

No. 664,389.

Patented Dec. 25, 1900.

A. T. DRYSDALE.
TOBACCO STEMMING MACHINE.

(Application filed Oct. 5, 1900.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

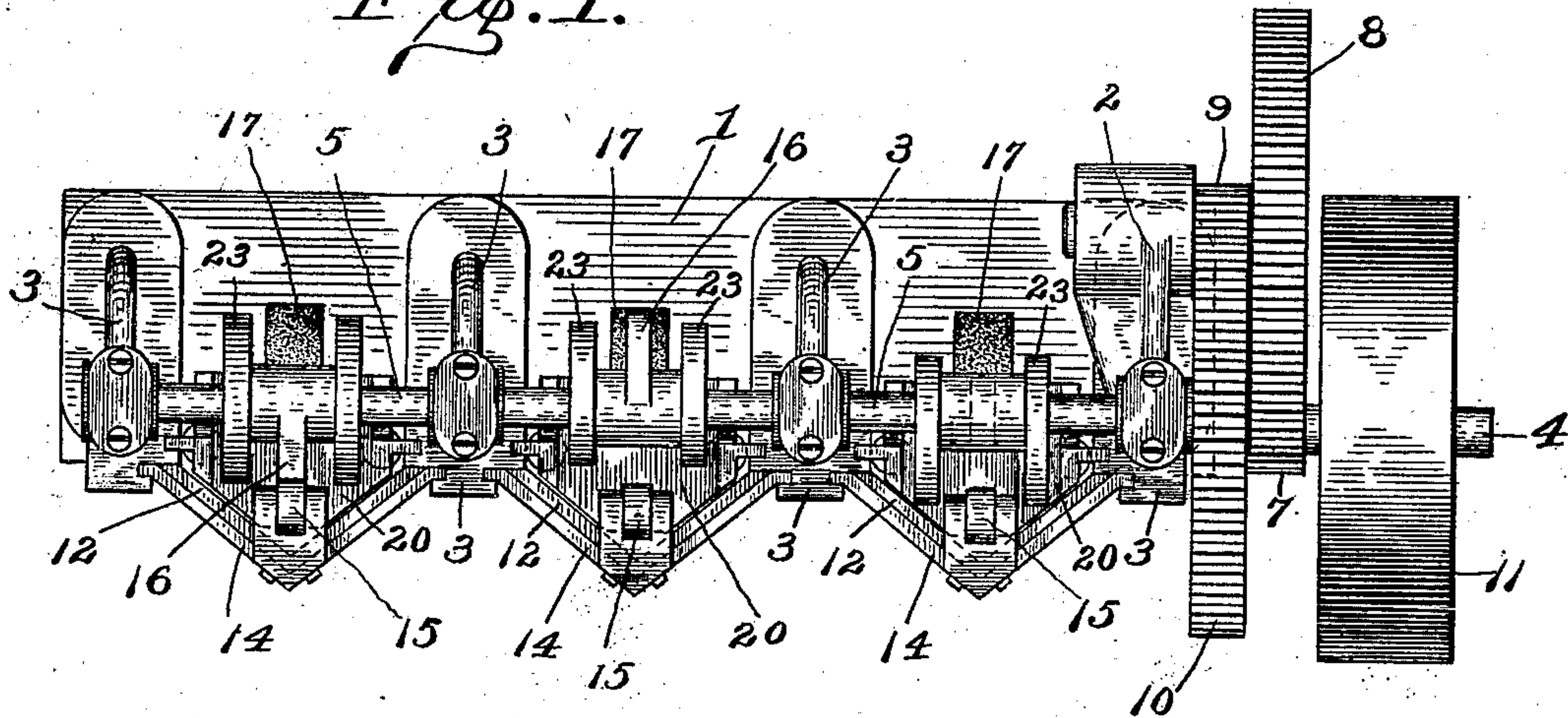
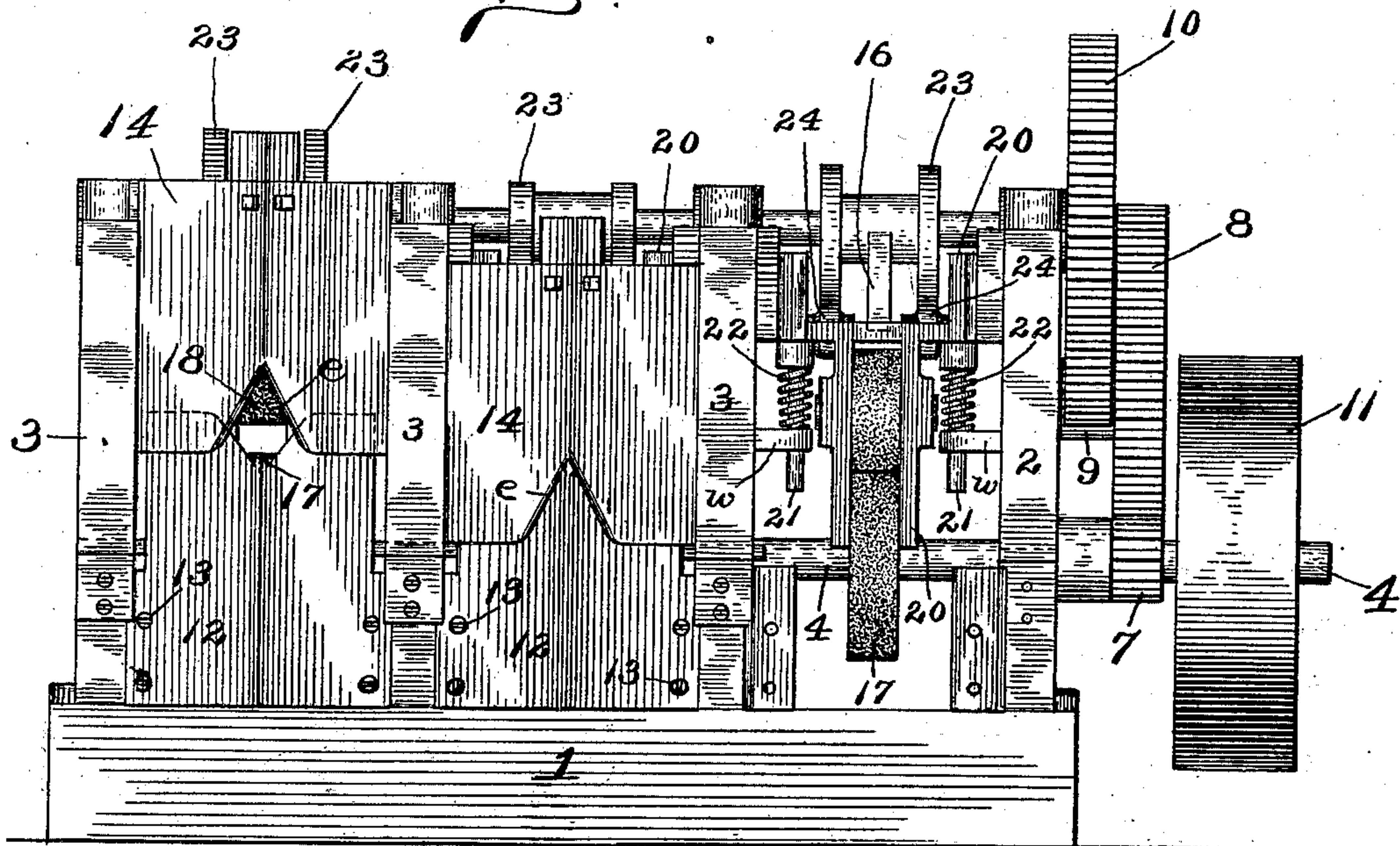


