

(No Model.)

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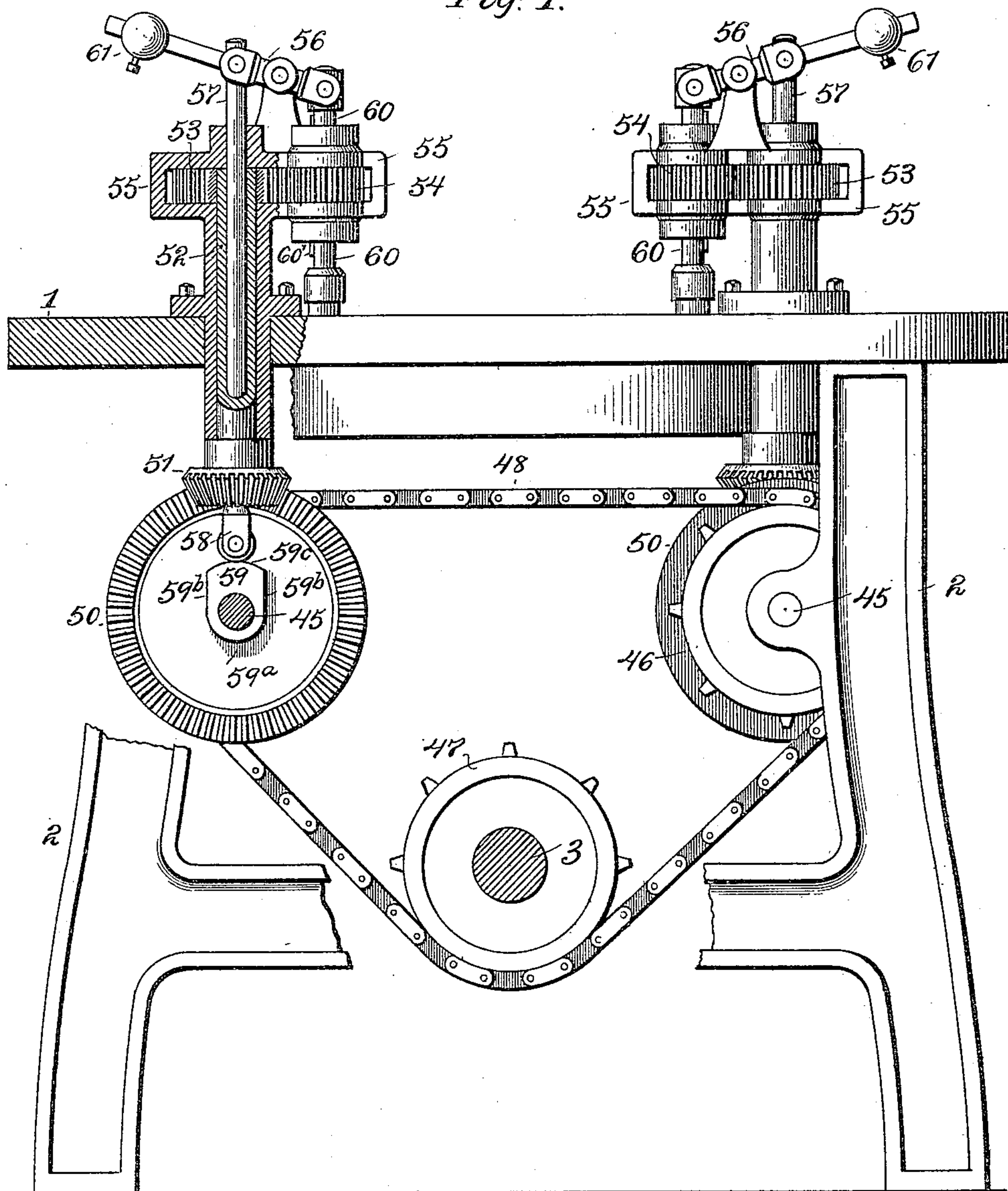
C. S. HISEY.

REVOLVING CRIMPER FOR CARTRIDGE LOADING MACHINES.

No. 528,098.

Patented Oct. 23, 1894.

Fig. 1.



Witnesses

Victor J. Evans  
L. M. Marble

Inventor

Charles S. Hisey.

