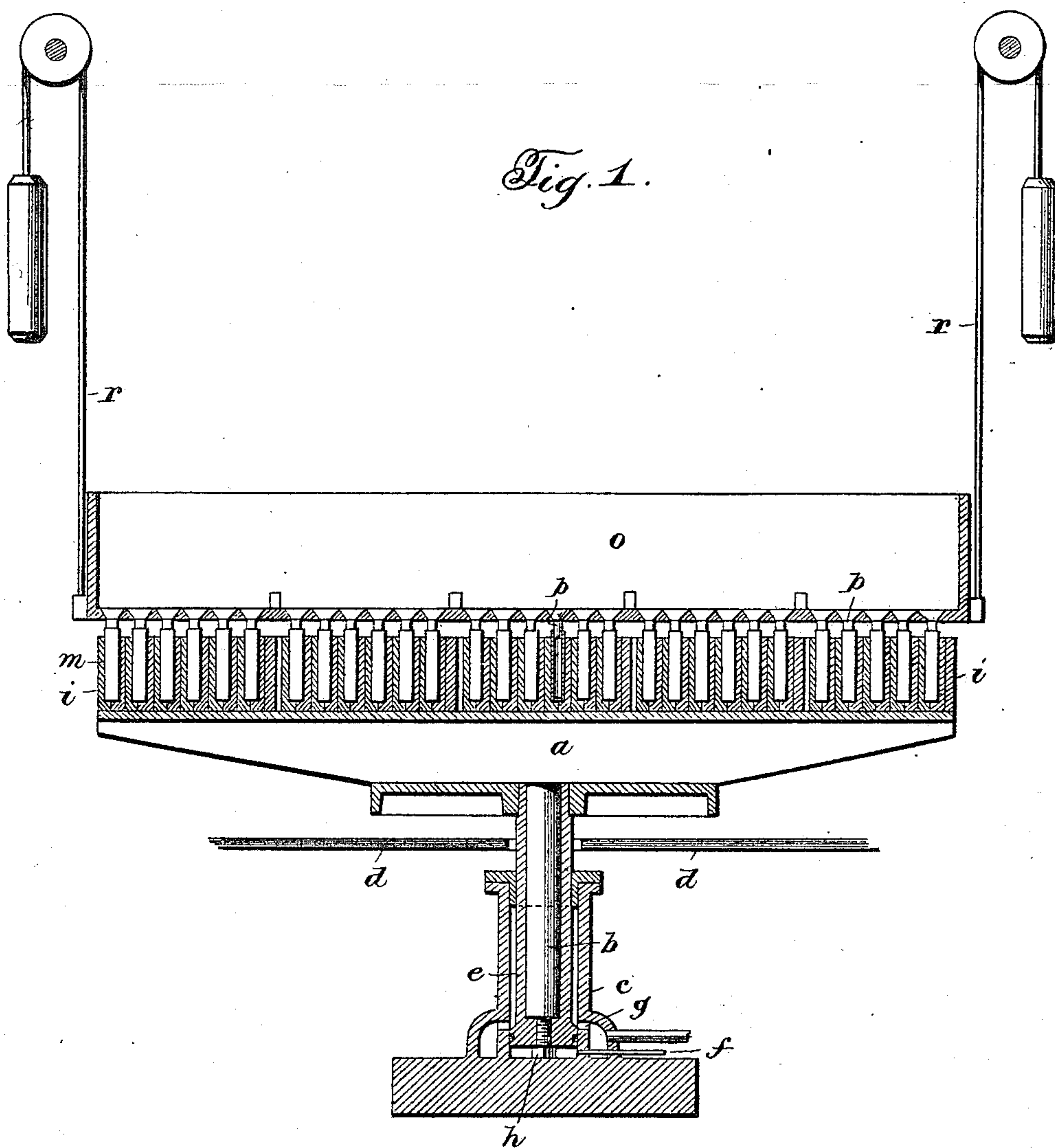


No. 849,437.

PATENTED APR. 9, 1907.

H. TALLEY.  
PACKING MACHINE.  
APPLICATION FILED DEC. 8, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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*C. W. Meylman*

Inventor

*Herbert Talley*

*By Hall & Meylman* Attorneys:

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APPLICATION FILED DEC. 8, 1906.

2 SHEETS—SHEET 2.

Fig. 2.

