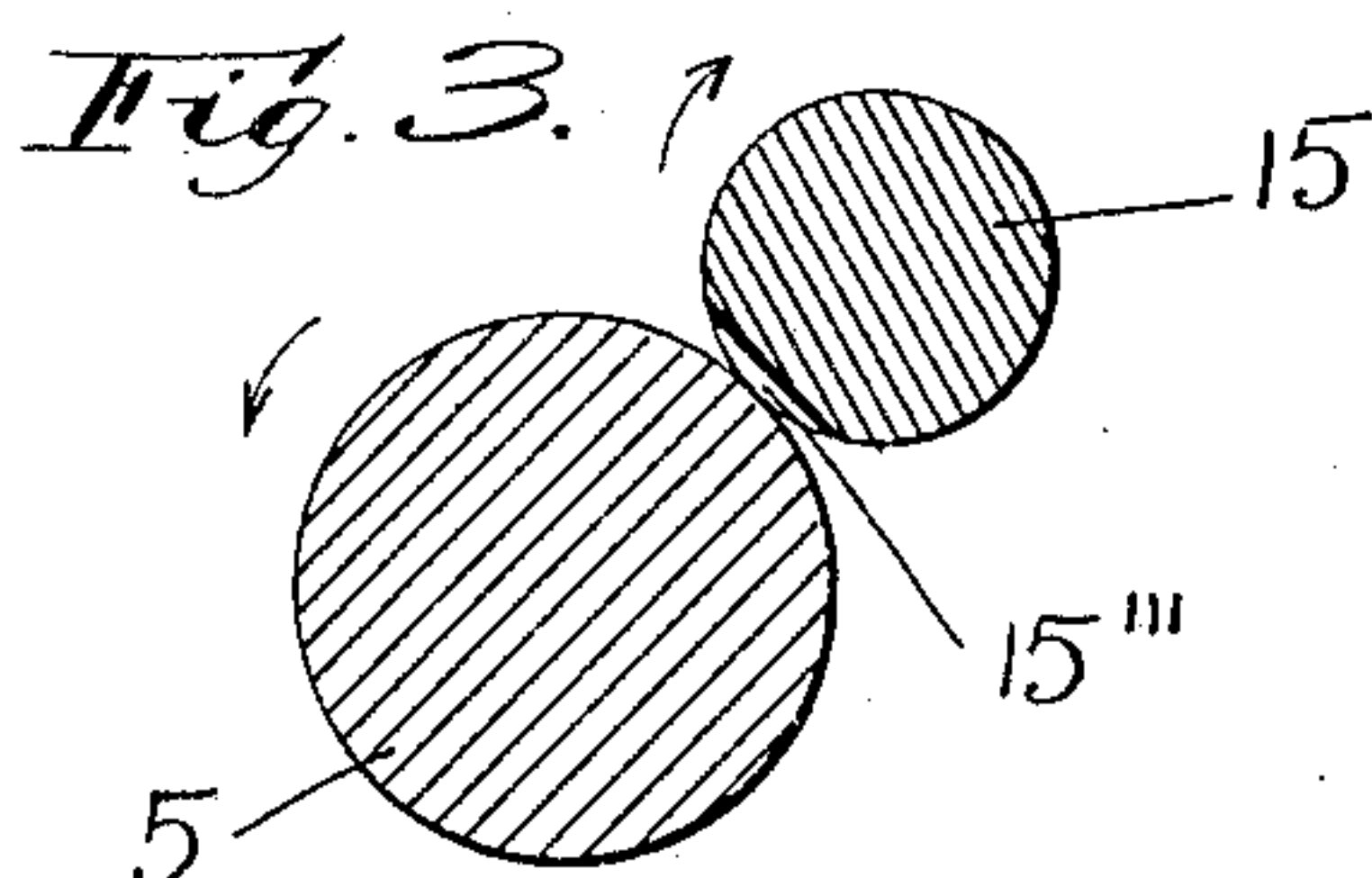
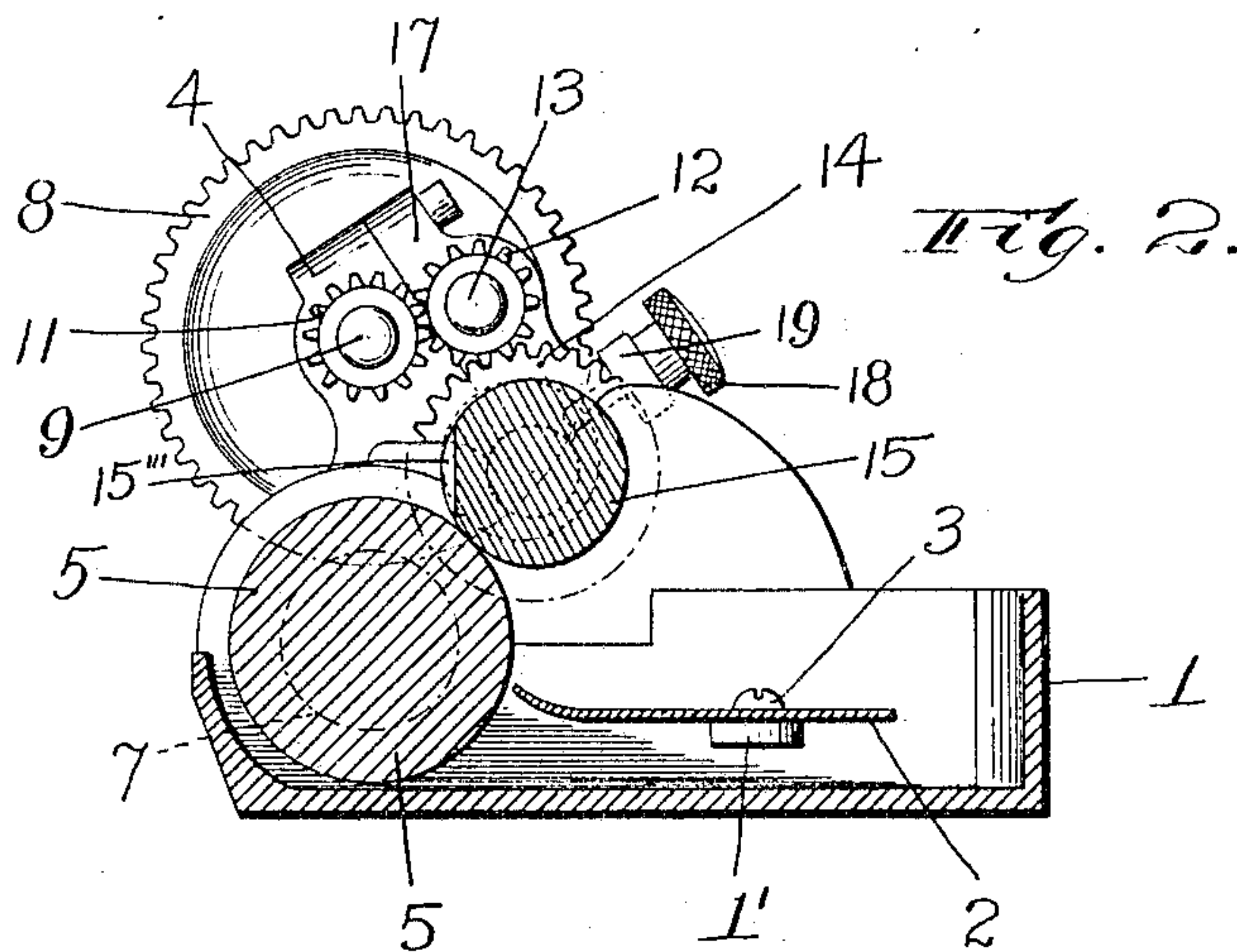
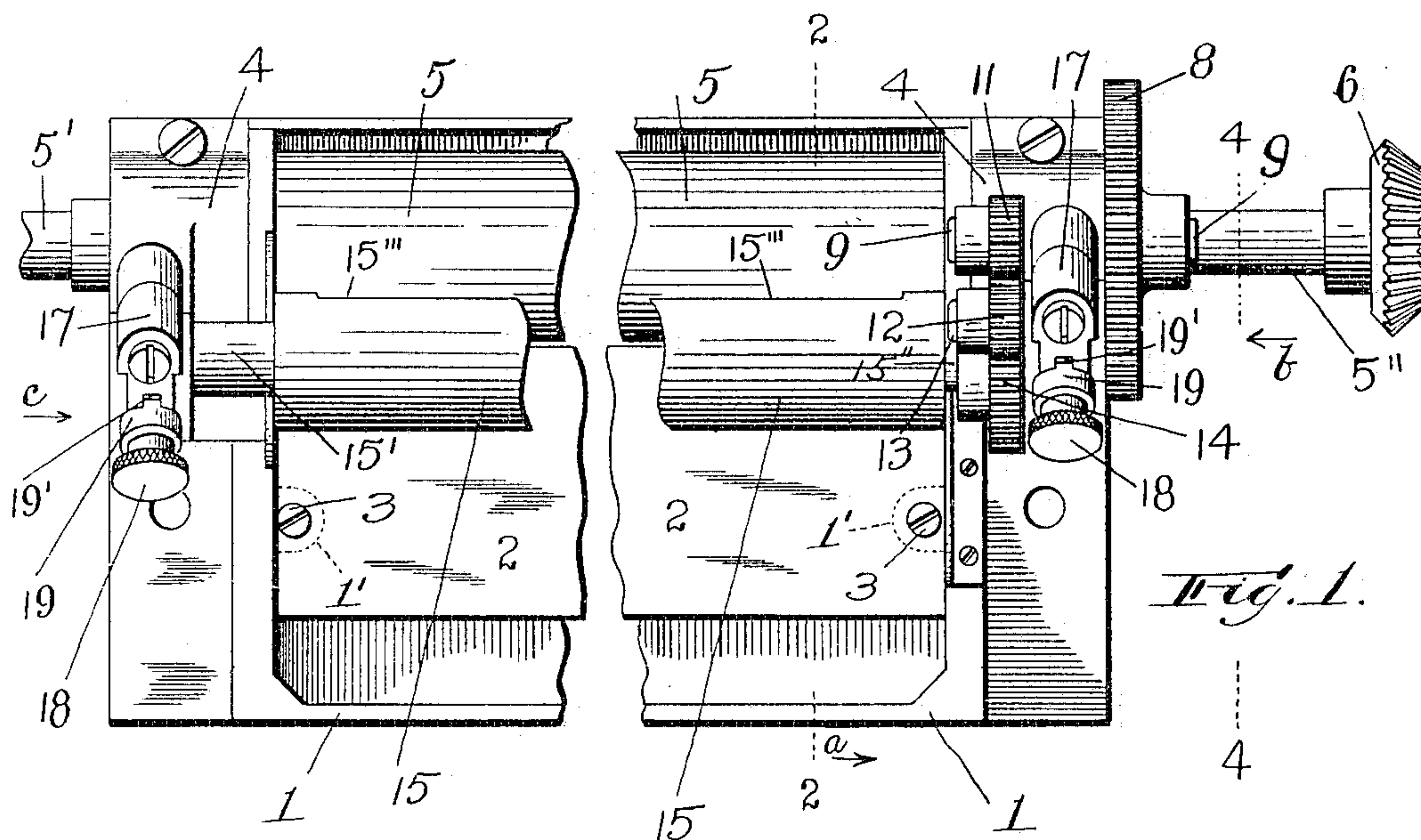


No. 801,563.

PATENTED OCT. 10, 1905.

