

## CARDING MACHINE.

APPLICATION FILED DEC. 23, 1908.

**988,320.**

Patented Apr. 4, 1911.

**2 SHEETS—SHEET 1.**

Fig. 2.

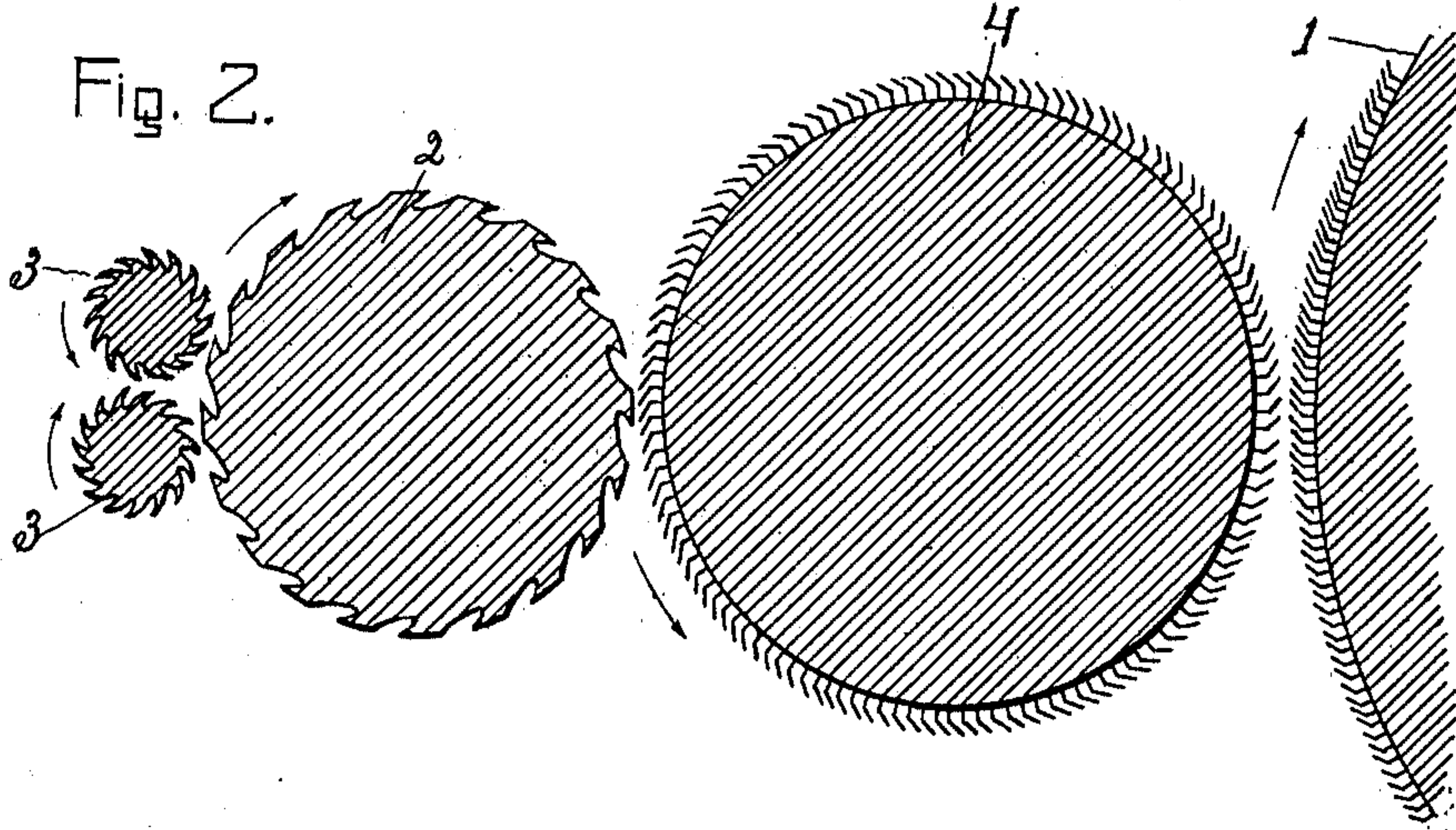
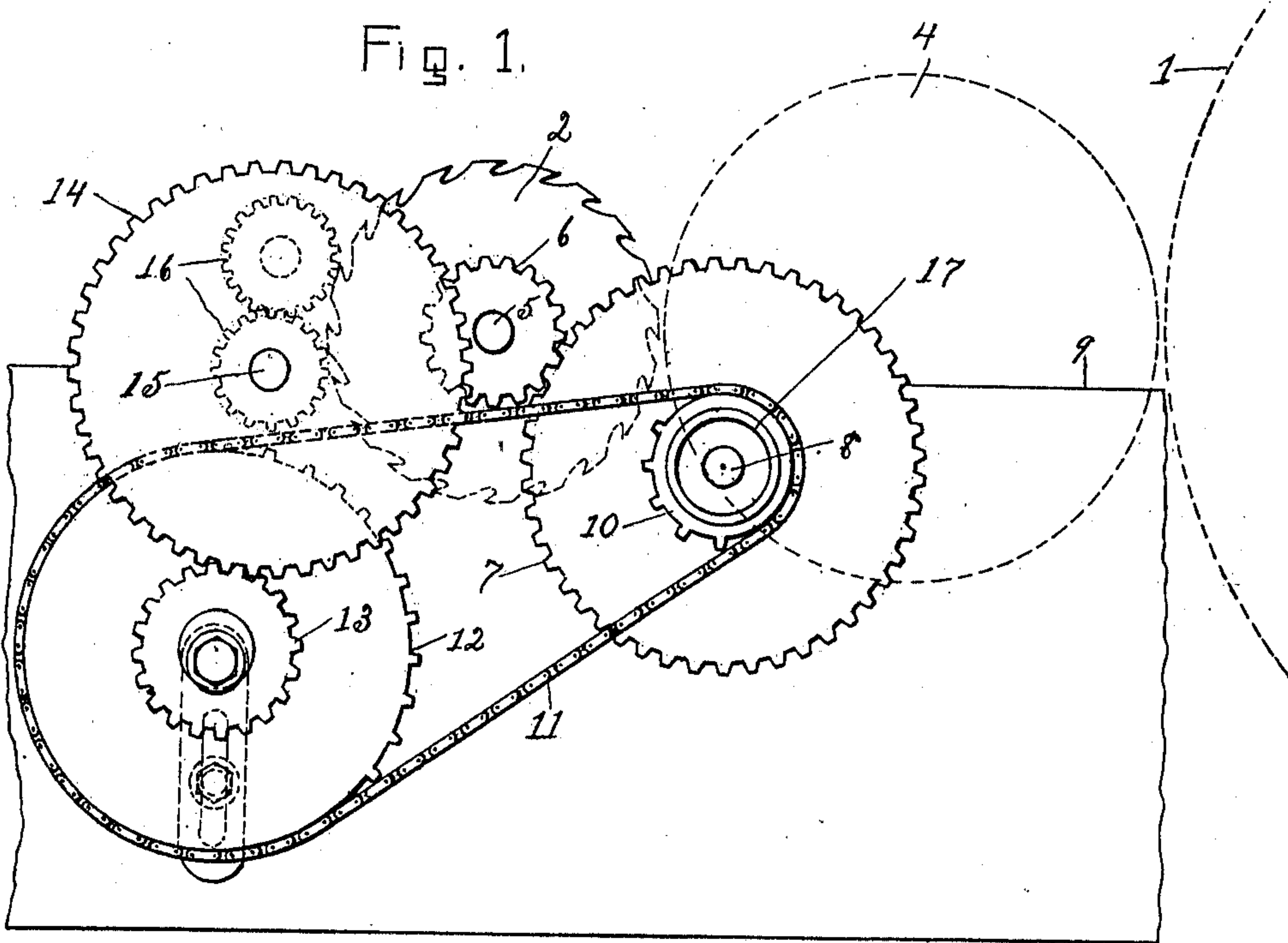