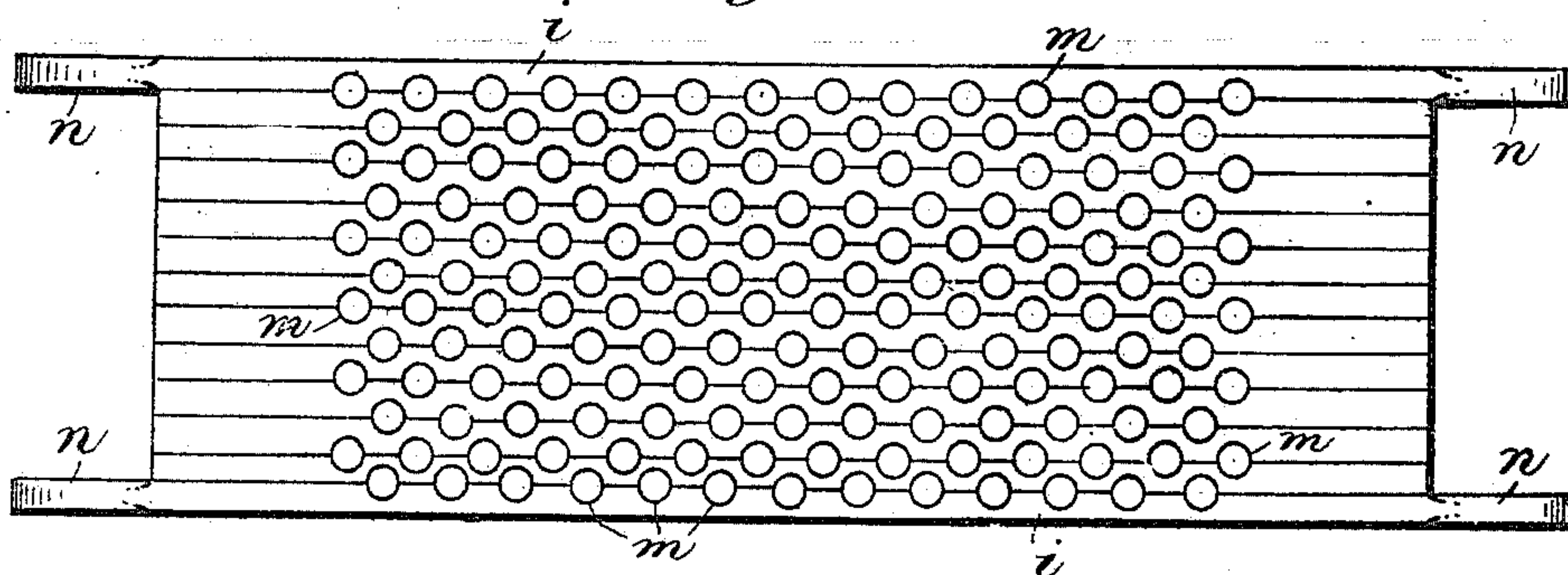


Fig. 3.

