

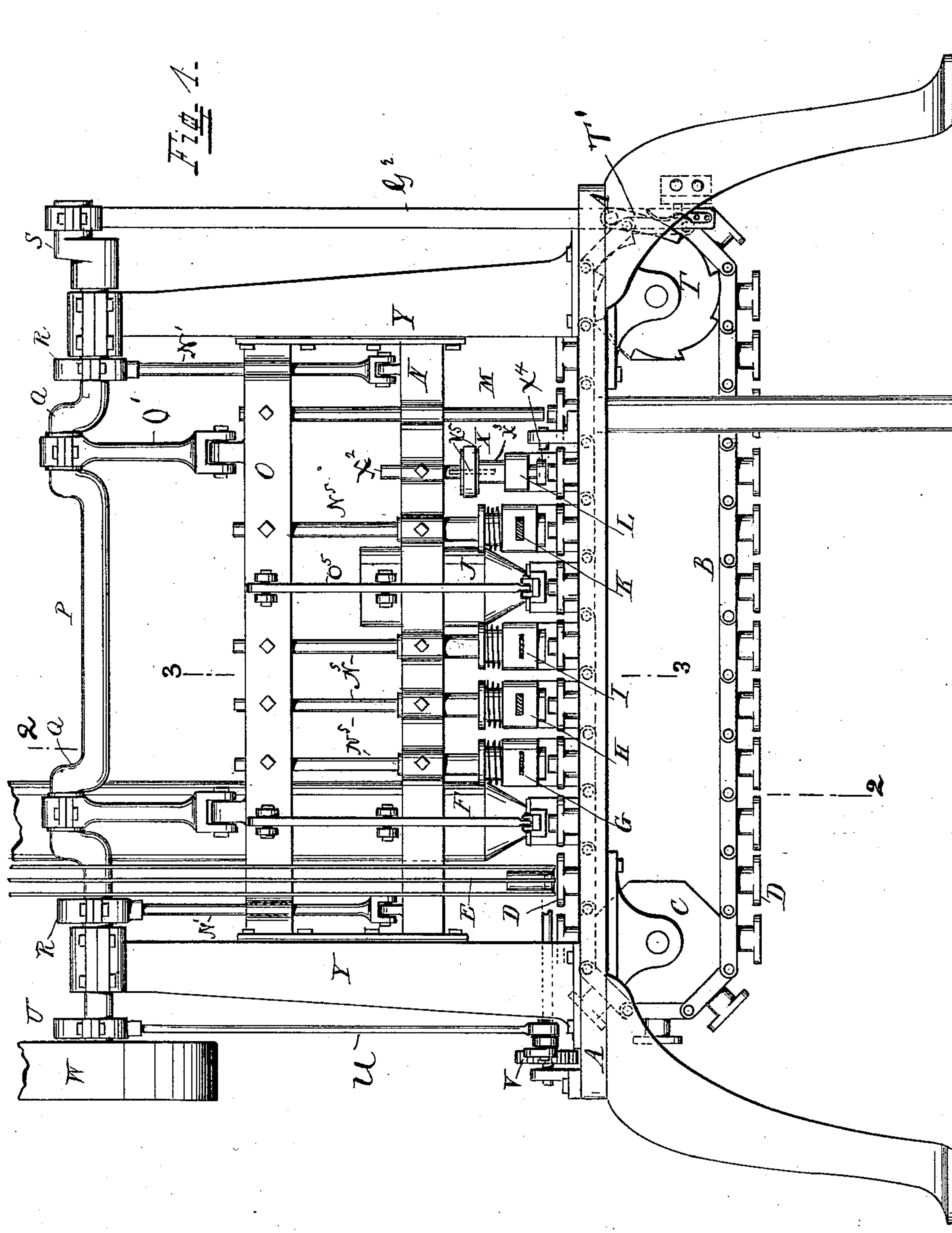
(No Model.)

2 Sheets—Sheet 1.

G. M. PETERS.
CARTRIDGE LOADING MACHINE.

No. 561,029.

Patented May 26, 1896.



Attest
W. F. Gardner
W. J. Johnson

Inventor
G. Moor Peters
By O. H. MacSonald Atty.

