

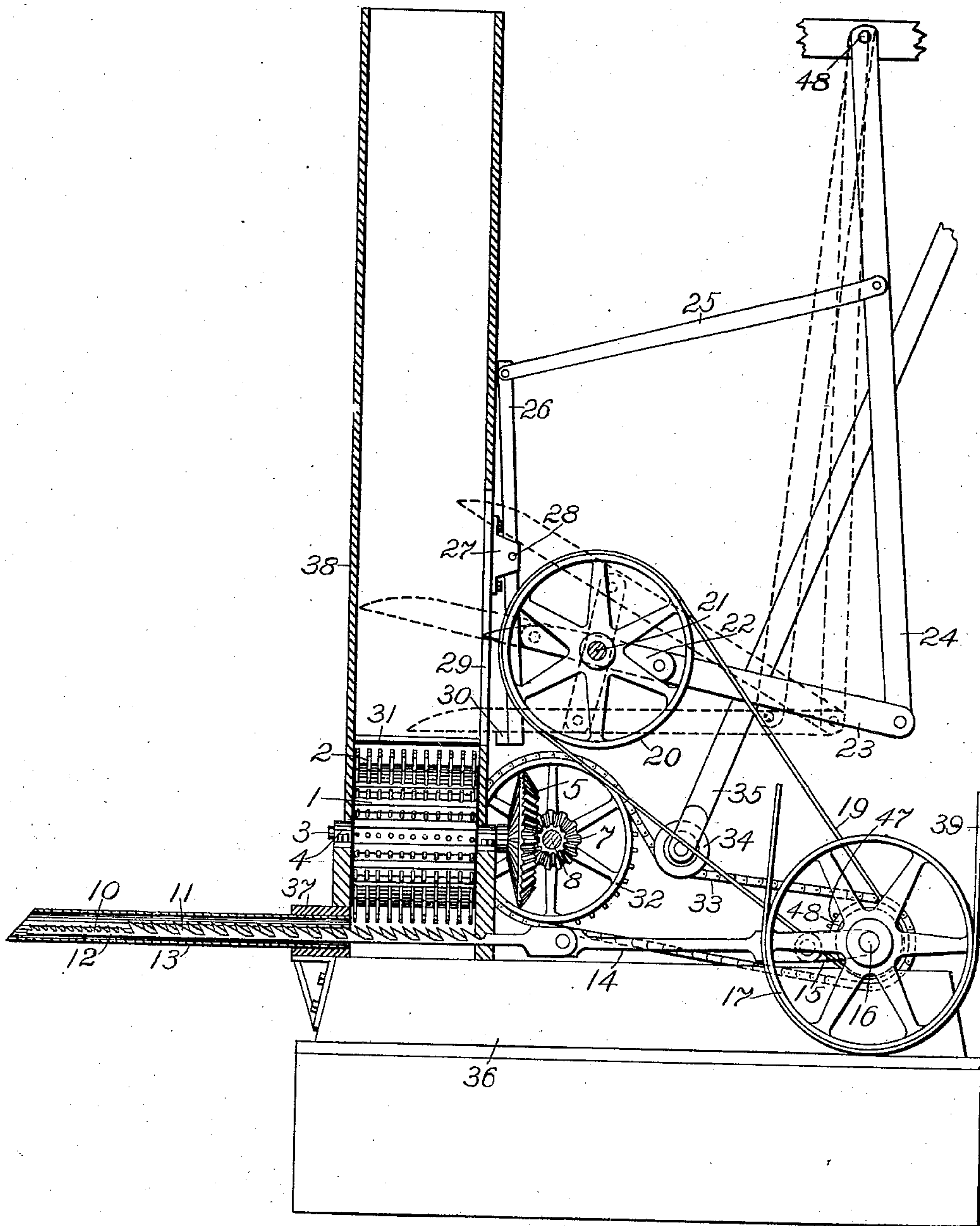
No. 865,934.

PATENTED SEPT. 10, 1907.

L. J. POWERS.  
MACHINE FOR STUFFING HORSE COLLARS.

APPLICATION FILED AUG. 30, 1906.

