(No Model.)

E. McCREARY.

FRICTION GEARING FOR DRIVING NAPPING MACHINES.

No. 581,760. Patented May 4, 1897.

Fig. 1.

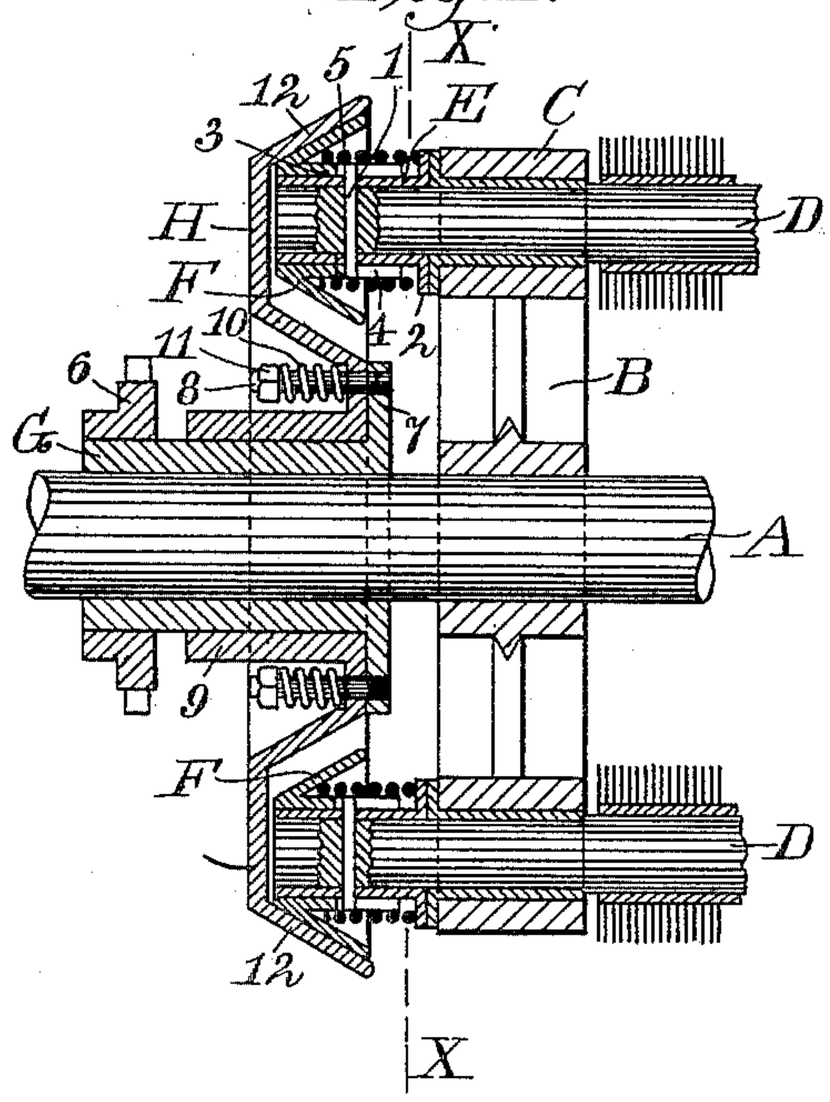


Fig. 2.

