

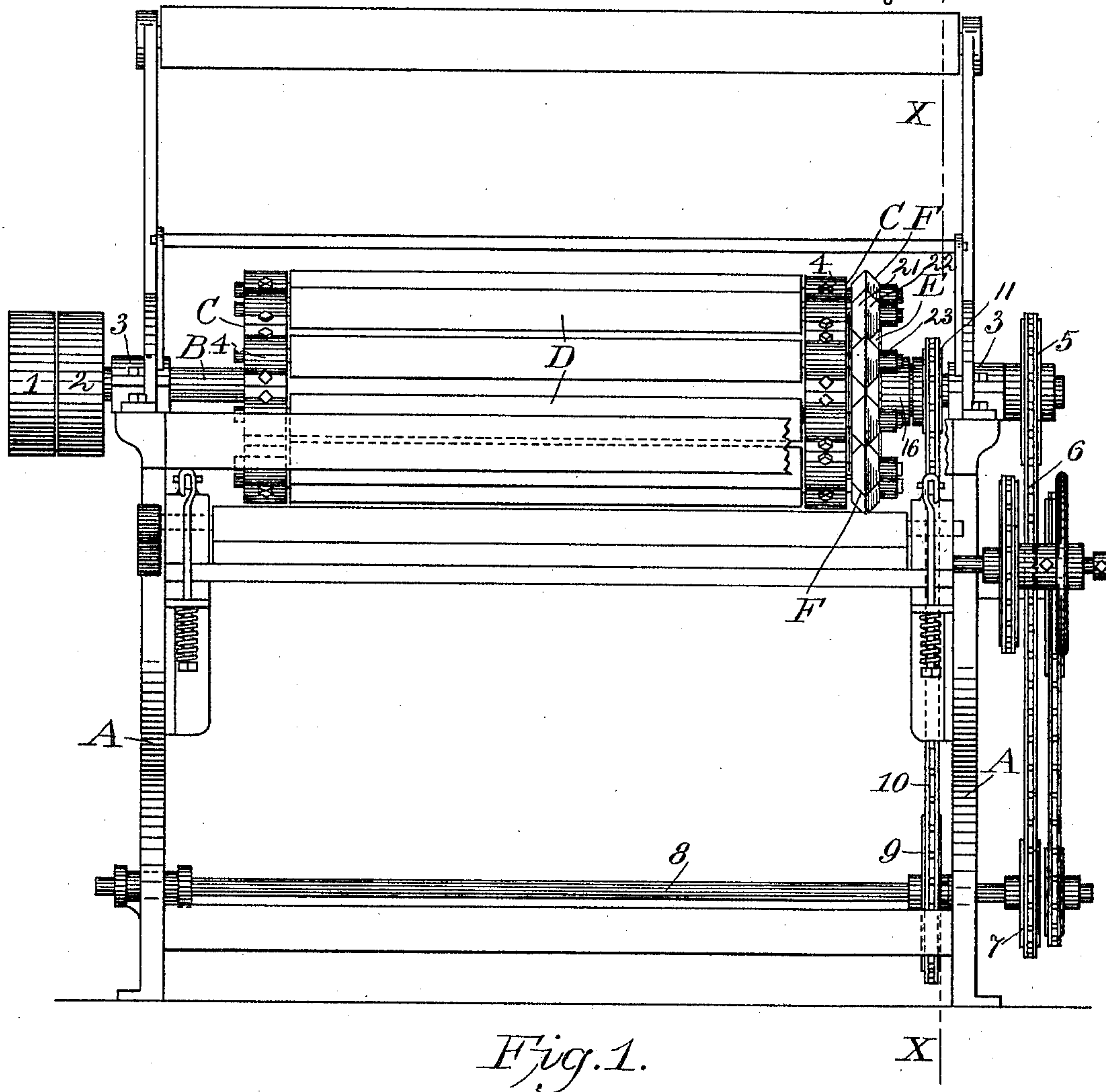
(No Model.)