Fig. 2.



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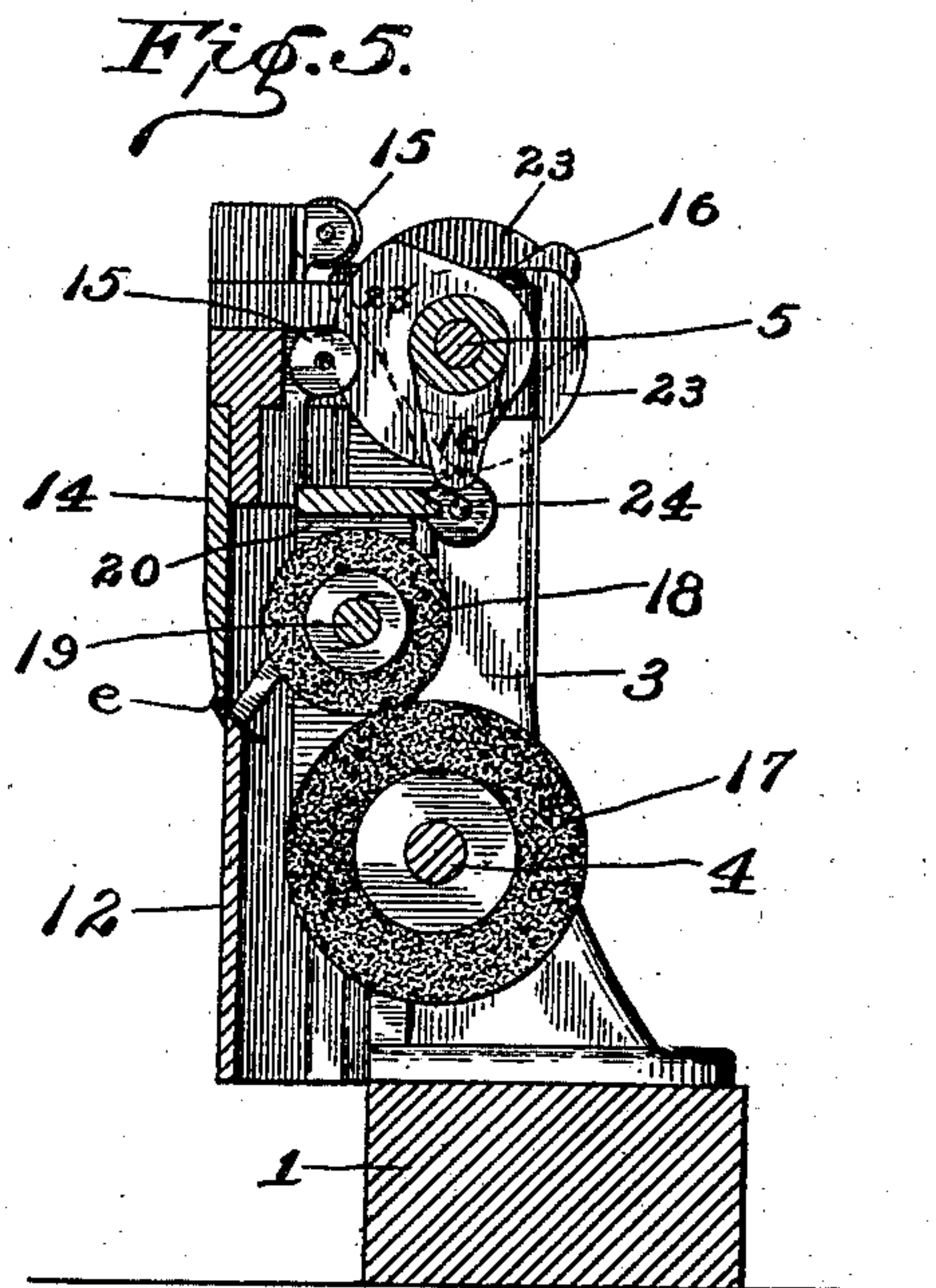
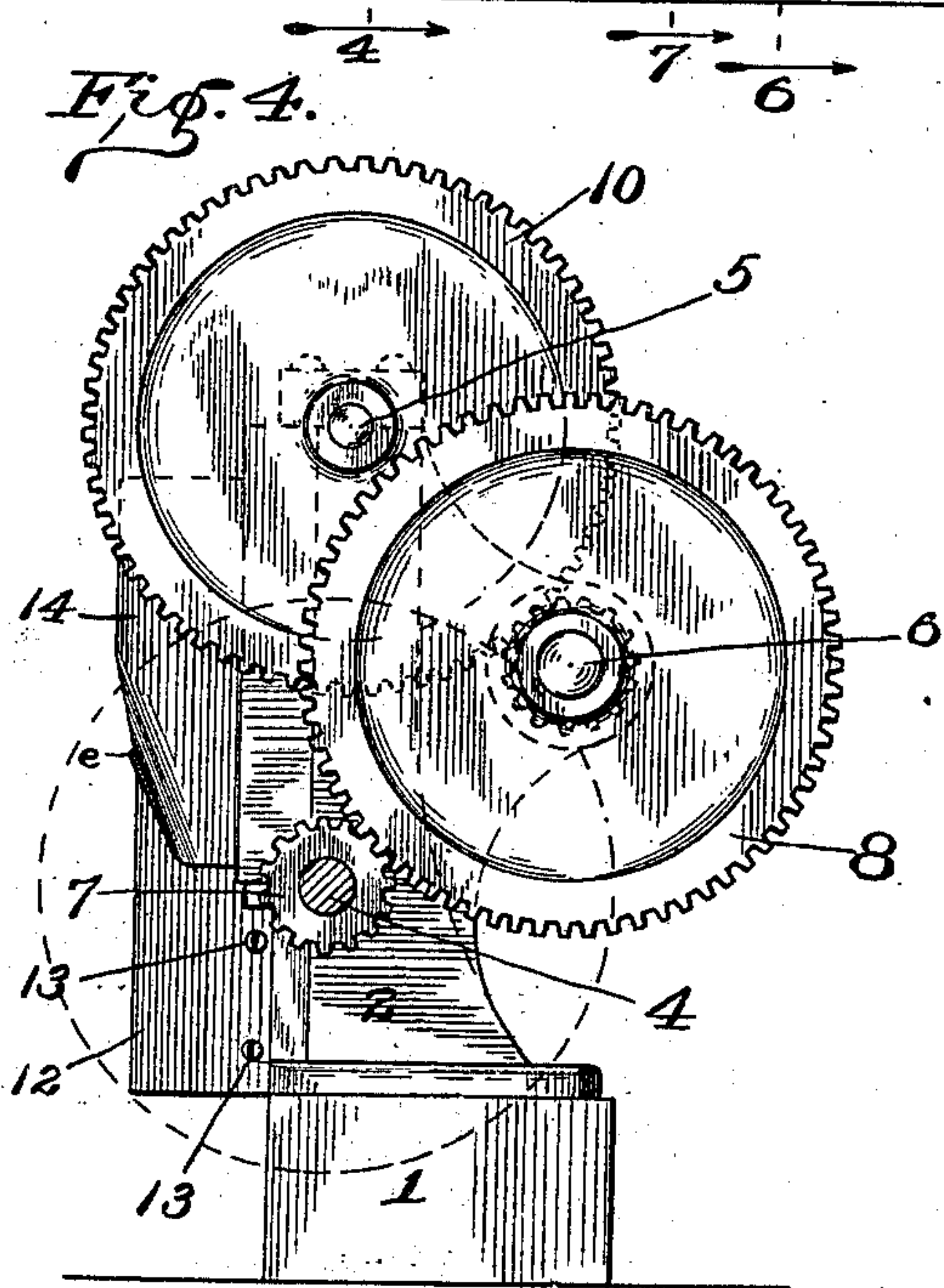
