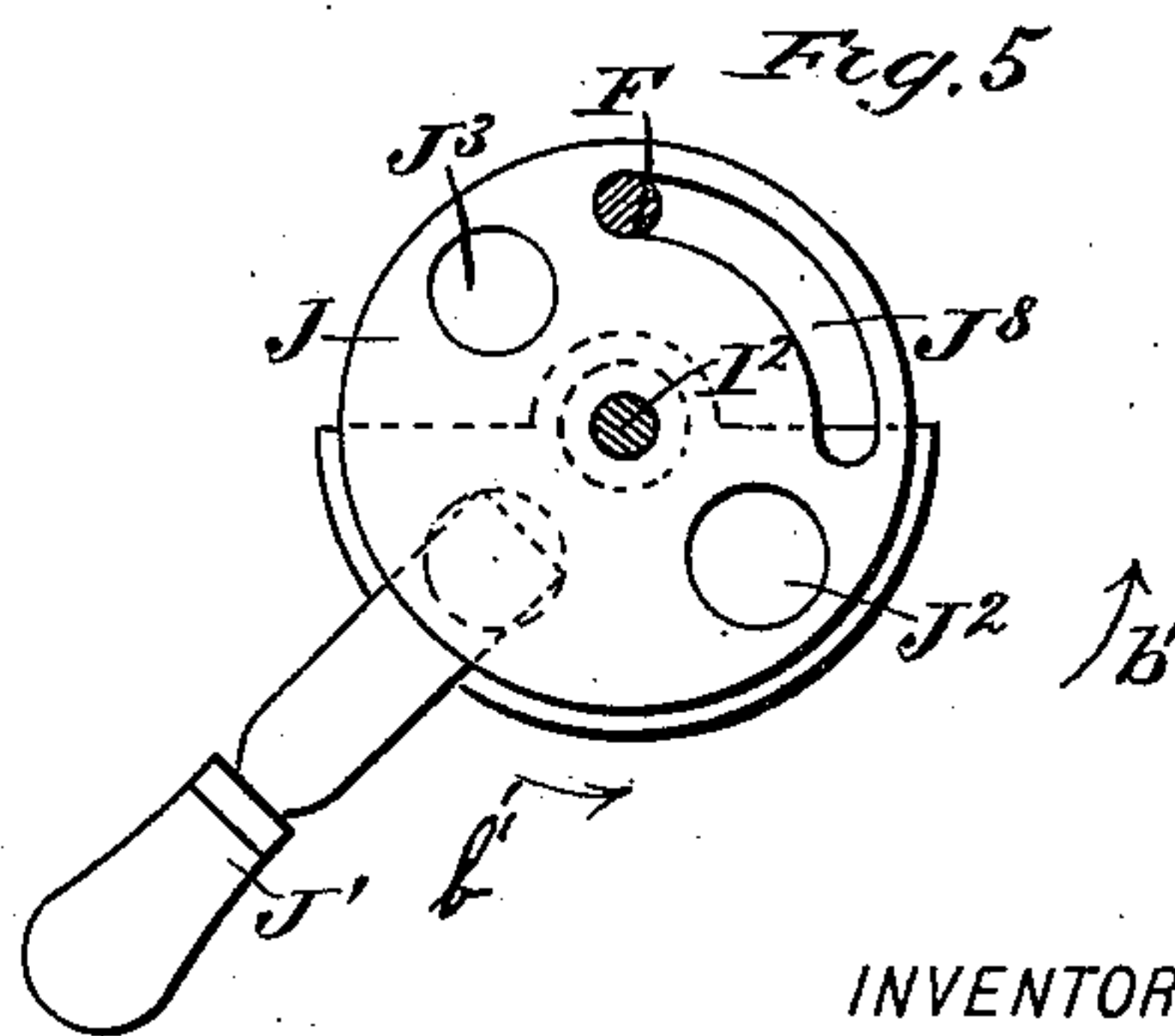
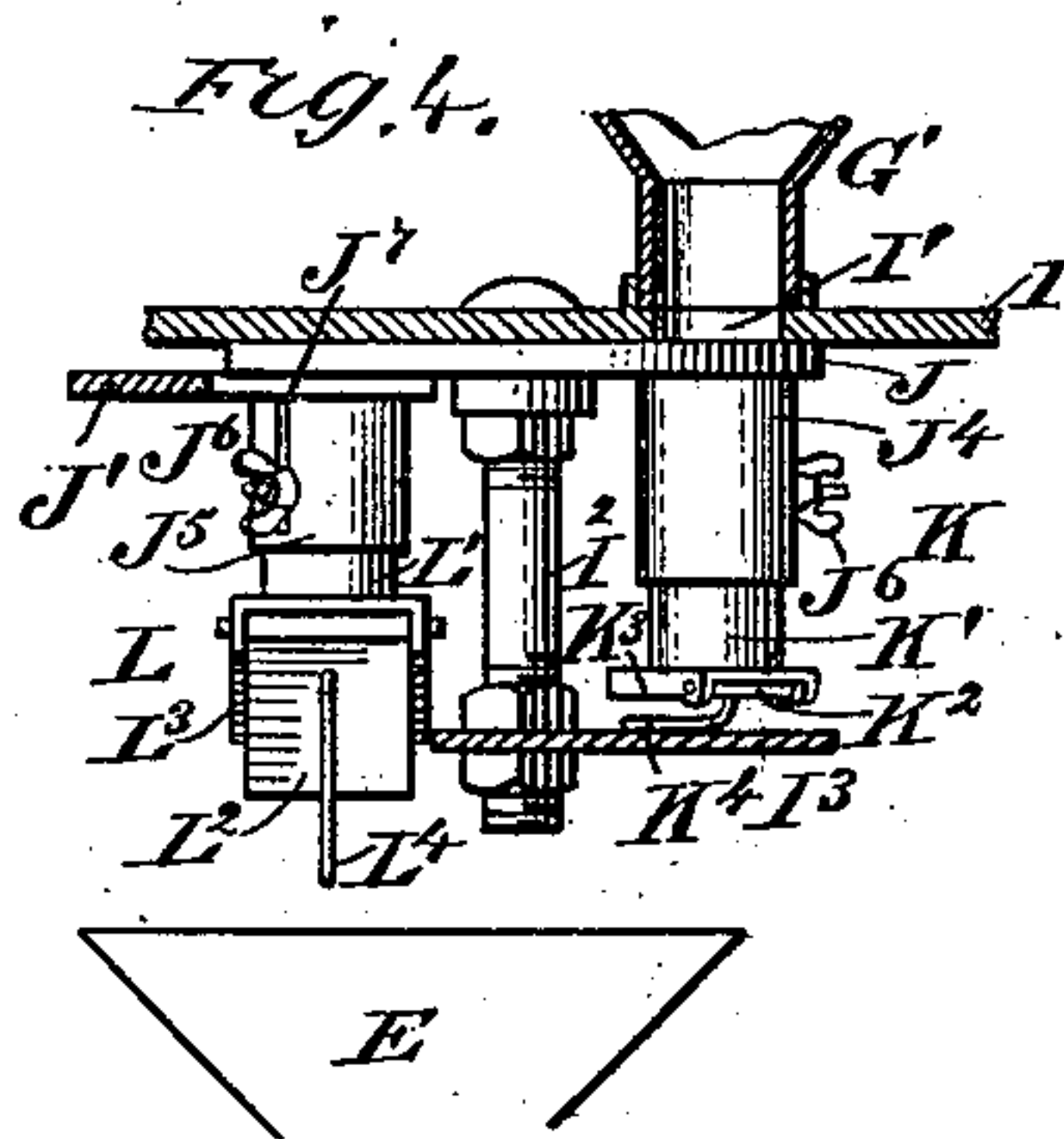
