(No Model.) 2 Sheets—Sheet 1.

C. FORSCHNER.

SAUSAGE STUFFING MACHINE.

No. 316,352. Patented Apr. 21, 1885.

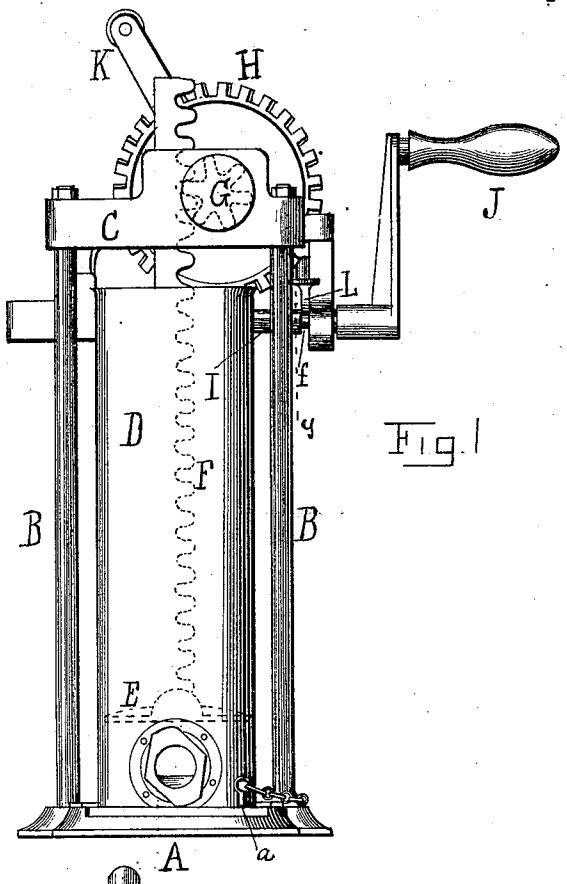

Fig. 1

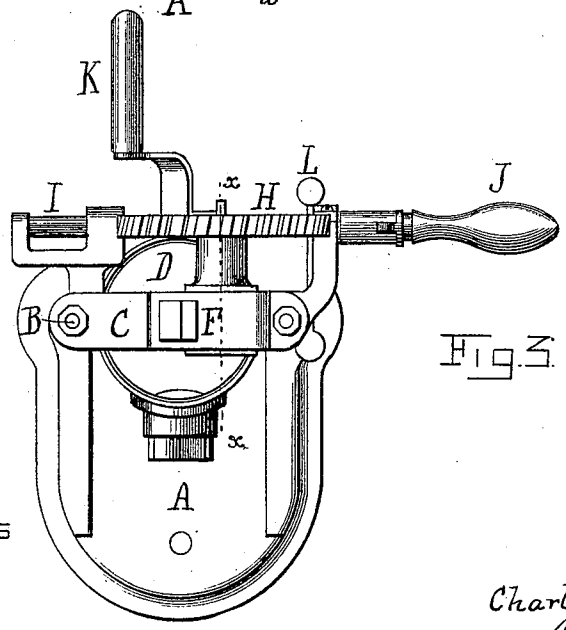

Fig. 3

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

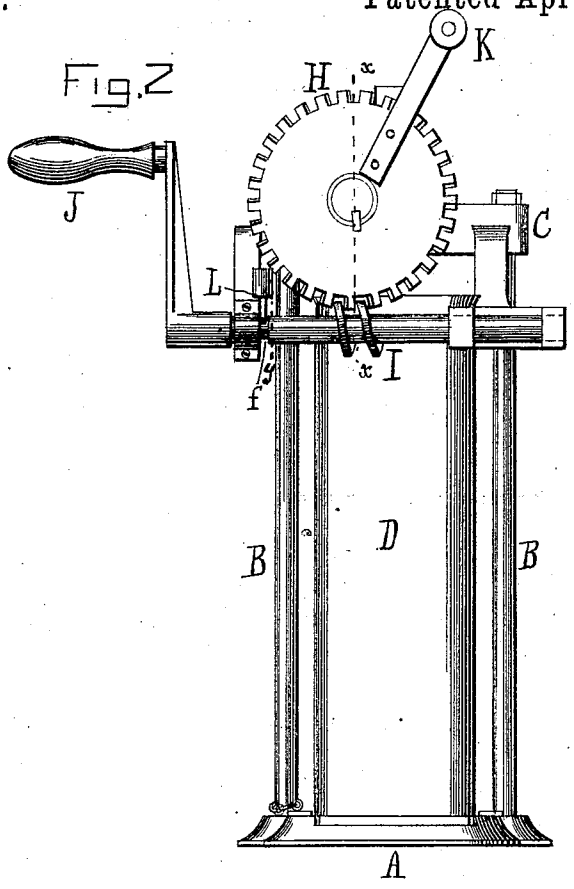


Fig. 4.

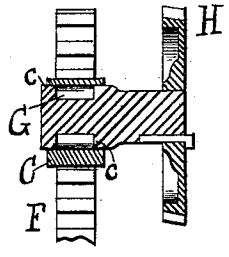
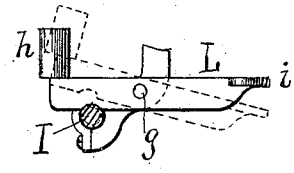


Fig. 5.



WITNESSES:

N. A. Clark

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UNITED STATES PATENT OFFICE.

CHARLES FORSCHNER, OF NEW YORK, N. Y.

SAUSAGE-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,352, dated April 21, 1885.