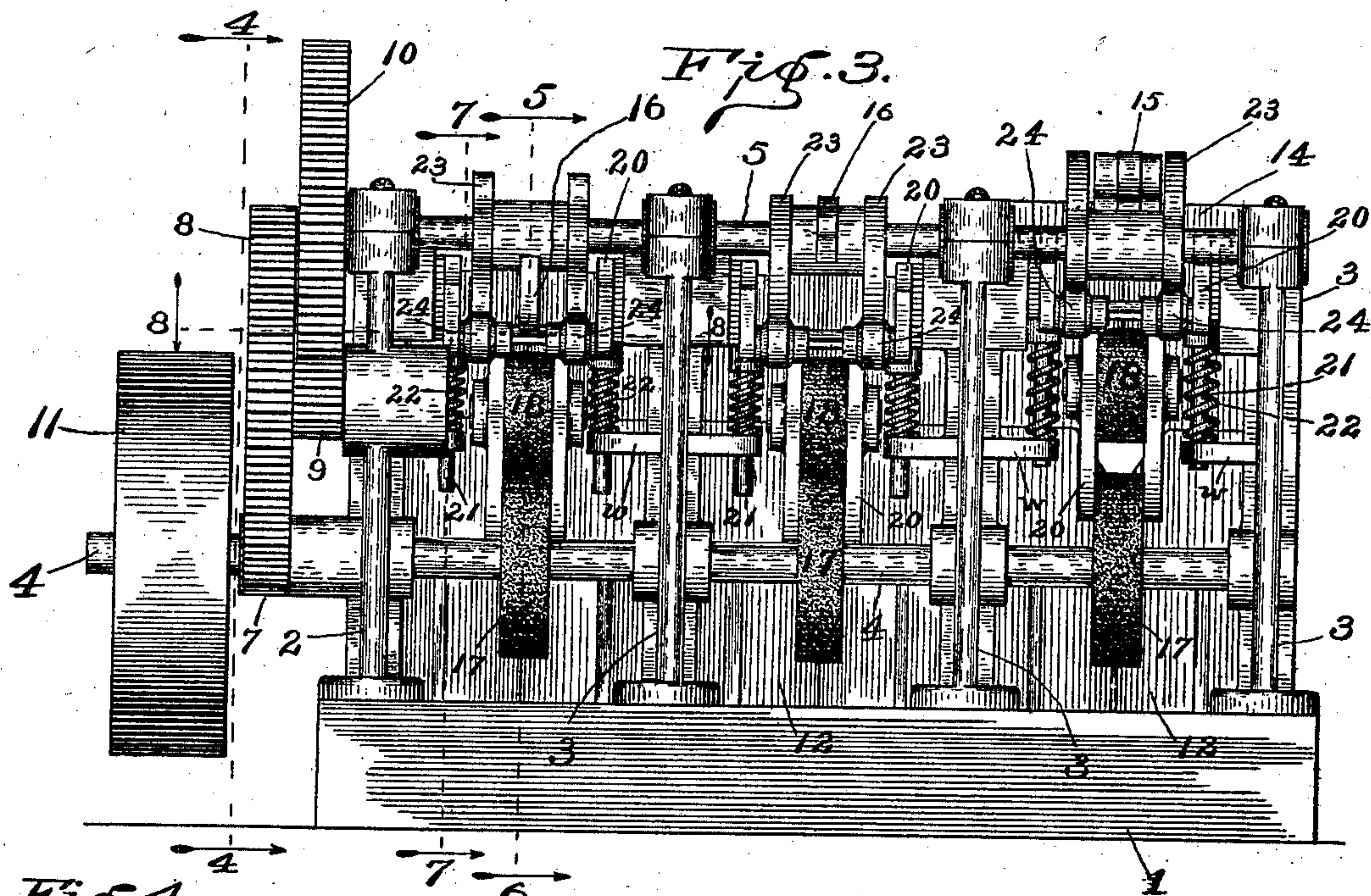
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3 Sheets—Sheet 3.

