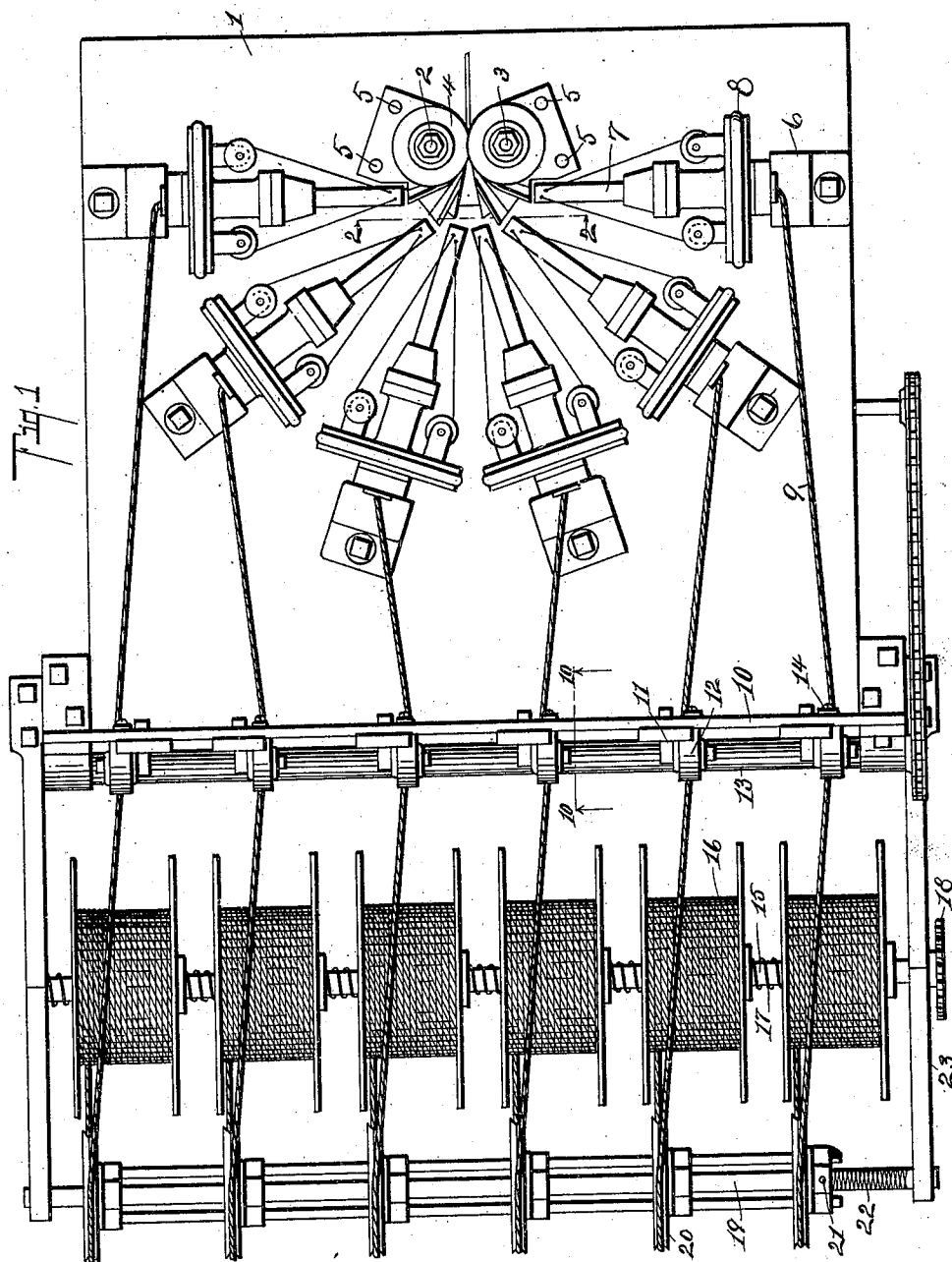


W. WEBSTER.
 MECHANISM FOR THE MANUFACTURE OF CORD FROM QUILL SUBSTANCE OR STRIPS.
 APPLICATION FILED OCT. 31, 1906.

982,322.