2 SHEETS--SHEET 1.



WITNESSES:

Fig. 1.

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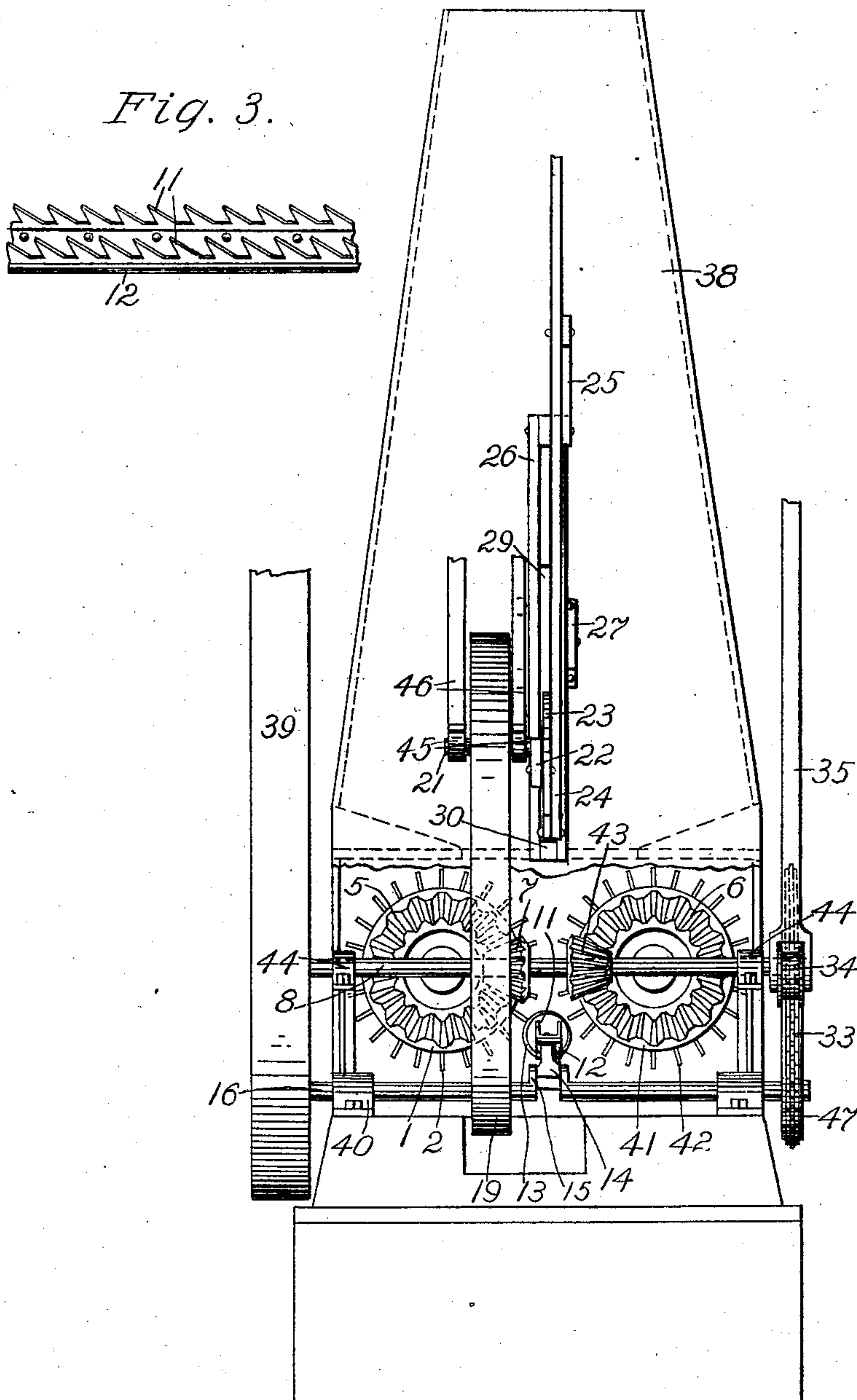
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WITNESSES:

*W. Kennedy*  
*C. M. Jensen.*

*Fig. 2.* Leonard J. Powers,

INVENTOR

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# UNITED STATES PATENT OFFICE.