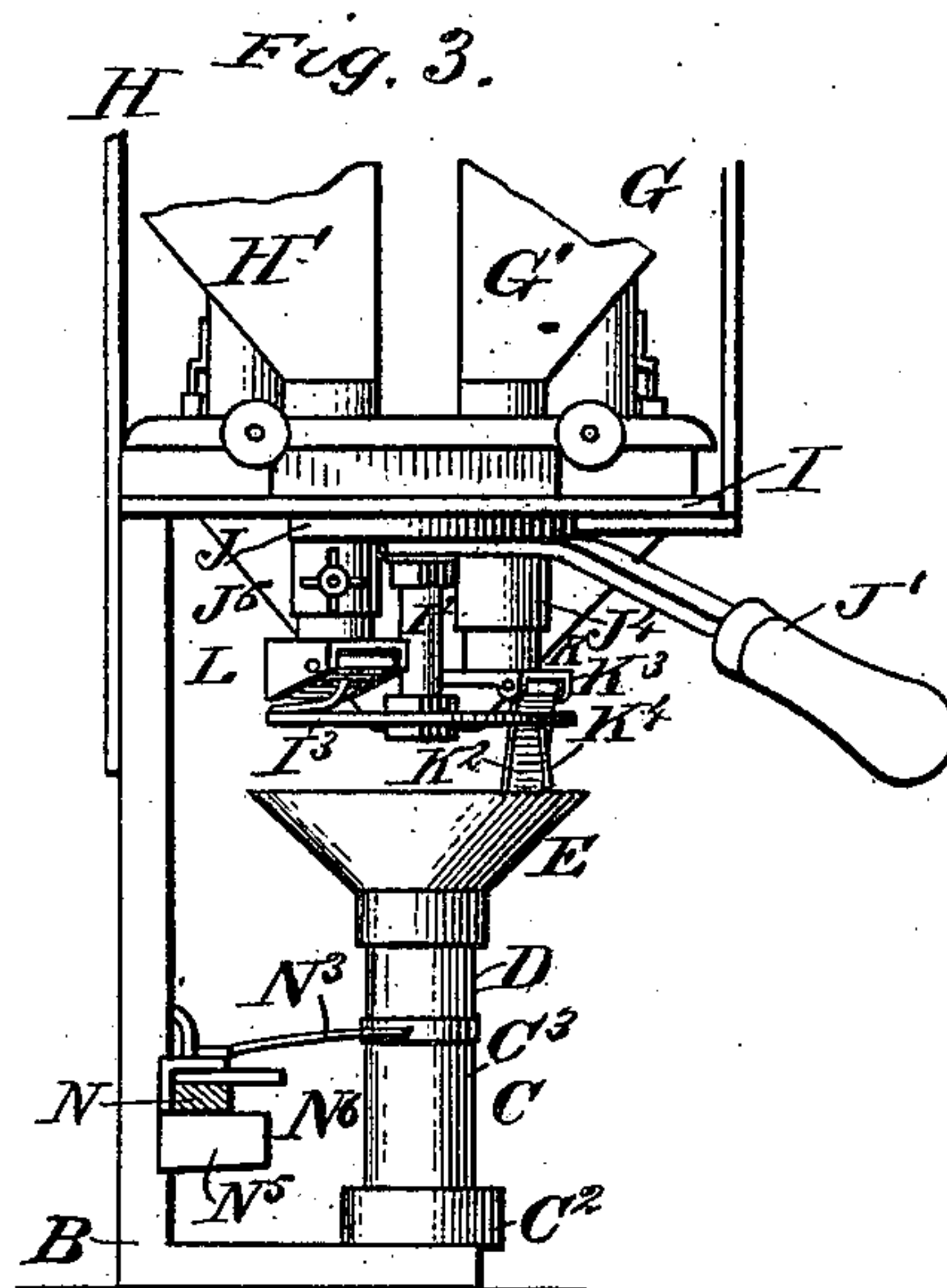
Patented May 31, 1892.



