No. 668,510. Patented Feb. 19, 1901.

I. N. FORRESTER.

CLOTH NAPPING MACHINE.

(No Model.) (Application filed Jan. 15, 1900.)

2 Sheets—Sheet 1.

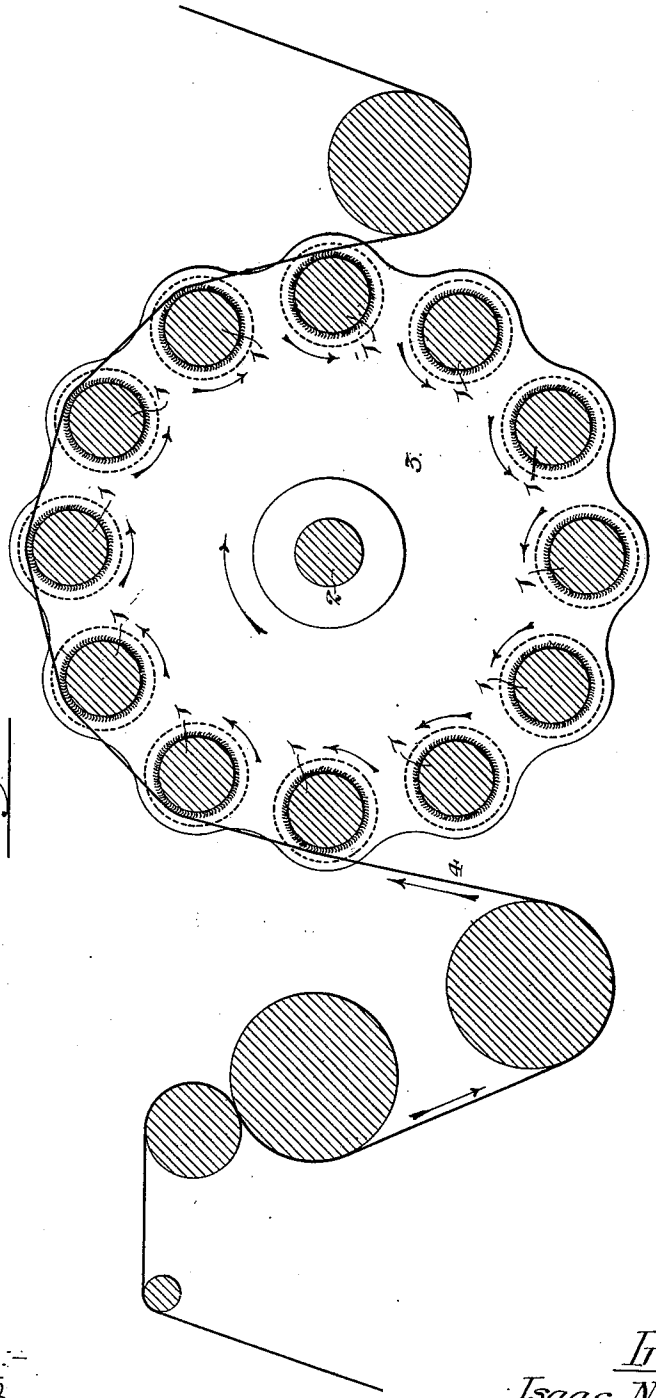


Fig. 1.

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by his Attorneys:-
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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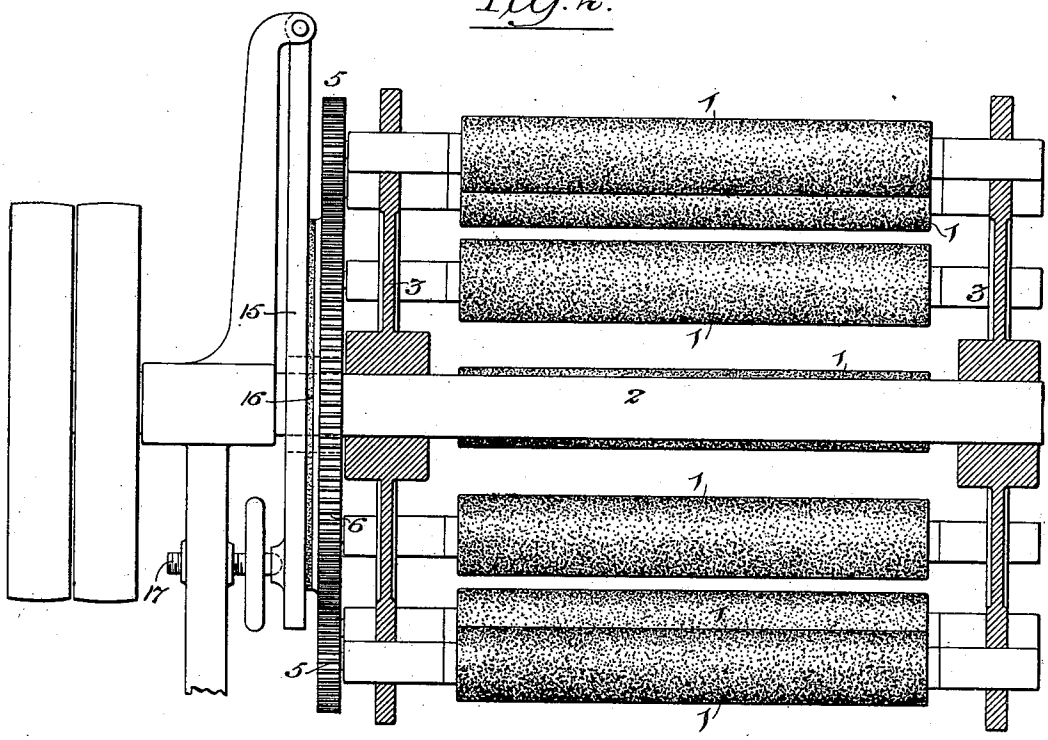
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CLOTH NAPPING MACHINE.