Fig. 6.

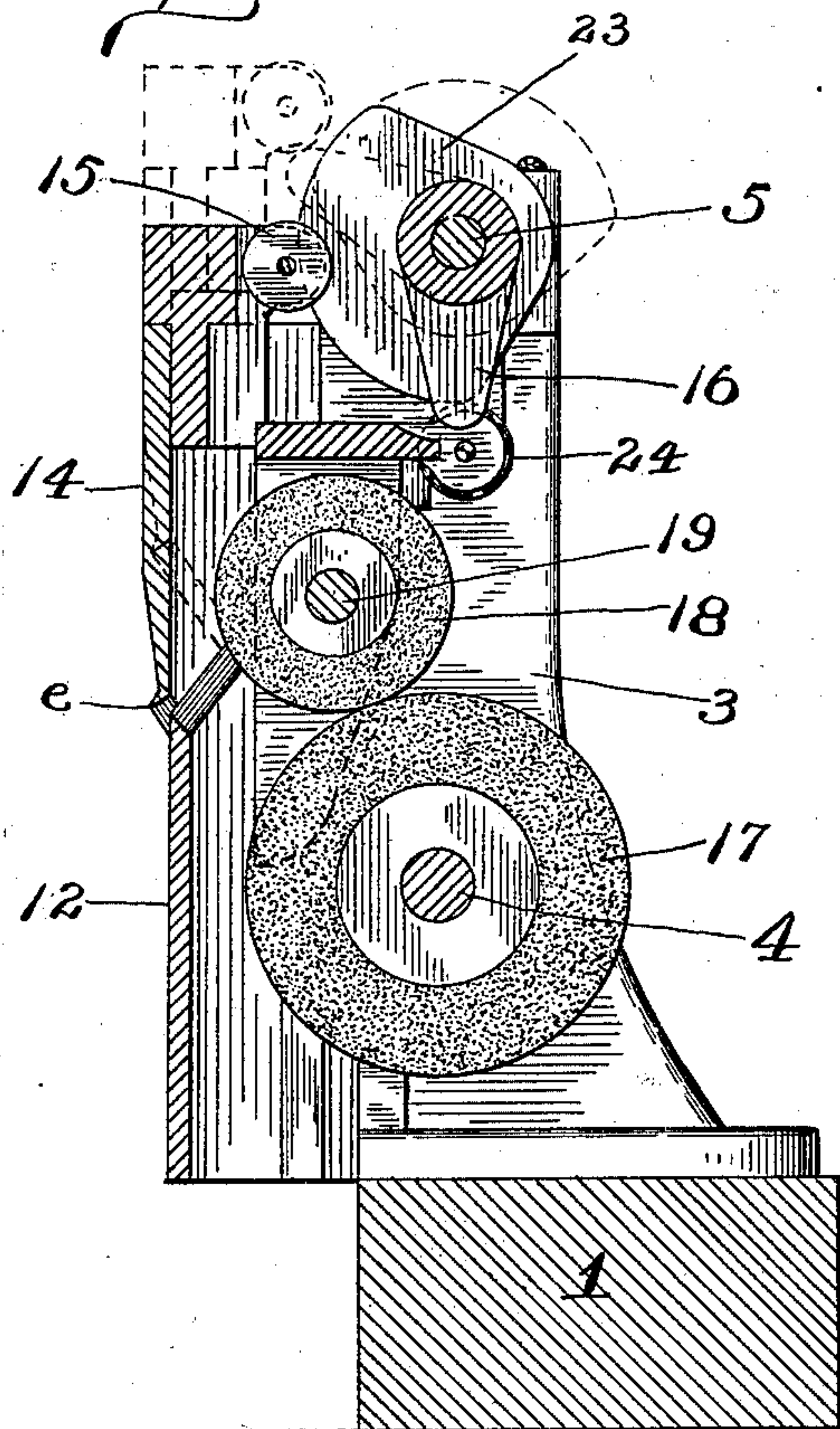


Fig. 7.