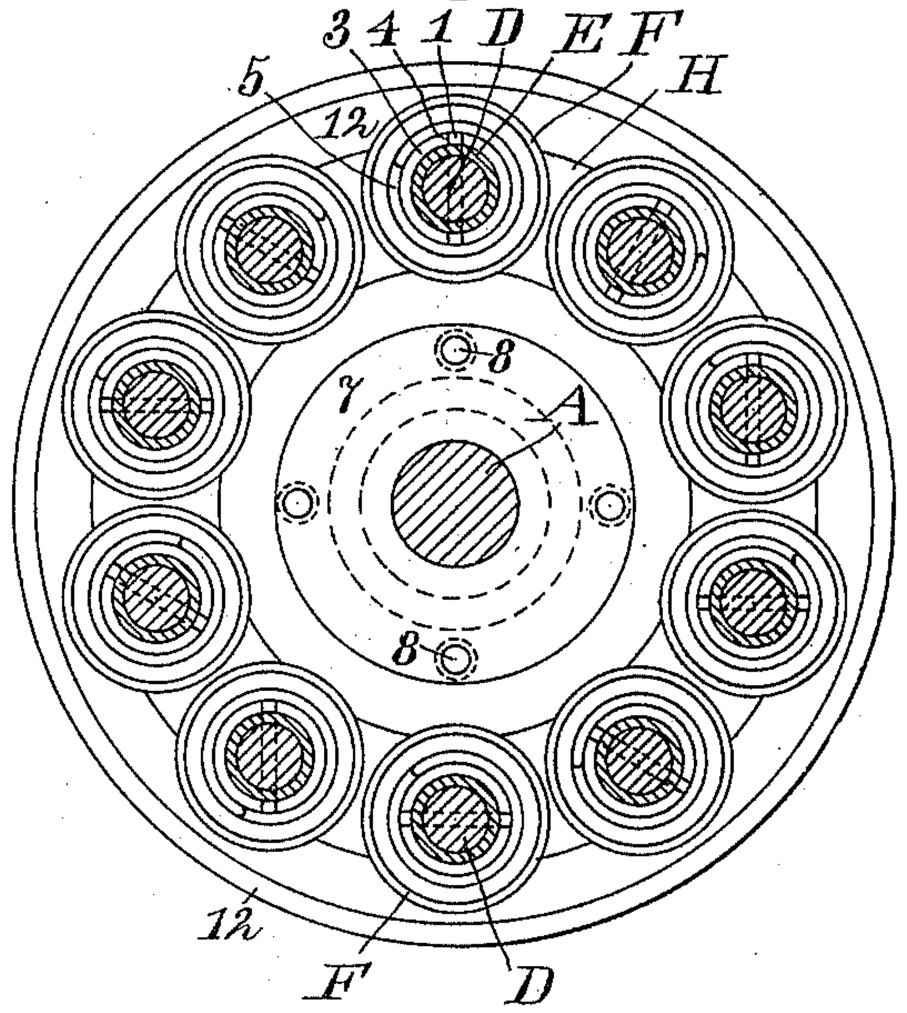


Fig. 3.

