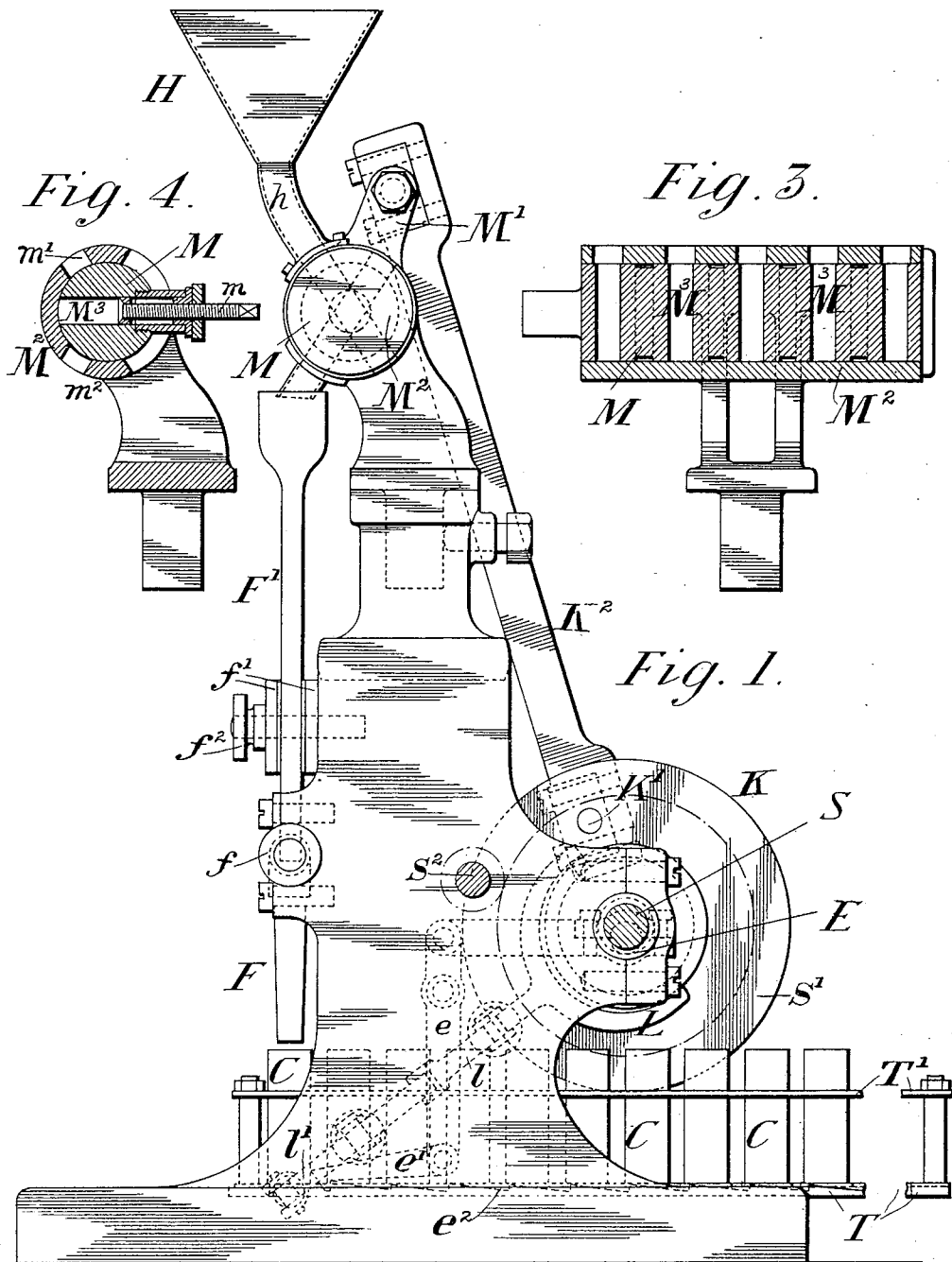


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CARTRIDGE LOADING MACHINE.

No. 566,217.

Patented Aug. 18, 1896.