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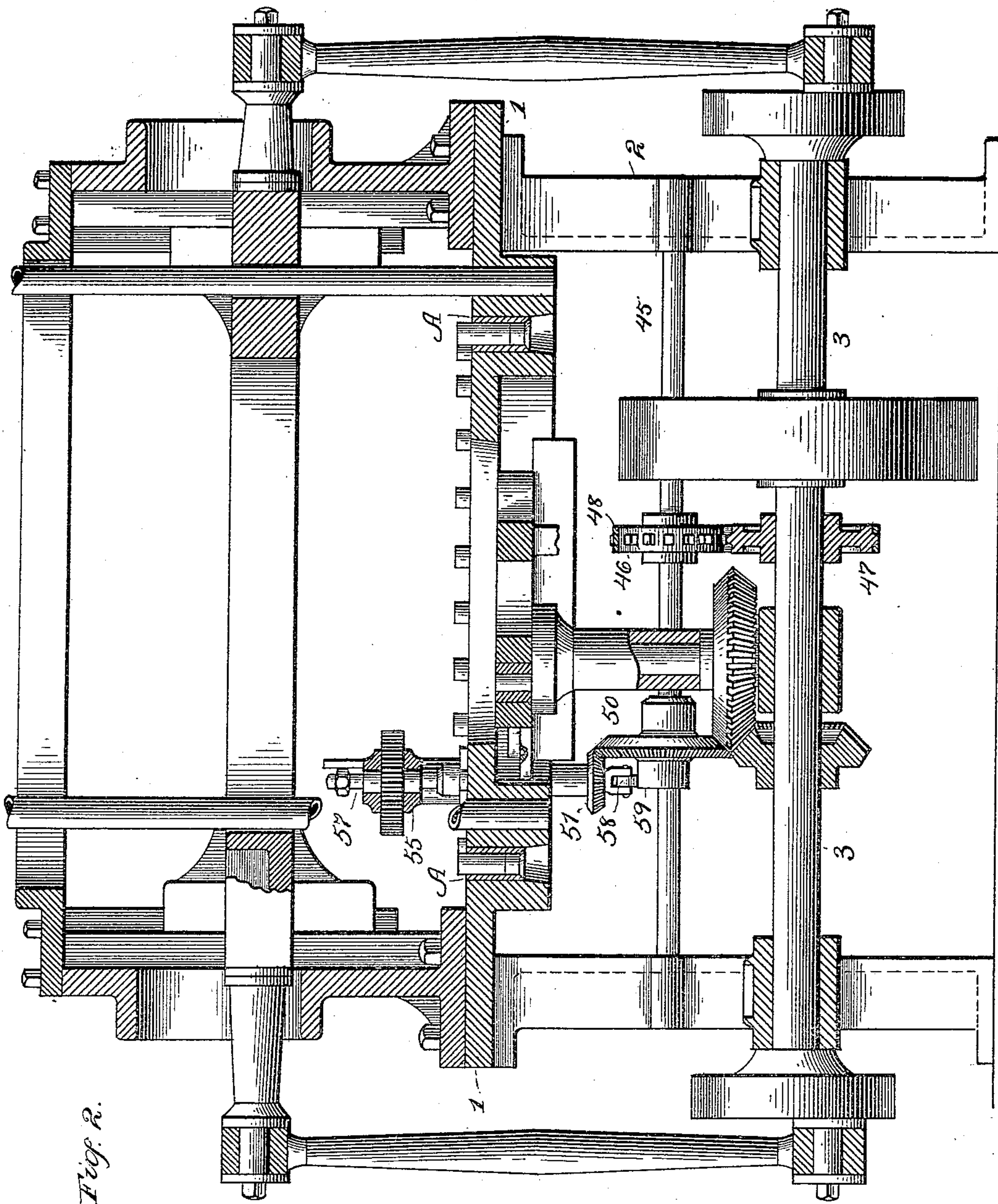


Fig. 2.

Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES S. HISEY, OF AURORA, INDIANA, ASSIGNOR TO ELLIOTT S. RICE,  
OF CHICAGO, ILLINOIS.

## REVOLVING CRIMPER FOR CARTRIDGE-LOADING MACHINES.

SPECIFICATION forming part of Letters Patent No. 528,098, dated October 23, 1894.