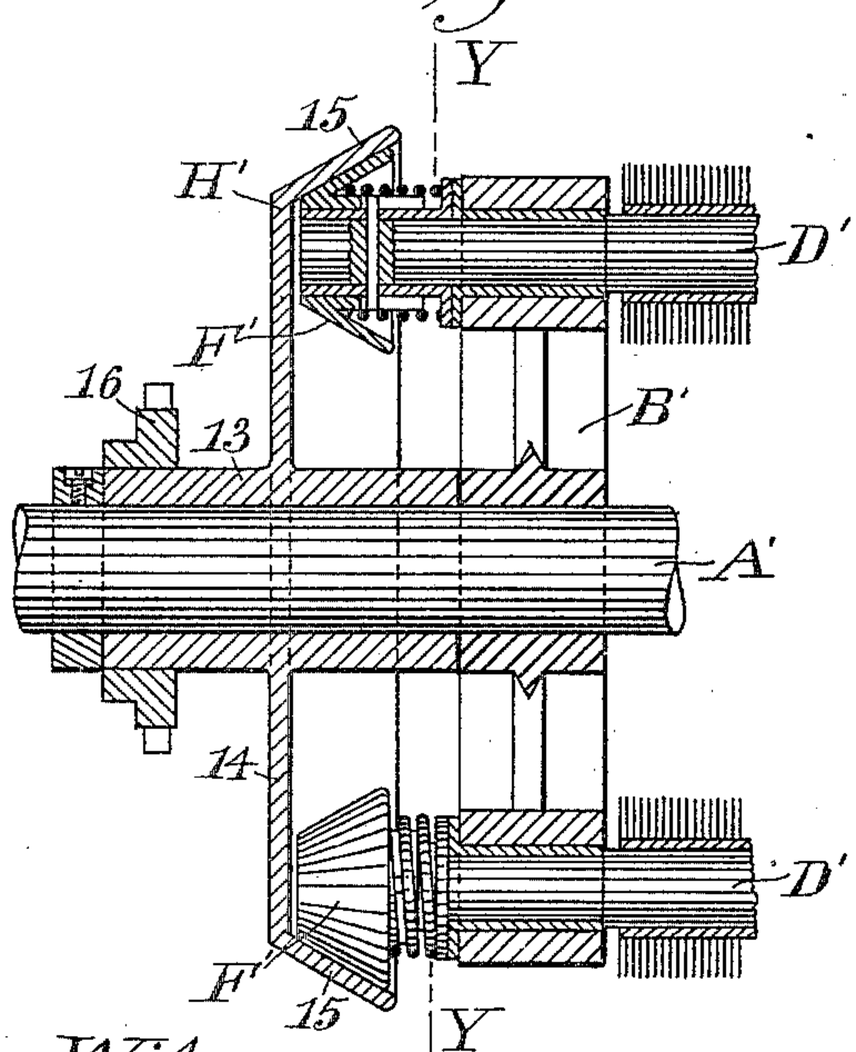
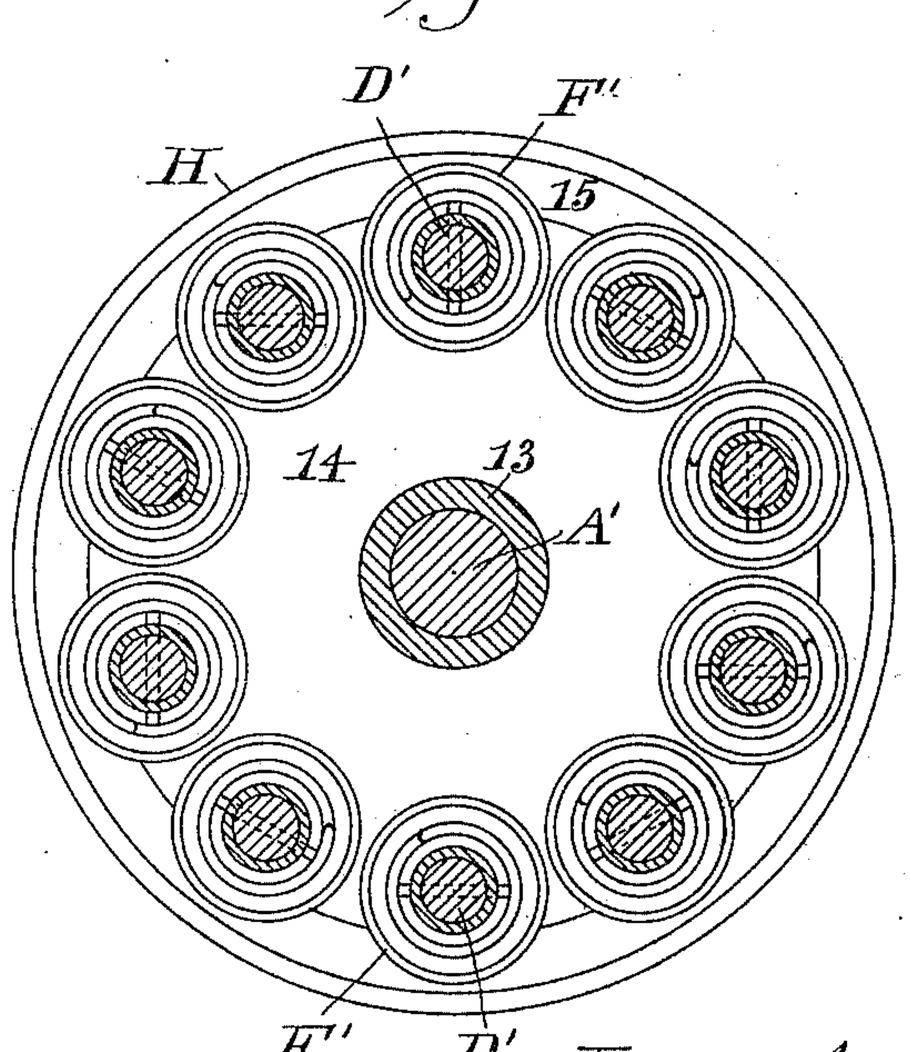


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD McCREARY, OF COHOES, NEW YORK, ASSIGNOR OF ONE-HALF TO EMMA J. McCREARY, OF SAME PLACE.

FRICTION-GEARING FOR DRIVING NAPPING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 581,760, dated May 4, 1897.

Application filed November 4, 1896. Serial No. 611,011. (No model.)

To all whom it may concern:

Be it known that I, EDWARD McCREARY, of Cohoes, in the county of Albany and State of New York, have invented new and useful Improvements in Frictional Gearing for Driving Napping-Machines, of which the following is a specification.

My invention relates to improvements in mechanisms for driving the napping-rollers of machines for napping textile fabrics, either knitted or woven, and it especially relates to that class of such mechanisms in which the napping-rollers are rotated by means of frictional gearing; and the object of my invention is to provide frictional gearing that will be automatically adjustable and thereby avoid the possible interruption to the uniformity of speed arising from an imperfect contact of the driving and driven friction-wheels. This object I attain by means of the mechanism illustrated in the accompanying drawings, which are herein referred to, and in which—

Figure 1 is a vertical section of one form of my self-adjusting frictional gearing as arranged to impart motion to the napping-rollers of a napping-machine; Fig. 2, a transverse section of Fig. 1 at the line X X; Fig. 3, a vertical section of a modified form of my self-adjusting frictional gearing applied to driving the napping-rollers of a napping-machine, and Fig. 4 a transverse section of Fig. 3 at the line Y Y.