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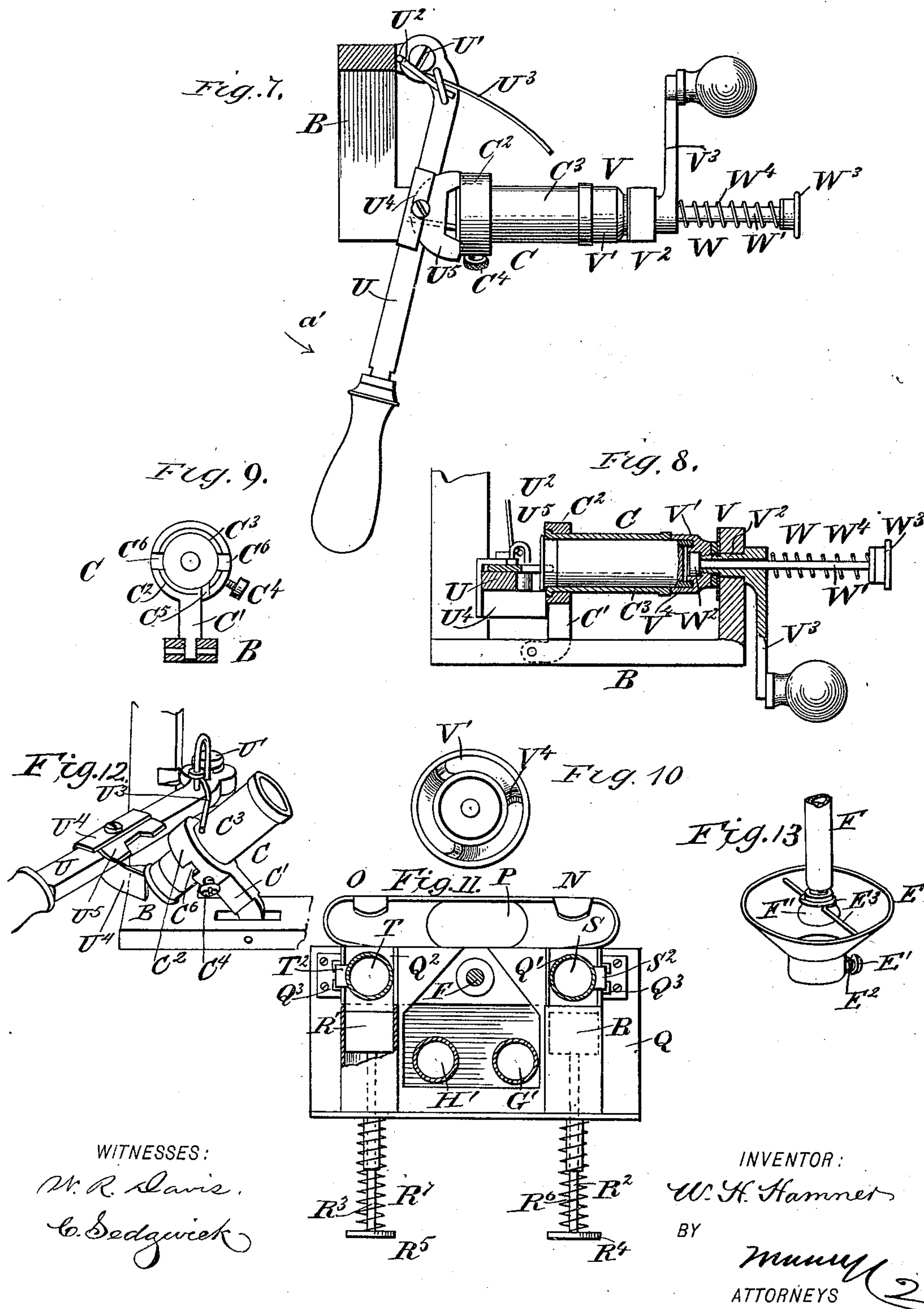
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3 Sheets—Sheet 3.