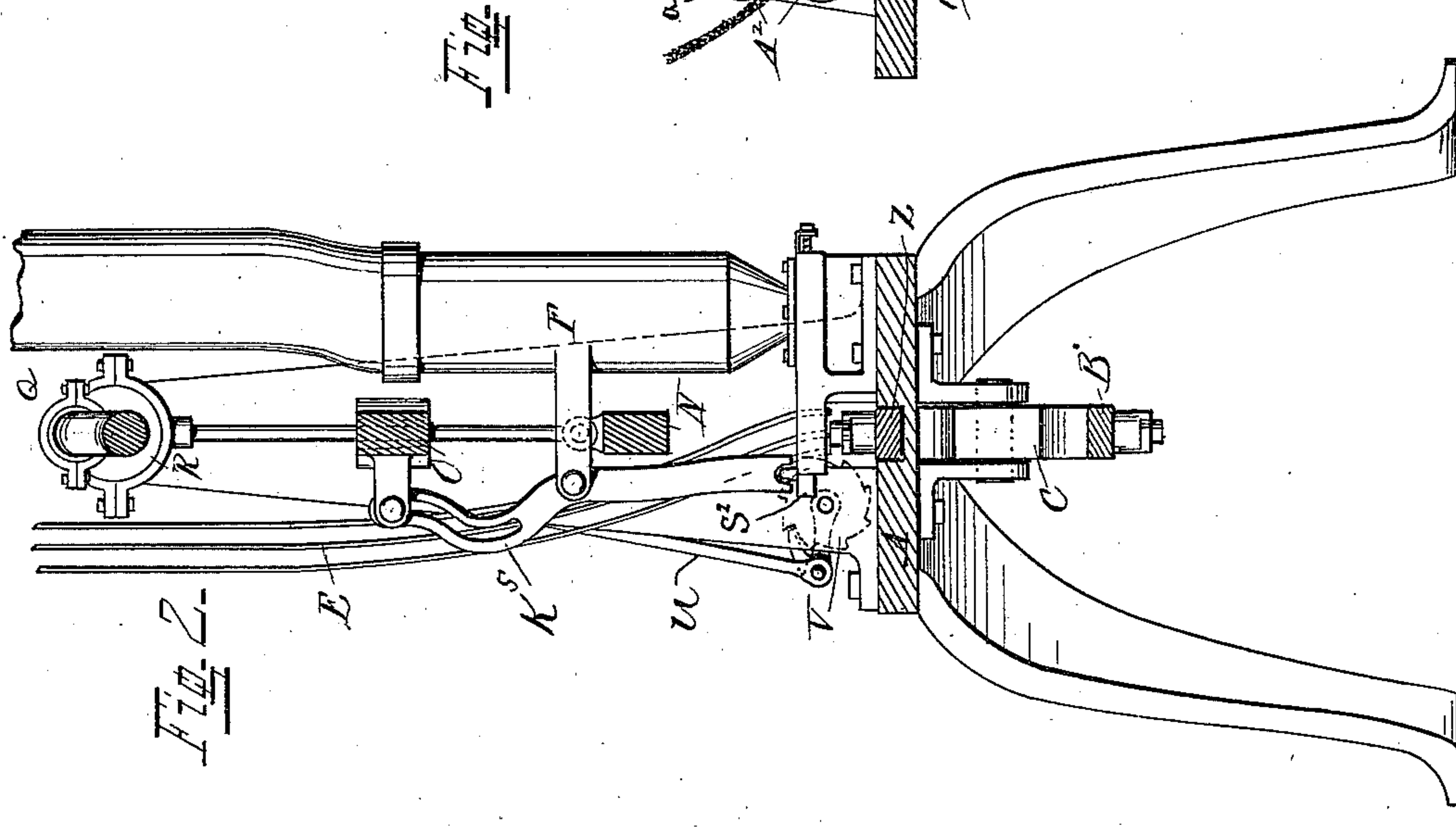
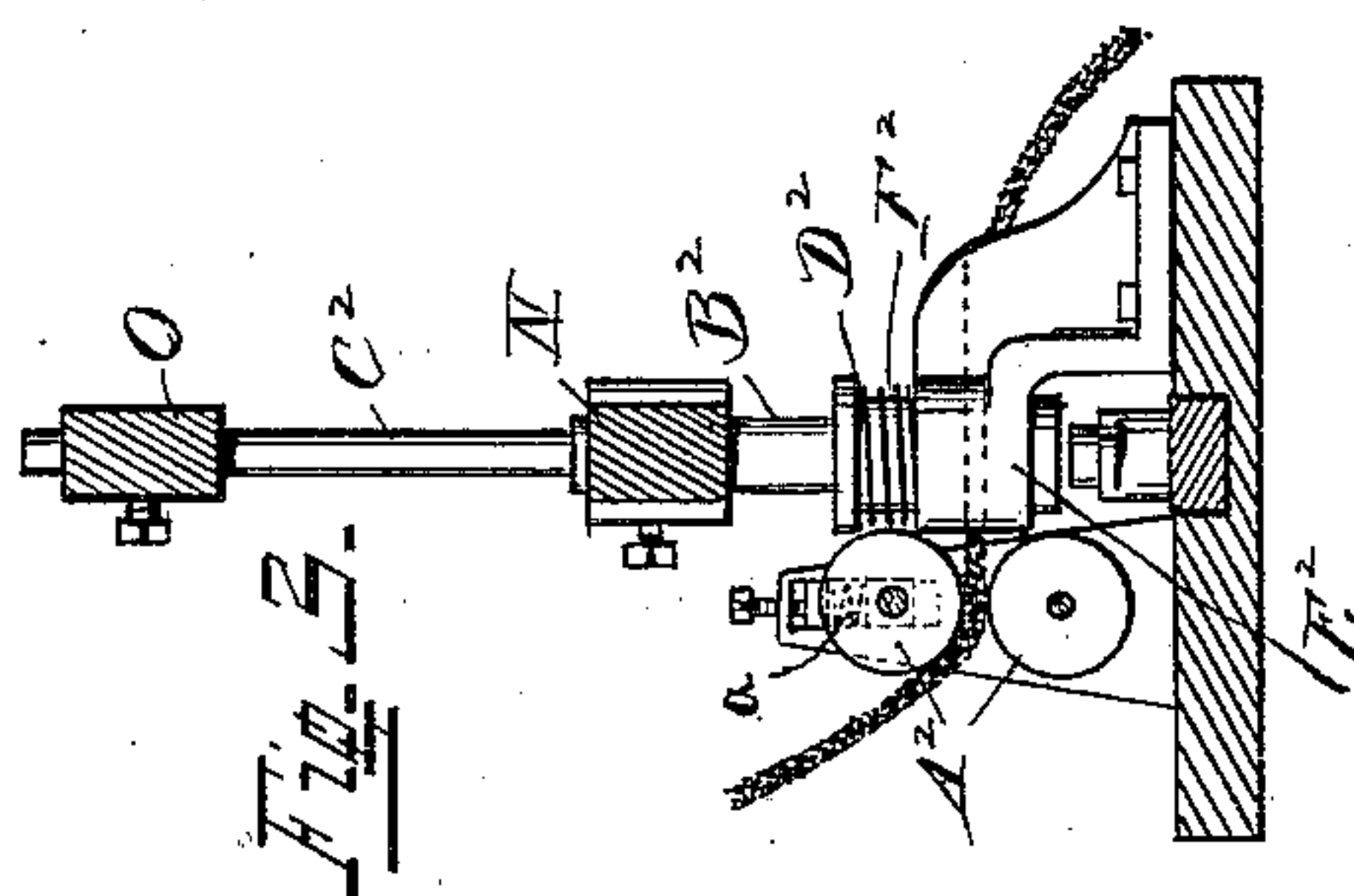