As illustrated in the accompanying drawings, A designates the main shaft of a napping-machine, which is rotated by belts and pulleys in the usual manner of imparting rotatory motion to the main shafts of such machines; B, spiders or centers secured to the main shaft A, and it should be understood that a pair of the spiders are secured to said shaft and are arranged at a distance apart that will correspond to the length of the napping-rollers that are journaled in said spiders. The latter are each provided with a series of journal-bearings C, and the two spiders should be fixed to the shaft A, so that the several pairs of journal-bearings will be in exact alinement.

D designates napping-rollers, which are fitted to rotate in the journal-bearings of the spiders B. Said napping-rollers are provided with the usual wire-clothing, and each is arranged to revolve on its own axis while being rotated around the axis of the shaft A. One end of each napping-roller D is provided with a sleeve E, that is secured to said roller by a cross-pin 1, whose opposite ends protrude beyond the perimeter of said sleeve, as shown in the drawings, and each of said sleeves is provided with a circumferential flange 2, that bears against the face of the journal-bearing C, in which the napping-roller is fitted to rotate. A coniform friction-wheel F is fitted to slide loosely on each sleeve E and is provided with a hub 3, whose inner end has a slotted opening 4 formed in its diametrically opposite sides, said slotted openings being arranged to allow the friction-wheels F to slide on the sleeves E without interfering with the cross-pins 1, which, by taking in the slotted openings 4, serve as drivers for friction-wheels F. A spring 5 is interposed between each friction-wheel F and flange 2 of the corresponding sleeve E in such manner that said spring will press the corresponding friction-wheel outwardly.

The several parts above described are common to both forms of my invention, which only differ in respect to the construction of the friction-disks by which the friction-wheels F are driven.

As shown in Figs. 1 and 2, a sleeve G is fitted to rotate loosely on and independently of the main shaft A. Said sleeve is provided with a sprocket-wheel 6, which is connected by an endless chain (not shown in the drawings) with another sprocket-wheel secured to a conveniently-located counter-shaft that is usually journaled in the frame of the machine. Said counter-shaft is driven by the main shaft A and imparts a proper rotatory motion to the sleeve G. The inner end of the latter is provided with a circumferential flange 7, in which a series of guide-pins 8 is secured to project toward the outer end of the sleeve G. A friction-disk H, provided with a hub 9, that is fitted to slide loosely on the sleeve G, has a series of holes that correspond to the guide-pins 8, which operate as a driver for the friction-disk H. Each of said guide-pins is provided with a spring 10, that

is interposed between a nut 11 and the outer face of said friction-disk, so that the friction-disk can yield slightly in an outward direction if occasion requires. The friction-disk H has an outwardly-flaring flange 12, which is arranged at an angle that conforms to the angle of the friction-wheels F, with which the friction-disk H coacts to rotate the napping-rollers D.

In the modification of my invention shown in Figs. 3 and 4, which only affects the friction-disk, the main shaft A′, spiders B′, napping-rollers D′, and friction-wheels F′ are all substantially the same as those hereinbefore described in respect to the other form of my invention. The friction-disk H′ consists of a hub 13, which is bored to fit loosely on the shaft A′, on which it rotates independently of said shaft. From the periphery of said hub an annular web 14 extends at right angles to the axis of the hub, and at the outer edge of said web an outwardly-flaring rim or flange 15 is formed at an angle which conforms to the conical form of the friction-wheels F′, with which the friction-disk H′ will coact to effect a rotary motion of the napping-rollers D′. The outer end of the hub 13 has a sprocket-wheel 16, through which a rotary motion is imparted to the friction-disk H′.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a driving friction-wheel composed of a sleeve having an annular flange provided with a series of guide-pins, a friction-disk fitted to slide loosely on said sleeve and guide-pins; said disk having an outwardly-flaring flange on its periphery, and springs fixed on said guide-pins and arranged to press the friction-disk toward said annular flange, of a spring-controlled coniform friction-wheel arranged with its periphery in frictional contact with the inner face of the flaring flange of the friction-disk, as herein specified.

2. In frictional gearing for driving napping-rollers, the combination, with a shaft having a driving-wheel journaled loosely thereon; said driving-wheel having a flaring flange formed on its perimeter and arranged so that the hollow side of said wheel will face inwardly, and a pair of spiders provided with a series of journal-bearings; said spiders being secured to said shaft so that the several journal-bearings will be in exact alinement, of a series of napping-rollers journaled in said spiders so that their axes will be parallel with the axis of said shaft, and a series of spring-controlled conical friction-wheels which are movably attached to the axes of the napping-rollers and arranged to have their conical surface bear with frictional contact against the flaring flange of said driving-wheel, as herein specified.

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