Patented Jan. 24, 1911.

3 SHEETS—SHEET 1



Witnesses:

A. J. Adams
Lucia Greenfield

Inventor,

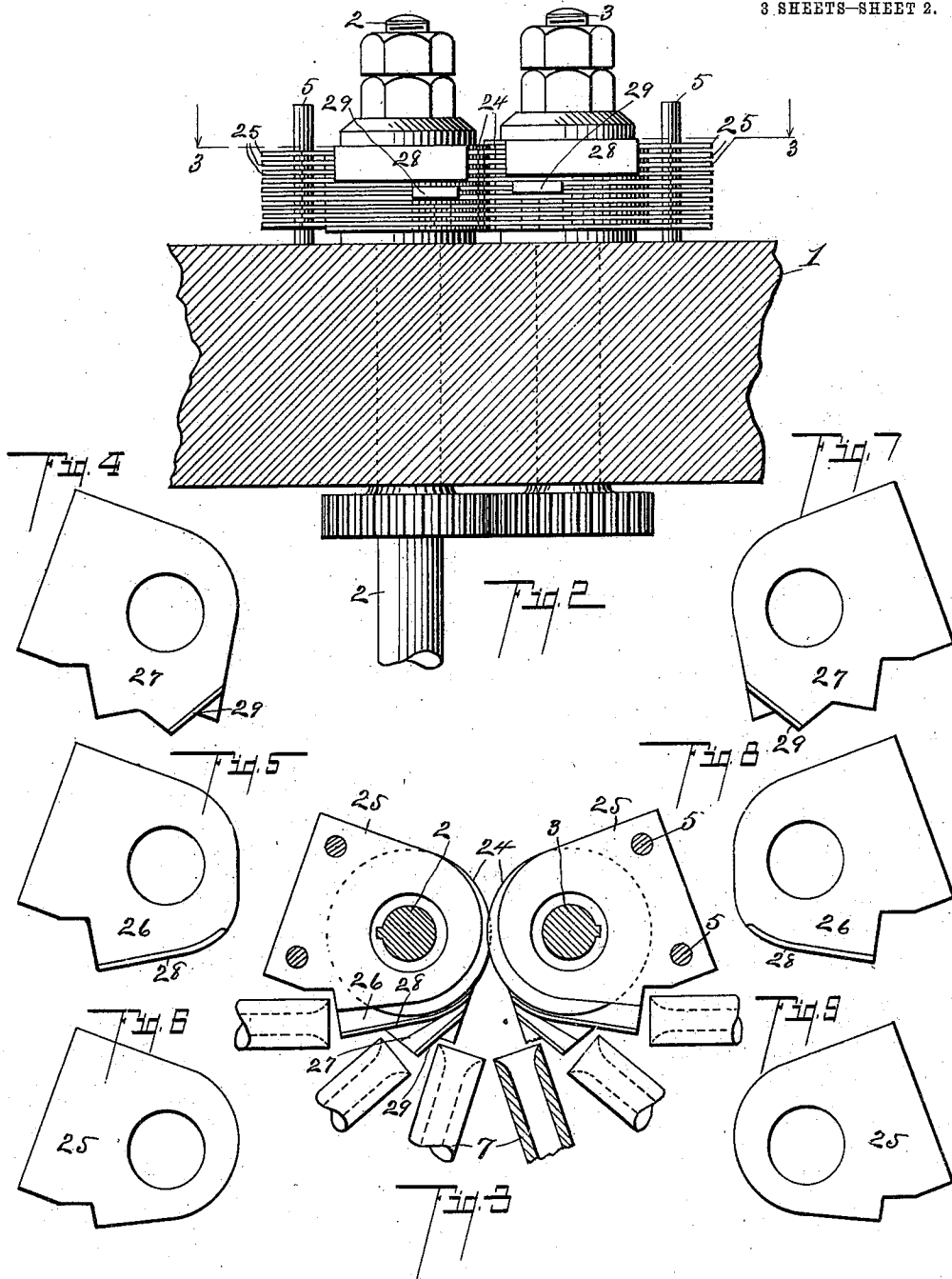
William Webster
 By *Chapman & Co.*
 Att'ys

