

No. 682,245.

Patented Sept. 10, 1901.

E. F. DREMAN.
FABRIC TWISTING MACHINE.

(Application filed Mar. 1, 1901.)

(No Model.)

2 Sheets—Sheet 1.

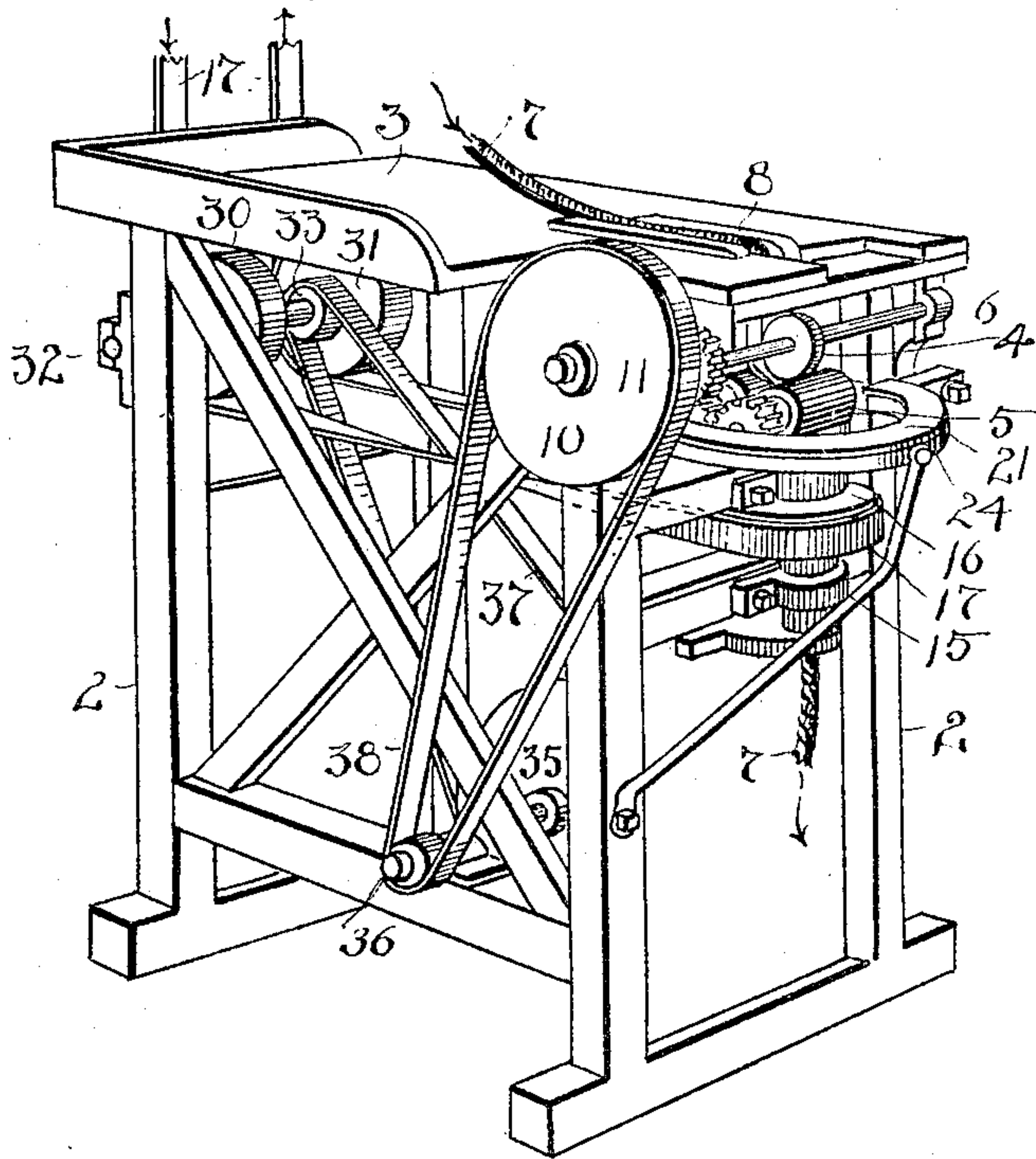


FIG. 1.