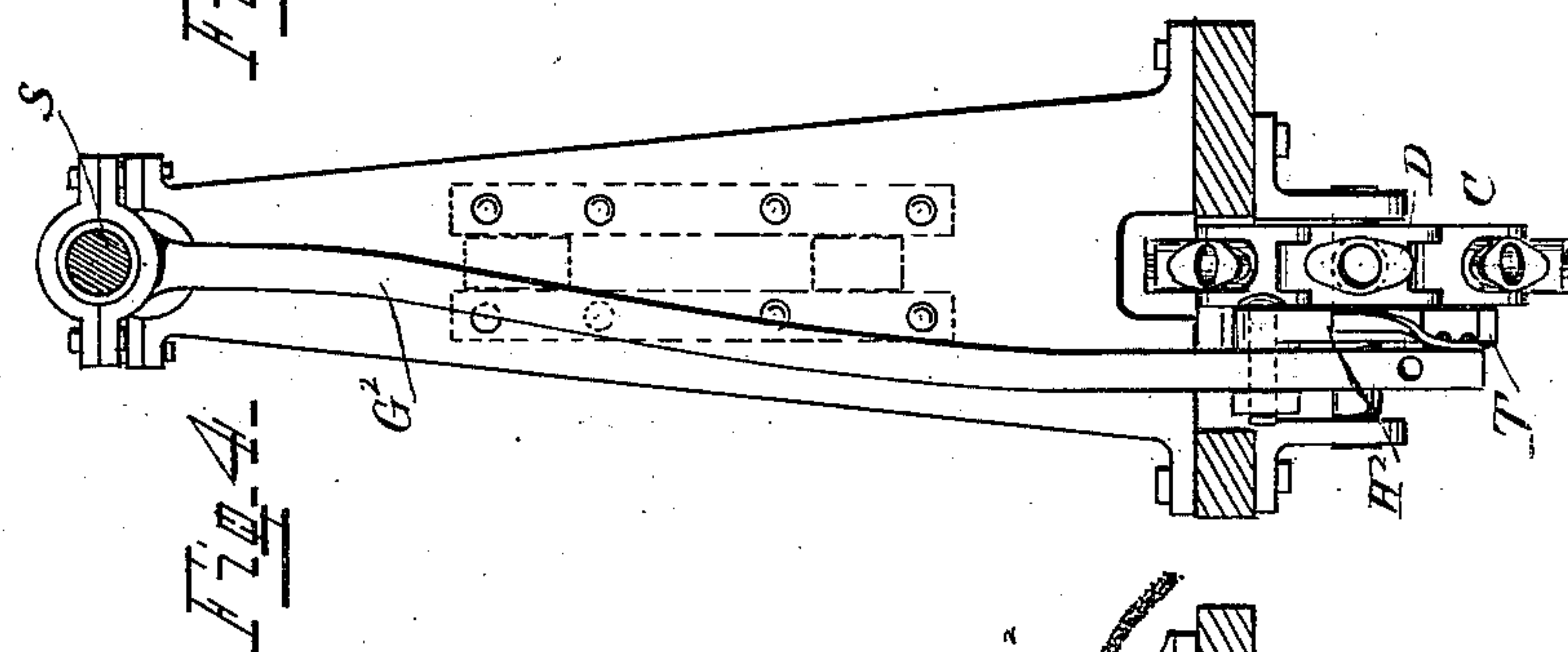
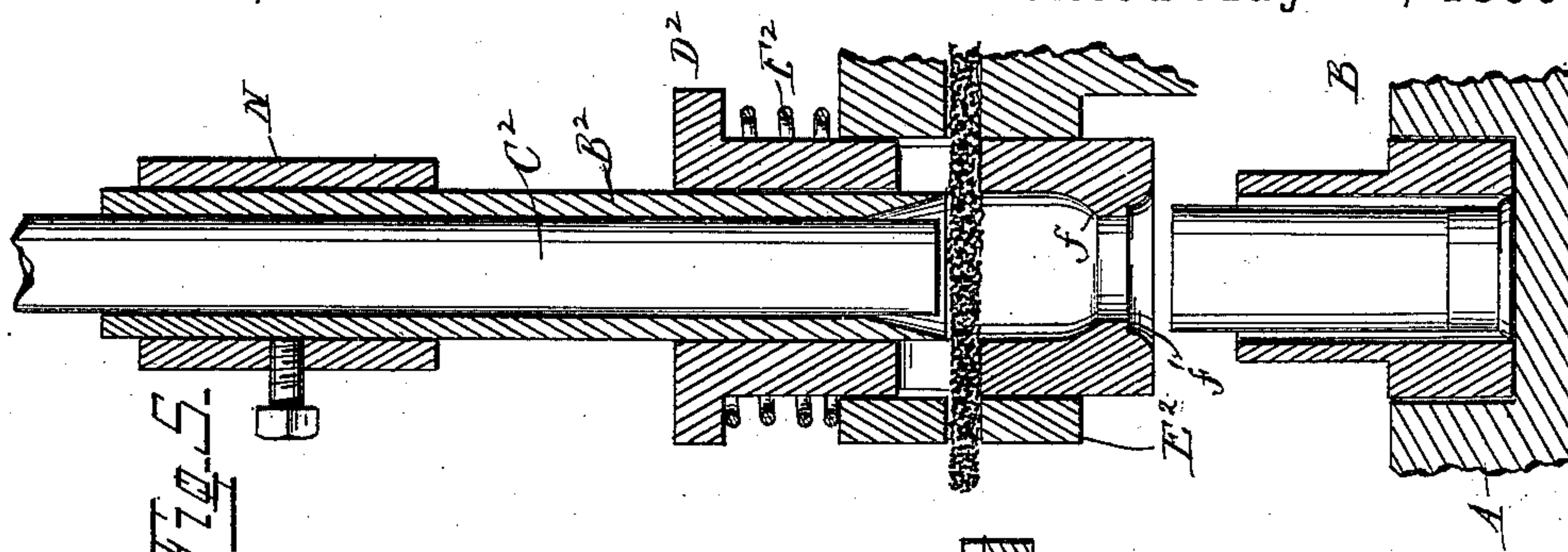
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UNITED STATES PATENT OFFICE.