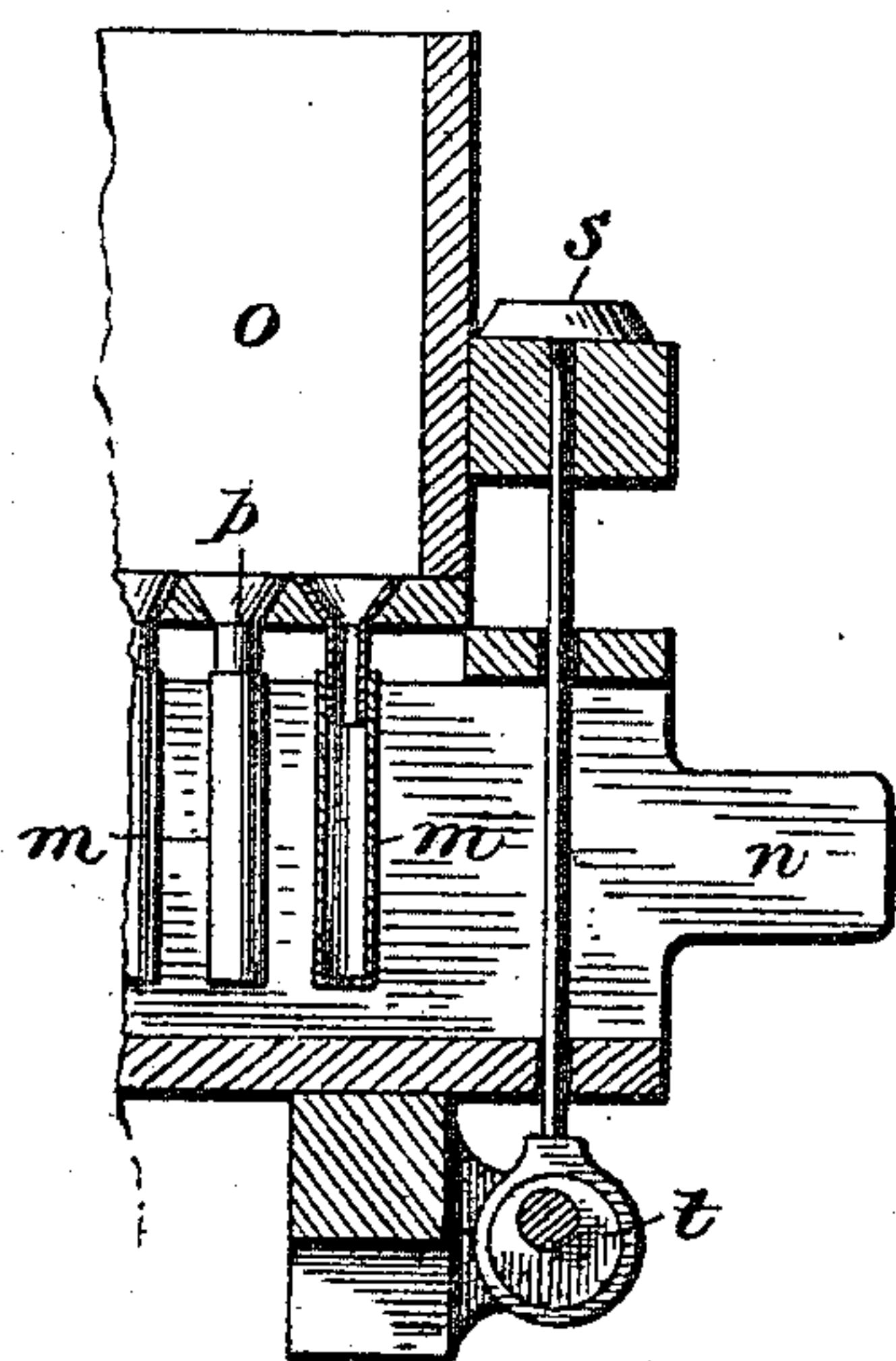
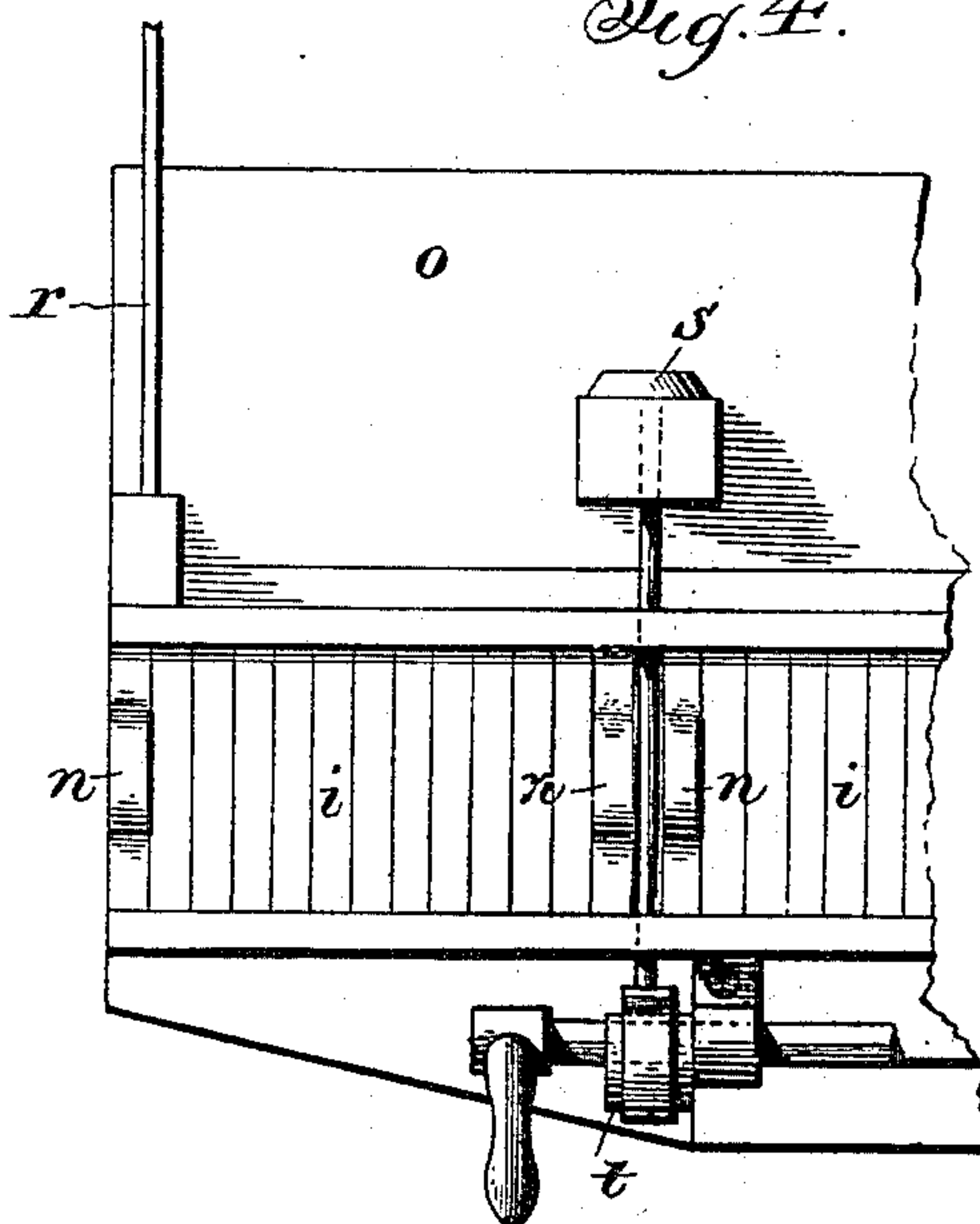


