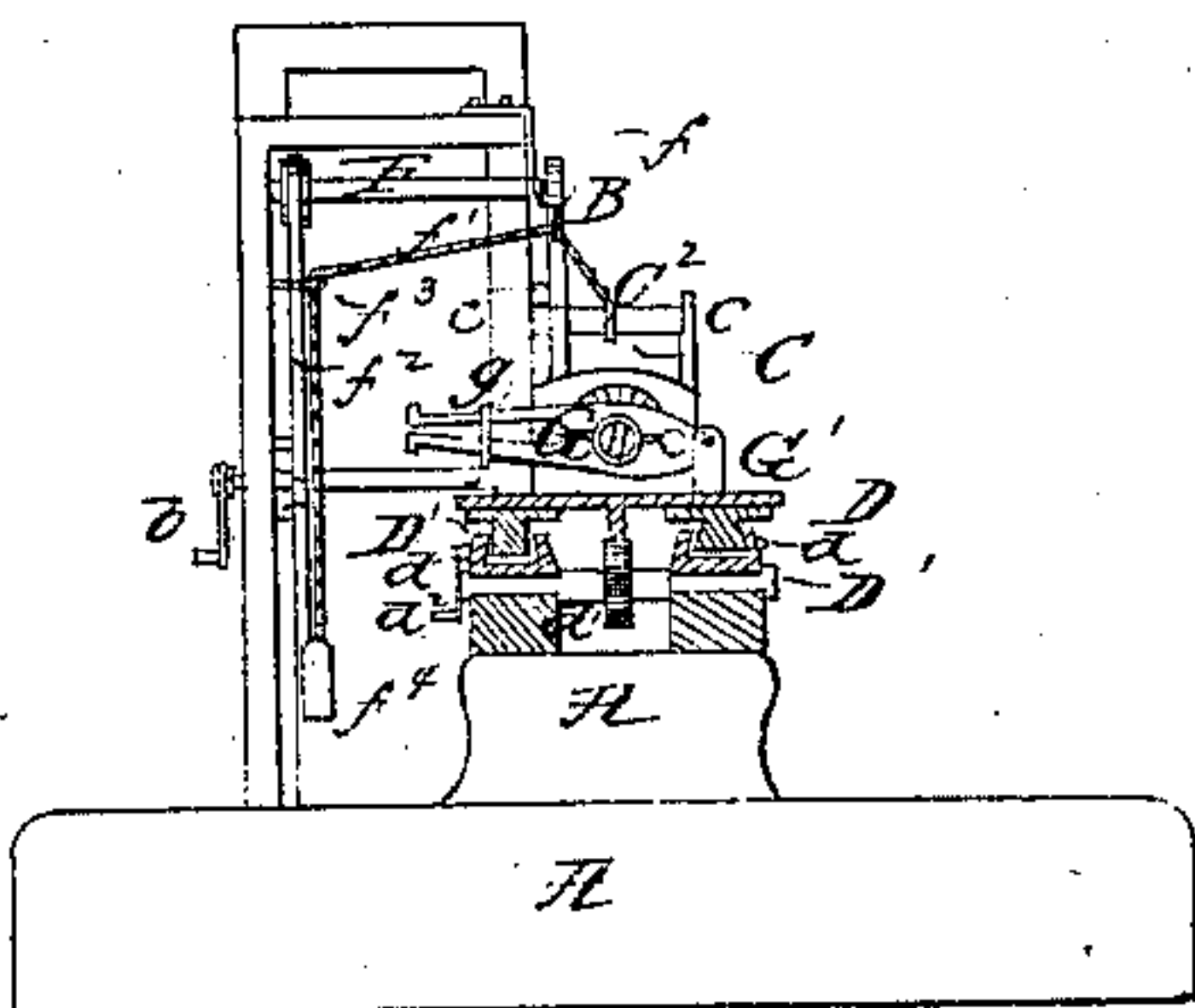
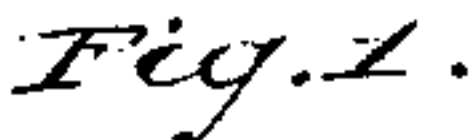


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Geo Mitchell Jr

Chas H. Boyle



August Schuck  
Henry Hildenbrand  
By their attorneys,  
Messrs. Randolph & Co.