3 Sheets—Sheet 1.

E. McCREARY.
GEARING FOR NAPPING MACHINES.

No. 581,759.

Patented May 4, 1897.



Witnesses:

J. W. Fisher.
Fred. J. Lawrence

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Edward McCreary
by William H. Low.
Attorney.

(No Model.)

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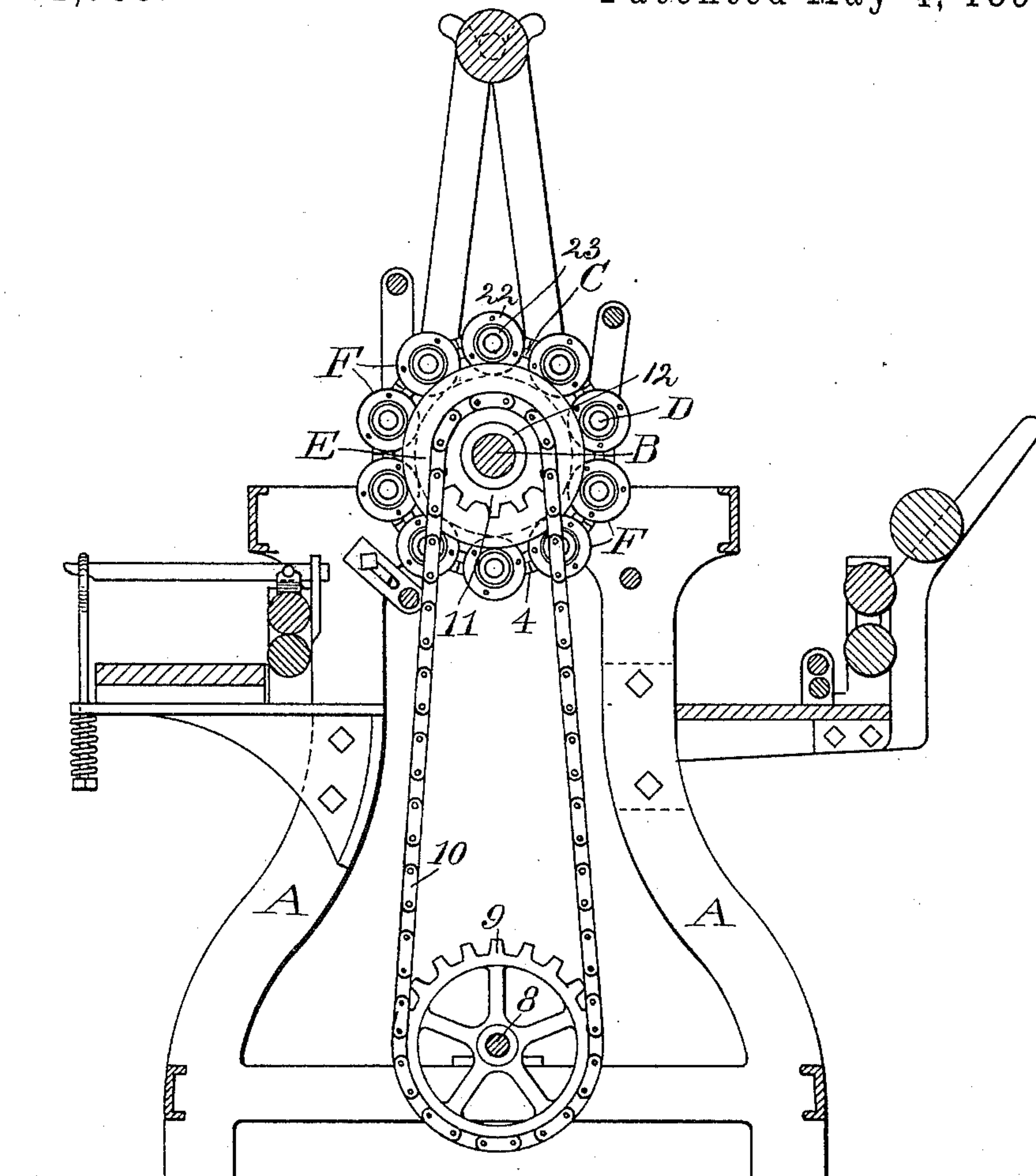


Fig. 2.