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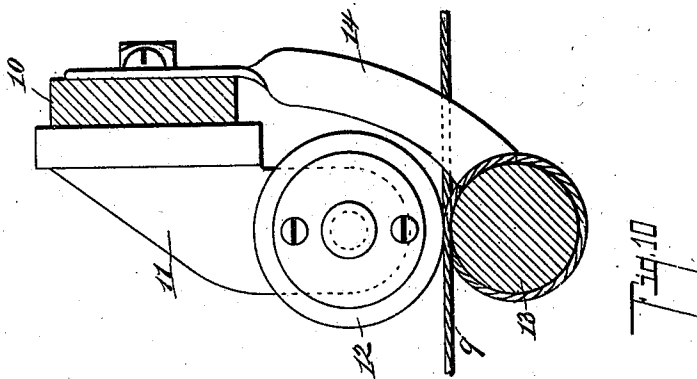
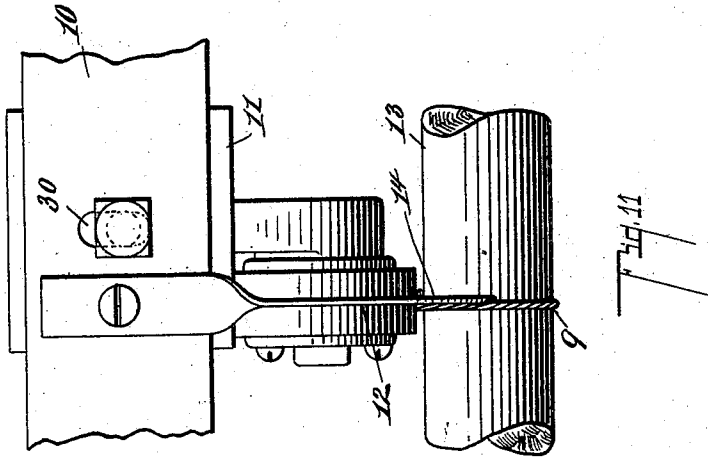
William Webster
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3 SHEETS-SHEET 3.



Witnesses:

W. F. Adams
Lulu Greenfield

Inventor,

William Webster
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 Att'ys

UNITED STATES PATENT OFFICE.

WILLIAM WEBSTER, OF LONDON, ONTARIO, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WARREN FEATHERBONE COMPANY OF MICHIGAN, OF THREE OAKS, MICHIGAN, A CORPORATION OF MICHIGAN.

MECHANISM FOR THE MANUFACTURE OF CORD FROM QUILL SUBSTANCE OR STRIPS.

982,322.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed October 31, 1906. Serial No. 341,503.

To all whom it may concern:

Be it known that I, WILLIAM WEBSTER, a subject of the King of Great Britain, residing at London, Ontario, Canada, have invented certain new and useful Improvements in Mechanism for the Manufacture of Cord from Quill Substance or Strips, of which the following is a specification.

This invention relates to an improved mechanism for the manufacture of cord from quill substance or strips.

This invention is related to the invention of my U. S. Patent No. 836,821, of Nov. 20, 1906.

The objects of this invention are, first, to provide an effective means for receiving the manually fed split halves of the quills and automatically fibering and bundling the same and forming them into cords by suitable wrapping thread or threads therearound. Second, to provide an improved means for putting tension on the cord and winding the same where a multiple winder is made use of.

Further objects, and objects relating to details of construction, will definitely appear in the detailed description to follow.

I accomplish the objects of my invention by the mechanism described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

Figure 1 is a plan view of my improved cord forming machine. Fig. 2 is an enlarged detail sectional elevation view taken on a line corresponding to line 2—2 of Fig. 1, looking toward the right. Fig. 3 is a detailed plan sectional view taken on a line corresponding to line 3—3 of Fig. 2. Figs. 4, 5 and 6 are views of the lefthand spacer and guide plates inserted between the stacks of cutter disks. Figs. 7, 8 and 9 are views of the righthand spacer and guide plates. Fig. 10 is an enlarged sectional elevation taken on a line corresponding to line 10—10 of Fig. 1, showing the means of retaining and delivering the cord from one of the winders, this being duplicated for each winder. Fig.