Fig. 1.



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2 SHEETS—SHEET 2.

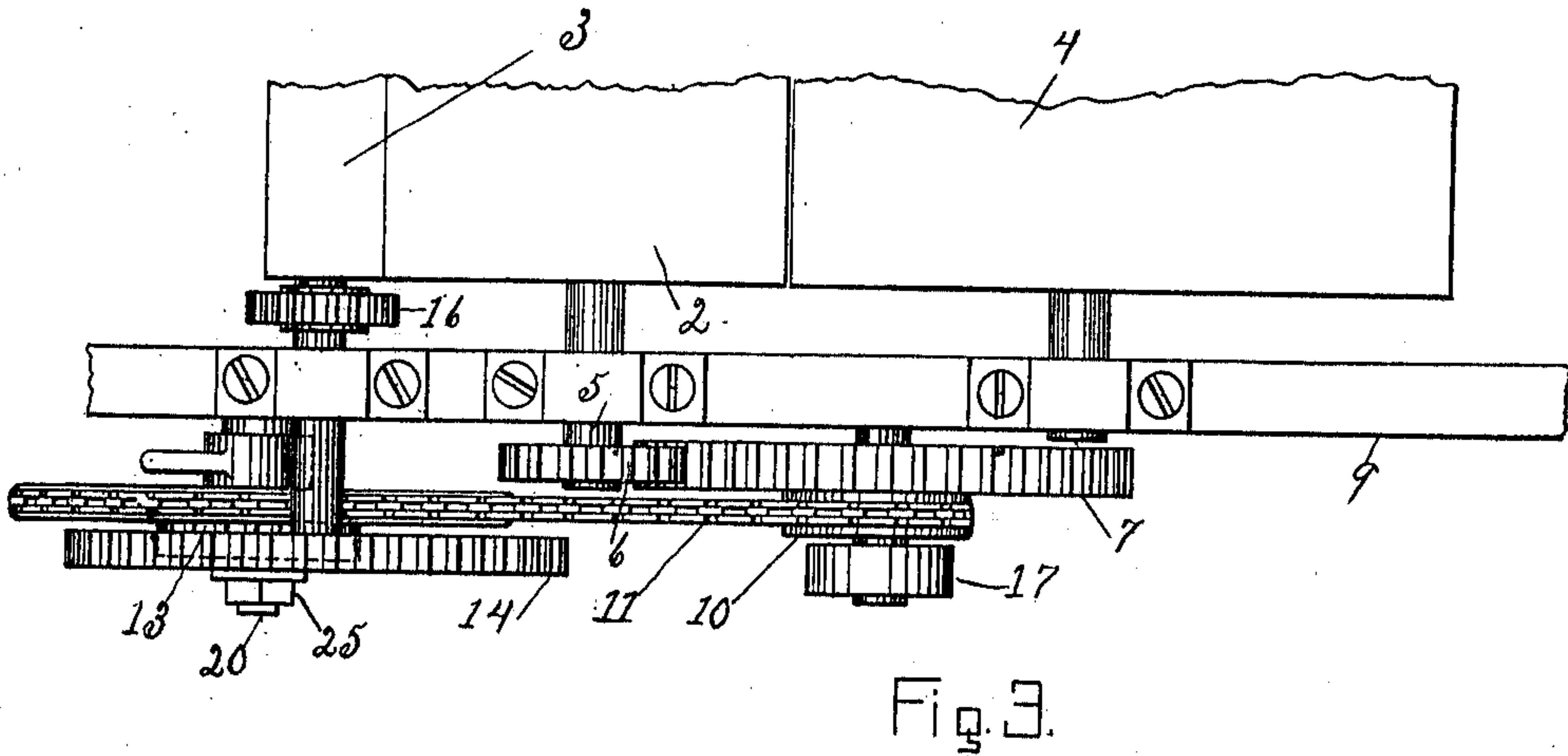


Fig. 4.