(Application filed Jan. 15, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

ISAAC N. FORRESTER, OF CAMDEN, NEW JERSEY, ASSIGNOR TO BLAIR MANUFACTURING COMPANY, OF SAME PLACE.

CLOTH-NAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,510, dated February 19, 1901.

Application filed January 15, 1900. Serial No. 1,492. (No model.)

To all whom it may concern:

Be it known that I, ISAAC N. FORRESTER, a citizen of the United States, and a resident of Camden, New Jersey, have invented certain Improvements in Cloth-Napping Machines, of which the following is a specification.

My invention relates to that class of cloth-napping machines in which the effect of the napping-rollers is governed by restricting the movement which would otherwise be imparted to them by reason of their contact with the web of fabric, the object of my invention being to provide simpler and more readily controllable devices than those which have heretofore been proposed for restricting such movement.

In the accompanying drawings, Figure 1 is a diagram illustrating the arrangement of the napping-rollers of an ordinary napping-machine and also showing the course taken by the web of cloth in its passage through the machine; and Fig. 2 is a view, partly in elevation and partly in section, of sufficient of the machine to illustrate my invention, showing the means whereby the desired retardation in the movement of the napping-rollers can be effected.

An ordinary napping-machine comprises a series of napping-rollers 1, covered with card-clothing and disposed in a circle about the axis of a shaft 2, which carries opposite disks or spiders 3, in which are the bearings for the shafts or spindles of the napping-rolls.

The web of cloth 4 which is to have a nap formed upon it is guided so as to pass in contact with as many as desired of the complete series of napping-rollers 1, and the shaft 2 is mounted in suitable bearings and has rotative movement imparted to it, so as to bring each of the napping-rollers of the series in succession into position to act upon the web of cloth. Usually the shaft 2 is rotated so as to carry the napping-rollers in the same direction as but at a greater rate of speed than the web of cloth, and if the rollers are perfectly free to turn in their bearings they will be turned backwardly by contact with the web of cloth and no napping action will result; but by restricting such backward movement of the napping-rollers the desired napping effect is obtained, and by varying the restrictive influence exerted to prevent such backward rotation the napping effect is correspondingly varied.

On reference to Fig. 2 it will be observed that the shaft or spindle of each of the napping-rollers has at the outer end a spur-pinion 5, which meshes with a spur-wheel 6, loosely mounted on the shaft 2 and having secured to its outer face a friction disk or ring 16, of leather or other available material, against which bears a brake-plate 15, pivoted at its upper end to a projecting bracket on the fixed frame of the machine and acted upon at its lower end by means of a pressure-screw 17, the latter being adapted to a suitable threaded portion of the fixed frame and being provided with a hand-wheel or other means whereby it may be conveniently turned. By means of this screw, therefore, the pressure of the brake-plate 15 against the friction-disk of the spur-wheel 6 can be regulated as desired and any required degree of retardation thus exerted upon said spur-wheel.

Contact of the napping-rollers 1 with the web of cloth tends to turn them in the direction pointed out by the arrows in Fig. 1; but by restricting the turning of the spur-wheel 6 a corresponding restriction will be exerted upon the napping-rollers 1, and the teeth of the latter will consequently be caused to act upon the surface of the web of cloth with a gigging or napping effect.

In some cases the carrier for the napping-rollers may be turned backwardly instead of forwardly, the restrictive devices serving to limit the forward movement of the rollers 1 and the teeth of the latter facing in a direction opposite to that shown in Fig. 1.

By positively gearing the napping-rollers to a single wheel and exerting the frictional retarding influence upon the latter uniform action upon all of the rollers is insured and greater certainty of action and more delicate regulation are attained than in previous devices of the class with which I am familiar—for instance, those shown in my prior patent, No. 458,725, dated September 1, 1891.

Having thus described my invention, I claim and desire to secure by Letters Patent—

The combination in a cloth-napping ma-

chine, of a rotatable carrier having bearings for the shafts of a series of napping-rollers which are adapted to be rotated by contact with the moving web of cloth, spur-pinions on the shafts of said napping-rollers, a spur-wheel meshing with said pinions, a friction-plate hung to the fixed frame of the machine and acting upon said spur-wheel to retard the motion of the same, and means for increasing or diminishing the pressure of said friction-plate, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ISAAC N. FORRESTER.

Witnesses:

F. E. BECHTOLD,

JOS. H. KLEIN.