W. H. HAMNER.
CARTRIDGE LOADER.

No. 476,048.

Patented May 31, 1892.



UNITED STATES PATENT OFFICE.

WILLIAM H. HAMNER, OF FORT ASSINABOINE, MONTANA.

CARTRIDGE-LOADER.

SPECIFICATION forming part of Letters Patent No. 476,048, dated May 31, 1892.

Application filed April 11, 1891. Serial No. 388,504. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HAMNER, of Fort Assinaboine, in the county of Choteau and State of Montana, have invented a new and Improved Cartridge-Loader, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved cartridge-loader which is simple and durable in construction, arranged to accurately measure the charge of powder and shot, adapted to deliver the desired wads in regular order of loading for each cartridge, and also adapted to be worked with great ease by hand.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a front view of the same. Fig. 3 is a rear elevation of part of the same. Fig. 4 is a sectional elevation of the powder and shot measuring devices. Fig. 5 is a plan view of part of the same. Fig. 6 is an enlarged section of one of the measuring devices in a closed position. Fig. 7 is a plan view of the cartridge crimping and discharging device. Fig. 8 is a sectional side elevation of the same. Fig. 9 is an end view of the cartridge-holder with part in section. Fig. 10 is an enlarged face view of the cartridge-crimping device, and Fig. 11 is a sectional plan view of part of the improvement on the line $y y$ of Fig. 1. Fig. 12 is a detail view illustrating the plate U^4 in its operative position; and Fig. 13 is a detail view of the hopper E, hereinafter referred to.

The improved cartridge-loader is provided with a suitably-constructed base A, adapted to be secured to the end of a table or bench by clamps, screws, or other suitable means. On this base A is erected a frame B, on the lower part of which is pivoted an angular arm C' , forming a part of the cartridge-holding device C and formed with a ring C^2 , in which is adapted to be secured a cylinder C^3 by means of a set-screw C^4 screwing in the

said ring C^2 . The interior diameter of the cylinder C^3 is arranged to correspond to the exterior diameter of the cartridge-shell, the said cylinder being detachable in the ring C^2 , so that cylinders of various diameters corresponding to the various diameters of the shells can be employed.