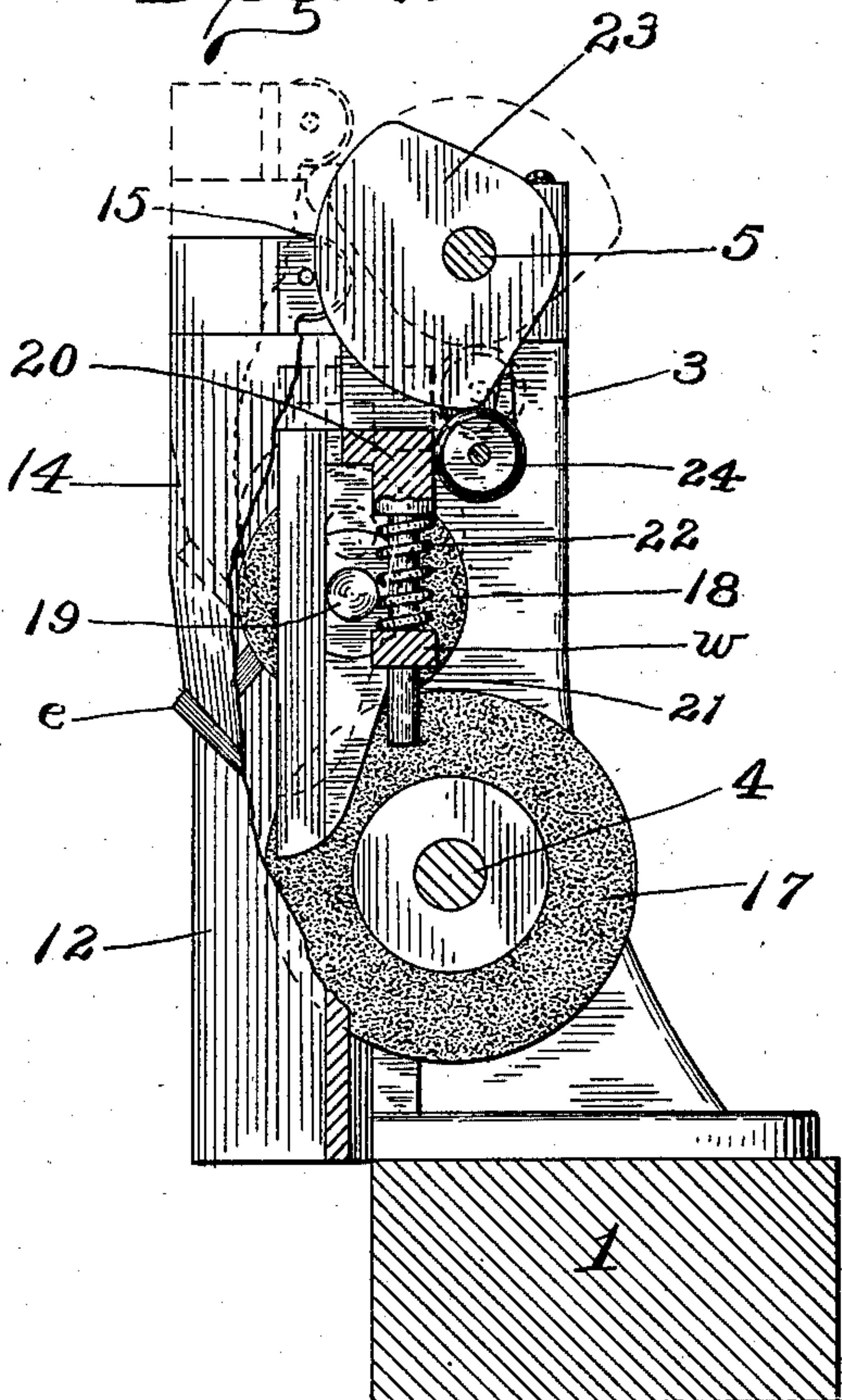


Fig. 8.