Fig. 4.



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# UNITED STATES PATENT OFFICE.

HERBERT TALLEY, OF CARTHAGE, MISSOURI.

## PACKING-MACHINE.

No. 849,437.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed December 8, 1906, Serial No. 346,867.

*To all whom it may concern:*

Be it known that I, HERBERT TALLEY, a citizen of the United States, residing in Carthage, State of Missouri, have invented certain new and useful Improvements in Packing-Machines, of which the following is a specification.

My invention relates to the explosive industry, and more particularly to the manufacture of explosive cartridges or shells; and it particularly appertains to the means for loading shells with the explosive.

The method and means now commonly employed for loading cartridges with explosives, particularly high explosives, are attended not only with great danger to those employed in this occupation, but with material loss by way of the destruction to the manufacturing plants, owing to the explosions which are occasioned in the packing of the cartridges when this is done by mechanical means.

Mechanical means have heretofore been employed in packing shells; but in such devices of which I have knowledge sticks, tamps, screws, or augers working through funnels or nozzles have been employed for compacting the explosive mixtures, and it has been found that these means frequently cause such excessive friction, owing to the presence of hard foreign bodies in the explosive mixtures, as to cause the substance to explode.

It is the object of my invention to provide a loading apparatus by means of which the shells may be loaded economically and with minimum danger of premature explosion and which will not require the presence of the operatives adjacent the explosive mixture during the loading operation, so that even in the event of an explosion no fatalities need result therefrom.

One exemplification of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view through the complete apparatus. Fig. 2 is a detail view of the shell-carrier, and Figs. 3 and 4 are detail views.

The invention includes generally a vertically-movable table having means associated therewith for giving it a jarring action, a shuttle or shell-carrier, intended to hold a plurality of cartridges, which is designed to be sup-

ported upon the table during the loading of the cartridges and removed therefrom when the latter are filled, a hopper provided with nozzles designed to register with the shells in the carrier, and means for rigidly connecting the hopper-carrier and table to one another during the filling operation.

The movable table is designated *a* in the accompanying drawings and is carried at the upper end on a pedestal *b*. In the particular exemplification of the invention herein disclosed means utilizing a suitable motive fluid is associated with the table for giving it a jarring action. This means is illustrated as a vertically-disposed cylinder *c*, arranged beneath the floor-line *d*, in which travels a piston *e*, carrying the pedestal *b*. An inlet *f* for the motive medium is located at the bottom of the cylinder, and an exhaust-port *g* leads from the cylinder a short distance above the inlet-port.

Compressed air or steam is preferably employed as the motive medium, and it is fed intermittently by any desired means through the inlet *f* and serves to force the piston *e* upwardly in the cylinder until the end of the piston uncovers the port *g*, whereupon the motive medium is exhausted and the piston drops back in the cylinder under the weight of the table and its contents, the jar received by the piston striking the end of the cylinder being of course imparted to the shell-carrier and the hopper. For controlling the length of stroke of the piston and the severity of the jar imparted to the table an adjustable stop *h* is preferably associated with the piston-head. In the illustrated embodiment of the invention this element is a bolt having its shank screwed into the piston and its head arranged to strike against the end of the cylinder.