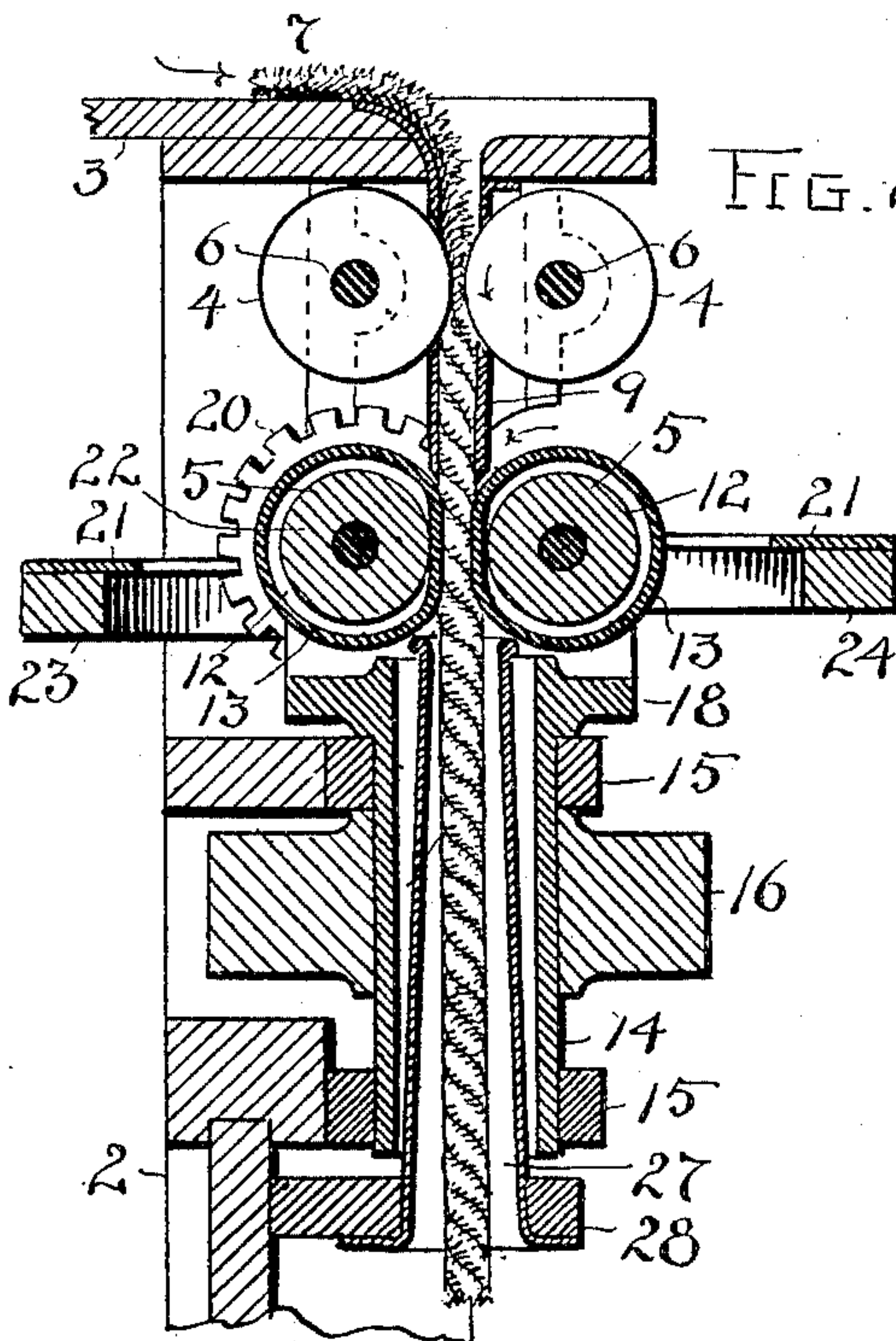
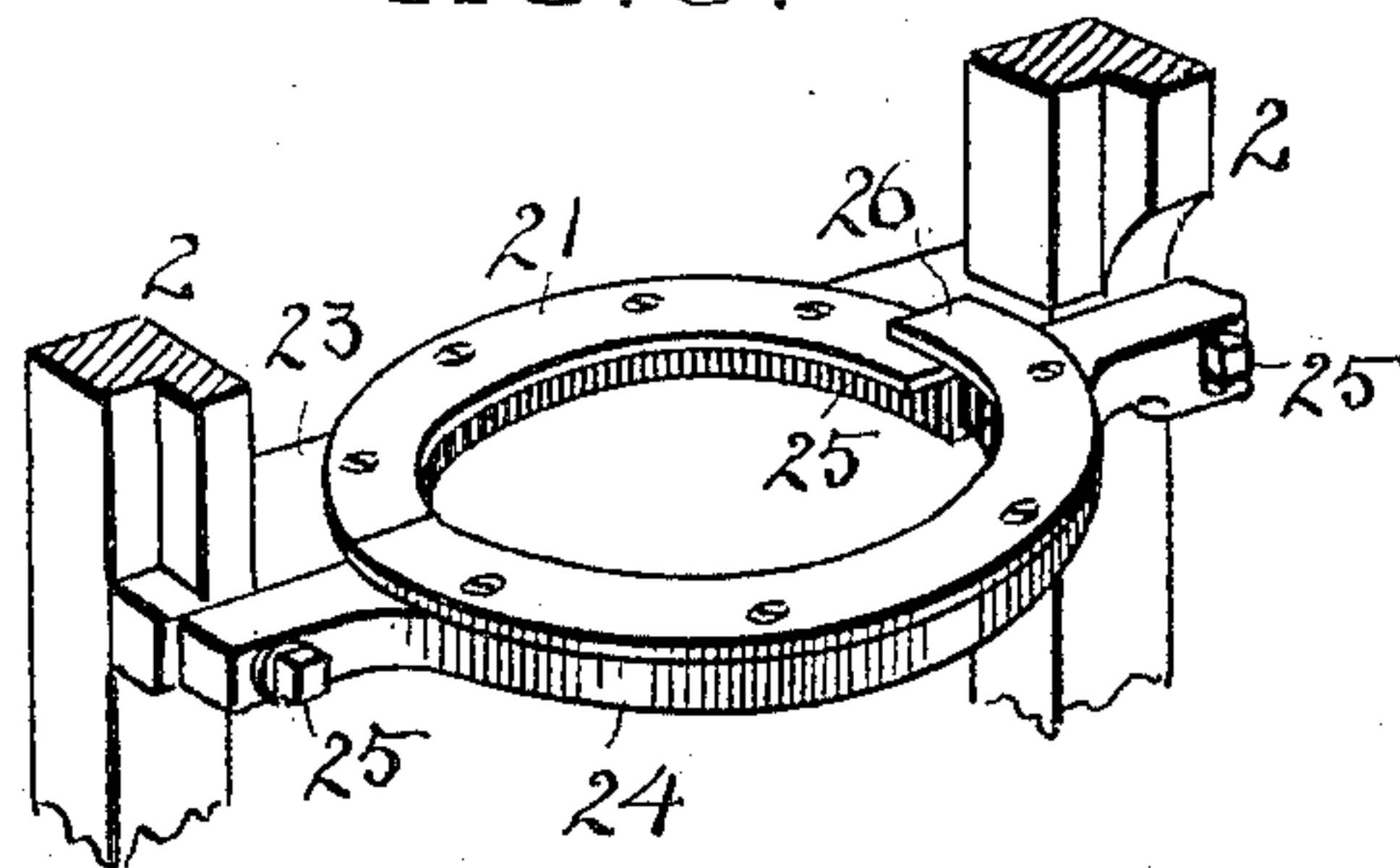