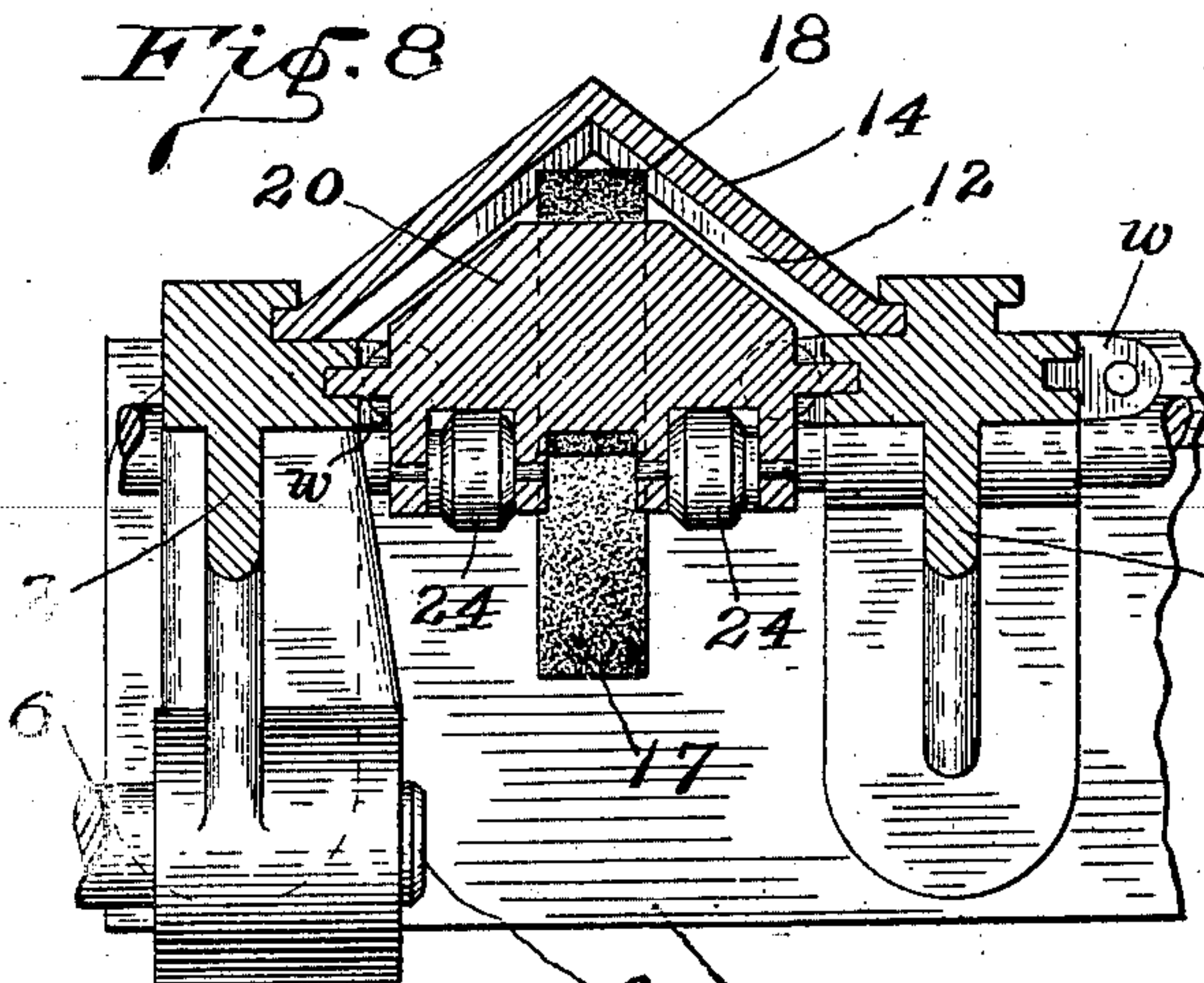
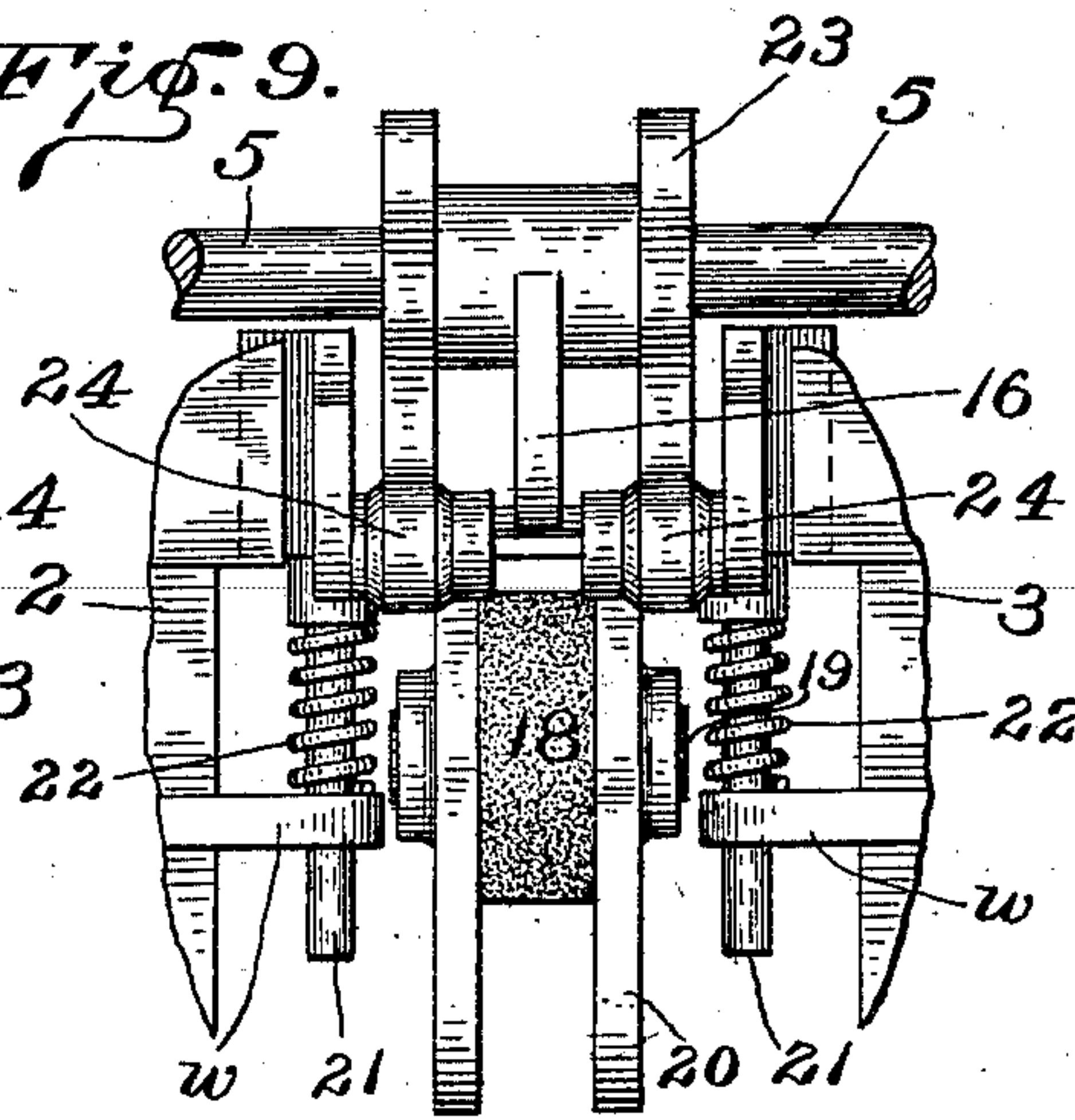