GERSHOM MOORE PETERS, OF CINCINNATI, OHIO.

CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,029, dated May 26, 1896.

Application filed June 8, 1889. Serial No. 313,560. (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 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in cartridge-loading machines; and it consists, substantially, in the construction shown in the accompanying drawings, described in the subjoined specification, and more particularly pointed out in the claims.

Like letters refer to the same parts in the several figures of the drawings, in which—

Figure 1 is a front view of the machine; Fig. 2, a vertical cross-section of the same; Fig. 3, a side elevation of the wad-cutter and strip-feeding rolls with the table and cross-heads in vertical section; Fig. 4, an end view of a portion of the machine; and Fig. 5, a vertical section of the wad-cutter and rammer or placer.

The improvements are in this instance shown as applied to a machine of the endless-chain type.

Referring to the drawings, A designates a table, preferably of approximate rectangular shape, which is supported by legs in the usual manner, and it forms a support for the upright standards Y Y, various feeding devices, and brackets for supporting other parts. The shell-carrier is composed of a number of links pivoted to each other and forming an endless chain, to each of which links there is cast or otherwise affixed a shell case or holder B, which shell-case is open at the top and bottom and of an internal diameter slightly in excess of the external diameter of the butt of the shell which is to be inserted therein. The shell-case is of such a length as to permit the shell when inserted to extend above the top of the case about three-fourths of an inch, or just enough to be properly crimped. Each shell case or holder has a flange D at

its top extending on both sides of the same in the direction of the length of the chain, the flange of the one shell-case nearly touching that of the adjoining shell-case on either side, and in this manner serving as a cut-off or valve to sustain a column of shells in the shell-delivery tube E except at the instant when the bore of the shell-case is immediately under the superposed shell-delivery tube, when said shell will drop into the shell-case. The shells are delivered from the delivery-tube into the cases butts foremost. The endless chain passes around polygonal drums C C, arranged at suitable distances apart near opposite ends of the table and suitably supported by brackets depending from such table. The chain extends in a straight line from one drum to the other, and its upper portion passes over the table, preferably in a groove formed therein, as shown in Figs. 2 and 3 of the drawings, and in such a manner that the top of its links is practically flush with the top surface of the table. This chain may be driven and stopped by any suitable mechanism, and although this driving mechanism forms no part of the present invention I have illustrated in the drawings a simple mechanism for driving the same, which consists of a crank S on a main shaft P and connecting-rod G² and pivoted pawl T', thrown into engagement by spring with a notched wheel or ratchet T on the same shaft with one of the drums.