FIG. 2.

FIG. 3.



ATTEST.
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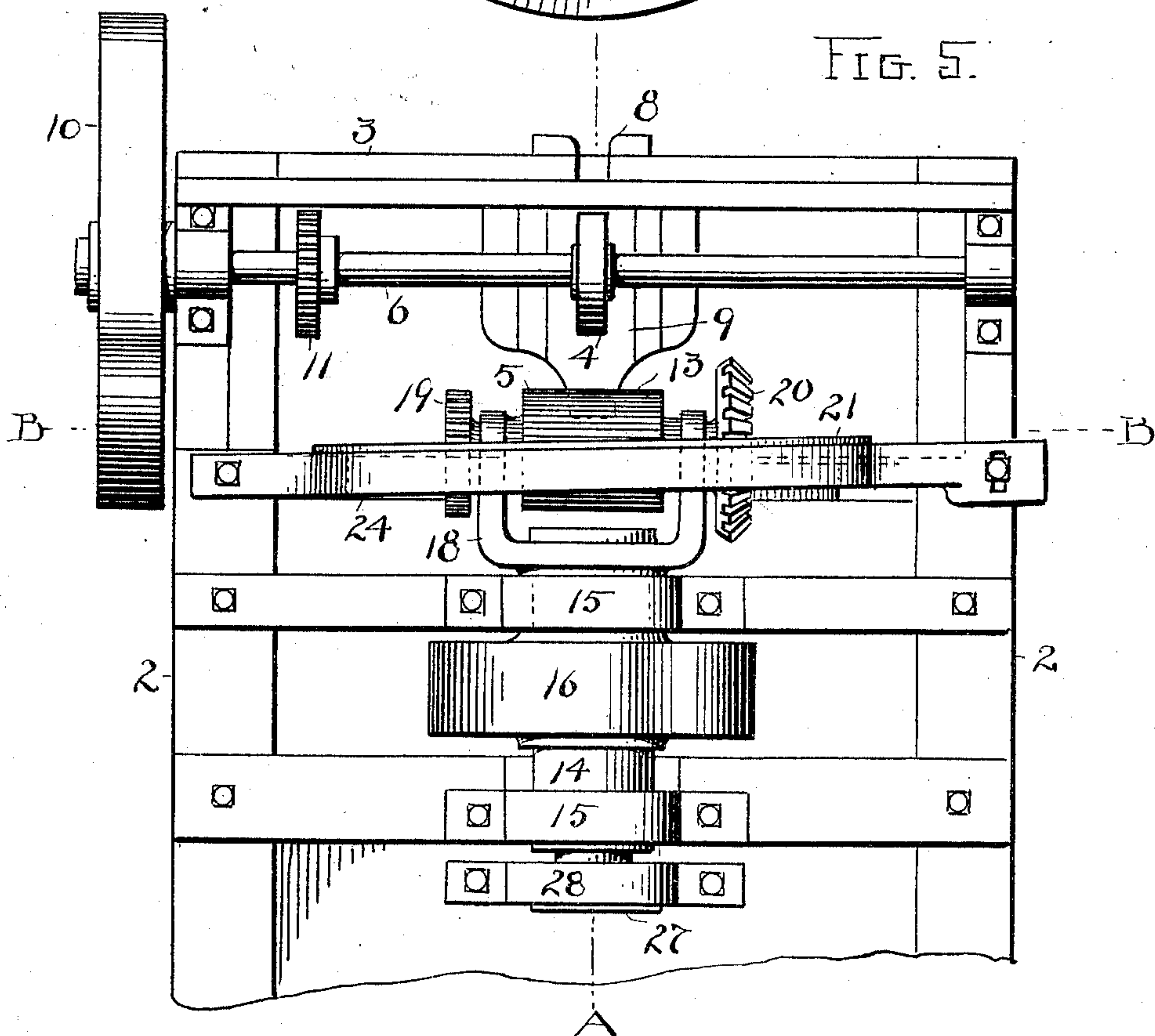