The shuttle or shell-carrier is designated *i* and consists, preferably, of a case or block having a plurality of pockets *m* therein of substantially the size of the shell to be packed. As will be understood, it is the common practice to pack shells of varying but approximately standard sizes or diameters, and consequently my invention contemplates the provision of several sets of shell-carriers, each set having pockets of the proper diameter to snugly fit the size of shell to be employed therewith. Handles *n* are preferably provided on the ends of the car-



riers for facilitating the transportation of the same. The pockets *m* are intended to be filled with empty shells in the house where the latter are made, these shells preferably having their upper ends protruding from the pockets, and the carrier so filled is then placed upon the top of the table *a*.

The hopper is designated *o*, is provided with a plurality of discharge-openings in its bottom corresponding in number and relative arrangement to the pockets *m*, and said hopper is so mounted that it may be readily shifted to permit the carrier to be placed upon and removed from the table. A nozzle *p* is preferably associated with each opening and is provided with a depending part intended to enter the open ends of the cartridge-shells in the carrier when the hopper is lowered onto the latter. As illustrated herein, the hopper is supported by counterbalanced cables *r*.

In practice it is preferable to so arrange the hopper relative to the mixing-machine that the latter will discharge directly thereinto, so that not only the expense incident to the ordinary additional handling of the explosive in transferring it from the mixing to the shell-filling stations is saved, but the likelihood of foreign substance getting into the mixture during such transportation is entirely avoided.

The means for rigidly connecting the hopper and carrier to the table during the filling operation is herein illustrated as a pair of clamps *s* in the form of yokes mounted at the ends of the tables on suitable eccentrics *t*. These yokes are intended to engage lugs on the hopper and force the same down firmly on the carrier and the carrier in turn down upon the table-top when the yokes are drawn down by shifting the eccentrics.

The form of hopper herein illustrated is intended for use in packing an explosive mixture having a powdered or granular consistency; but when it is desired to load gelatin powders or explosives that are more or less fluid when in a heated condition a water-jacketed hopper is employed which serves to maintain the substance in a warm condition for facilitating the discharge thereof into the shells.

It will be understood that the accompanying drawings illustrate and the foregoing description describes but one embodiment of the invention and that the invention is susceptible of varying embodiments without departing from the spirit and scope thereof. For instance, instead of the particular means herein shown and described for reciprocating and jarring the table cams may be employed for this purpose, the same being arranged in

a manner which would readily suggest itself to any mechanic.

I claim—

1. In a machine for packing explosives and in combination a table, means for giving the same a vertical reciprocating and a jarring movement, a shiftable hopper supported above the table independently thereof and provided with a plurality of discharge-openings, a shell-carrier having a plurality of shell-pockets therein, said carrier being designed to rest upon the top of the table with its pockets in register with the openings in the hopper and means for rigidly connecting the hopper, carrier and tables to one another.

2. The combination, in a machine for packing explosives, with a hopper, a shell-carrier, a supporting-table, of means for imparting a vertical reciprocatory and jarring movement to the table, comprising a cylinder having an inlet in its lower end and an exhaust-port in the side wall a distance above the inlet, and a piston carrying the said table and controlling the exhaust-port.

3. The combination, in a machine for packing explosives, with a hopper, a shell-carrier, a supporting-table, of means for imparting a vertical reciprocatory and jarring movement to the table, comprising a cylinder having inlet and exhaust ports, a piston carrying the table and controlling the exhaust-port, and an abutment adjustable in the head of the piston for controlling the length of the stroke of the piston.

4. In a machine for packing explosives and in combination a table, a shell-carrier or shuttle having a plurality of pockets therein designed to be placed on top of the table, a hopper superimposed above the top of the table, and supported by counterbalanced cables, a plurality of discharge-openings in the bottom of the hopper having the same relative arrangement as the pockets in the carrier and designed to register therewith, funnels arranged in said openings having dependent parts designed to enter the upper ends of the shells within the shell-pockets of the carrier, means for rigidly connecting the table, carrier and hopper and means for imparting a vertical reciprocatory and a jarring movement to the table, substantially as described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Carthage, Missouri, this 31st day of October, 1906.

HERBERT TALLEY.

Witnesses:

F. A. WILBER,  
E. S. GROVE.