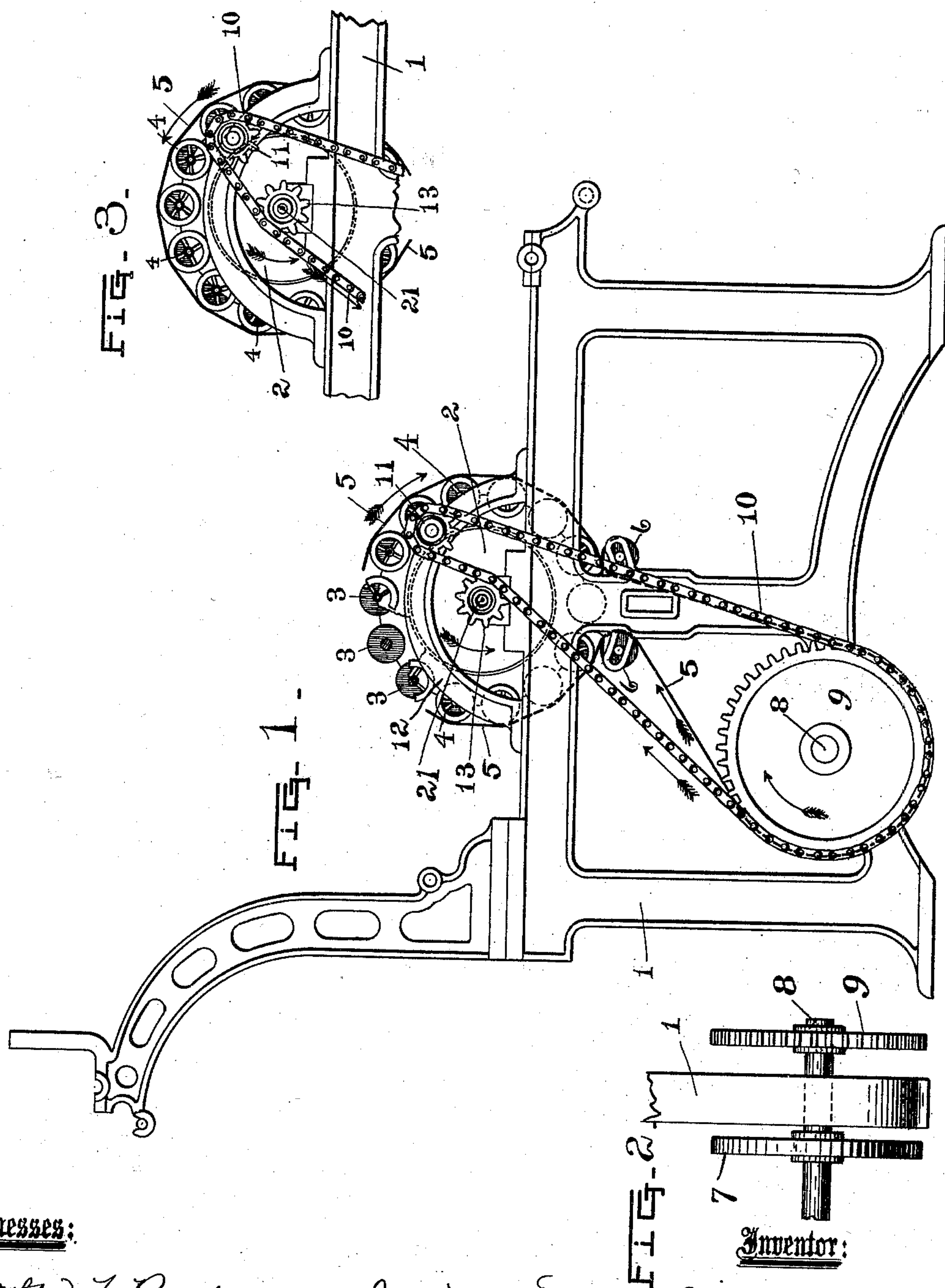


(No Model.)

J. D. CLOUDMAN.
CLOTH NAPPING MACHINE.

No. 505,264.

Patented Sept. 19, 1893.



Witnesses:

Arthur F. Raudall,
Robert Wallace.

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His Attorneys.

Inventor:

UNITED STATES PATENT OFFICE.

JOSIAH DANA CLOUDMAN, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EDWARD W. THOMAS, OF SAME PLACE.

CLOTH-NAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,264, dated September 19, 1893.

Application filed July 8, 1893. Serial No. 479,908. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH DANA CLOUDMAN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cloth-Napping Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to cloth napping machines of the class in which a number of small napping or teasing rollers is arranged in a circular series at the periphery of a revolving drum, the said rollers being provided with actuating connections by means of which they respectively may be rotated on their individual axes at the same time that they are carried around the drum in the revolution of the latter. A considerable number of different forms of driving connections for imparting to the said rollers the desired rotation upon their individual axes has been devised.

My invention relates in particular to the said driving connections, and is designed as an improvement upon the forms thereof which have been proposed heretofore.

The especial object of my invention is to provide a simple, convenient, practical and satisfactory form and arrangement of the said driving connections.

