J. C. COLLETT & J. RENNIE.

HORSE COLLAR STUFFING MACHINE.

APPLICATION FILED JULY 19, 1909.

949,293.

Patented Feb. 15, 1910.

2 SHEETS—SHEET 1.

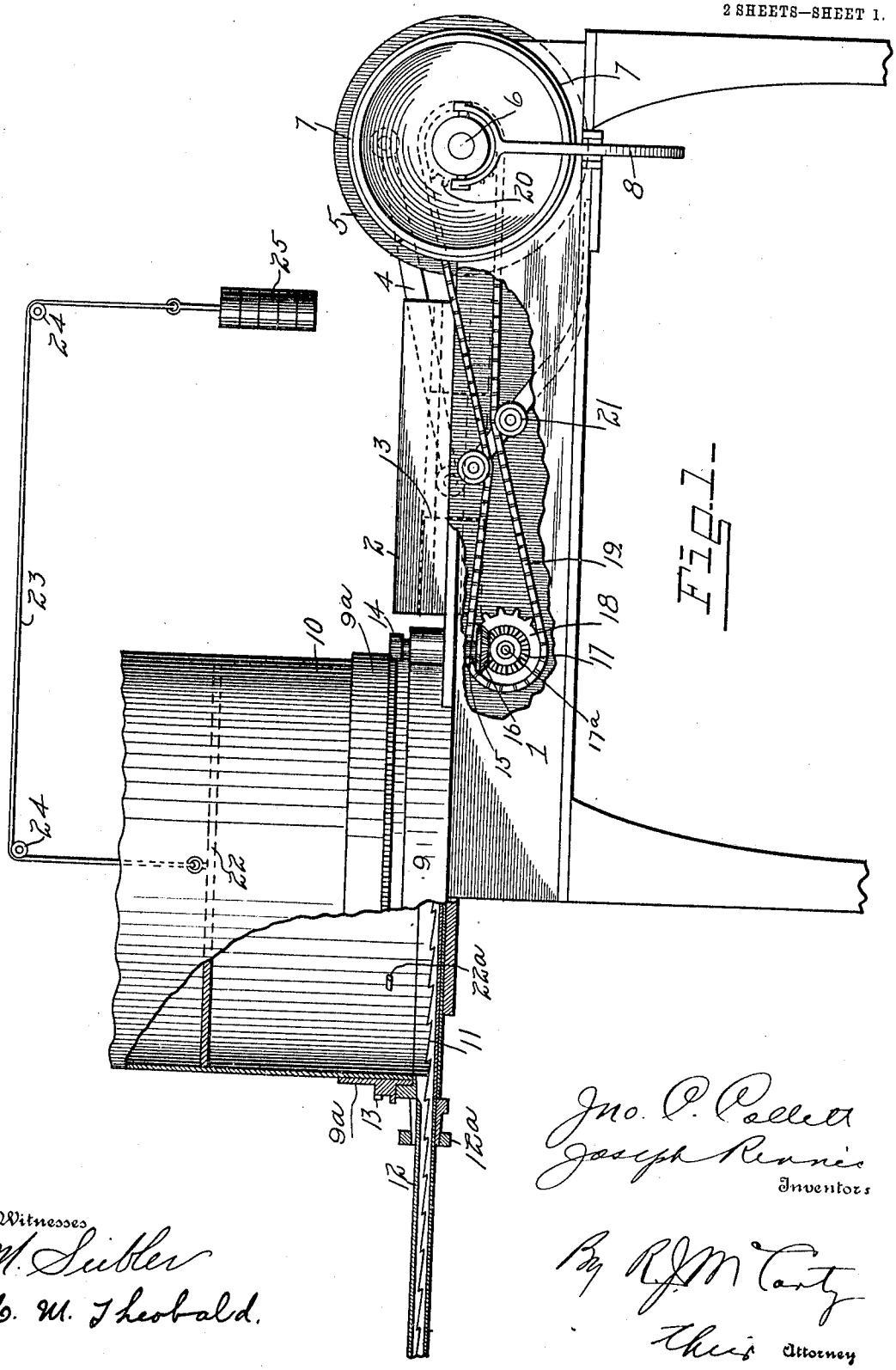

FIG. 1.