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Fig. 3.

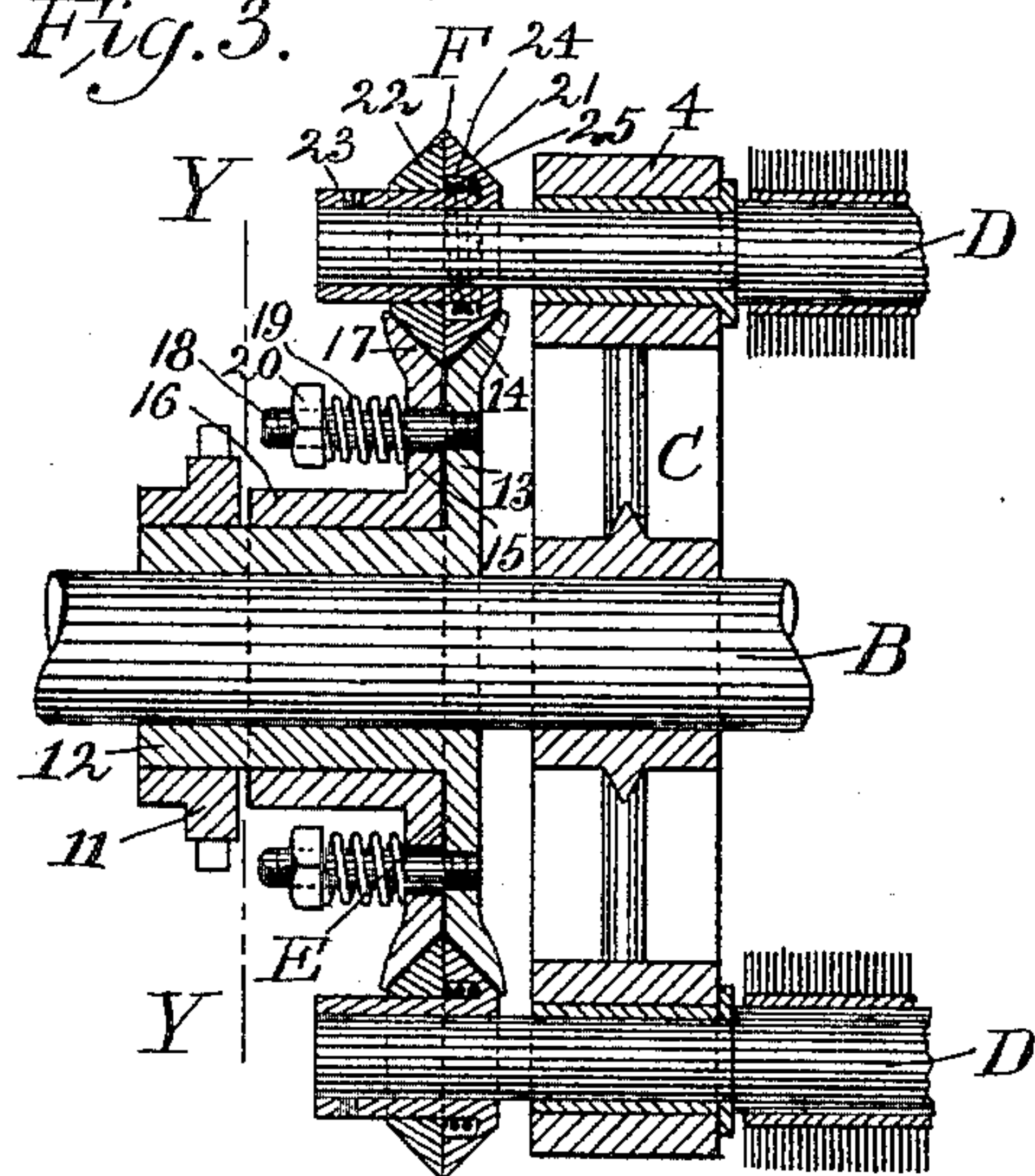


Fig. 4.

