

(No Model.)

2 Sheets—Sheet 1.

W. J. WEBBER.  
HORSE COLLAR STUFFING MACHINE.

No. 465,302.

Patented Dec. 15, 1891.

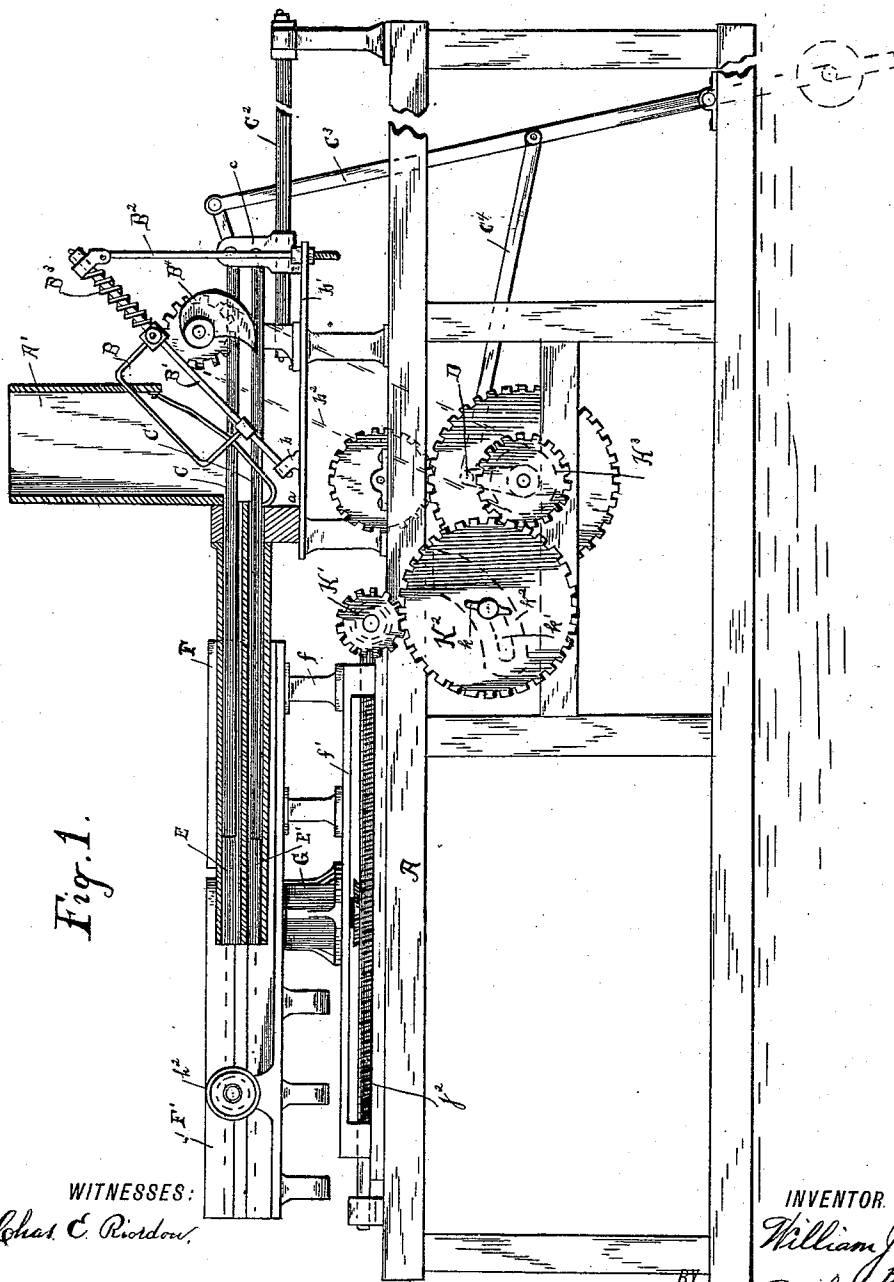


Fig. 1.