Witnesses

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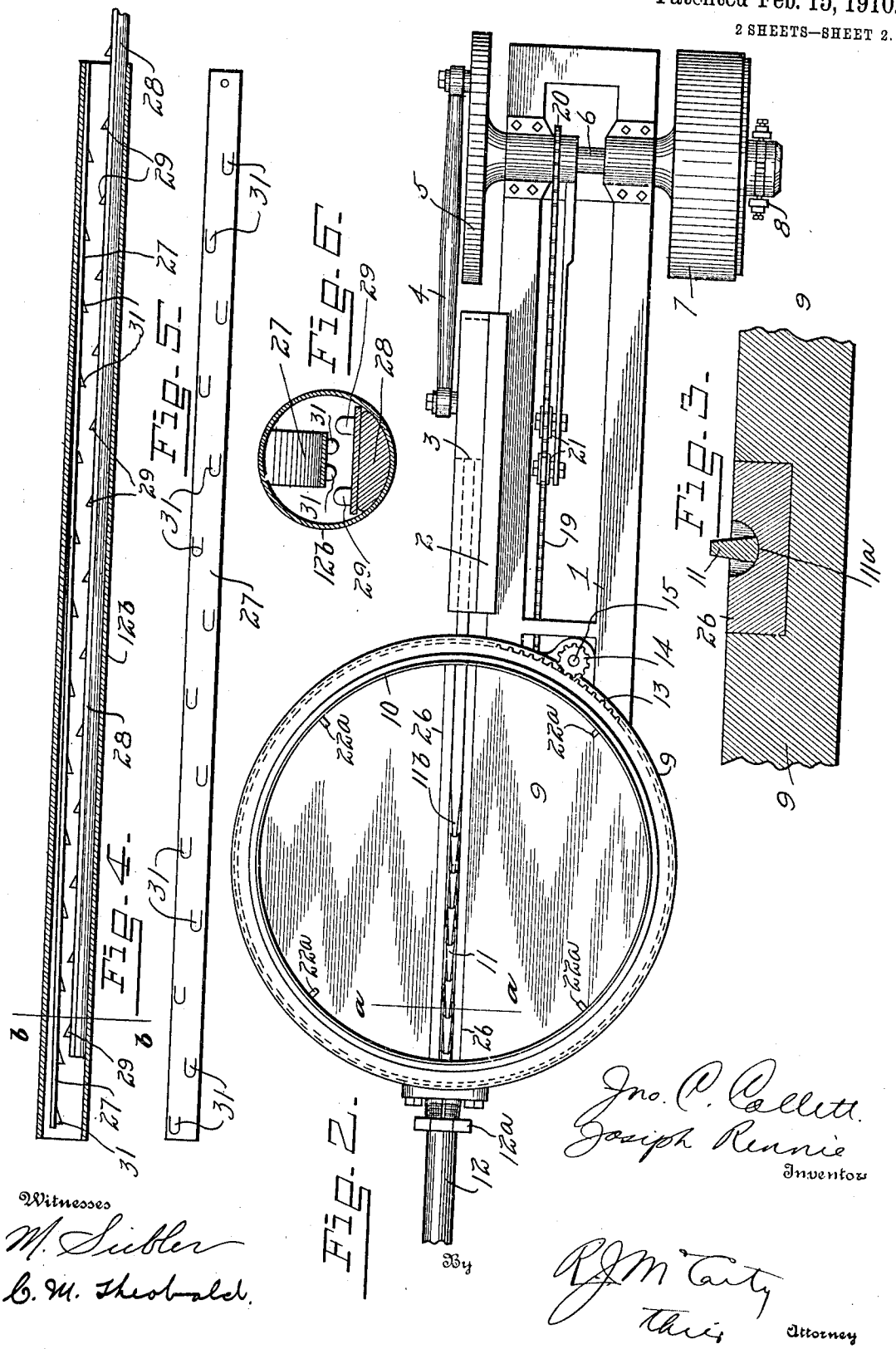

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UNITED STATES PATENT OFFICE.

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HORSE-COLLAR-STUFFING MACHINE.

949,293. Specification of Letters Patent. Patented Feb. 15, 1910.

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To all whom it may concern:

Be it known that we, JOHN C. COLLETT and JOSEPH RENNIE, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Horse-Collar-Stuffing Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in horse collar stuffing machines.