Application filed April 3, 1894. Serial No. 506,144. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. HISEY, a citizen of the United States, residing at Aurora, in the county of Dearborn and State of Indiana, have invented certain new and useful Improvements in Crimpers; 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 improvements in cartridge loading machines, and to the particular class of said machines which is constructed and adapted to charge or fill shot gun cartridges, and it consists in an improved crimper for crimping or turning over the ends of the loaded cartridge shells, which will be hereinafter fully described and particularly pointed out in the claims.

In automatic cartridge loading machines of whatever type, it is necessary that means be provided for holding the charge, after it has been placed in the shell, in position, and for preventing the said charge from falling out. It is necessary, in other words, that the last wad placed upon the top of the charge of shot be securely held in the position into which it is forced by the punch which placed it in the shell. This final wad may be held in position either by indenting the shell just above the wad, or by crimping or turning over the end of the shell, so that the turned over end will come in contact with the final wad. The latter method is preferable, as it gives a more uniform support to the wad, and increases the accuracy with which the charge can be fired.

In all previous cartridge loading machines in which a revolving crimper has been used, the crimper has been rotated by means of a separate belt run from a countershaft distinct from the main power shaft of the cartridge loading machine, and in most machines has been depressed, so as to crimp the shell brought at that moment in position under it, by a reciprocating cross head.

One object of my present invention is to provide means for rotating the crimper by the main power shaft of the machine on which it is placed, and to operate said crimper also by the revolution of the power shaft of the

machine. In this manner I center in one machine all of the mechanism used in connection with the same, and by operating the crimper from the power shaft, instead of from the reciprocating cross head, obtain a better distribution of the applied power over the entire machine than is obtained in the machines now in use.

A further object of my invention is to so regulate the movements of the crimper that it will have a considerable dwell upon the end of the cartridge shell being crimped, as thereby the shell can be crimped more perfectly than can at present be done by the operation of a single crimper upon the same, and the speed of revolution of the crimper head need not be so great.

I accomplish the objects of my invention by revolvably attaching the crimper to one of the arms of a pivoted lever stationed upon the machine table, and by providing means by which the other arm of said lever can be raised or depressed, thereby applying or disengaging the crimper from the cartridge shells, by the revolution of the power shaft, the movement being such as to permit the crimper to dwell upon the cartridge shells. I further arrange a train of gears so that the crimper can be rotated at any desired speed by the revolution of the power shaft.

My invention is fully illustrated in the drawings accompanying and forming a part of this application, in which the same reference letters and numerals refer to the same or corresponding parts, and in which—

Figure 1 is an end view of the cartridge loading machine of the type shown in the companion joint application of myself and Elliott S. Rice, filed March 1, 1894, Serial No. 501,935, showing the crimpers in position. Fig. 2 is a sectional view of the same.

Referring to the drawings, 1 represents the machine bed or table. It is rectangular in form, and is supported from the ground by the standards 2. In the upper surface of the table is cut a deep groove, approximately elliptical in form, in which move the shell carrier blocks A, and on both sides of which sets of loading tools may be placed.

3 is the main power shaft of the machine, and is journaled centrally between the stand-



ards of the machine table in cross pieces running between the same.

In lugs projecting interiorly from the standards 2 are journaled shafts 45, one on each side of the machine, on which are mounted the sprocket wheels 46. On the power shaft 3 is mounted a corresponding sprocket wheel 47, and a sprocket chain 48, passing around the sprocket wheels, revolves the shafts 45. On each of the shafts 45, but on opposite ends of the same, is mounted a beveled gear wheel 50, which meshes with a gear wheel 51, attached to the end of a hollow shaft 52. On the upper end of the shaft 52 is mounted a gear wheel 53, which meshes with a gear wheel 54, by means of which shaft the rod to which the crimper head is attached is rotated. The support for the hollow shaft 52 is afforded by the casting 55, which is bolted to the machine table, and the upper end of which is 8-shaped to afford proper bearing surfaces and support for the gear wheels 53 and 54. On standards projecting from the top of this 8-shaped portion of the casting 55 is pivoted the lever 56. To one end of this lever is attached the rod 57, which passes down through the hollow shaft 52, and has journaled on its lower end the roller 58, which rides upon the cam-shaped piece 59, which cam is integral with the gear wheel 50, and is formed with a semi-cylindrical portion 59<sup>a</sup>, straight projecting sides 59<sup>b</sup>, and a curved top surface 59<sup>c</sup>. On the other end of the pivoted lever 56 is attached the rod 60, on the lower end of which is attached the crimper head, the connection here being such as to allow the free rotation of said rod. The rod 60 is formed with a feather 60', which engages with a vertical recess formed in the center of the gear wheel 54. In this manner the rod 60 is caused to rotate at a speed corresponding to that of the wheel 54, and is allowed a free up and down movement. An outward extension is formed on the lever 56, on which is adjustably mounted a weight 61, which is sufficient to counterbalance the weight of the crimper head and attached rod.