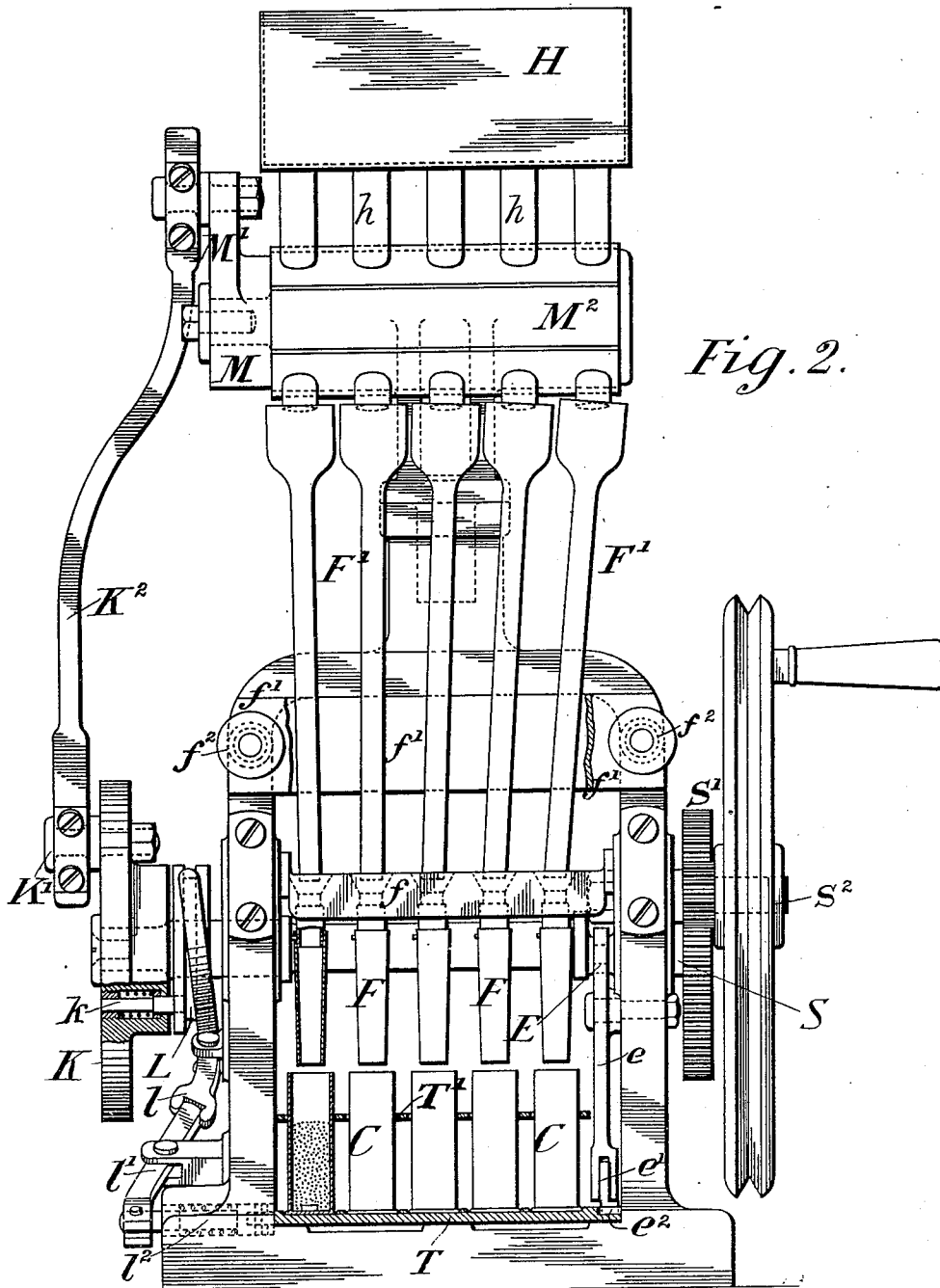
Witnesses:
Shas A. Green
Robert Elliott

Inventor:
Lars G. Ohman.
By James L. Norris.
Atty.

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Witnesses
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Robert Everett.

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UNITED STATES PATENT OFFICE.

LARS GUSTAF OHMAN, OF MARIEBURG, SWEDEN, ASSIGNOR TO GUSTAF OTTO FILIP MORNER, OF LANDSKRONA, SWEDEN.

CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 566,217, dated August 18, 1896.

Application filed November 27, 1895. Serial No. 570,264. (No model.)

To all whom it may concern:

Be it known that I, LARS GUSTAF OHMAN, a citizen of Sweden, residing at Marieburg, Stockholm, Sweden, have invented certain
5 new and useful Improvements in Apparatus for Charging Cartridge-Shells, of which the following is a specification.

This invention relates to the manufacture of cartridges, and has for its object to provide new and improved means for charging the cartridge-shells. This object is accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in
15 which—

Figure 1 is a side elevation, partly in section, of an apparatus embodying my invention. Fig. 2 is an end elevation, partly in section. Fig. 3 is a longitudinal sectional view
20 of the measuring-cylinder, and Fig. 4 is a detail sectional view showing a modification of the measuring-cylinder.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, reference being
25 made to the drawings, in which—

The letter T indicates a slidable table, on which are placed rows of cartridge-shells C, which pass through holes in an upper plate T', attached by bolts to the table. One edge
30 of the table T' is made with ratchet-teeth e^2 , with which engages a pawl e' , jointed to a lever e , which is worked by an eccentric E on a rotating shaft S. On the same shaft S is fitted a clutch-sheave L, so that it can slide
35 along but must revolve with the shaft, and loose on the shaft there is a crank-disk K, having a crank-pin K' , which is connected by a link K^2 to an arm M' , fixed on the end of an
40 oscillating or axially-reciprocating measuring-cylinder M. In the crank-disk K there is a hole having fitted in it a spring-pin k , the end of which projects into a hole in the clutch-sheave L. When the pin is thus engaged, the
45 crank-disk K is caused to revolve, and the measuring-cylinder M is caused to turn with a reciprocating or to-and-fro motion within a casing M^2 . The hole in the sheave L for the pin k is so situated that the clutching of the
50 crank-disk K is suited to the setting of the eccentric E on the shaft S in such manner