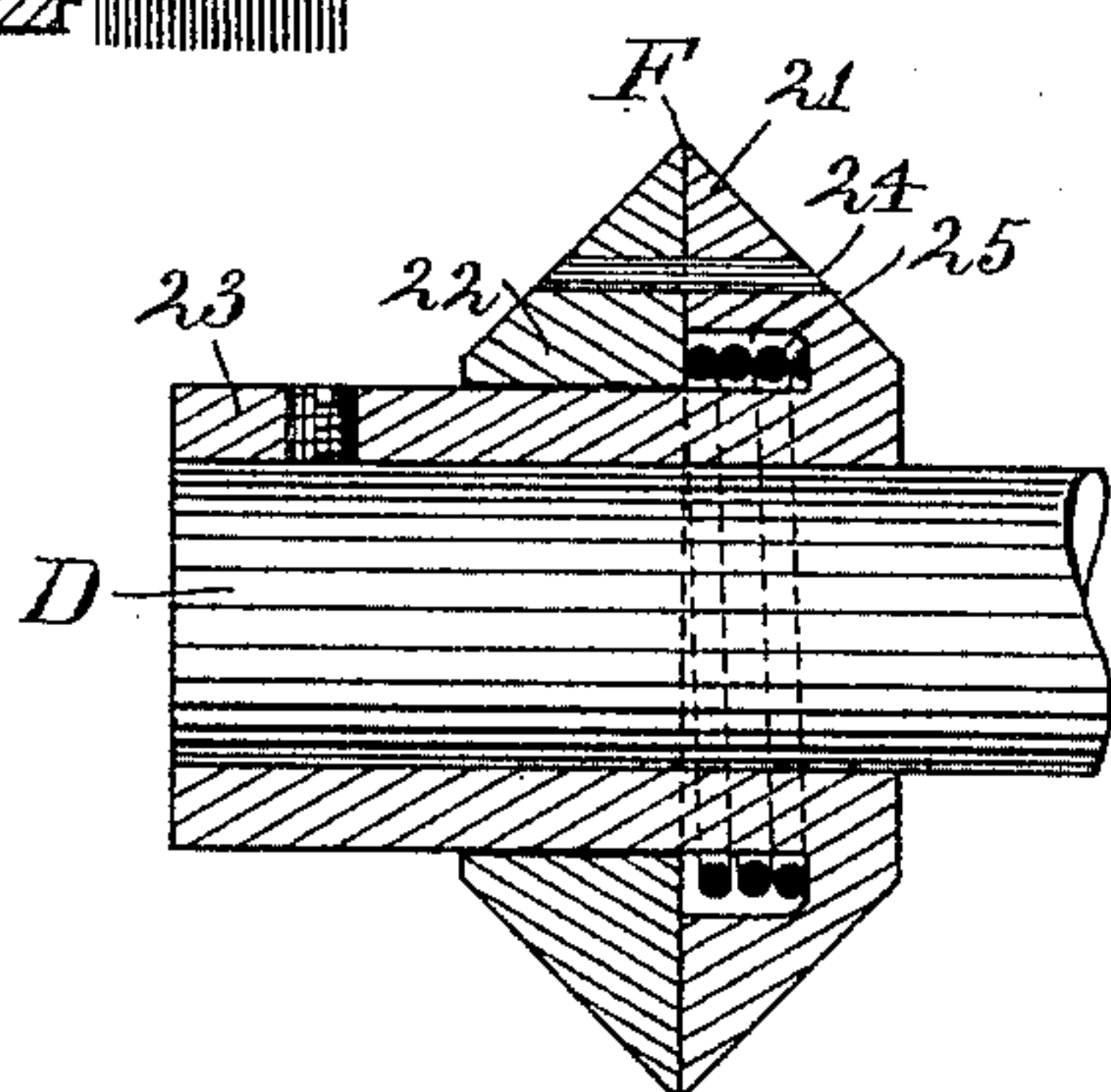