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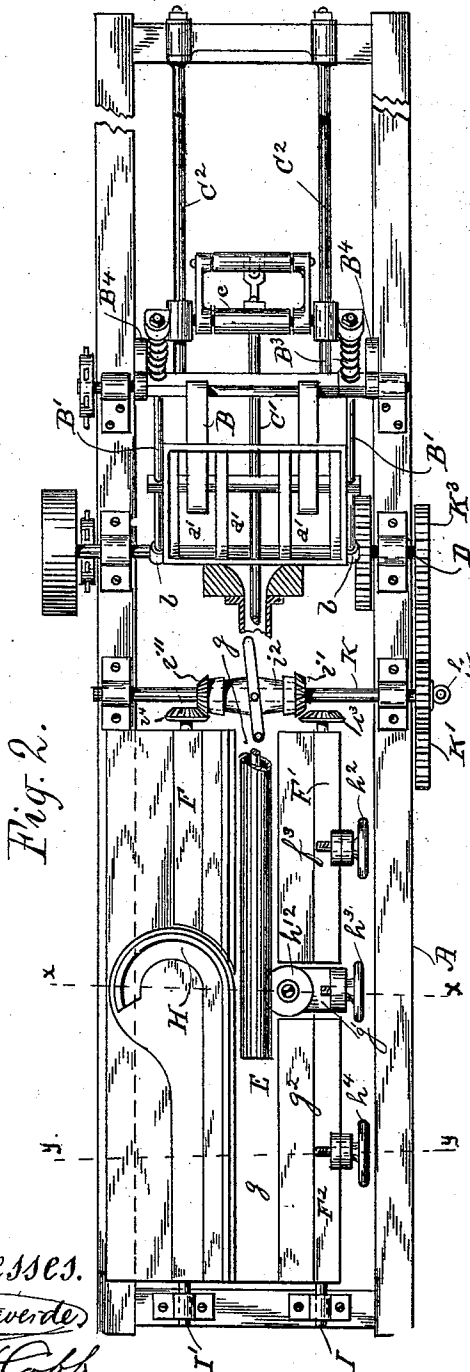


Fig. 2.

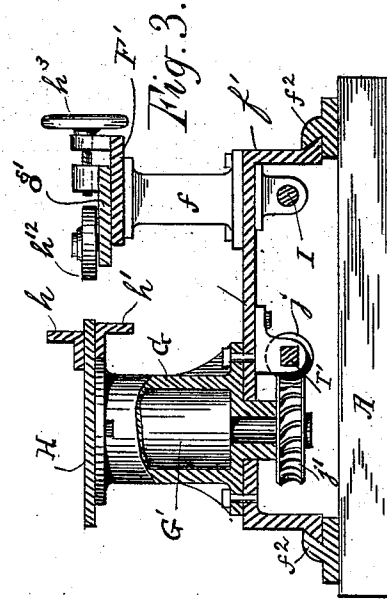


Fig. 3.

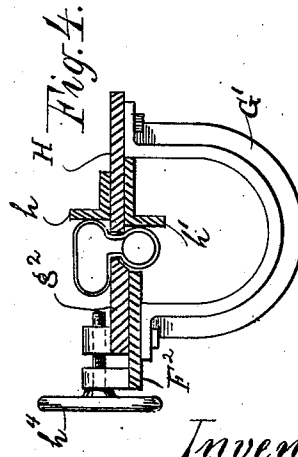


Fig. 4.

Witnesses.  
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Inventor.  
*William J. Webber*  
By *Bornick* atty

# UNITED STATES PATENT OFFICE.

WILLIAM J. WEBBER, OF SAN FRANCISCO, CALIFORNIA.

## HORSE-COLLAR-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 465,302, dated December 15, 1891.

Application filed November 21, 1890. Serial No. 372,198. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. WEBBER, a citizen of the United States, residing at the city and in the county of San Francisco, and State of California, have invented certain new and useful Improvements in Horse-Collar Rim and Body Stuffing Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to certain new and useful improvements in horse-collar-stuffing machines, which consists in the arrangement of parts and details of construction, as will be hereinafter more fully set forth in the drawings, described, and pointed out in the specification.

The invention relates more particularly to certain improvements upon the stuffing-machine fully set forth and described in the application filed by me on the 22d day of October, 1890, Serial No. 368,963; and it consists in the providing for the stuffing of the horse-collar rim and body synchronously while the collar is being turned or formed into the proper shape during the stuffing operation.

In my above-described application I only provided for the stuffing of the collar-rim, leaving the body to be properly filled by separate operation. However, by the hereinafter-described mechanism I propose to perform both the stuffing of the rim and body in a single operation.