The cartridge-holder C is adapted to be swung into a vertical position, as illustrated in Figs. 1, 2, and 3, for filling the cartridge-shell, or into a horizontal position, as illustrated in Figs. 7 and 8, for crimping the cartridge after it is loaded, as hereinafter more fully described. When the cartridge-holder C is in an upright position, then the upper end of the cylinder C^3 is in line with a nozzle D, held in the end of a hopper E, through which the powder, shot, or wads are passed into the shell held by the holder C. The nozzle D can be removed from the hopper E, so as to be substituted by a nozzle of the size corresponding to the size of the respective cylinder C^3 . The nozzle D is held in place in the hopper E by a set-screw E' .

In the upper end of the hopper E is arranged a transversely-extending cross-piece E^3 , formed in its center with a loop engaged by the plunger F for ramming wads into the cartridge-shell. The plunger F is provided with a head F' , arranged below the loop of the cross-piece E^3 , so that when the plunger F is raised above the normal position the said head F' engages the loop and raises the hopper E out of contact with the cylinder C^3 of the holding device. The hopper E is guided in its up-and-down motion by a rod E^2 , pivotally connected to the upright of the frame B, and also pivotally connected with the said hopper, as is plainly illustrated in Fig. 2. The plunger F is arranged vertically and is fitted to slide in suitable bearings in a cross-piece of the main frame B, the upper end of the said plunger being pivotally connected with a lever F^2 , pivoted on a post erected on the base A. On the lever F^2 is held a spring-pressed latch F^3 , adapted to engage a cross-piece secured on the upper part of the main frame B, so that the lever F^2 , as well as the plunger F, can be held in an uppermost position, so that the hopper E is disconnected from the holder C, as plainly illustrated in Fig. 1.

Into the hopper E are adapted to discharge

on opposite sides of the plunger F the powder-feed device G and the shot-feed device H. Both devices are provided with hoppers G' and H', respectively, containing powder and shot, respectively. The lower ends of the hoppers G' and H' connect with openings I', formed in a plate I, secured upon the main frame B. The plate I supports a bolt I², on which is mounted to turn a cut-off disk J, provided with a handle J' for conveniently turning the said disk on the bolt I². The disk is provided with oppositely-arranged openings J² and J³, respectively, adapted to alternately connect and disconnect with the openings I', connected with the lower ends of the hoppers G' and H', respectively.

From the under side of the cut-off disk J extend downwardly the shells J⁴ and J⁵, registering with the openings J² and J³, respectively, the said shells containing the measuring devices K and L, respectively, for measuring the proper charge of powder and shot, according to the size of the cartridge to be filled. The measuring devices K and L are provided with the cylinders K' and L', extending into the shells J⁴ and J⁵, respectively, and adapted to be secured therein by thumb-screws J⁶, passing through slots J⁷, formed vertically in the shells J⁴ and J⁵. The latter are graduated along the slots J⁷, so that the charge is gaged according to the position of the respective thumb-screw. The lower open ends of the cylinders K' and L' are adapted to be closed by hinged bottoms K² and L², respectively arranged to swing downwardly, being inclosed in a hood K³ or L³, respectively fastened to the lower end of the respective cylinder K' or L'. A spring K⁴ or L⁴, respectively, is secured to the under side of the respective bottom K² or L², the said springs being adapted to press upon a semicircular disk I³, supported on the lower end of the bolt I², previously mentioned. The front edge of the disk I³ is above the hopper E, as is plainly indicated in Fig. 1, so that when the respective measuring device K or L has swung beyond this front edge of the disk I³ its respective bottom K² or L² is free to open to permit the charge in the measuring device K or L to pass into the hopper E. Into the latter are also adapted to discharge the wad-feeding devices N and O, of which the device N is adapted to contain felt wads, while the other device O contains card-board wads. Both devices are provided with a common funnel P, adapted to discharge into the hopper E in front of the plunger F. The funnel P receives the respective felt or card-board wad over a plate Q, secured on the main frame B and containing two longitudinally-extending guideways Q' and Q², (see Fig. 11,) in which are fitted to slide the plungers R and R', respectively fastened on rearwardly-extending rods R² and R³, respectively, provided on their outer ends with knobs R⁴ and R⁵, respectively. Springs R⁶ and R⁷ are coiled on the rods R² and R³, respectively, so as to hold the plungers R and

R' in a rearmost position, as plainly illustrated in Fig. 11.