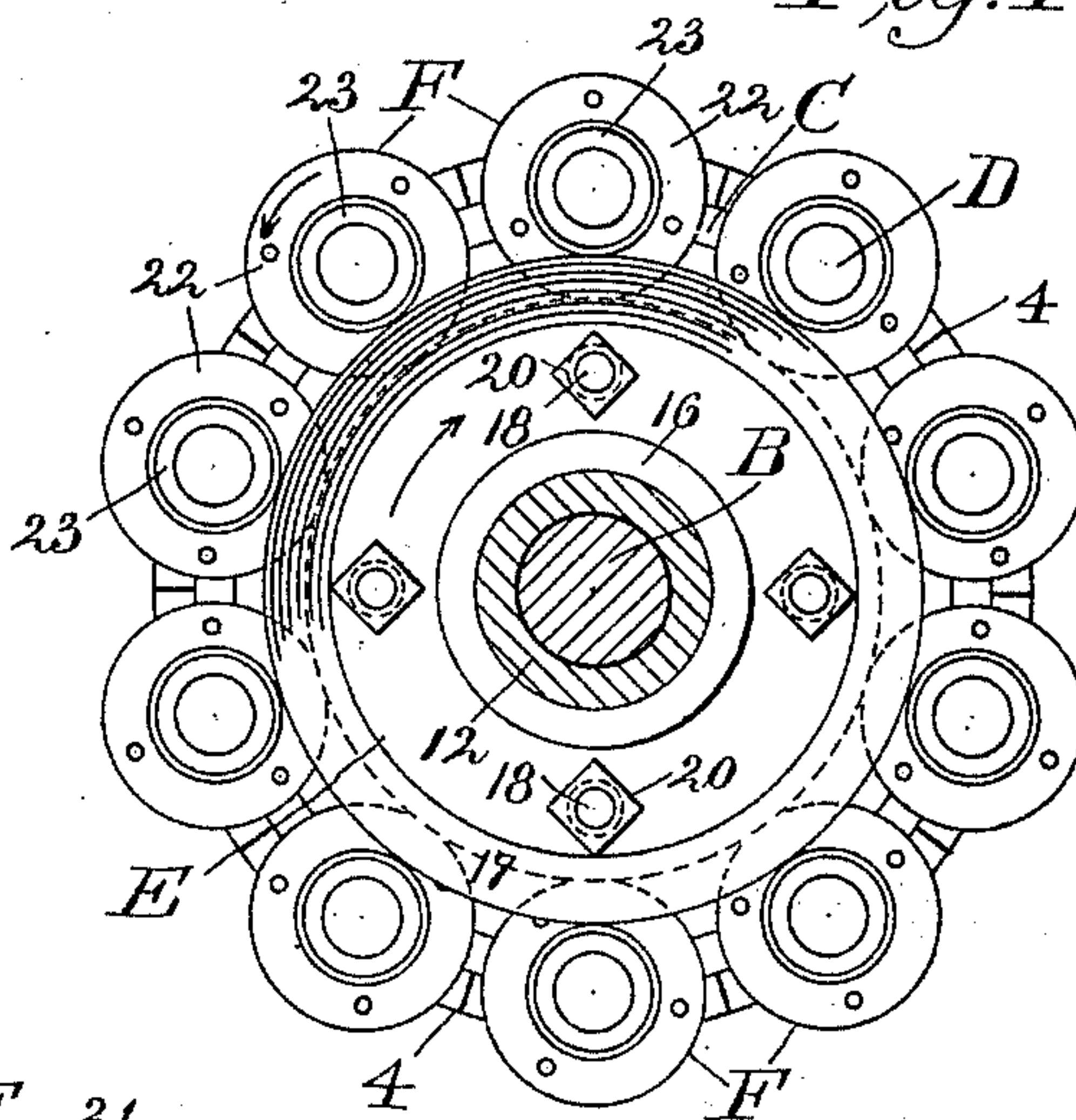