# UNITED STATES PATENT OFFICE.

A. SCHRICK AND H. HILDENBRAND, OF ST. LOUIS, MISSOURI, ASSIGNORS  
TO THEMSELVES, F. C. KRAYER, AND C. R. SHRICK, OF SAME PLACE.

## IMPROVED MACHINE FOR FILLING HORSE-COLLARS.

Specification forming part of Letters Patent No. 59,726, dated November 13, 1866.

*To all whom it may concern:*

Be it known that we, AUGUST SCHRICK and HENRY HILDENBRAND, both of the city and county of St. Louis, and State of Missouri, have invented a new and useful Machine for Filling Horse-Collars; and we do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 of the accompanying drawings is a side elevation of the said machine. Fig. 2 is a plan of the same. Fig. 3 is a transverse vertical section. Fig. 4 is a plan of a separate plunger.

The object of this invention is to produce a machine by the use of which the collars for horses may be uniformly, rapidly, and cheaply filled.

To enable those skilled in the art to make and use our improved machine, we will proceed to describe its construction and operation.

A is a frame, upon which the other parts of the machine are built. Near one end of this frame the fly-wheel B is located, the shaft of the said wheel being supported in suitable bearings and provided with some means for receiving motion, as from a belt or a crank, as at *b*. If the said fly-wheel shaft is provided with a crank it may be operated by hand-power; or, if it is provided with a wheel for a belt, any other power may be applied to operate the machine. Into one of the arms of the fly-wheel there will be a slot cut radial from the center of the wheel for the reception of the wrist or crank *b*<sup>1</sup>, which will be attached to the said slotted arm by passing through it and being screwed up by means of a nut on the back side of the arm. The object of this arrangement is to increase or diminish at will the length of the stroke of the said crank, for the purpose hereinafter mentioned. The crank *b*<sup>1</sup> is connected by means of a connecting-rod, *b*<sup>2</sup>, with a cross-head, *b*<sup>3</sup>, to which it imparts a reciprocating motion, the said cross-head sliding on its ways *b*<sup>4</sup> in a similar manner to the cross-head of a steam-engine. To the front end of the cross-head there is attached a plunger, *b*<sup>5</sup>, which passes through the bottom of the hopper C and its funnel-shaped discharge-pipe

C<sup>1</sup>. When the plunger is drawn back its forward end should come as far back as the hopper, or at least into the pipe C<sup>1</sup>. The hopper C and its pipe C<sup>1</sup> rest on a bed-plate, D, which is arranged to slide back and forth in its ways D', as seen clearly in Figs. 1 and 3. There are set-screws *d* arranged to tighten up onto the ways of the bed-plate, for the purpose hereinafter mentioned. There is a cogged rack (not shown) on the bottom side of the bed-plate D, and a cog-wheel gearing into the said rack. The said cog-wheel is located upon and attached to the shaft *d*<sup>1</sup>, which is furthermore provided with a crank-wheel, *d*<sup>2</sup>, outside of the bed-plate, and located in a convenient position for the operator to manage, so he can thereby run the said bed-plate back or forth, as occasion may require. There is a shaft, E, located across the forward end of the bed-plate D, as shown in Fig. 2, and provided with a crank and ratchet-wheel at *e*. There is a pawl which is arranged to fall into and hold this wheel as it is turned up. A cord or rope, *e*', attached to the shaft E at one of its ends, is employed to draw the tongs or nippers E' toward it by simply turning the said shaft by means of the crank at *e*, whereby the said cord is wound around the shaft and so shortened.