My invention further consists in providing a straw-feeder which allows for a uniformity of pressure to be given to the straw before being forced into the rim and body, thereby obtaining a collar, when completed, equally stuffed at all points, by which I obtain a better collar, and one which shall be constructed at less cost and possess greater durability than any heretofore known to me.

Referring to the drawings forming a part of this specification, wherein similar letters of reference are used to denote corresponding parts throughout the entire specification and several views, Figure 1 is a side view in elevation partly broken away; Fig. 2, a top plan partly broken away. Fig. 3 is a transverse

section on the line *xx*, Fig. 2. Fig. 4 is a cross-section on the line *yy*, Fig. 2.

The letter A is used to indicate the ordinary frame or table on which the machine proper is mounted. To one end of the frame I locate the feed-hopper A', which is adapted to hold the straw to be used in the stuffing of the collar body and rim. Said hopper is provided with the inclined bottom *a*, which has the openings *a'* formed therein, through which and within the hopper the compressors B project. These compressors work or slide upon the rod B', which at one end is secured to the projection *b* and at the other to upright B<sup>2</sup>, each of which is attached or secured to plate *b'*. The compressors are held in their normal position by means of the springs B<sup>3</sup>, and are operated by the rotation of cams B<sup>4</sup>, which receive motion from the operation of the mechanism hereinafter described through the medium of chain or belt *b*<sup>2</sup>. With each rotation of the cams the compressors are forced upward, and upon being relieved from contact therewith are forced downward by the resiliency of springs B<sup>3</sup> and carry therewith a wad of straw and tightly compress the same to the lower end of the hopper, from whence it is received by the stuffing-rods and forced into the stuffing-tubes.

The stuffing-rods are indicated by the letters C C', which are secured to the slides *c*, which work upon the rods C<sup>2</sup>. Said slides and stuffing-rods are operated through the medium of vertical pivoted fly-staff C<sup>3</sup>, which is connected with a wrist-pin on the drive-wheel D by means of the pitman C<sup>4</sup>. (Clearly shown in Fig. 1.)

The stuffing-tubes, which project from and in front of the lower end of the feed-hopper, are represented by the letters E E', over which one end of the collar body and rim is drawn preparatory to being stuffed, the upper one E receiving the collar-body and the lower one E' receiving the rim of the collar. The stuffing-rods pass through the feed-hopper and at each stroke carry a wad of straw into the rim and body through the stuffing-tubes.

Above the table A is arranged a bed-piece *f'*, adapted to work in guideways *f*<sup>2</sup>, so as to allow for the travel of said bed-piece. A feed-screw I passes through lugs formed upon the

bed-piece, the apertures in said lugs being threaded oppositely to the threads of the screw. A rod I' also passes through lugs formed upon the bed-piece, and both screw I and rod I' are provided upon their inner ends with bevel-gears  $i^3$  and  $i^4$ , rod I' being further provided at a suitable point upon its length with a worm  $j$ . Projecting upward from one end of bed-plate  $f'$  are standards  $f$ . The standards upon one side carry a plate F, and the standards upon the opposite side a plate F', the inner edges of the two plates being sufficiently apart to form a narrow space  $g$ . Upon the top of plate F' is arranged a gripping-plate  $f^3$ . This plate is adapted to be adjusted to or from the stationary section F by means of a hand-screw  $h^2$ .

The letter  $g'$  indicates a gripping-plate, which is seated upon the outer end of plate F'. This plate carries a roller  $h^3$ , which is adapted to hold the collar in position while being stuffed on the curve. It is furthermore provided with a screw  $h^3$  for the purpose of providing for the adjustment of the roller.

The letter G indicates a tubular standard having a vertical shaft G' passing there-through, said shaft carrying on its lower end a worm-wheel  $j'$ , which meshes with worm  $j$  of rod I'. The upper end of the vertical shaft carries the curved former H, adapted to be rotated with the rotation of the shaft. This former is similar in all respects to the former described in my application for Letters Patent, Serial No. 368,963, filed the 22d day of October, 1890, excepting that it is provided with a downwardly-projecting flange  $h'$ , as well as upwardly-extending flange  $h$ . These flanges serve as bearing-surfaces for both the collar rim and body. Opposite the former is a plate F<sup>2</sup>, its edge being sufficiently removed from the edge of the former as to constitute a continuation of the slot  $g$ . Upon plate F<sup>2</sup> is mounted a gripping-plate  $g^2$ , which is adjusted closer to or farther from the former H by means of hand-screw  $h^4$ . The former is rigidly connected to plate F<sup>2</sup> by means of yokes G<sup>2</sup>, and consequently will turn with said former as the latter is rotated.