Fig. 5.

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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.

GEARING FOR NAPPING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 581,759, dated May 4, 1897.

Application filed August 12, 1896. Serial No. 602,514. (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
5 Improvements in Gearing for Napping-Machines, of which the following is a full description, reference being had to the accompanying drawings, which form part of this specification.

10 My invention relates to improvements in machines for napping fabrics, either woven or knitted, but especially to that class of such machines that have their napping-rollers rotated by means of frictional gearing; and the
15 object of my invention is to provide suitable mechanism for rendering the frictional gearing automatically adjustable, so as to compensate for any inequality in the contacting surfaces of the frictional gearing, whether
20 such inequality is inherent to the construction or is produced by the wearing of the parts.

In the accompanying drawings, Figure 1 is a front elevation of a napping-machine in which my invention is embodied; Fig. 2, a
25 vertical section of the same at the line X X; Fig. 3, an enlarged partial longitudinal section showing the main shaft and shafts for napping-rollers in front elevation; Fig. 4, a vertical section of the same at the line Y Y,
30 and Fig. 5 an enlarged and detached vertical section of one of the frictional gears on the napping-rollers.

As represented in the drawings, A designates the frame of the machine, which may
35 be made of any suitable material and in any preferred form that is adapted to the purpose; B, the main shaft of the machine, which is provided with a tight pulley 1, to which power is applied from any motive power by a driving-belt, (not shown in the drawings,) and
40 with a loose pulley 2, to which said driving-belt may be shifted when the motion of the machine is to be stopped. The shaft B is journaled in bearings 3, which may be formed
45 on or secured to the frame A.

C designates spiders or centers secured to the shaft B and provided with a series of journal-bearings 4, in which the napping-rollers are fitted to rotate. Said spiders should
50 be fixed to the shaft B in such manner that

the centers of the corresponding journal-bearings 4 will be in perfect alinement.

D designates napping-rollers which are journaled in the bearings 4 and are carried by the spiders C to revolve around the center of
55 the shaft B, and in addition to such revoluble motion each of the napping-rollers D is fitted to rotate on its own axis. Each of the napping-rollers should be card-clothed in the usual manner, and it should be understood
60 that said napping-rollers do not, *per se*, form any part of my invention.

The shaft B is provided with a sprocket-wheel 5, which carries an endless chain 6, that engages with a sprocket-wheel 7, which is se-
65 cured to a counter-shaft 8, that is preferably arranged to revolve in the lower part of the frame A, but when preferred said shaft may be arranged to revolve at any place that is properly located in relation to the shaft B.
70 The counter-shaft 8 is provided with a sprocket-wheel 9, which carries an endless chain 10, that engages with a sprocket-wheel 11, secured to a sleeve or hub 12 of a friction-wheel E. The latter is fitted to revolve loosely
75 on the shaft B in such manner that it will be independent of said shaft, both in respect to its speed and the direction of its motion.

The friction-wheel E is formed in two parts, one of which, a disk 13, is provided with the
80 sleeve 12, and the periphery of said disk is provided with a bevel-face 14, which forms one side of a V-shaped groove around the periphery of the friction-wheel E when the two parts are fixed together. The other part of
85 the friction-wheel E consists of a disk 15, provided with a hub 16, that is bored to slide loosely on the sleeve 12. The periphery of the disk 15 is provided with a bevel-face 17, which conforms to the bevel-face 14 and forms
90 the complement of the V-shaped groove in the periphery of the friction-wheel E. The disk 13 has a series of guide-pins 18 projecting from its outer face, and the disk 15 is provided with a series of holes which corre-
95 spond to said guide-pins, so that the disk 15 will slide loosely on the guide-pins and the disk 13 will serve as a driver to the disk 15 to make the two disks rotate as one piece. Each guide-pin is provided with a spring 19, 100

which is interposed between the disk 15 and a nut or head 20 to force the disk 15 toward the disk 13.