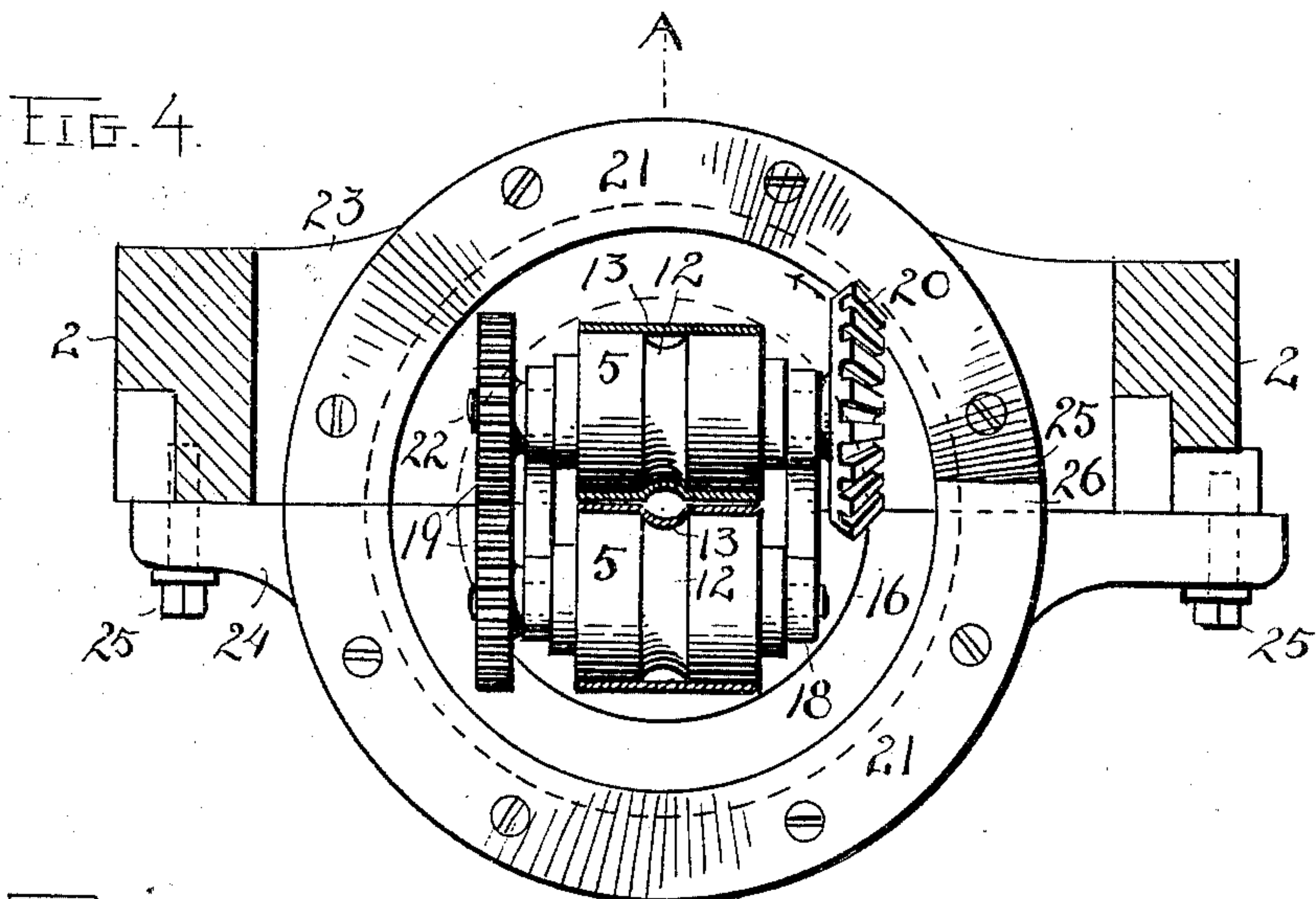
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