There will be next described the various loading tools or devices and the means for operating the same. I have heretofore explained the shell feeding or delivery tube E, through which the shells are fed into the shell-cases as the latter successively pass under such tube and are supported by the flanges of such shell-cases when the barrel or cylinder of the same is not immediately under the tube. The next step is to supply these shell-cases with the material with which they are to be charged, and powder is the first material to be so supplied. A powder-hopper F, of any suitable construction, is supported by brackets a proper distance above the table and in a different vertical plane from that of the shell-cases with the shells. Underneath this powder-hopper is arranged a powder slide or charger, which is guided in suitable brack-

ets and measures and delivers the powder to the shell in a well-known manner. The construction of this powder slide or charger need not be specifically described, for it forms no part of the present invention and is fully set forth in my previous patent, No. 398,650, granted February 26, 1889. The mechanism for operating said powder slide or charger is also substantially like that in my previous patent, except that the arrangement is slightly different to correspond with the present style of machine to which it is applied. For instance, the cam-lever K^5 , which operates this powder-slide, is pivoted on a bracket projecting from the powder-hopper and arranged at a point between two cross-heads or tool-carriers and so as not to be in the way of either, and its cam-slot is engaged by a pin from an arm projecting from the upper cross-head or tool-carrier, as best shown in Fig. 2 of the drawings.

The shot-charger mechanism is arranged and constructed substantially as is the powder-charger mechanism, and the shot-hopper is designated by the letter J and the operating-lever for the shot-charger by the letter O^5 . Between the powder and shot hoppers are arranged a suitable number of wad cutting and ramming tools. The number which I provide is three, and as they are all alike a description of one will serve for the description of all, as it will also of a similar device placed at the other side of the shot-hopper. In this arrangement of wad cutters and rammers or placers it is preferable to have the first cut a cardboard wad, and this I designate by the letter G; the second a felt wad, and this cutter I have designated by the letter H; the third a cardboard wad, and this I have designated by the letter I, and the fourth and last a cardboard wad, and this I have designated by the letter K.

Fig. 5 best illustrates the construction and relative arrangement of the wad-cutter, the wad placer or rammer, the die, the wad-strip in position to be cut, and the shell arranged in the shell-case in position to receive such wad.

Fig. 3 best illustrates the manner in which the wad-strip is fed to the wad-cutter.

Referring to Fig. 5 of the drawings, it will be seen that there is shown a wad-cutter of a well-known form, which is designated by the letter B^2 and which has a cylindrical bore in which plays the wad placer or rammer C^2 . Surrounding the lower end of the wad-cutter is a die D^2 , through which there is a transverse opening for the passage of the wad-strip, and the lower interior bore of which die is formed at f of less diameter and at its bottom has a beveled and shouldered recess f' . By reducing the diameter of the lower interior of the die and providing the beveled recess a wad of greater diameter than the shell may be inserted, because the rammer or placer will force downward the central portion of the wad, while the edges of the latter will be bent upward by the walls of the die

and said wad will therefore be forced into the shell in this shape. The upper end of the shell might be split under the great pressure thus brought to bear upon it if it were not supported in some way, and to afford this support there is provided a shouldered recess f' , which fits down over the top of such shell as the rammer and die descend and so supports and preserves the upper part of such shell while the wad is being rammed in place. This also tends to center the shell.