It is well known that the tightest and most rigid pack of straw in the collar is obtained by a reciprocating machine which folds the straw before packing the same in the collar. In other words, the straw on account of being fed in its original lengths, is delivered to the collar in a folded condition, that is to say, the particles of straw are folded in being delivered by the reciprocating rod and are wedged into the collar, one folded particle of straw within the other in a compact mass. Heretofore, it has been necessary to prepare the straw for packing in short lengths, as it was only possible to feed such lengths to the collar. This assorting of the straw in comparatively short lengths required much time as it was necessary to cut the straw in such lengths preparatory to feeding and packing it in the collar.

One of the objects of the present invention is to provide means for feeding and stuffing the straw without previously preparing it. In other words, by the present machine, straw not previously prepared and of maximum and varying lengths may be placed in the machine and effectually fed and packed in the collar.

A further object of the invention is to provide means for packing heavy material, such as a mixture of sand and saw dust may also be fed without necessitating the use of a great amount of power, and thus a machine is provided, in which material other than straw, may be fed and packed in the collar.

A still further object of the invention is to provide a feeding rod which is adapted to uniformly feed light material, such as shoddy, prepared feathers etc.

Of the accompanying drawings, Figure 1, is a side elevation of the machine with parts broken away to disclose the power-transmitting mechanism. Fig. 2, is a top plan view of the machine. Fig. 3, is a sectional view on the line *a a* of Fig. 2. Fig. 4, is a modified form of packing tube adapted to feed shoddy or prepared feathers. Fig. 5, is a detailed view of the floating rod mounted in the tube shown in Fig. 4. Fig. 6, is a sectional view on the line *b b* of Fig. 4.

In the following description of the invention, similar reference characters indicate corresponding parts.

1 designates a base frame, to the top of which is secured a plate 2 in which a cross head 3 is mounted. The said cross-head is reciprocated by a connecting rod 4 attached to a disk 5 mounted upon a shaft 6 having bearings on said base frame 1. The shaft 6 also carries a well-known type of friction clutch pulley 7 controlled by a lever 8 to start and stop the machine.

On the end of the base frame 1 opposite the shaft 6 is located a stationary base member 9 upon which a hopper 10 is mounted; the said hopper 10 is provided with a base ring 9^a which incloses the lower periphery of the hopper and rides upon the base member 9. The hopper is of circular form preferably and is rotated by means of gear teeth 13 which extend around the base ring 9^a and are engaged by a pinion 14; the pinion 14 is mounted on the upper end of a short shaft 15 which is provided with bearings in the base frame 1, and on the lower end of said shaft is placed a miter gear 16 which meshes with a similar gear 17 mounted upon a shaft 17^a which has bearings in the sides of the base frame 1. The gear 17 is driven by a sprocket 18 through a chain 19 which passes around a sprocket 20 on the main driving shaft 6. Idlers 21 may be provided to take up the slack in the chain 19.

Mounted in a recess 11^a in the base member 9 and at the bottom of the hopper, is a reciprocating stuffing rod 11, see Fig. 3, which extends rearwardly and is attached to the cross head 3. The forward end of this stuffing rod projects into a tube or pipe 12 which extends into the collar (not shown) to be stuffed and through which tube or pipe the straw or material is fed. The pipe 12

may be of any desired size and it is held firmly by a clamping nut 12^a. The stuffing rod 11 may also be of any shape to suit the conditions of the work, and when said rod is changed, the recess 11^a in which it reciprocates is also changed by inserting a different block 26. There may be a different removable block or member 26 for each form of stuffing rod 11, said block 26 being insertable in the upper face of the base member 9 below the hopper.

Within the hopper 10 is a weighted disk or member 22 which is counterbalanced by a weight 25, said disk 22 and the weight 25 being connected by a cord or cable 23 which passes over a suitable number of pulleys 24. The purpose of the weighted disk 22 is to press the straw in the hopper against the stuffing rod 11, and when it is desired to vary the feed of the machine, the pressure of the disk 22 may be varied by changing the weight 25. At the bottom of the hopper, pins 22^a are mounted which prevent the disk or weighted member 22 coming in contact with the stuffing rod 11 when the straw or material in the hopper becomes low. Owing to the fact that there are no central obstructions in the hopper, the straw may be placed therein in its original lengths or as it comes from the bale, and kept in that condition until delivered by the reciprocating feed rod through the pipe into the collar. In its operation, the rotating hopper carries the straw around with it, and the straw is thus presented to the reciprocating feed rod 11 in an ever-changing position, which results in said straw being picked off the bottom of the body in its original lengths, and fed and packed through the pipe 12 into the collar.