It will be understood from the foregoing that when the machine is in position to receive the collar for stuffing its rim the curved former is in the position illustrated in the drawings, while the spaces between the several sections are in a line with each other. The collar rim and body are then placed over the appropriate tubes and retained in lengthwise position by adjusting the gripping-plates closely thereto.

The stuffing operation is now commenced, and is attained through the following mechanism: It will be noticed that I provide a transverse shaft K, upon which are adjustably mounted, by means of clutch mechanism  $i^2$ , gears  $i'$  and  $i''$ . When it is desired that the feed-screw only should be operated, gear  $i'$  is thrown into mesh with gear  $i^3$  upon the end of said feed-screw and gear  $i''$  out of mesh

with gear  $i^4$  of rod I'. It is obvious that when this is done and the shaft K rotated a rotary motion will be imparted to the feed-screw, and as the latter works through the threaded lugs of the bed-piece  $f'$  a forward movement of said table will be the result. After the stuffing has continued in this manner for a sufficient length of time to fill the collar for a distance equal to the distance of one leg it then becomes necessary to turn the collar in order to give the same the proper curvature. This is accomplished by throwing gear  $i'$  out of mesh with gear  $i^3$  and gear  $i''$  into mesh with gear  $i^4$  upon the end of rod I'. As shaft K turns the result will be that rod I' only is rotated, which has the effect of turning the curved former, while the stuffing process still continues. After the former has been turned to its full extent, so as to completely bend the collar, the gear rotating the feed-screw is again thrown into mesh and the gear operating rod I' out of mesh, so as to cause the table to resume its forward movement, which is continued until the unfilled leg of the collar has been completely stuffed.

The shaft K, carrying operating-gears  $i'$ , receives its motion through the medium of gear K', which meshes with gear K<sup>2</sup>, which in turn is operated by gear K<sup>3</sup>, which is mounted on shaft D, which has its motion imparted by any suitable mechanism. (Not shown.)

Any suitable form of mechanism may be employed for reversing the travel of the table after the collar has been stuffed; but I prefer to operate the same through the medium of a crank-handle, which I secure to axle of gear K'. (Not shown.) In order to use the crank-handle, I throw gear K<sup>2</sup> out of contact with gears K' and K<sup>3</sup> by means of the stud  $k$ , which projects through opening or slot  $k'$ , formed in the segment  $k^2$ .

As previously stated, this invention relates more particularly to improvements upon the device described in another application for Letters Patent filed by me on the 22d day of October, 1890, Serial No. 368,963, and I therefore disclaim herein any matter claimed in the application referred to.

Having thus described my invention, what I claim as new, and desire to secure protection in by Letters Patent of the United States, is—

1. In a machine for stuffing rims and bodies of horse-collars, the combination of the rim and body stuffing tubes, stuffing-rods adapted to work therein, traveling table for holding the collar in position, said table composed of stationary and movable sections, movable former located on said table, and suitable mechanism for operating said former, substantially as set forth and described.

2. In a machine for stuffing horse-collars, the combination of a longitudinally-moving collar-carrying table consisting of front and rear sections, one side of said rear section mounted rigidly upon a shaft, a feed-screw for imparting said longitudinal movement to

the table, mechanism engaging the shaft and imparting a rotary movement thereto after the longitudinal movement has ceased, and means for stuffing the collar carried by the table, substantially as set forth.

3. In a machine for stuffing the rims and bodies of horse-collars, the combination of the body and rim stuffing tubes, stuffing-rods working therein, traveling table composed of stationary and movable sections, rotary former for bending the collar to the proper shape, and the feed-hopper adapted to equally supply the rim and body stuffing tubes, substantially as set forth and described.

4. In a machine for stuffing the rims and bodies of horse-collars, a traveling table composed of a stationary and movable section adapted to grip the collar in a straight line, and rotary former secured to the table and adapted to form or bend the collar to the proper shape while the rim and body of the collar are being stuffed, substantially as set forth and described.