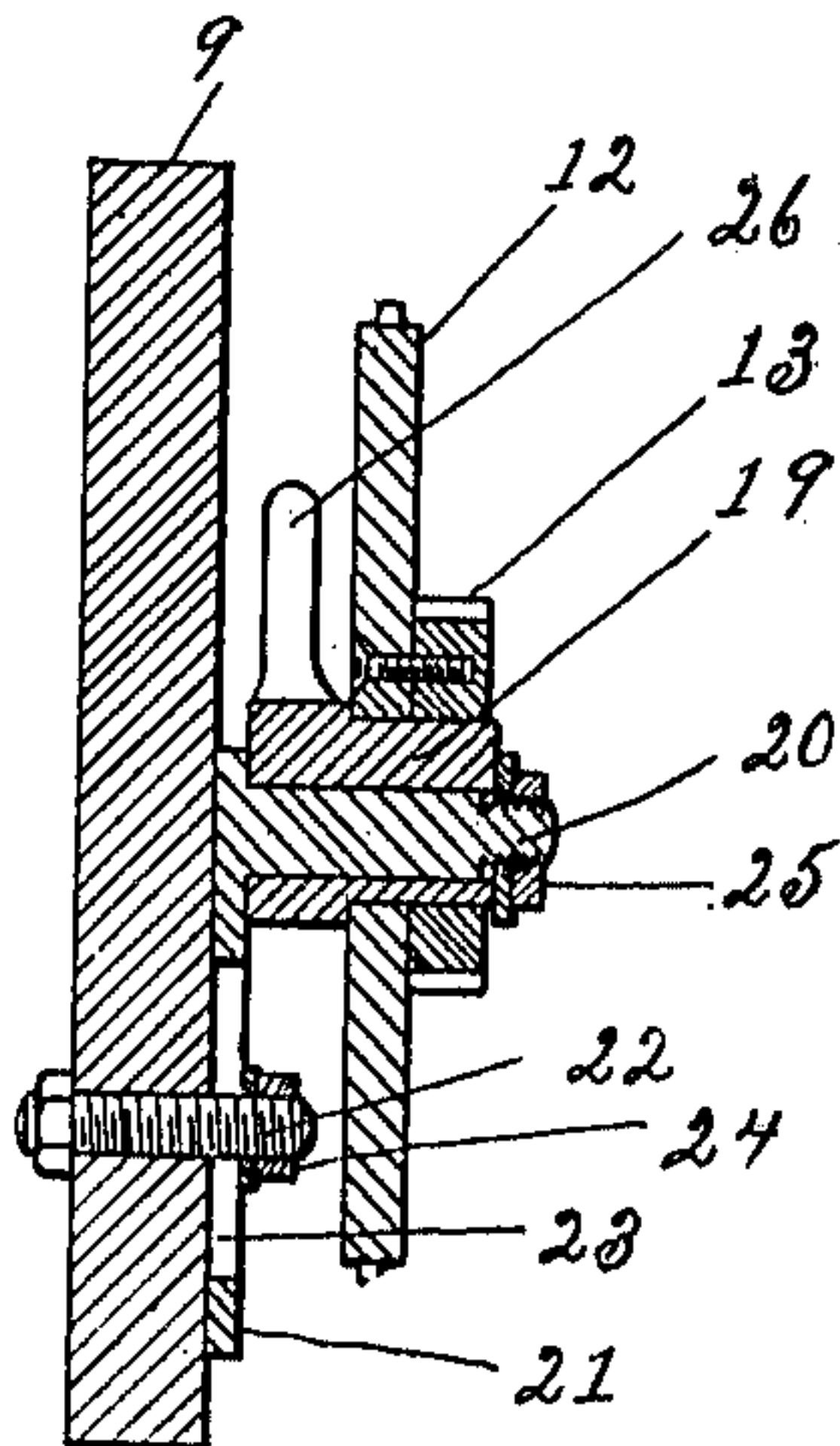