LEONARD J. POWERS, OF WATERLOO, IOWA, ASSIGNOR TO THE POWERS MANUFACTURING COMPANY, OF WATERLOO, IOWA.

## MACHINE FOR STUFFING HORSE-COLLARS.

No. 865,934.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed August 30, 1906. Serial No. 332,709.

*To all whom it may concern:*

Be it known that I, LEONARD J. POWERS, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Machines for Stuffing Horse-Collars, of which the following is a specification.

My invention relates to improvements in machines for stuffing horse collars, and the objects of my improvement are, first, to improve the mechanism and mode of operation of the machine patented by Otis Jones, No. 670,051, on March 19, 1901, by substituting interacting tooth-carrying drums for the rotating flails of said patent, and second, by providing a peculiar auxiliary mechanism for assisting in feeding the material in the hopper to said interacting drums. This application is also differentiated in some of the above particulars from the features set forth and claimed in Patent Number 852,137, issued to me on April 30th, 1907, on a machine for stuffing horse-collars. These objects I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my said machine, parts being sectioned away in order to better disclose the interior construction; Fig. 2 is a rear elevation of the same with parts removed to show the positions of the interacting drums, and Fig. 3 is an enlarged view of a portion of the stuffing rod showing the arrangement of the double row of staggered teeth thereon.

Similar numbers refer to similar parts throughout the several views.

A hopper 38 has below it a communicating compartment partially separated therefrom by means of shelves 31. Within this lower compartment are placed the drums 1 and 41, spaced apart but parallel with each other, and mounted on shafts 3 whose ends are rotatably fitted within the bearings 4. The surfaces of both drums are covered thickly with rows of short projecting spikes or teeth 2 and 42 respectively but extending out from the surfaces of said drum far enough so as not to interfere with each other when in rotation.

The rear ends of the shafts 3 carry the bevel gear wheels 5 and 6 respectively which respectively intermesh with the bevel pinions 7 and 43, the latter fixedly mounted on a transverse shaft 8 whose ends are rotatably fitted in bearings 44. The shaft 16 is rotatably mounted in bearings 40 affixed to the engine bed 36, and is rotated by means of a belt wheel 17 carrying a belt 39 driven by any suitable source of power. The opposite end of the shaft 16 carries a sprocket wheel 47 the latter communicating rotation to a sprocket wheel 32 on the end of the shaft 8 by means of a sprocket chain 33. A lever 35 carrying an idler 34 serves to keep the sprocket chain 33 taut. The shaft 16 has an intermedi-

ate crank 15 and between said crank and the rear end of the stuffing rod 12 a connecting rod 14 is pivoted. The stuffing rod has attached thereto two parallel rows of forwardly directed teeth arranged on opposite sides, the teeth in one row being staggered in relation to the teeth of the other row, and said stuffing rod is adapted to be horizontally reciprocated by means of the above described connecting mechanism within the stuffing tube 13. Said stuffing rod is also provided in that portion of its length anterior to the staggered teeth 11 with smaller forwardly directed teeth 10. The rear end of the stuffing tube 13 is mounted in a block 37 supported by the engine bed 36. As shown in Fig. 2, the stuffing rod 12 is located so as to lie intermediately between the drums 1 and 41 at a point sufficiently below their centers as will permit the teeth 11 to receive the material deposited thereon by said inwardly rotating drums and yet clear the radial teeth 2 and 42 thereon. I have provided auxiliary means whereby the material in the hopper 38 may be repeatedly grasped and pushed down toward the drums 1 and 41, as follows.

48 is a drive pulley mounted upon the shaft 16 and which communicates rotation to the driven pulley 20 mounted upon a short shaft 21 set in bearings 45 on the lower ends of the depending hangers 46. Said shaft 21 has a crank 22 to which a packing rod 23 is pivoted at a point a sufficient distance to the rear of its forward end. The rear end of said packing rod 23 is pivoted to the lower end of a rock-hanger 24 suspended from a pivot 48.