Application filed May 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FORSCHNER, of the city, county, and State of New York, have invented certain Improvements in Sausage-Stuffing Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front view of the improved machine; Fig. 2, a rear view of the same; Fig. 3, a top view thereof; Fig. 4, a vertical section of a portion of the machine in a plane indicated by the line *x x*, Figs. 2 and 3; Fig. 5, a vertical section of a portion of the machine in a plane indicated by the line *y*, Figs. 1 and 2.

Like letters designate corresponding parts in all of the figures.

I have represented in the drawings a vertical machine to which my improvements are applied; but they may be applied also to a horizontal machine.

In the machine represented, A is the base on which the other parts of the machine are mounted; B B, standards, on the upper ends of which a bearing-head, C, is secured and supported; D, the sausage cylinder or receptacle arranged under the head C, and adapted to be drawn forward in ways on the base A sufficiently to bring it out from under the head for filling it with sausage-meat, and when returned to a position centrally under the head to be held there by a pin, *a*, passed down through its base-flange or bottom and into the base A of the machine; E, the piston; F, a vertical rack attached to the piston and gearing into a pinion, G; H, a worm-wheel on the shaft of the pinion; I, a worm-shaft gearing into the worm-wheel, and J a handle, or its equivalent, for turning the worm-shaft, to which it is attached, for forcing down the piston E through the medium of the said worm-shaft, worm-wheel, pinion, and rack.

In the parts above mentioned no novelty is herein claimed, except in the construction of the bearing-head C, pinion G, and its shaft mounted in the said head, and in the rack F, mounted in relation to the said parts.

The improvement in the construction and arrangement of these parts is as follows: The head C is cast in one solid piece, is slotted vertically to receive the rack F, the smooth sides of which fit accurately therein, but so as to slide up and down freely. A horizontal hole is formed or bored horizontally through the head, sufficiently large to admit the pinion G and journals *c c* of its shaft, which journals are made as large in diameter as, or a little larger than, the pinion is in diameter around the extreme points of its leaves or cogs, as shown. By this construction all of these parts are made very cheaply, especially the bearing C, requiring no parts to be added or removed, and the whole construction is extremely strong and durable, never liable to get out of order, and the rack and pinion work very accurately together and without loose play.

Since the descent of the piston E by the action of the worm-shaft I on the worm-wheel H is slow and powerful for forcing down the sausage-meat in the cylinder, and since there is little power required in raising the piston again out of the cylinder, so that a quick return motion is desired to gain time, it is common to ungear the worm-shaft from the worm-wheel and to raise the piston by means of a handle, K, on the shaft of the worm-wheel and pinion. The ungearing of the worm-wheel and worm-shaft has been effected by simply reversing the motion of the shaft, which has an endwise motion in its bearings sufficient to effect this ungearing, the worm-shaft turning back freely in the direction toward its handle by the simple travel of its screw, while the worm-wheel, then stationary, acts as a nut thereto; and a forward motion of the worm-shaft, after ungearing, by a similar action again, brings it into gear with the worm-wheel, and then begins to act thereon for forcing down the piston again.

With this construction the more or less elastic resistance of the sausage-meat tends to force forward more of the meat at the outlet after the action of the worm-wheel ceases, and thus in putting on new skins after the previous ones are filled there is more or less of the meat forced out. This can be prevented by raising the piston a little with the reversal of the worm-shaft; but with the ungearing device in use, as above stated, the reversal of the motion of the worm-shaft simply ungears the worm from the worm-wheel, and has no effect to raise the piston; also, the weight of the piston E and its vertical driving-rack F, when

raised to the top of the cylinder D and the latter is empty, will cause the worm-wheel to turn and ungear from the worm-shaft by driving it endwise, whenever the machine gets to working smoothly, which in itself is desirable, and thus without some means of holding up the piston and rack above the empty cylinder, they have to be held up by hand, or be subject to frequent otherwise unnecessary lifting. To avoid these difficulties I form a circular groove, *f*, in the periphery of the worm-shaft in a proper position, and employ a latch, L, pivoted to the frame of the machine at *g*, with its end *h* over the worm-shaft heavier than the other end, so as to drop and rest in the groove *f* of the worm-shaft when the latter is in gear with the worm-wheel, and thereby prevent ungearing the shaft from the worm-wheel, when it is desired to raise the piston by the reverse motion of the worm-shaft, for the above-named or any other purpose. When, however, the worm-shaft is to be purposely ungeared from the worm-wheel, the latch L is raised out of the groove *f* by simply pressing down on a thumb-piece, *i*, on the other end of the latch, or by equivalent means, when the worm-shaft is free to be ungeared by turning it backward. On turning it forward again the latch drops into the groove *f* as soon as the worm-shaft is in gear with the worm-wheel. Any suitable construction of the latch L and equivalent of the groove *f* may be used.

I claim as my invention—

1. The combination of the solid bearing C, the rack F, and pinion G, the bearing being slotted to receive the rack, the pinion bearing journals *c c* as large in diameter as the pinion itself, and the bearing having an aperture of sufficient diameter to receive the pinion and its journals, for the purpose specified.

2. In combination with the piston E, driving-rack F, pinion G, and worm-wheel H of a sausage-stuffing machine, the worm-shaft I, provided with a peripheral groove, *f*, and pivoted latch L, carrying a thumb-piece, *i*, and weight *h*, arranged and operating substantially as and for the purpose herein specified.

CHAS. FORSCHNER.

Witnesses:
EMIL GOEDE,
FRANK EHRLING.