Into the front end of the guideways Q' and Q² open the lower ends of the feed-tubes S and T, respectively, held removably in the main frame B and provided at their upper ends with receptacles S' and T', into which the felt and card-board wads are placed. On the lower ends of the feed-tubes S and T are held the arms S² and T², respectively, engaging sockets Q³, erected on the plate Q and serving to suspend the lower ends of the said feed-tubes a sufficient distance above the guideways to permit the said feed-tubes to discharge the respective wad into the respective guideway Q' or Q² to allow the plungers R and R', respectively, to push the respective wad into the funnel P. The feed-tubes S and T are made removable so as to insert feed-tubes of varying diameter, according to the size of the cartridge to be filled. The upper ends of the feed-tubes are held in place by an arm S³, made of spring-wire and pivoted at S⁴ to one side of the main frame B. The other end of the spring-arm S³ is adapted to be passed over a projection or button S⁵, so as to lock the feed-tubes in place, the lower ends of the same being held in the sockets Q³, as previously described.

In order to move the cartridge-holder C into a horizontal position, as previously mentioned, a lever U is provided, fulcrumed at U' to the main frame B and pressed on by a spring U², so as to hold the said lever in a normal position. (Indicated in Fig. 1.) On the lever U is secured a spring U³, adapted to press on the cylinder C³ when the said lever is moved out of a normal position in the direction of the arrow a'. (See Fig. 7.) On the lever U is fastened a plate U⁴, extending vertically below the under side of the said lever and adapted to return the cartridge to its place in the holder, the filling end of the said plate U⁴ being adapted to pass into vertical slots C⁵, formed partly in the ring C² and the cylinder C³. (See Fig. 9.) The plate U⁴ is adapted to engage the base of the cartridge-shell and press it up into the holder until the fork of the crimping-lever engages the base of the shell. In upsetting the cartridge-holder preparatory to crimping the shell sometimes slips down accidentally or partly out of the holder, so that the device is necessary to bring the shell back to the proper position. On the lever U is also secured a horizontally-extending plate U⁵, having its ends forked, the inner sides being slightly inclined or beveled, so as to engage the cartridge at opposite sides, the extreme ends of the fork being adapted to pass into recesses C⁶, formed in the said ring C² and the cylinder C³. When the cartridge-holder C is swung into a horizontal position, the projecting outer end of the cartridge is adapted to engage the disk V' of a crimping device V, illustrated in detail in Figs. 7 and 8. The disk V' is secured on a hub V², mounted to turn in an arm of

the main frame B, the said hub being provided with a handle V^3 for conveniently turning the said hub and the disk V' . The disk V' is flanged and the inner face is formed with a series of projections V^4 , adapted to press the projecting end of the cartridge inwardly, so as to hold or lock the wads in place.

On the crimping device V is arranged a cartridge-discharging device W, provided with a rod W' , mounted to slide longitudinally in the hub V^2 , the inner end of the said rod being provided with a head W^2 , adapted to be seated in a recess formed in the center of the disk V' . On the outer end of the rod W' is formed the head or knob W^3 , and on the latter presses one end of a spring W^4 , coiled on the rod W' and abutting against the handle V^3 . The spring W^4 serves to hold the rod W' and its head W^2 in the position shown in Fig. 8, so that the said head W does not interfere with the workings of the crimping device.

The operation is as follows: When the cartridge-loader is in the position illustrated in Figs. 1 and 2, then the lever U is in its normal position and entirely disconnected from the cartridge-holder C, the latter, by its arm C' , being free to swing into a normal position, so as to permit the operator to conveniently insert the cartridge-shell from underneath into the cylinder C^3 , the open end of the cartridge-loader extending above the cylinder C^3 , as plainly shown in Fig. 1, when the cartridge is swung into a vertical position, so that the face of the ring C^2 rests on top of the horizontal part of the frame B. When the cartridge-holder is in position, as described, the operator disconnects the spring-pressed catch F^3 , so as to permit the lever F^2 to swing downward, whereby the plunger-rod F slides downward and permits the nozzle D to be fitted over the projecting end of the cartridge-shell. (See Fig. 2.) The operator now takes hold of the lever J' with his left hand and pulls it to the front, so that the disk J swings in the direction of the arrow b' , whereby the opening J^2 is disconnected from the lower end of the hopper G' , the measuring device being filled with powder. Now on this movement of the disk J the measuring device K is carried along, so that finally the spring K^4 of the hinged bottom K^2 of the said measuring device is disconnected at the front end of the plate I^3 , so that the bottom K^2 swings downward and permits the powder in the measuring device to discharge into the hopper E, which guides the powder to the nozzle D connected with the upper end of the cartridge-shell. The powder is thus passed into the hopper. As soon as the operator has moved the lever J' into the position described, the operator presses upon the knob R^4 , so that the plunger R slides outward and moves the lowermost felt wad discharged by the tube S into the guideway Q' out of the latter into the funnel P, from which the wad passes into the hopper E after the powder is passed through the latter. The operator then presses on the lever F^2 , so that