EDWARD F. DREMAN, OF CLEVELAND, OHIO.

FABRIC-TWISTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,245, dated September 10, 1901.

Application filed March 1, 1901. Serial No. 49,393. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. DREMAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Fabric-Twisting Machines; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in fabric-twisting machines; and the improvement consists in the novel construction and arrangement of parts, all substantially as shown and hereinafter described, and more particularly pointed out in the claims.

This machine is designed to shape strips of fabric, such as narrow carpet-strips, into the twisted form as required and used in the manufacture of double-faced rugs. Heretofore this has been done partly or entirely by hand and was a slow and unsatisfactory method, owing to the length of time required and the unevenness of the product when finished. With my improved machine I can produce a uniform spiral twisted strip in less time and with less labor and at less cost than formerly, all of which is more clearly disclosed in the accompanying description.

Referring to the drawings, Figure 1 is a perspective view of my improved machine in its entirety. Fig. 2 is a vertical sectional elevation showing only a portion of the frame and table and the main features of the invention mounted thereon and taken on line A A, Figs. 4 and 5. Fig. 3 is a perspective view of the circular inclined track alone. Fig. 4 is a plan view on line B B, Fig. 5, with the elastic covering on the feed-rollers sectioned to show the circumferential grooves. Fig. 5 is a front elevation of the upper front portion of the machine and the main operating parts thereon.

The machine as a whole comprises a frame or base 2 and driving and operating mechanism mounted on said frame beneath a table 3. The main operating parts for feeding and twisting the strips of fabric are supported at the front of the frame and consist of a double set of feed-rollers 4 and 5. Rollers 4 are mounted upon and rotated by their respective shafts

6, and the strip of fabric 7, which is fed from the table above along a grooved way 8 to a point centrally above the gripping-line of said roller, is carried downward between and by rollers 4 and passed to the second set of rollers 5 through a spout or casing 9, rigidly attached to and depending from table 3. Rollers 4 have a fixed alinement or position above the rollers 5, and their shafts 6 rotate in bearings mounted on the sides of frame 2 and are driven through pulley 10 and pinions 11 on said shafts at the left of the machine. Rollers 5 receive and grip strip 7 at a point centrally between their ends and opposite a circumferential groove 12 therein. The face of rollers 5 have an elastic covering 13, preferably of rubber, which bridges grooves 12 and provides an accommodating or yielding gripping-surface by means of which strip 7 is twisted and also fed downward in its twisted form. The twisting of the strip is accomplished by rotating the support of rollers 5, which causes said rollers to travel in a circle at right angles to the feed of the strip, the strip being centrally located and defining the axis of said movement. The roller-support referred to is a hollow shaft 14, vertically supported to rotate in bearings 15, which are fastened to separate front cross-timbers of frame 2, and rotation is imparted to said shaft and support by means of a belt 17, which passes around a pulley 16 on shaft 14. The roller-support proper comprises a head 18, which is rigidly attached to the top of hollow shaft 14, and the rollers 5 are provided with shafts which have bearings in upright standards on said head.