The tongs or nippers E' are clearly shown in Fig. 2, wherein it is represented that by drawing the cord or rope *e*' toward the shaft E the said tongs or nippers will be tightened upon whatever may be within their jaws. There is a counter-shaft, F, usually attached to the ceiling of the room above the hopper C, and having a crank, *f*, on one of its ends, from which a cord or rope, *f*<sup>1</sup>, is depended and attached to the said hopper. The shaft F is driven by means of a belt, *f*<sup>2</sup>, from the driving-shaft that passes through the fly-wheel B. The hopper C is so arranged that it will have a slight vertical motion on its posts or guides *c*, and the cord or rope *f*<sup>1</sup> will raise the said hopper or allow it to fall by its own gravitation at each revolution of the crank on the shaft F.

The relative size of the two wheels over which the belt *f*<sup>2</sup> passes should be such that the hopper will rise once to about three revolutions of the fly-wheel. The cord or rope *f*<sup>1</sup>,



being attached to the hopper, as above described, by one of its ends, passes thence up through a loop or sheave attached to the crank  $f$ , thence across to the sheave or loop  $f^3$ , and thence down to the weight  $f^4$ , by means of which the hopper is counterbalanced. By the use of this counterbalancing-weight the work of raising or lowering the hopper C by means of the revolving shaft F will be rendered comparatively easy.

G is a pair of nippers pivoted to the standard G', which is erected upon the bed-plate D in such a position that when the said nippers are closed, as represented in Fig. 3, they will grasp firmly the small end of the funnel-shaped discharge-pipe C<sup>1</sup>. A ferrule,  $g$ , may be slipped over the two handles of these nippers, as also shown in Fig. 3, and thereby hold them firmly closed.

The operation of a machine thus constructed is as follows: The collar to be filled will be placed upon the table of the bed-plate and its open end run up over the funnel discharge-pipe C<sup>1</sup>, where it will be held fast by means of the nippers G, pressed tightly down onto it, and the ferrule  $g$  slipped up to retain the said nippers tightly in place. The tongs or nippers E' will then be gripped onto the other end of the collar, and the crank  $e$  will be revolved a few times until the cord  $e'$  is sufficiently taken up around the shaft E to hold the collar distended upon the table. The hopper C is, of course, to be filled with straw or other material with which the collar is to be filled previous to the commencement of the operation. After the collar to be filled has been placed upon the machine, as above described, the machine will be set in motion by turning the crank  $b$ . As the plunger  $b^5$  moves backward and forward it will at every stroke carry a quantity of the filling material out of the hopper and through the funnel into the collar. The bed-plate should be run up toward the plunger at the commencement of the operation so far that the first stroke of the plunger will force the filling into the farthest end of the collar, and then, as the collar becomes filled, it and the bed-plate to which it is secured will be forced

farther from the plunger at each successive stroke of the same as a new load of material is deposited in the collar at the end of the plunger, thus forcing the collar away from the plunger. By tightening the set-screws  $d$  or loosening the same the bed-plate will be more or less easily moved off from the plunger, as above described, and it follows that the filling within the collar will be packed more or less tightly, as may be desired.

After one collar has been filled and it is desired to prepare the machine to receive another, the bed-plate may be run up to its former position by turning the crank  $d^2$ , when the operation already described will be repeated.

In order to cause the plunger as it passes through the hopper to take hold upon new straw at each stroke, and not pass repeatedly and uselessly through the same orifice which it first made through the straw or other filling contained in the said hopper, the hopper is given a slight vertical motion, as above described, thus enabling the plunger to get at new material at each stroke, and thereby act continuously in its operation of emptying the hopper and filling the collar. When long straw is to be used to fill the collar, an inclined slide, C<sup>2</sup>, should be placed in the hopper; but this slide may be removed when short straw or some similar substance is to be used, and in this latter case the barbed plunger represented in Fig. 4 should be employed.

Having described our invention, what we claim is—

1. The combination of the bed-plate D with the hopper C, and also with the straining-shaft E, as described and set forth.
2. The nippers G and E', when constructed and employed substantially as described and set forth.
3. Giving to the hopper C a vertical motion, for the purpose of enabling the plunger to reach new material at each successive stroke.

AUGUST SCHRICK.

HENRY HILDENBRAND.

Witnesses:

M. RANDOLPH,  
CHAS. U. BOYLE.