that the measuring-cylinder M is receiving powder while the table is advancing and is discharging while the table is at rest. Above this casing there is fixed a feed-hopper H,
55 from which several tubes h lead down to the casing M^2 , and through the measuring-cylinder M are bored a corresponding number of holes M^3 , each forming a cavity or receptacle for powder supplied from the hopper M.
60 When it is desired to vary the capacity of these holes, thus varying the charge to each cartridge, each of the holes in the cylinder is provided with a movable bottom, which, by means of a screw m , can be advanced or re-
65 tracted, so as to adjust the bottom, and thus make the capacity of the hole less or greater, as may be desired.

When the cylinder M is caused to oscillate or axially reciprocate, the transverse holes M^3
70 present themselves toward openings m' , to which the tubes h are connected, and while they are in that position they become charged with powder. Then when the cylinder M is housed, so that its holes M^3 present them-
75 selves to other openings m^2 , the powder falls from them into the funnel-mouths of tubular chutes F' , which are fixed in suitable position, being clamped between two bars f' ,
80 secured together by screws f^2 . Below the tubular chutes F' there is a set of lower chutes F, having funnel-mouths immediately under the upper chutes F' . The lower chutes F are fixed in a cylindrical bar f , which can be
85 turned more or less round in its bearings and then clamped in such position that the lower mouths of the chutes F are immediately above a row of cartridge-shells C, and thus the powder which descends the chutes F' and F pours
90 into the shells. When a row of shells is thus filled, the table T is advanced a step, so as to bring another row of shells under the chutes F. This advance of the table T is effected, as above mentioned, by the pawl e' , moved by the eccentric E.
95

The shaft S is driven slowly by reducing-gear S' from a more rapidly-revolving shaft S^2 , provided with a fly-wheel, which may be driven by hand or from any convenient motor. As this shaft goes on continuously, it
100 is necessary to provide that when the last row of cartridges is filled, as shown in Fig. 1,

the reciprocation of the cylinder M and the consequent feed of powder should cease until a fresh table T, carrying empty shells, shall have been substituted for the table carrying the charged shells. This stoppage of feed is effected by unclutching the crank-disk K in the following manner: The groove of the clutch-sheave L is engaged by a fork-lever *l*, to which is loosely jointed another lever *l'*.
 10 The lower end of this lever is jointed to a pin *l''*, which can slide in a hole in the framing, being urged by a spring which presses it against the edge of the table T. While the table is sliding this pin *l''* is kept in the position shown, holding the clutch L nearly close
 15 to the crank-disk K, with the pin *k* engaged in it. Consequently the crank-disk K revolves, working the measuring-cylinder M. But when the end of the table T passes beyond the pin *l''*, this pin, urged by the spring, moves to the right, moving the levers *l'* *l* and the clutch-sheave L, withdrawing it from the pin *k*, and consequently the crank-disk K ceases to revolve and the measuring-cylinder M remains
 25 at rest. When a fresh table T is introduced, the pin *l''* is moved to the left by the end of the table. The clutch-sheave L is thus moved up to the crank-disk, pushing back the pin *k* until the hole of the sheave L comes round to
 30 coincidence with *k*, which thereupon springs into the hole, the crank-disk then revolving with the sheave.

My invention provides novel, simple, efficient, and economical means for charging
 35 cartridge-shells with gunpowder or other pulverulent explosive materials. It is of course obvious that the apparatus may be used for charging the cartridge-shells with shot.

40 Having thus described my invention, what I claim is—

1. The combination in a machine for charging cartridge-shells, of an intermittingly-movable table having means to carry a series of rows of cartridge-shells, a row of charge-conducting chutes arranged above the table and adapted to deliver the charges into the cartridge-shells, a measuring-cylinder having a plurality of charge-holding cavities, means for supplying the charging material to the charge-holding cavities of the cylinder, a driving-shaft, devices actuated by the driving-shaft for intermittingly moving the shell-carrying table, devices for reciprocating the measuring-cylinder, and an automatic clutch
 55 for throwing the measuring-cylinder into and out of operative connection with the driving-shaft, substantially as described.

2. The combination in a machine for charging cartridge-shells, of a shell-carrying table, a reciprocating measuring-cylinder having charge-holding cavities, a driving-shaft having a crank-disk, a spring-pin mounted in the crank-disk, a clutch-sheave, a lever operated by the shell-carrying table and connected with the clutch-sheave for moving the same against the spring-pin, connections between the crank-disk and the measuring-cylinder, whereby the crank-disk and measuring-cylinder are only operated when a shell-carrying table is in position, and means for conducting the charges from the measuring-cylinder to the shells carried by the table, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of November, A. D. 1895.

LARS GUSTAF OHMAN.

Witnesses:

A. WIDESTROM,
 ALBIN BJÖRKSTEDT.