A set of intermeshing gears 19 are fastened at one end of the roller-shafts to rotate rollers 5 together to feed strip 7 downward between them, and rotation of said shafts is obtained by a bevel-gear 20, which is in turn rotatably and operatively engaged by an inclined and circular track 21. Bevel-gear 20 is fastened to the end of roller-shaft 22, and as head 18 is rotated this gear is carried around in a circle opposite track 21 and always in engagement with the edge thereof. The track is divided into semicircular halves, each of which is mounted on separate cross-bars 23 and 24 of frame 2, and these cross-

bars and the track portion thereon are arranged and set at an angle to each other in order to obtain a gradual incline of the track from one of its meeting ends 25 to the opposite meeting end 26. Cross-bar 24 is adjust- 5
ably mounted on frame 2 by bolts 25 and the degree of incline can be changed whenever required. The ends 25 and 26 of track 21 overlap each other somewhat and are spaced 10
apart a distance equal to the distance between two teeth on gear 20, so that as said gear passes from track end 26 a new engagement with a lower tooth at end 25 is had before the upper tooth is released. Each revolution of head 18 acts on gear 20 in this manner and the inclined track imparts a rotative 15
movement to gear 20 and rollers 5, which gradually feeds strip 7 downward at the same time that it is being twisted.

20 To prevent the strip from coming in contact with the rapidly-revolving hollow shaft 14 as it is being discharged from rollers 5, a central stationary tube 27 is mounted on a bracket 28, which is fixed to frame 2, and this 25
tube extends upward within the entire length of the hollow shaft and is of greater diameter at the bottom than at the top. The strip 7 is thereby passed through and out of the open bottom of tube 27 without being affected or 30
retarded in any way by the action of the rapidly-revolving hollow shaft.

Belt 17, that drives pulley 16, passes under separate idler and power pulleys 30 and 31, respectively, on its way to and from pulley 35 35
16, and shaft 32, which supports pulleys 30 and 31, has a smaller band-wheel 33 thereon, which drives a pulley 35 and its shaft 36 by a separate belt 37. Shaft 36 is also provided with a small band-wheel, by which power is 40
transmitted to pulley 10, by means of belt 28, to drive feed-rollers 4 independently of rollers 5.

What I claim is—

1. A set of rollers to feed a strip of fabric 45
having a circumferential groove in the peripheral face of each, and an elastic covering

bridging said groove, substantially as described.

2. A set of gripping feed-rollers, in combination with a separate set of combined feed 50
and twisting rollers having circumferential grooves and elastic covering for said grooves, a rotatable support for said twisting-rollers, and means to revolve each set of rollers and the rotatable support, substantially as de- 55
scribed.

3. In a fabric-twisting machine, a rotatable support having a pair of rollers mounted thereon, a circumferential groove in said rollers and an elastic covering bridging said rollers, a gear to rotate said rollers, a circular 60
inclined track engaging said gear, means to rotate said roller-support, and a pair of rollers to feed the fabric to said first-mentioned rollers, substantially as described. 65

4. A pair of feed-rollers for a strip of fabric, in combination with a pair of twisting feed-rollers mounted opposite thereto, a hollow rotatable support for said twisting-rollers, a stationary tube within said support 70
open at its top and bottom and arranged centrally below said twisting-rollers, and means to rotate said support and rollers separately, substantially as described.

5. In a fabric-twisting machine, a set of 75
gripping feed-rollers, in combination with a set of combined feed and twisting rollers having intermeshing gears, a hollow rotatable support for said twisting-rollers, a stationary tube within said support having an open top 80
and bottom and arranged immediately below said twisting-rollers, a circular inclined track having its ends spaced apart and overlapping each other, a gear on one of said twisting-rollers engaging said track, and means to rotate 85
said support, substantially as described.

Witness my hand to the foregoing specification this 4th day of February, 1901.

EDWARD F. DREMAN.

Witnesses:

R. B. MOSER,
H. E. MUDRA.