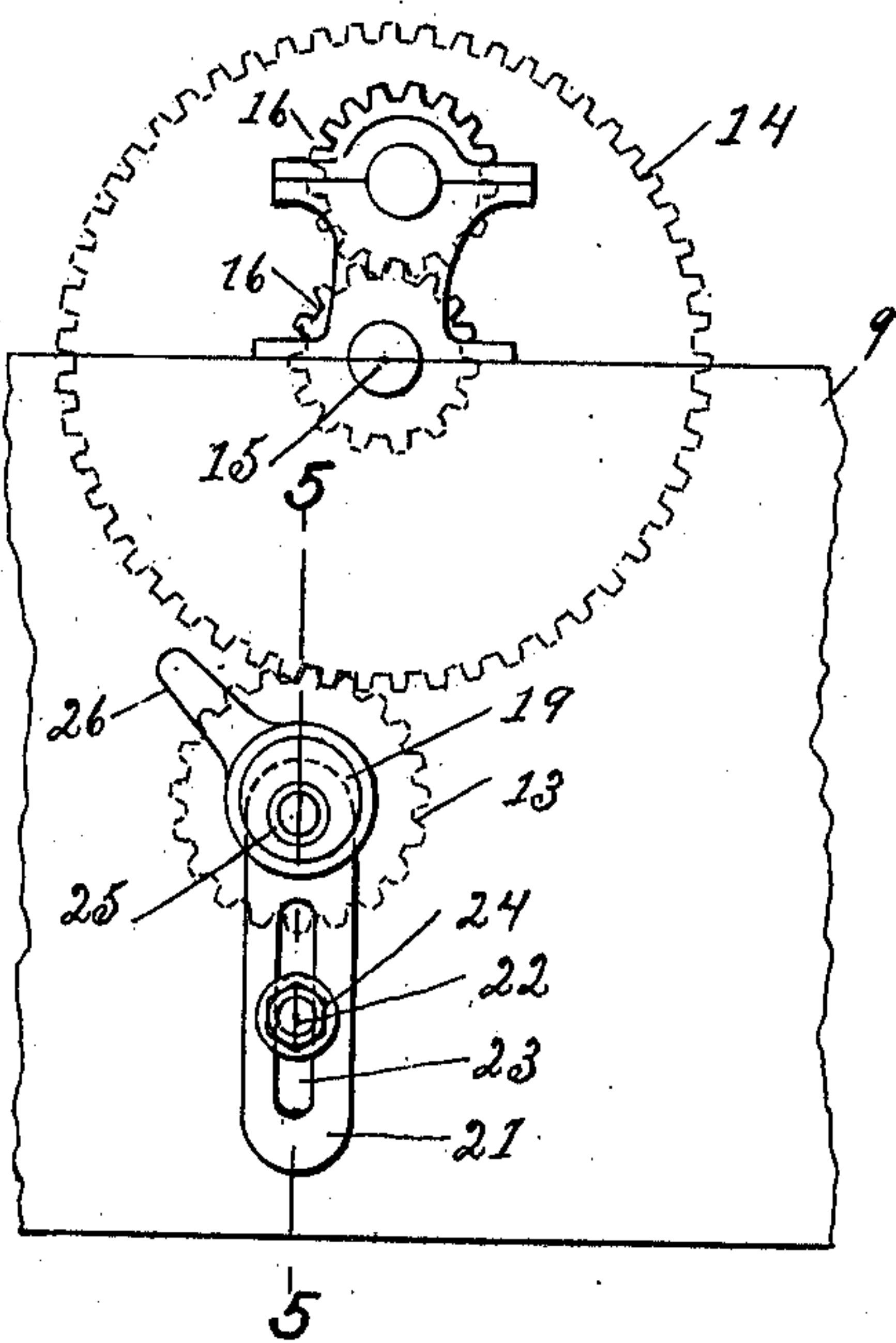