By providing the guide-pins 18 with screw-nuts the resistance of the springs 19 can be increased or diminished as occasion may require to regulate the frictional adhesion of the friction-wheel E to the wheels with which the wheel E coacts, and it is obvious that the two disks of said wheel will move apart against the resistance of the springs 19 whenever occasion requires them to yield.

F designates friction-wheels secured to the napping-rollers D. Each of said friction-wheels is composed of two disks 21 and 22, both having peripheries shaped to conform to the corresponding face of the V-shaped groove of the periphery of the friction-wheel E. The disk 21 is provided with a sleeve-like hub 23, by which it is secured to the shaft of a napping-roller D, and the inner face of said disk is provided with a recess 24 for containing a spring 25, which bears against the adjacent face of the disk 22 to force the two disks apart and press them into frictional contact with the sides of the V-shaped groove of the friction-wheel E.

The accompanying drawings show the usual mechanisms for feeding the fabric to the action of the napping-rollers D and for delivering the latter therefrom; but as such mechanism forms no part of my invention a description of such parts is unnecessary.

My invention, as hereinbefore described, operates in the following manner: The fabric being fixed in the machine in the usual manner, motion is imparted to the shaft B by any suitable motive power. By the rotations of the shaft B the spiders C will be revolved with said shaft, and through the sprocket-wheels 5 and 7 and endless chain 6 motion will be imparted to the counter-shaft 8, whose sprocket-wheel 9 will, through the chain 10, impart motion to the friction-wheel E, and the latter will impart the required motion to the series of friction-wheels F to rotate the napping-rollers D. If, as will sometimes happen, the friction-wheels E and F are not formed perfectly accurate, so that their frictional contact will vary in degree, or if by wear the same effect is produced, the automatic adjustability of said friction-wheels will compensate for such defects and the nap-

ping-rollers D will be rotated with perfect regularity. By the arrangement just described the napping-rollers D will be rotated in a direction that is reversed from the direction that the friction-wheel E is rotated, as indicated by the arrows on Fig. 4.

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

1. In a napping-machine, the combination of a main shaft, spiders mounted on said shaft and provided with a series of non-adjustable journal-boxes, a series of napping-rollers journaled on said spiders, a friction driving-wheel loosely mounted on—and revoluble independently of—said main shaft; said driving-wheel being composed of two parts and provided with springs which are arranged to force said parts toward each other, and each napping-roller being provided with a friction-wheel composed of two parts that are separable on a plane that is perpendicular to the center line of said roller, and each of said friction-wheels being provided with a spring arranged to press the two parts of said wheel asunder; whereby all of the friction-wheels will be rendered automatically adjustable in respect to the friction-wheels with which they coöperate, as herein specified.

2. The combination of two disks, 13 and 15, the first having a sleeve, 12, a bevel-face, 14, and guide-pins, 18, as herein set forth, the other disk having a hub, 16, fitted to slide loosely on the sleeve 12, and having a bevel-face, 17, on its periphery, and springs, 19, arranged to force the disks 13 and 15 toward each other; said disks forming a friction driving-wheel, E, which has a V-shaped groove in its periphery, as herein specified.

3. The friction-wheels F, composed of two disks, 21 and 22, each having a bevel-face on its periphery; the disk 21 having a sleeve-like hub, 23, and a recess, 24, at the inner end of said hub; the disk 22 being fitted to slide loosely on the hub 23 and engage with the disk 21 so that the two disks will operate as one piece, in combination with a spring, 25, arranged between the two disks to force the latter apart, as specified.

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Witnesses:

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