the plunger F moves downward and with its head F' presses the felt wad into the shell on top of the powder. Any desired number of felt wads may be thus passed into the shell, the operator pressing the knob R^4 a corresponding number of times and operating the lever F^2 , as above described. As soon as the desired number of wads are pressed upon the powder the operator moves the lever J' in the inverse direction of the arrow b' , so that the shot-measuring device is disconnected from the hopper H' and is moved over the hopper E, the swinging bottom L^2 opening to permit the same to pass into the said hopper E and from the latter into the cartridge on top of the felt wads. The operator then presses upon the knob or button R^5 , so as to push by the plunger R' a paper wad from the guideway Q^2 into the funnel P, from which the wad passes into the hopper E to be finally moved on top of the shot by the operator actuating the lever F^2 , and consequently the plunger F. Any desired number of paper or card-board wads can thus be passed on top of the shot, the operator repeatedly pressing the button R^5 . It is understood that at the time the powder-measuring device K is discharging into the hopper E the shot-measuring device registers with its hopper, so that the said measuring device is filled with shot, and when the lever J' is moved, so that the shot-measuring device discharges into the hopper E, then the powder-measuring device registers with its hopper G' to be filled with powder. In order to prevent the operator from moving the lever J' too far in either direction, the disk J is provided with a segmental slot J^8 , through which passes the plunger F, which latter thus forms a stop-pin. (See Fig. 5.) When the shell is loaded with powder, shot, or wads, as described, then the operator moves the lever F^2 in an uppermost position, so that the spring-pressed catch F^3 locks the said lever, the plunger F, and the hopper E in an uppermost position. (Shown in Fig. 1.) The operator then moves the lever U in the direction of the arrow a' , so that the spring U^3 , pressing against the cylinder C^3 , causes the holder to swing into a horizontal position, the cartridge being prevented from falling out of the cylinder by the plate U^4 . The cartridge is securely locked in position after the cylinder C^3 extends horizontally in line with the crimping and discharging device by the forked ends of the plate U^5 . At the time the holder C passes into a horizontal position the projecting end of the cartridge passes into the disk V' , as plainly illustrated in Fig. 8, and when the operator now turns the handle V^3 the said disk is revolved and by its projection V^4 engaging the outer end of the shell crimps the latter, so as to securely lock the outermost wad in place. Three or four turns of the handle V^3 are usually necessary in order to accomplish perfect crimping. The operator then releases the pressure on the lever U, so that the spring U^2 returns the said lever to its nor-

mal position. (Shown in Fig. 1.) The operator then presses upon the knob W^3 , so as to force the rod W' and its head W^2 against the outer end of the cartridge, so that the latter
 5 slides out of the cylinder C^3 and passes into a chute Z , extending downward from the base A . The holder C is then moved into an inclined position by the operator and a new shell is inserted therein, after which the holder and
 10 its shell are moved into a vertical position and the above-described operation is repeated. By adjusting the respective cylinder K' or L' of the measuring device K or L , respectively, a larger or less quantity of powder or shot is
 15 measured at a time to form a corresponding charge for larger or smaller cartridges.

It will be seen that the apparatus is very simple and durable in construction, is easily manipulated by hand, and accurately measures the charges of the powder and shot, and at the same time permits of ramming as many
 20 wads as desired into the cartridge-shell between the powder and shot and on top of the shot.

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

1. In a cartridge-loader, a cartridge-holder comprising an angular pivoted arm adapted
 30 to swing the holder out of line with the plunger, a ring secured on the angular arm, and a cylinder adapted to be secured at its base in the said ring to swing with the arm out of line with the plunger, substantially as described.
 35

2. In a cartridge-loader, the combination, with a feed-hopper provided with a cross-piece, of a plunger arranged centrally with
 40 the said hopper and passing through an opening in the said cross-piece, and a head held on the plunger to engage the said cross-piece to raise the hopper when the plunger is raised, substantially as shown and described.