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## CARDING-MACHINE.

988,320.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed December 23, 1909. Serial No. 534,568.

### *To all whom it may concern:*

Be it known that I, THOMAS EGAN, Sr., a citizen of the United States, residing at Amsterdam, county of Montgomery, and State of New York, have invented certain new and useful Improvements in Carding-Machines, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification. Similar characters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in side elevation of a part of a wool-carding machine showing my invention applied thereto, the position of the main cylinder and the tumbler being indicated by dotted lines. Fig. 2 is a vertical section taken transversely of the feed-rolls, take-in-roll, tumbler and main cylinder, showing the relative positions of the same in the machine. Fig. 3 is a top plan view of the parts shown in Fig. 1. Fig. 4 is a view in side elevation similar to Fig. 1, with certain of the sprockets and gears removed for the purpose of illustrating the means for throwing into and out of mesh the feed-roll operating-gears. Fig. 5 is a vertical section of the same taken on the line 5—5 of Fig. 4 through the vertical plane of the axis of the stud upon which the eccentric sleeve is mounted, and of the axis of the bolt, whereby the bracket which carries said stud is attached to the frame of the machine.

This invention relates to the class of carding-machines employing in combination with a main carding-cylinder, a pair of feed-rolls, and a take-in-roll between said feed-rolls and main cylinder, and the invention will be shown and described in its application to a type of such machine known as a woolen card. In machines of said type it has heretofore been customary to drive the take-in-roll by means of a belt, and to drive the feed-rolls independently of the take-in-roll. In such machines the take-in-roll tends at times to become clogged, causing its driving-

belt to slip and said take-in-roll to cease to rotate. In such cases, however, the feed-rolls, being independently driven, continue to force the stock against the take-in-roll, causing the same to pile up and become packed in between the take-in-roll and the feed-rolls, frequently resulting in injury to the machine and in a considerable loss of time in removing the stock thus accumulated in packed form.

The principal object of my invention is to insure in a machine of this type discontinuance of the operation of the feed-rolls whenever the operation of the take-in-roll is stopped for any reason, and to this end I have devised a positive driving means connecting together the take-in-roll and the feed-rolls.

Referring to the drawings wherein the invention is shown in preferred form, 1, represents the main cylinder, 2, the take-in-roll shown in the form of a bur-cylinder, and 3—3, the feed-rolls. Interposed between the take-in-roll and main cylinder I have shown the usual roll, 4, called a tumbler. Fixed upon the shaft, 5, of the take-in-roll is a pinion, 6, meshing with a gear, 7, rotatively mounted upon a stud, 8, projecting from the frame, 9, of the machine. In fixed relation to said gear, 7, is a sprocket-wheel, 10, connected by a chain, 11, with a sprocket-wheel, 12, rotatively mounted upon a stud projecting from the frame of the machine. A pinion, 13, in fixed relation to said sprocket-wheel, 12, is adapted to mesh with a gear, 14, fixed upon the shaft, 15, of the lower feed-roll, the shafts of said feed-rolls being connected by intermeshing gears, 16, in the usual manner. Power may be transmitted in any known manner to any one of said gears, pinions or wheels, as, for example, through the belt-pulley, 17, which is fixed to the sprocket-wheel 10.

The tumbler, 4, and main cylinder, 1, may be driven in the manner usual in machines of this type.

By means of the gears, pinions, sprockets and chain above referred to, it will be seen that the take-in-roll, 2, is positively connected with the feed-rolls, 3, so that said



feed-rolls can operate only when the take-in-roll is operating. Should the take-in-roll, 2, become clogged and stopped, the feed-rolls, 3, thus also necessarily stop and cease to feed the stock to the take-in-roll, thus avoiding the piling up of stock between the feed-rolls and take-in-roll, and accomplishing the purpose of the present invention.

In machines of this type it is desirable to provide means for from time to time changing the speed of the feed-rolls relatively to that of the take-in-roll, and it is also desirable to provide means for quickly connecting and disconnecting the feed-rolls from the driving-mechanism therefor. I have therefore provided means for quickly moving the pinion, 13, into and out of engagement with the feed-roll operating-gear, 14, and also for permitting the pinion, 13, to be replaced from time to time by pinions of different sizes. The mechanism whereby this object is accomplished is more particularly shown in Figs. 4 and 5. The pinion, 13, and sprocket-wheel, 12, which are in fixed relation to each other are rotatively mounted upon a sleeve, 19, through which a supporting-stud, 20, extends eccentrically. The stud, 20, projects laterally from a bracket, 21, mounted upon the frame, 9, of the machine by means of a bolt, 22, passing through a slot, 23, in said bracket, and a locking-nut 24. The eccentrically mounted sleeve, 19, is rotatively adjustable upon the stud, 20, and is adapted to be locked in adjusted position by means of a nut, 25, on the outer end of said stud, whereby the sleeve is clamped against the bracket 21. When the nut, 25, is loosened rotative adjustment of the eccentrically mounted sleeve, 19, can be accomplished in any known manner, as by means of a handle 26. The adjustment of the bracket, 21, permitted by the slot, 23, permits the stud, 20, and sleeve, 19, to be located nearer the axis of the gear, 14, when the pinion, 13, is to be replaced by a smaller pinion, or at a greater distance from the axis of the gear, 14, when the pinion, 13, is to be replaced by a larger pinion. Whatever may be the size of the pinion, 13, however, it can be quickly thrown into or out of engagement with the gear, 14, by a rotative movement of the eccentrically mounted sleeve 19.