It will be noted from Fig. 2, that when the stuffing rod 11 is in its rear position, the rear tooth 11^b is slightly past the center of the hopper, consequently, the entire lower surface of the packing material or straw comes in contact with said rod during the revolution of said hopper. In the actual operation of the machine, the straw, which is engaged by the stuffing rod at an angle, is gradually forced to the outer circumference of the hopper, when said straw will lie approximately at right angles to the feed rod. After the machine has been in operation a short time, the straw thus accumulated at the bottom and lower circumference of the hopper, resembles much the form of a bird's nest, and notwithstanding the straw is placed in the hopper in a more or less tangled condition, it comes in contact with the feed rod in a uniform condition, or at approximately right angles, and straw of any length may thus be folded and packed in the collar. This is due to the rotation of the hopper. As the said hopper rotates, or carries around the stuffing material in a body, the machine is adapted to be used to feed heavy material, such as a mixture of sand and saw dust, which is used to stuff razor strop handles and the like, and further, owing to the fact that the material is rotated in a body as distinct from being agitated by a moving member within the hopper, considerably less power is required to operate the machine.

When it is desired to feed light material, such for example, as shoddy or prepared feathers, the feed rod and pipe shown in Fig. 4, may be used. The clamp nut 12^a may be released to permit of the removal of the pipe 12 and the insertion of the pipe 12^b. The stuffing rod 11 is detached from the cross head 3, and feed rod 28 is inserted in its place. The recessed member 26 is also changed to provide a recess 11^a which conforms with the feed rod 28, the latter rod being provided with a multiplicity of spurs 29 which are preferably arranged in alternate positions as shown. The spurs 29 point outwardly and are adapted to carry the stuffing material toward the outer end of the pipe during the reciprocating movement of said feed rod. In order to prevent the stuffing material from returning during the retrograde movement of the feed rod, a floating rod 27 is provided and which is mounted in the pipe 12^b above the stuffing rod 28 as shown in Fig. 4. The rod 27 is likewise provided with spurs 31 which point outwardly and downwardly, and the said rod is attached at one end of the pipe 12^b in any suitable manner. It will be observed that the spurs 31 on said floating rod 27 lie between the spurs 29 on the stuffing rod 28, see Fig. 6, and the said spurs 31 prevent the packing material from gathering in lumps and thus insures an even feed and packing of the material. It will be understood that the floating retaining rod 27 in the pipe 12^b will drop when the reciprocating rod is feeding lightly and will prevent any wadding of the material in the pipe.

We claim:

1. In a stuffing machine, the combination of a rotatable hopper, a feed pipe, a reciprocating feed rod extending below said hopper and into said feed pipe, means for rotating said hopper, and means for reciprocating the feed rod during the rotation of the hopper.

2. In a stuffing machine, the combination of a rotatable hopper, a stationary base upon which said hopper is mounted, gearing connected to the lower circumference of said hopper to rotate the same, a feed pipe, a reciprocating feed rod extending across the lower end of the hopper and into said feed pipe, means for actuating the gearing through which the hopper is rotated, and means for reciprocating said feed rod.

3. In a stuffing machine, the combination of a hopper, a base supporting said hopper,

a toothed ring extending around the lower circumference of said hopper, a pinion engaging said toothed ring to rotate the hopper, means for driving said pinion, a feed pipe, a reciprocating feed rod extending below said hopper and into said pipe, and means for reciprocating said feed rod.

4. In a stuffing machine, the combination of a rotatable hopper, a stationary base below said hopper and inclosing the lower circumference of said hopper, means for rotating said hopper, a feed pipe, a feed rod extending below said hopper and into the feed pipe, a floating retaining bar within said feed pipe above the reciprocating feed rod, and means for reciprocating the feed rod during the rotation of the hopper.

5. In a stuffing machine, the combination of a hopper, a stationary base upon which said hopper is mounted, a ring surrounding the lower circumference of the hopper and engaging the circumference of said base, a portion of said ring being provided with gear teeth, a pinion engaging said gear teeth to rotate the hopper, means for driving said pinion, a pipe, a reciprocating feed rod extending below the hopper through the base and into said pipe, and means for actuating said feed rod concurrently with the rotation of the hopper.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN C. COLLETT.
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