Fig. 9.



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UNITED STATES PATENT OFFICE.

ALEXANDER T. DRYSDALE, OF BESSEMER, ALABAMA.

TOBACCO-STEMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,389, dated December 25, 1900.

Application filed October 5, 1900. Serial No. 32,157. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER T. DRYSDALE, a citizen of the United States, residing at Bessemer, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Tobacco-Stemming Machines, of which the following is a specification.

The object of my said invention is to provide a means by which the stems may be rapidly, cleanly, and efficiently removed from tobacco-leaves; and it consists in a machine for the purpose embodying certain novel features of construction and arrangement, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a top or plan view of a machine embodying my present invention; Fig. 2, a front elevation of the same; Fig. 3, a rear elevation thereof; Fig. 4, an end elevation as seen when looking in the direction indicated by the arrows from the dotted line 4 4 in Fig. 3; Fig. 5, a transverse sectional view as seen from the dotted lines 5 6 in Fig. 3; Fig. 6, a similar view omitting all parts not immediately connected with the set of strippers through which the section-line runs and illustrating the raised position of the movable parts by means of dotted lines; Fig. 7, a similar view as seen from the dotted line 7 7 in Fig. 3, also showing the raised position of the movable parts by means of dotted lines; Fig. 8, a horizontal sectional view as seen from the dotted line 8 8 in Fig. 3, omitting the gearing; and Fig. 9, a view of the housing carrying the movable roller and immediately adjacent parts. Figs. 6 to 9 are on a larger scale than Figs. 1 to 5.

This machine as constructed has a base 1, carrying a main upright frame-post 2 at one end and as many additional upright frame-posts 3 as there are strippers in the particular machine in question. In the machine illustrated I have shown three strippers; but obviously any number desired may be employed by simply lengthening or shortening the machine and adding or taking away the necessary parts.

Within suitable bearings in the posts 2 and 3 are the shafts 4 and 5. The first upright frame-post 2 also carries a stud-shaft or counter-shaft 6 to accommodate the gearing which I prefer to use in driving the machine and which in my preferred arrangement consists, as shown, of the pinions and spur-gears 7, 8, 9, and 10. On the shaft 4, alongside the pinion 7, is also preferably the pulley or band-wheel 11, by which the machine is driven by a belt from some suitable source of power. (Not shown.) It will be seen that by the system of gearing employed the shaft 5 runs much slower than the shaft 4, for reasons which will presently appear.

In front of the mechanism and secured to the framework are the lower strippers 12. These are stationary, being secured to the frame by the screws 13 or otherwise. Above these are the strippers 14, which are mounted in slideways in the frame and are capable of vertical movement. The extreme positions of these movable strippers are illustrated in Fig. 2, where that at the left is in the extreme highest position and that alongside it to the right is in the extreme lowermost position, as when in the operation of removing the stem from a tobacco-leaf. The slideways are formed at the bottom to constitute stops by which the descent of the movable strippers is arrested at the proper points. The cutting or operating edges of all the strippers are V-shaped where they come together, thus forming a diamond-shaped orifice through which the stem of tobacco passes, as shown in Fig. 2. They are also V-shaped in cross-section. In addition, as best shown in Figs. 6 and 5, the upper stripper 14 has an outwardly-extended edge *e*, which is the operative edge in separating the leaf from the stem. The careful forming of this edge of proper shape is of considerable importance. The strippers 14 each have an overhanging head, preferably provided with an antifric- tion roller or truck 15, with which an arm 16 on the shaft 5 is adapted to come in contact as said shaft revolves and which constitutes the means of raising said movable strippers. When the arm escapes from contact with the overhanging head or its antifric- tion-roller, the stripper drops by gravity to its lowermost

position and into engagement with the leaf from which the stem is at the time being stripped.