26 is a lever medially fulcrumed on pivots 28 set in brackets 27 affixed to the rear part of the hopper 38 on either side of a vertical slot 29 in said hopper. The lever 26 is provided with a longitudinal opening registering with the slot 29 and the forward end of the packing rod 23 passes through said opening and said slot and projects into the interior of said hopper. A link 25 is pivotally connected between the upper end of the lever 26 and an intermediate point on the rock-hanger 24. A short block 30 projects forwardly from the front surface of the lower end of the lever 26 and registers in width with a like space at the lower end of the slot 29 so as to easily move therein when reciprocated.

When the hopper 38 has been filled with the fibers or other materials used for stuffing the horse collar, and the sack to be filled has been drawn over the delivery opening of the stuffing tube 13, the operation of stuffing said sack is begun by setting the drive wheel 17 in rotation. The drive wheel 17 through the medium of the crank 15 and the connecting rod 14 horizontally reciprocates the stuffing rod 12; the sprocket wheel 47 by means of the sprocket chain 33 and sprocket wheel 32 rotates the bevel pinions 7 and 43 in the proper direction to impart inward rotation to the bevel gear wheels 5 and 6 and to the toothed drums 1 and 41 respectively. The simultaneous rotation of the pulley 48 drives in the



same direction the pulley 20, and crank 22, causing the packing rod 23 to swing forward and back in such a manner that its forward end repeatedly enters the slot 29 at its top part and then passes forward and downward until it nearly contacts with the forward part of the hopper and then is withdrawn from said hopper through the lower end of said slot. This operation of the packing rod 23 with its connections and supports is indicated in the above described positions by the dotted lines in Fig. 1. The forward end of the packing rod 23 thus grasps in its downward movement and pushes down a portion of the material in the hopper 38 through the opening between the shelves 31 against the interacting teeth 2 and 42 on the inwardly rotating drums 1 and 41 respectively. As the lower end of the lever 26 is reciprocated, its block 30 alternately enters and is withdrawn from the lower end of the slot 29 constantly pushing inward any of the material which otherwise might tend to become packed therein and clogging impede the action of the packing rod 23. The material which is grasped by the teeth 2 and 42 is drawn down between them and fed directly to the horizontally reciprocating stuffing rod 12, the teeth 11 on the latter gathering up said material and constantly pushing it forward through the stuffing tube 13 into the sack placed about the delivery opening of said tube.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for stuffing collars, the combination with a hopper, of two interacting distributing drums rotatably mounted in said hopper so as to draw down the

material between them, radial pins on said drums, means for causing rotation of said drums toward each other inwardly from above, a tube connected with the hopper and a rod reciprocating through the hopper and tube, said rod having two rows of teeth arranged on opposite sides on its upper surface, and respectively located below and between the interacting pins on said drums. 35

2. In a machine for stuffing collars, the combination with a hopper, of two interacting distributing drums rotatably mounted in said hopper, radial pins on said drums, a lever in said hopper for dislodging the material from the hopper upon and between said drums, a rotatable shaft having a crank-arm, linking means between said lever and said crank-arm, a tube connected with the hopper, and a toothed rod reciprocating through said hopper and tube. 40 45

3. In a machine for stuffing collars, the combination with a hopper having a slot in one wall, of a packing-rod reciprocating through said slot and hopper to dislodge and push down the material therein, a reciprocating block movable in and out of the bottom of said slot adapted to move into the slot when said packing-rod is elevated, means for distributing the said material in the hopper, a tube connected with said hopper, and a toothed rod reciprocating in said hopper and tube. 50 55

4. In a machine for stuffing collars, the combination with a slotted hopper having a reciprocating packing-rod therein and a reciprocating block movable into and out of the bottom of the slot therein, such block being adapted to move into said slot only when said packing-rod is lifted, of interacting distributing drums provided with radial pins, a tube communicating with said hopper, and a toothed rod reciprocating below and between said drums and in and through said hopper and tube. 60

Signed at Waterloo, Iowa, this 11th day of Aug. 1906.

LEONARD J. POWERS.

Witnesses:

BERTHA COLLENTINE,  
M. E. KENNEDY.