By the term take-in-roll, I refer to a roll having the function of what is commonly known in the art relating to machines of this class as a bur-cylinder or a licker-in.

The gear, 7, sprocket-wheel, 10, chain, 11, sprocket-wheel, 12, and pinion, 13, form a train of speed-changing positively-interengaging driving-elements interposed between, and connecting together, the gear-wheel on the feed-roll with the gear-wheel or pinion

on the take-in-roll, whereby the object of my invention is accomplished, while the proper reduction in surface speed of the feed-rolls from that of the take-in-roll is secured.

What I claim as new and desire to secure by Letters Patent is—

1. In a machine of the class described, and in combination, a take-in-roll; a feed-roll immediately in advance of the take-in-roll; and speed-reducing gear-connections between said take-in-roll and said feed-roll comprising a pinion fixed to said take-in-roll; a rotatively mounted gear-wheel in mesh with said pinion; a sprocket-wheel fixed to said gear-wheel; another rotatively mounted sprocket-wheel; a chain connecting together said sprocket-wheels; a gear-wheel fixed to said feed-roll; and a pinion fixed to said other sprocket-wheel and in mesh with said last-mentioned gear-wheel.

2. In a machine of the class described, and in combination, a take-in-roll; a feed-roll; a gear-wheel fixed to said take-in-roll; a gear-wheel fixed to said feed-roll; a train of speed-changing positively-interengaging driving-elements interposed between, and connecting together, said gears, one of said elements being adapted to mesh with the gear on said feed-roll; a support upon which said element is rotatively mounted, capable of adjustment toward and from the axis of the feed-roll; and means for securing said support in adjusted position.

3. In a machine of the class described, and in combination, a take-in-roll; a feed-roll; a gear-wheel fixed to said take-in-roll; a gear-wheel fixed to said feed-roll; a train of speed-changing positively-interengaging driving-elements interposed between, and connecting together, said gears, one of said elements being adapted to mesh with the gear on said feed-roll; a sleeve upon which said element is rotatively mounted; a stud upon which said sleeve is rotatively mounted eccentrically; and means for locking said sleeve upon said stud when desirable.

4. In a machine of the class described, and in combination, a take-in-roll; a feed-roll; a gear-wheel fixed to said take-in-roll; a gear-wheel fixed to said feed-roll; a train of speed-changing positively-interengaging driving-elements interposed between, and connecting together, said gears, one of said elements being adapted to mesh with the gear on said feed-roll; a sleeve upon which said element is rotatively mounted; a stud upon which said sleeve is rotatively mounted eccentrically; means for locking said sleeve upon said stud when desirable; and a stud-supporting bracket capable of adjustment toward and from said feed-roll.

5. In a machine of the class described, and



in combination, a frame; a take-in-roll; a  
feed-roll; a pinion fixed to said take-in-roll;  
a rotatively mounted gear-wheel in mesh  
with said pinion; a sprocket-wheel fixed to  
5 said gear-wheel; another sprocket-wheel; a  
chain connecting together said sprocket-  
wheels; a pinion fixed to said other sprocket-  
wheel; a gear-wheel on said feed-roll adapt-  
ed to mesh with said last-mentioned pinion;  
10 a bracket mounted upon said frame adjust-  
ably with reference to said feed-roll; a stud  
carried by said bracket; a sleeve rotatively

adjustable eccentrically upon said stud, upon  
which sleeve are rotatively mounted said  
other sprocket-wheel and the pinion fixed 15  
thereto; and means for securing said sleeve  
in adjusted position upon said stud.

In testimony whereof, I have hereunto set  
my hand this 4th day of December, 1909.

THOMAS EGAN, Sr.

Witnesses:

JOHN S. MAXWELL,  
FLORENCE E. PEARSON.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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