11 is a detail elevation view taken from the righthand of the structure appearing in Fig. 10.

In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Similar numerals of reference refer to similar parts throughout the several views.

Referring to the numbered parts of the drawing, the different parts of the machine are supported on the table or bed 1. These consist of a stack of cutter rolls for slitting flat portions of quills or similar material into fiber. These rolls are supported on a pair of vertical shafts 2 and 3, and intermesh with each other, as clearly appears in Fig. 2, where the rolls are shown enlarged with the shafts geared together for actuating the same. Between these rolls are inserted separator plates 25, 26 and 27, these being of the same thickness as the cutter disks of the opposite pairs of rolls, whereby the cutter disks are properly separated for doing their work. When the quill or other material is slitted by these disks the fibers are delivered out along the edges of the several plates 25, 26 and 27, and their tendency is to cling to the edges of the same, and to be delivered to the winders 7, supported on suitable brackets 6 and driven by the belt 8, and of a usual and well-known construction, the throats of which are arranged opposite the edges of the guiding disks to receive the fibers as they pass from the fibering mechanism. Upwardly projecting flanges 28—28 and 29—29 are provided on the lowermost of each group of washers to assist as guides for the fiber being discharged from the slitters. These flanges are found to be useful under certain conditions. The cords are delivered from these winders 7 and are passed over a live shaft 13 which is revolved from a suitable connection, preferably a sprocket chain connected to the driving shaft of the machine, the details of the mechanism for driving the winder not being illustrated, as it is a usual gear construction and not necessary to be illustrated.

A bar 10 extends above the shaft 13 and has guiding fingers 14 which extend down and serve to guide and locate the cord 9 where it wraps around said shaft 13. A

bracket 11 also depends from this bar 10 for each cord and a roller 12 with a suitable rubber tire is arranged to contact with the cord and by co-acting with the shaft 13 serves to deliver the same at all times. The cord, being stiff and resilient, will not embrace the shaft otherwise, and in the event of any slight difference in the feeding, the slip of the cord on the shaft accommodates the same so that a proper and even tension on the cord is secured.

The cord is delivered over a level winding device which reciprocates back and forth by the pin 21, engaging the double screw 22, the cord passing over the grooved guide wheels 20, one for each spool 16. The spools 16 are held yieldingly and yield or slip sufficiently, so that the cord will be drawn taut without danger of breaking it. This shaft is driven by the sprocket wheel 18. The specific relations of these various parts clearly appear in the plan view of Fig. 1.

The operation of my improved automatic cord making machine will be readily understood from the drawing. A strip of quill substance, preferably formed by splitting and depithing a turkey quill, is delivered between the cutting rolls by the fingers of the operator. The rolls slit the same into fiber which is delivered out over the guiding plates 25, 26 and 27, into the throats of the respective winders 7. The winders are provided with a suitable supply of thread for wrapping around these bundles of fibers and forming them into cord. The cord 9 then passes over the live shaft 13, is guided in place by the finger 14, and retained in position by the rubber rimmed wheel 12 supported on the bracket 11, these devices being carried by a bar 10 above the shaft 13. The cord then passes over pulleys 20, one being provided for each of the winders, and is delivered around such pulley to the spools 16. The pulleys 20 are reciprocated back and forth by the double screw 22 acting on the pin 21 in a manner well-known to the art. The spools are held yieldingly in position by the spring 17 on the shaft 15 so that the cord is wound under proper tension.

I desire to state that this arrangement of the device could be utilized with other means of winding the formed cord but the particular means as shown is of special advantage and could be used in connection with any kind of automatic cord forming machine.