5. In a stuffing-machine for horse-collar rims and bodies, the combination, with the stuffing-tubes, of the feed-hopper, stuffing-rods working therethrough, straw-compressors working therein, cams for actuating the compressors, said compressors adapted with the movement to carry and supply sufficient straw to the mouths of the stuffing-tubes to form a uniform wad for the stuffing-rods, and suitable mechanism for operating the cams and stuffing-rods, substantially as set forth and described.

6. In a machine for stuffing horse-collars, the combination of a collar-carrying table consisting of front and rear sections, one side of said rear section mounted rigidly upon a shaft and provided with upwardly and downwardly extending flanges constituting forming and shaping device for the collar, a feed-screw for imparting a longitudinal movement to the table by engagement therewith, mechanism engaging the shaft for imparting a rotary movement thereto after the longitudinal movement has ceased, and means for stuffing the collar carried by the table, substantially as set forth.

7. In a horse-collar-stuffing machine, the combination of a longitudinally-moving table having a central opening or slot to receive the collar, adjustable gripping-plate arranged at the forward end of the table to one side of the slot, a rotary former arranged at the rear end of the table, yokes for connecting said rotary former with the section of the table on the opposite side of the slot, an adjustable plate mounted upon said section of the table, an intermediate gripping-plate carrying a roller adapted to hold the collar in position while being stuffed on the curve, stuffing-tubes, and stuffing-rods working therein, substantially as set forth.

8. In a horse-collar-stuffing machine, the combination of a frame, bed-piece working in guideways therein, said bed-piece provided

with threaded depending lugs, a feed-screw working through said lugs and provided with opposite threads, a rod also working through lugs depending from the bed-piece and provided with a worm, plates arranged above said bed-piece and connected therewith by standards, a rotary former to the rear of these plates, a shaft depending from said former and provided upon its lower end with a worm-wheel adapted to be engaged by the worm formed upon the rod, means for alternately rotating said rod and the feed-screw, stuffing-tubes, and stuffing-rods working therein, substantially as set forth.

9. In a horse-collar-stuffing machine, the combination of a bed-piece provided with threaded depending lugs, an oppositely-threaded feed-screw working through said lugs and provided upon its inner end with a bevel-gear, a rod also working through lugs depending from the bed-piece, having a bevel-gear upon its inner end and provided upon its length with a worm, a rotary former above the bed-piece, provided with a depending shaft carrying a worm-wheel adapted to meet with the worm upon the rod, a transverse shaft carrying an end gear, a main driving-shaft carrying an end gear, an intermediate gear meshing with the two former-gears, said gear formed with a segmental slot, a stud working in said slot for throwing the gear out of mesh, means for reversing the travel of the table, stuffing-tubes, and stuffing-rods working therein, substantially as set forth.

10. In a horse-collar-stuffing machine, the combination of a frame, a bed-piece working in guideways therein, said bed-piece provided with threaded depending lugs, a feed-screw working through said lugs and provided with opposite threads, a rod also working through lugs depending from the bed-piece and provided with a worm, plates arranged above said bed-piece and connected therewith by standards, a rotary former to the rear of these plates, a shaft depending from said former and provided upon its lower end with a worm-wheel adapted to be engaged by the worm formed upon the rod, means for alternately rotating said rod and the feed-screw, stuffing-tubes, and stuffing-rods working therein, substantially as set forth.

11. In a horse-collar-stuffing machine, the combination of a bed-piece provided with threaded depending lugs, an oppositely-threaded feed-screw working through said lugs and provided upon its inner end with a bevel-gear, a rod also working through lugs depending from the bed-piece, having a bevel-gear upon its inner end and provided upon its length with a worm, a rotary former above the bed-piece, provided with a depending shaft carrying a worm-wheel adapted to mesh with the worm upon the rod, a transverse shaft having bevel-gears and means for throwing the same alternately in and out of mesh with the gears of the rod and feed-screw, said transverse shaft also provided with an

end gear, a main driving-shaft having a gear  
mounted upon the end thereof, an interme-  
diate gear meshing with the end gears of the  
transverse shaft and driving-shaft and pro-  
5 vided with a segmental slot, a stud work-  
ing in the slot for throwing the gear out of  
mesh, means for reversing the travel of the  
table as said gear is thrown out of operation,

stuffing-tubes, and stuffing-rods working there-  
in, substantially as set forth. 10

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

WILLIAM J. WEBBER.

Witnesses:

J. W. KEYS,

JNO. E. SEXTON.