The invention consists in an improved combination and arrangement of parts, which I now will proceed to describe with reference to the accompanying drawings, and afterward will point out particularly and clearly define in the claims at the close of this specification.

In the drawings, Figure 1 is a view in side elevation of part of a cloth-napping machine having my invention applied thereto, sufficient of the machine being represented to render clearly apparent the mode of application and connection of the invention. Fig. 2 is a detail view showing certain parts as viewed from the left hand side in Fig. 1. Fig. 3 is a view in detail showing a change in the position of the driving-band or chain.

At 1 is shown the frame-work of the machine, and at 2 the napping drum, at 21 the shaft thereof, at 3, 3, the napping or teasing rollers arranged in a circular series around the periphery of the drum, at 4 the band pul-

leys which are provided on the said rollers 3, at 5 the band which passes around in contact with the peripheries of the series of rollers 4, at 6, 6 guide pulleys between which the two parts of the band 5 pass, at 7 a driving band pulley around which the band 5 passes and by which the said band is driven, and at 8 a shaft on which the said pulley 7 is fast.

On the shaft 8 I mount a wheel 9 to which power is applied, as I shall presently describe, and which wheel I will designate herein the driven wheel. Around the said driven wheel passes a driving band or chain 10, which also passes around a carrier or guide-wheel 11 that is supported on the small arch 12 fixed to the main frame-work of the machine adjacent to the end of the napping drum.

Between the wheels 9 and 11 one part of the band or chain 10 is made to have driving engagement with the driving wheel 13 which is made fast on the shaft 21 of the napping drum. Through the engagement between the driving wheel 13 and the driving band or chain 10 at a point intermediate the driven wheel 9 and the carrier wheel 11 the said band or chain is moved, and thereby is caused to actuate the driven wheel 9, the shaft 8, the band pulley 7, and the band 5, so as to occasion rotation of the napping or teasing rollers upon their individual axes as they are carried around by the napping drum in the revolution of the latter. The use of the carrier wheel 11 enables me to extend the upper bight of the driving band 10 to a point beyond the shaft 21 and the driving wheel 13 that is mounted thereon, and the said carrier wheel 11 is located on the arch 12 in position as shown to cause the advancing side or portion of the band 10 to bear upon or engage the periphery of the driving wheel 13. Simply by shifting the said advancing side or portion of the band or chain 10 from one side to the other of the axis of the shaft 21 and the driving wheel 13 the direction of the movement communicated from the driving wheel 13 to the said band or chain 10 and the parts actuated thereby may be reversed from time to time.

In Fig. 1 I have shown the band or chain 10 in contact with the driving wheel 13 on the right hand side of the latter. This will serve

for communicating movement to the band or chain, and the parts that are actuated thereby, in the direction indicated by the arrows in the said Fig. 1.

5 In Fig. 3 I have shown the band or chain 10 in contact with the driving wheel 13 on the left hand side of the latter. This will serve for communicating movement in the reverse direction to the band or chain, and the parts
10 that are actuated thereby, as is indicated by the arrow near the band in Fig. 3.

By preference, the driving band or chain 10 is made by me as a sprocket band or chain, and the wheels 9, 11 and 13 are made as sprocket
15 wheels, in order to secure the known advantages of sprocket chains and sprocket wheels as driving connections. I contemplate, however, using in some cases an ordinary driving band and band pulleys in lieu
20 of a sprocket chain and sprocket wheels.

I claim as my invention—

1. The combination with a napping drum, and its series of napping or teaseling rollers, of a driving wheel on the shaft of the said
25 drum, a driven wheel, a carrier wheel beyond the said driving wheel, a band passing around the driven wheel and the carrier wheel and having one side thereof in driving engagement with the driving wheel, and means for trans-
30 mitting movement from the driven wheel to the napping or teaseling rollers, substantially as described.

2. The combination with a napping drum, and its series of napping or teaseling rollers,
35 of a driving sprocket wheel on the shaft of the said drum, a driven sprocket wheel, a carrier wheel beyond the said driving wheel, a sprocket chain passing around the driven

wheel and the carrier wheel and having one side thereof in driving engagement with the
40 driving wheel, and means for transmitting movement from the driven wheel to the napping or teaseling rollers, substantially as described.

3. The combination with a napping drum, 45 its series of napping or teaseling rollers, a driving band for said rollers, and a driving band pulley around which said band passes, of driving connections comprising a driving wheel on the shaft of the drum, a driven wheel in
50 operative connection with the said driving band pulley, a guide or carrier wheel beyond the said driving wheel, and a band passing around the driven wheel and carrier wheel and having one side thereof in driving en-
55 gagement with the driving wheel, substantially as described.

4. The combination with a napping drum, its series of napping or teaseling rollers, a driv-
ing band for said rollers, and a driving band 60 pulley around which said band passes, of driving connections comprising a driving sprocket wheel on the shaft of the drum, a driven sprocket wheel in operative connection with the said driving band pulley, a guide or car-
65 rier wheel beyond the said driving wheel and a sprocket chain passing around the driven wheel and guide wheel and having one side thereof in driving engagement with the driv-
ing wheel, substantially as described. 70

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

JOSIAH DANA CLOUDMAN.

Witnesses:

EDWARD W. THOMAS,
MARTIN L. HAMBLET.