The splints or strips of quill substance can, of course, be delivered from the machine which forms the same by a proper arrangement of devices, but the particular plan here shown of feeding the same by hand is very effective. I merely require that the operator overlap the parts or strips in proper relation when they are fed in.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:

1. In a machine for manufacturing cords from strips of quill substance, the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to divide it into a plurality of bundles; a plurality of winders each with its throat arranged to receive a bundle of fiber as it is delivered from the slitting disks and wrap a thread therearound; a live shaft arranged at the rear of said winders around which the cord is looped or turned; a bar above the said shaft with fingers for guiding the cord upon the shaft, and a rubber rimmed roller for holding each cord in contact with the revolving shaft; a series of spools, one for each of the said cords, for receiving the same, with suitable friction means for driving the spools yieldingly to put proper tension on the cord, co-acting substantially as described and for the purpose specified.

2. In a machine for manufacturing cords from strips of quill substance, the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to divide it into a plurality of bundles; a plurality of winders each with its throat arranged to receive a bundle of fiber as it is delivered from the slitting disks and wrap a thread therearound; a live shaft arranged at the rear of said winders around which the cord is looped or turned; and a rubber rimmed roller for holding each cord in contact with the revolving shaft; and a series of spools, one for each of the said cords, for receiving the same, with suitable friction means for driving the spools yieldingly to put proper tension on the cord, all co-acting substantially as described and for the purpose specified.

3. In a machine for manufacturing cords from strips of quill substance, the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to divide it into a plurality of bundles; a plurality of winders each with its throat arranged to receive a bundle of fiber as it is delivered from the slitting disks and wrap a thread therearound; a live shaft arranged at the rear of said winders around which the cord is looped or turned; and a series of spools, one for each of the said cords, for receiving the same, with suitable friction means for driving the spools yieldingly to put proper tension on the cord, all co-acting

substantially as described and for the purpose specified.

4. A machine for manufacturing cords from strips of quill substance, comprising the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks arranged to be manually fed; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to divide it into a plurality of bundles; a plurality of winders each with its throat arranged to receive a bundle of fiber at the point of delivery as it is delivered from the slitting disks and wrap a thread therearound; a series of spools one for each of the said cords, for receiving the same, with suitable friction means for driving the spools yieldingly to put proper tension on the cord, all co-acting substantially as described and for the purpose specified.

5. A machine for manufacturing cords from strips of quill substance, comprising the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks arranged to be manually fed; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to divide it into a plurality of bundles; a plurality of winders each with its throat arranged to receive a bundle of fiber at the point of delivery as it is delivered from the slitting disks and wrap a thread therearound; and means for winding the cords separately, all co-acting substantially as described and for the purpose specified.

6. A machine for manufacturing cords from strips of quill substance, comprising the combination of slitting devices consisting of stacks of intermeshed revolving slitting disks arranged to be manually fed; spacing and guiding washers between the said disks for delivering the fibered substance therefrom at different angles, to di-

vide it into a plurality of bundles; and a plurality of winders each with its throat arranged to receive a bundle of fiber at the point of delivery as it is delivered from the slitting disks and wrap a thread therearound, all co-acting substantially as described and for the purpose specified.

7. In a machine for manufacturing a plurality of cords, a live shaft arranged at the rear of the machine around which the separate cords are looped or turned; a bar above said shaft with fingers for guiding the cord upon the shaft and a rubber rimmed roller for holding each cord in contact with the revolving shaft; and a series of spools one for each of said cords for receiving the same, with friction means for driving the spools yieldingly to put proper tension on the cord, all co-acting substantially as described and for the purpose specified.

8. In a machine for manufacturing a plurality of cords, a live shaft arranged at the rear of the machine around which the separate cords are looped or turned; and a bar above said shaft with fingers for guiding the cord upon the shaft and a rubber rimmed roller for holding each cord in contact with the revolving shaft, all co-acting substantially as described and for the purpose specified.

9. In a machine for manufacturing a plurality of cords, a live shaft arranged at the rear of the machine around which the separate cords are looped or turned; and a rubber rimmed roller for holding each cord in contact with the revolving shaft, all co-acting substantially as described and for the purpose specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

WILLIAM WEBSTER. [L. s.]

Witnesses:

R. G. FISHER,
D. CONSTABLE.