An important feature of the invention is the arrangement for respectively operating a wad-cutter proper and the wad placer or rammer, and this will now be described. The main shaft P, which is supported in the upright standards Y Y, is provided with crank portions Q Q, which, through rods or pitmen O' , are connected to an upper cross-head O, which latter is suitably guided in the standards. The rammers or wad-placers C^2 are secured by set-screws or in any other suitable manner to this cross-head, and are consequently reciprocated thereby. The lower cross-head N has secured to it in a similar manner the wad-cutters proper, B^2 , and this cross-head is connected by rods or pitmen N' with eccentrics or other suitable devices on the cross-shaft P for raising the same. The eccentrics just referred to are designated by the letter R. The main shaft is rotated by pulley W, which may be connected with any suitable power. The die D^2 is in the path of the lower cross-head and is forced down at the extreme movement thereof; but after the wad is inserted in the shell such die is lifted by the spring F^2 , arranged between a flange on said die and the upper part of the bracket through which the die moves, which bracket is designated by the letter E^2 . It will thus be seen that the wad-cutters are operated by one cross-head and the wad placers or rammers by an independent cross-head. As before said, the levers for operating the powder-slide are operated by the upper cross-head O. The ejector M may be secured to and operated by the upper cross-head O. The spindle X^2 , having a shoulder at its end, may be secured to the cross-head N and passed through a pulley X, which latter may be turned rapidly in any suitable way. A sleeve X^3 surrounds said spindle and is provided with a feather X^5 to fit a corresponding groove in the pulley, and at the lower end of said sleeve is arranged a crimper X^4 . As the shells are moved forward on the chain after being loaded with powder and shot and their wads placed they come in succession beneath the crimper. This crimper is revolved rapidly and turns in or crimps the upper edge of the shell in the usual way. In the upper movement of the cross-head N the spindle X^2 is moved upward and by its shoulder at its lower end raises the sleeve X^3 , and therefore lifts the crimper above the shell and permits the latter to move onward to the ejector. The wad-strips are fed to the wad-cutters as shown in Figs. 1, 2,

and 3. A pair of rolls A^2 are mounted in suitable short standards a . Upon the shaft of one of these rolls A^2 is a ratchet V , which is intermittently actuated by means of a connecting-rod u , which is driven by any suitable device, such as an eccentric U upon the main shaft. It will be understood that the movements of the several parts are properly timed, so that they may perform their respective functions.

It is obvious that many variations may be made in the details of the mechanism shown and above described without departing from the principle of the invention.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a cartridge-loading machine the combination with an endless carrier provided with shell-holding cases, vertically-reciprocating cross-heads carrying the wad cutting and placing devices, and of powder and shot receptacles in the line of the path of the carrier and provided with valves actuated by said cross-heads and operating mechanism for said carrier and cross-heads.

2. In a wad-cutting device for cartridge-loading machines, the combination with the mechanism for operating same and a shell-case of less length than the shell, of a die-head having a top of greater diameter than its bottom and the top of the cartridge-shell whereby a wad of greater diameter than the shell can be cut and forced into the shell.

3. In a cartridge-loading machine a wad-cutting die and its actuating mechanism, said die having an opening for the passage of a wad-strip and a shoulder at one end and a spring acting against said shoulder to raise the die at the end of its cutting movement, as and for the purpose set forth.

4. In a cartridge-loading machine the combination with the die-actuating mechanism, of a die having an opening for the passage of the wad-strip and provided with a shoulder or recess at its lower end for receiving and protecting the top of the shell in the act of loading; as and for the purpose set forth.

5. In a cartridge-loading machine, the combination with a shell-carrier, provided with shell cases or holders, which have horizontal flanges at their upper ends, of a shell-delivery tube, placed over or in close juxtaposition to the carrier, whereby such flanges of the shell-cases form a cut-off when the open ends of the cases pass out of registry with the bottom of the shell-tube; as and for the purpose set forth.

6. In a cartridge-loading machine, the combination with a cross-head, having a wad-cutter secured thereto, a wad-die disconnected from such cross-head, but in the path of the cutter, a spring for lifting such die, intermittently-actuated devices for feeding the wad-strip, an independent cross-head having a wad rammer or placer secured thereto, and mechanism for operating such cross-heads; substantially as and for the purpose set forth.

7. In a cartridge-loading machine the combination with a cross-head having a wad placer or rammer secured thereto, another cross-head having a hollow wad-cutter secured thereto through which the wad placer or rammer works, a wad-die surrounding the wad-cutter having a transverse passage for the wad-strip and a decreased bore toward its bottom and located in the path of the cross-head, and a spring for lifting such die; substantially as and for the purpose set forth.

8. In a cartridge-loading machine, the combination with an endless-chain shell-carrier and mechanism for intermittently actuating the same, with a set of tools, comprising loading, finishing and ejecting tools, arranged in line with the shell-carrier and above the same, two cross-heads, arranged one above the other, and each carrying some of the tools, and mechanism for independently reciprocating such cross-heads; substantially as and for the purpose set forth.

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

G. MOORE PETERS.

Witnesses:

C. E. PETERS,
J. H. MCKIBBEN.