The operation of the crimper is as follows:—  
During a portion of the revolution of the power shaft, the roller 58 rests upon the semi-cylindrical portion 59<sup>a</sup> of the cam 59, and when in this position, which amounts to half a revolution of the power shaft, the rod 57 drops, and raises the crimper head from the line of the shells, this movement being accelerated and made certain by the counterbalancing weight 61. When, however, the roller begins to ride up on one of the straight faces of the cam, the rod 57 is raised, and the rod 60 correspondingly depressed, until, when the roller reaches the curved portion of the cam 59, the rod 60 is fully depressed and the crimper is in active operation. While the roller 58 rides over the curved portion of the cam 59, the crimper head dwells upon a shell, the curve of this part of the cam being

just sufficient to depress the crimper sufficiently to perfect the crimping of the shell. The dwell of the crimper upon the shell lasts for approximately two eighths of a revolution of the power shaft, and may be increased or diminished by suitably forming the cam. After passing the dwell of the cam, the roller 58, riding upon the straight portion of the cam 59, descends and lifts the crimper head from the line of the shells.

By suitably changing the ratio of the gears which rotate the crimper, the crimper may be given any desired rapidity of revolution, but it is not necessary with my crimper that the crimper head should have as rapid a movement as it must have for satisfactory operation in the existing machines, as the dwell of the crimper head upon the shells enables them to perfectly perform their function at a moderately low rate of speed.

Having thus fully 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 a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, means for raising the other arm of the pivoted lever and thereby depressing the crimper, and means incapable of longitudinal movement for revolving the crimper, substantially as described.

2. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, mechanism capable of producing a dwell for raising the other arm of the pivoted lever, thereby depressing the crimper, whereby the crimper is so actuated as to have a dwell upon the cartridge shell, and means incapable of longitudinal movement for revolving the crimper, substantially as described.

3. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, means actuated by the power shaft for raising the other arm of the pivoted lever and thereby depressing the crimper, and means incapable of longitudinal movement for revolving the crimper, substantially as described.

4. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, and actuated, through mechanism incapable of longitudinal movement, by the power shaft, and means for raising the other arm of the pivoted lever and thereby depressing the crimper, substantially as described.

5. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, and actuated, through mechanism incapable of longitudinal movement, by the power shaft, and means, also actuated by the power shaft, for raising the



other arm of the pivoted lever, and thereby depressing the crimper, substantially as described.

5 6. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, and actuated, through mechanism incapable of longitudinal movement, by the power shaft, and a cam actuated  
10 by the power shaft for raising the other arm of the pivoted lever, and thereby depressing the crimper, whereby the crimper is so actuated as to have a dwell upon the cartridge shell, substantially as described.

15 7. In a cartridge loading machine, the combination with a shell carrier, of a revolving crimper revolubly attached to one of the arms of a pivoted lever, an arm attached to the other arm of the pivoted lever, means for  
20 raising said attached arm and thereby de-

pressing the crimper, and means incapable of longitudinal movement for revolving the crimper, substantially as described.

8. In a cartridge loading machine, the combination with a shell carrier, of a revolving  
25 crimper revolubly attached to one of the arms of a pivoted lever, an arm attached to the other arm of the said lever, a cam actuated by the power shaft for raising said attached arm and thereby depressing the crimper, and  
30 means incapable of longitudinal movement for revolving the crimper, substantially as described.

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

CHARLES S. HISEY.

Witnesses:

J. LOWE WHITE,

JOSEPH D. WOOD.