The stem is drawn through the machine by means of a pair of rollers 17 and 18. The roller 17 is fixedly mounted on the shaft 4 and revolves therewith, the top of said roller being approximately at the same level as the operating edge of the corresponding lower fixed stripper 12. The roller 18 is when raised an idle roller, being mounted on the shaft 19, which in turn is loosely mounted in the yoke or housing 20, and said housing is mounted to have a vertical movement in slides provided on the adjacent portions of the frame or frame-posts. Said housing is also provided with stems or rods 21, which extend down through wings *w* on the adjacent frame-posts, and springs 22 surround these stems, being interposed between said wings and shoulders at the upper ends of said stems. Cams 23 on the shaft 5 are arranged to come in contact with the housings 20 or the anti-friction rollers or trucks 24, mounted therein, and thus at the proper time press down the yokes or housings and the rollers carried thereby, so that the latter come in contact with the rollers 17 or with the tobacco-stem at the time passing over said rollers, thus clamping said stem tightly between the two rollers of the pair and causing it to be drawn through the machine steadily and certainly, the same being driven by the shaft 4. The cams 23 are cut away on one side, so that the springs may at a certain point in the revolutions of the shaft 4 be enabled to raise said yokes or housings and the rollers carried thereby for the introduction of another stem. The mechanism is so arranged that this occurs just after the time when the arm 16 has operated to raise the upper stripper 14, and the movements are so timed relatively to each other that the strippers and rollers will be held down into operative position until the leaf is drawn entirely through. This is accomplished by speeding the shaft 5 to run slow relatively to the shaft 4, as above described. The rollers 17 and 18 should be of a somewhat elastic character, and I make them preferably of rubber or face them with rubber. The rubber portions as I prefer to make them are indicated in the drawings by means of stipple-shading.

As before stated, I have shown a machine containing three sets of strippers, and these may be multiplied indefinitely. As will be seen, these strippers are arranged to work alternatively, so that a single operator may be enabled conveniently to feed a large number. In operation the operative inserts the thick end of the stem of a leaf of tobacco through the diamond-shaped opening between a pair of strippers and into the space between the corresponding pair of rollers at the time when the upper stripper and the upper roller are raised. The upper stripper then descends, impinging on the thick part or butt of the

stem, with its cutting edges in position to strip the leaf therefrom. The upper roller then also descends, and the rollers grasp the stem and draw it on through, while the strippers strip off the leaf cleanly and efficiently, dropping the leaf in front of the strippers, while the stem passes through and drops down behind. As above stated, the upper stripper in its descent first comes in contact with the thick end of the stem, and the weight of the stripper during a considerable portion of the operation is supported by the stem. As the stem decreases in size the stripper descends gradually, until finally when the stem escapes the stripper rests on the stops or bearings therefor in the slideways on the frame.

It will thus be seen that my improved machine is designed not only to rapidly and efficiently but very cleanly strip the leaves from the stems of tobacco and leave them in the best possible condition for further treatment. In a machine embodying a considerable number of these strippers the several strippers are at work in all stages of operation.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a tobacco-stemming machine, of a framework, a stationary stripper mounted thereon, a movable stripper adapted to work in conjunction therewith, a driven shaft carrying a roll arranged behind said stationary stripper, a movable housing carrying a roll arranged behind said movable stripper, and a second shaft provided with an arm adapted to raise the movable stripper and with cams adapted to operate the housing carrying the movable roll, said housing being also provided with means acting oppositely to said cams whereby it is moved and held up except when forcibly depressed by said cam.

2. The combination, in a tobacco-stemming machine, of a framework, a stationary stripper and a movable stripper operating in conjunction with each other and having V-shaped operating edges, the outer stripper having its edge *e* also extending outwardly from its face, the lower stripper being plain-faced, suitable rolls for drawing the stem through between the strippers, and means for operating the movable stripper and the movable roll.

3. The combination, in a tobacco-stemming machine, of a stationary stripper, a movable stripper, a fixedly-positioned feed-roll, a movable feed-roll, and means for operating said movable stripper and said movable feed-roll arranged and timed as to raise said stripper and feed-roll simultaneously and permit the stripper to drop before the feed-roll is moved down into engagement with the stem of the tobacco-leaf being stripped, substantially as set forth.

4. The combination, in a tobacco-stemming machine, of the framework, the stationary

stripper, a movable stripper mounted in slides, a fixedly-positioned feed-roll mounted on a driving-shaft, a movable housing mounted in slides, a second feed-roll mounted in said housing, springs supporting said housing and adapted to raise the same and the roll carried thereby, a second shaft, a cam thereon adapted to force said housing and the roll carried thereby downwardly, and means for raising the movable stripper in its slides at the end of the stripping operation thereby adjusting the machine to receive a fresh stem and leaf, substantially as set forth.

5. The combination, in a tobacco-stemming machine, of a pair of strippers having V-shaped adjacent operative edges, the outer edge by which the leaf is severed from the stem being also turned outwardly, as at *e*, substantially as shown and described.

6. The combination, in a tobacco-stemming machine, of a stationary stripper, and a movable stripper mounted in slides and adapted to approach and recede from the stationary stripper, and mechanism whereby the movable stripper may be raised, said mechanism being also arranged to escape from engagement therewith at a certain point, whereby the movable stripper is permitted to drop onto the leaf to be stripped and rest on the stem thereof, being held into engagement therewith by its own gravity, the slides being provided with stops whereby it is prevented from moving too far, substantially as set forth.

7. The combination, in a tobacco-stemming machine, of a pair of strippers each being V-shaped in horizontal section and one fitting over the other, the operative edges being also V-shaped, slides wherein one of said strippers is mounted, and means for moving said stripper in said slides.

8. The combination, in a tobacco-stemming machine, of a framework, a stationary stripper mounted thereon, a movable stripper adapted to work in conjunction therewith, a driven shaft carrying a roll arranged behind said stationary stripper, a movable housing carrying a roll arranged behind said movable stripper, a second shaft provided with an arm adapted to raise the movable stripper and with cams adapted to operate the housing carrying the movable roll, said arm and said cams being arranged as shown whereby the movable stripper is permitted to descend before the movable housing and its roll are forced downwardly, and means acting oppositely to said cams whereby the housing carrying the movable roll is operated in the opposite direction.

In witness whereof I have hereunto set my hand and seal, at Bessemer, Alabama, this 11th day of September, A. D. 1900.

ALEXANDER T. DRYSDALE. [L. s.]

Witnesses:

L. E. BURNS,
E. S. HUEY.