3. In a cartridge-loader, the combination, with a feed-hopper provided with a cross-piece, of a plunger arranged centrally with
 45 the said hopper and passing through an opening in the said cross-piece, a head held on the plunger to engage the said cross-piece to raise the hopper when the plunger is raised, and a lever for actuating the said plunger, substantially as shown and described.
 50

4. In a cartridge-loader, the combination, with a feed-hopper provided with a cross-piece, of a plunger arranged centrally with
 55 the said hopper and passing through an opening in the said cross-piece, a head held on the plunger to engage the said cross-piece to raise the hopper when the plunger is raised, and a spring-pressed catch held on the said lever and adapted to lock the latter, the plunger, and the hopper in an uppermost position, substantially as shown and described.
 60

5. In a cartridge-loader, the combination, with a feed-hopper provided with a cross-piece, of a plunger arranged centrally with
 65 the said hopper and passing through an open-

ing in the said cross-piece, a head held on the plunger to engage the said cross-piece to raise the hopper when the plunger is raised, and a
 70 spring for supporting and returning the said plunger, substantially as shown and described.

6. In a cartridge-loader, a feeding device for powder and shot, comprising two hoppers, a fixed plate having apertures connected with
 75 the outlets of the said hoppers, a disk mounted to turn on the under side of the said plate and provided with oppositely-arranged openings adapted to alternately register with the apertures in the said plate, measuring devices held
 80 on the said disk and registering with the said openings, each measuring device comprising a cylinder held adjustably in a shell on the said plate, a spring-pressed pivoted bottom to close the cylinder, and a second fixed plate
 85 adapted to be engaged or disengaged by the spring of the pivoted door, substantially as shown and described.

7. In a cartridge-loader, a measuring device comprising a disk mounted to turn, and provided with a shell having a slot with graduated edges, a cylinder fitted to slide in the said
 90 shell, a thumb-screw passing through the said slot and adapted to fasten the said cylinder to the said shell, a bottom pivoted on the said cylinder to close the lower end thereof, and a spring secured on the said bottom and adapted to engage a fixed plate to hold the bottom closed, substantially as shown and described.
 95

8. In a cartridge-loader, a measuring device
 100 comprising a disk mounted to turn, and provided with a shell having a slot with graduated edges, a cylinder fitted to slide in the said shell, a thumb-screw passing through the said slot and adapted to fasten the said cylinder
 105 to the said shell, a bottom pivoted on the said cylinder to close the lower end thereof, a spring secured on the said bottom and adapted to engage a fixed plate to hold the bottom closed, and a lever for turning the said disk
 110 to engage and disengage the said spring with the fixed plate, substantially as shown and described.

9. In a cartridge-loader, the combination, with a holder adapted to hold a cartridge, of a
 115 lever for locking the cartridge in place in the said holder, and a crimping device arranged in line with the said holder and provided with a revoluble flanged disk having projections adapted to crimp the shell of the cartridge,
 120 substantially as shown and described.

10. In a cartridge-loader, the combination, with a holder provided with a cylinder adapted to hold a cartridge, of a spring-pressed rod having a head and arranged to slide in line
 125 with the said cylinder to remove the cartridge from the said cylinder, substantially as shown and described.

11. In a cartridge-loader, a holder comprising a pivoted angular arm, a ring supported
 130 on the said arm, and a cylinder held in the said ring, in combination with a lever provided with a spring adapted to engage the said cylinder to swing the said holder into a

horizontal position, substantially as shown and described.

12. In a cartridge-loader, a holder comprising a pivoted angular arm, a ring supported on the said arm, and a cylinder held in the said ring, in combination with a lever provided with a spring adapted to engage the said cylinder to swing the said holder into a horizontal position, and a plate held in the said lever and adapted to engage the cartridge to push the same into the said cylinder, substantially as shown and described.

13. In a cartridge-loader, a holder comprising a pivoted angular arm, a ring supported on the said arm, and a cylinder held in the said ring, in combination with a lever provided with a spring adapted to engage the said cylinder to swing the said holder into a horizontal position, and a forked plate held in the

said lever to lock the cartridge in the said cylinder, substantially as shown and described.

14. In a cartridge-loader, a holder comprising a pivoted angular arm, a ring supported on the said arm, and a cylinder held in the said ring, in combination with a lever provided with a spring adapted to engage the said cylinder to swing the said holder into a horizontal position, a forked plate held in the said lever to lock the cartridge in the said cylinder, and a crimping device operating in conjunction with the said holder and lever to crimp the cartridge, substantially as shown and described.

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