E. P. WATERHOUSE.
GUMMING MECHANISM.
APPLICATION FILED MAY 2, 1902.

2 SHEETS—SHEET 1.



Witnesses:
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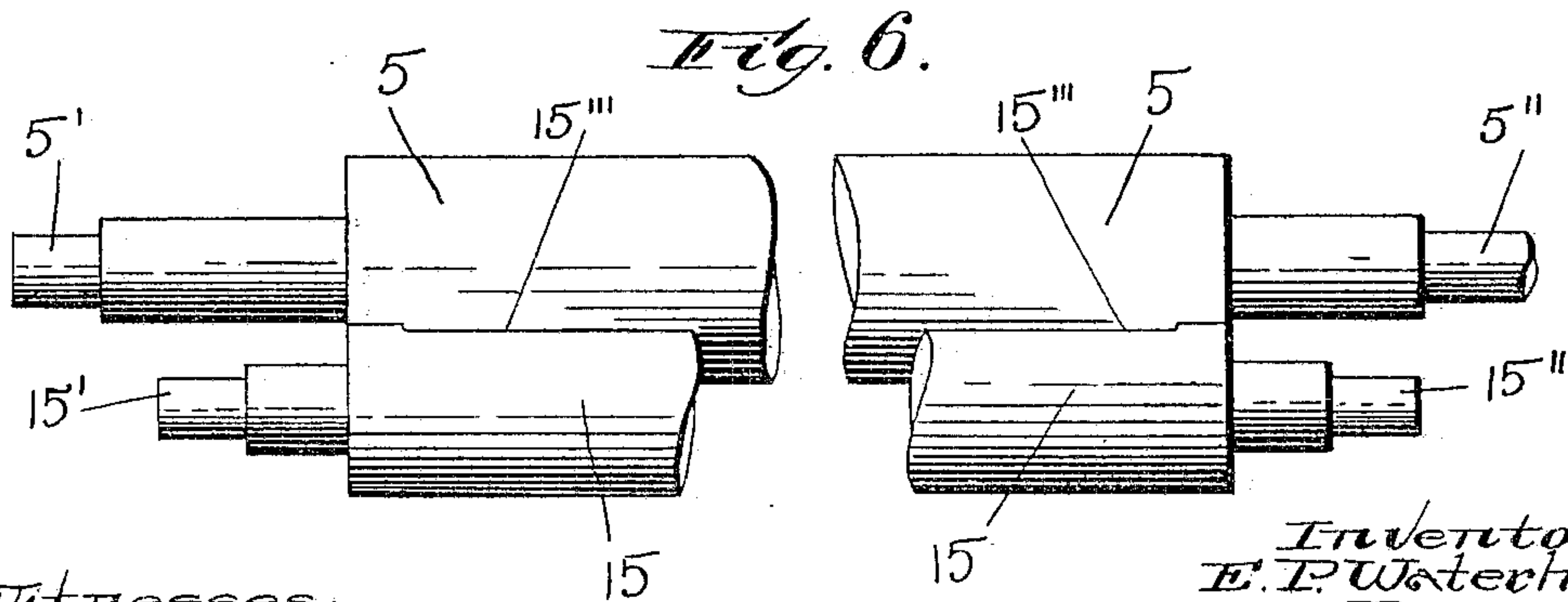
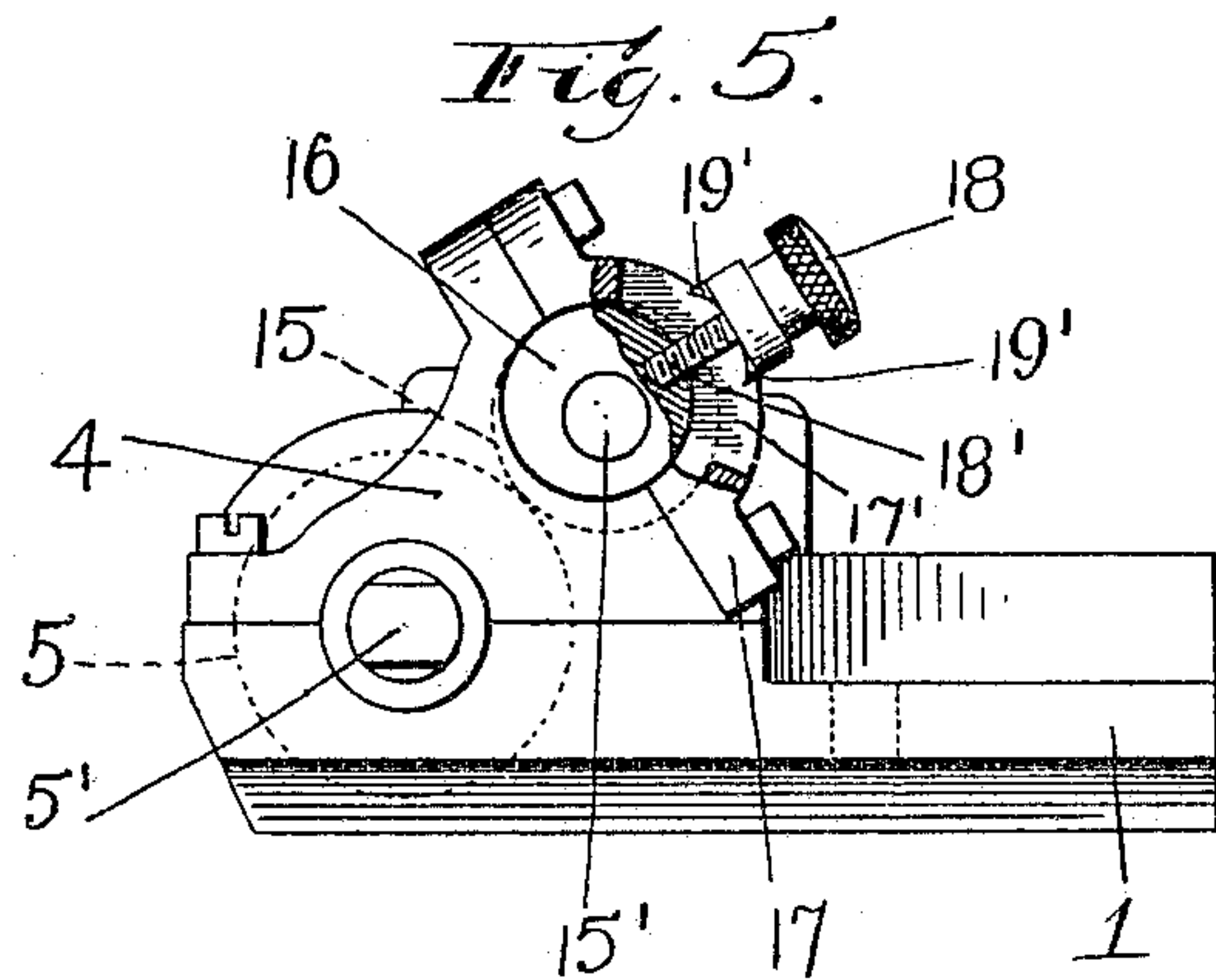
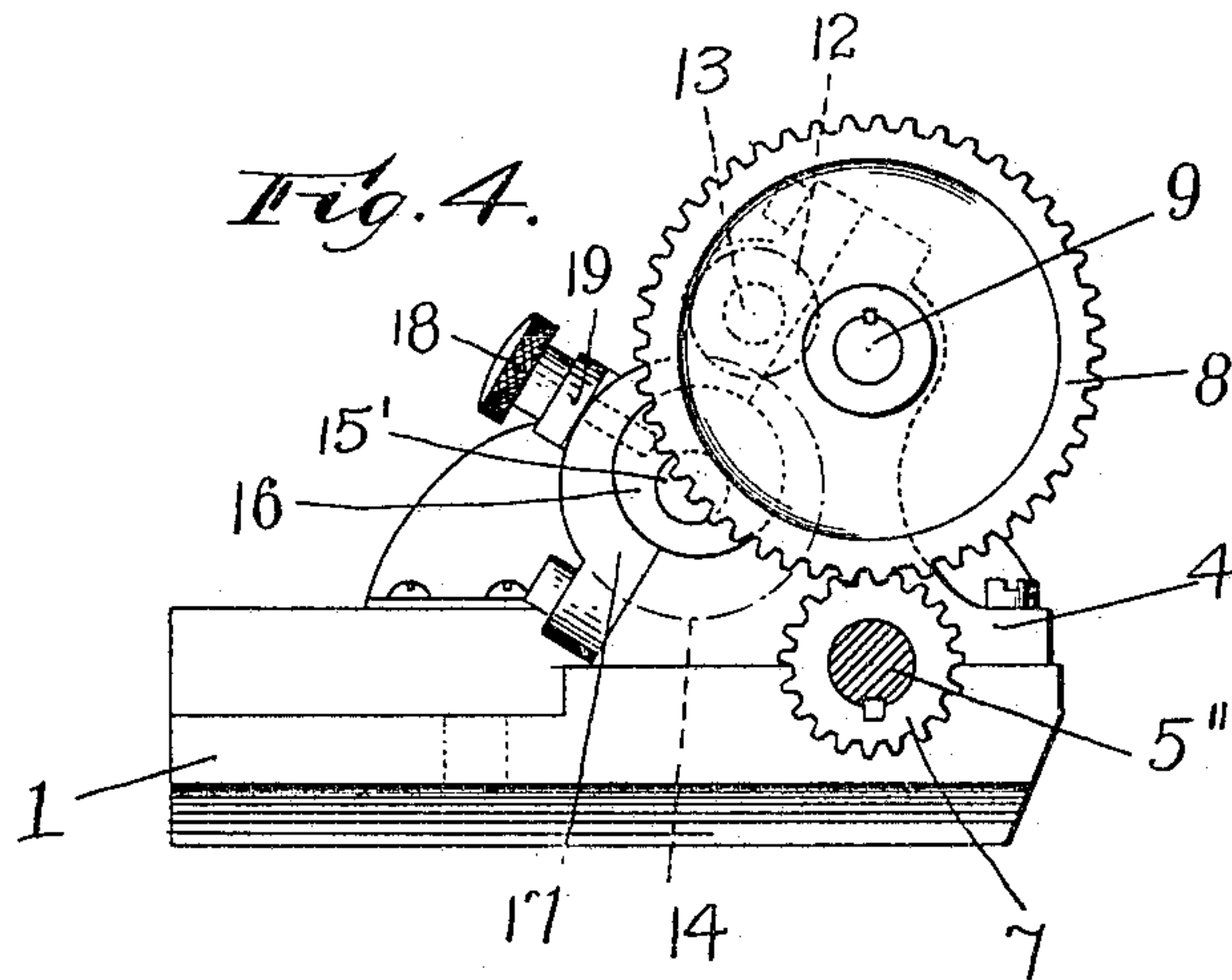
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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GUMMING MECHANISM.

No. 801,563.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Original application filed March 20, 1901, Serial No. 51,966. Divided and this application filed May 2, 1902. Serial No. 105,616.

To all whom it may concern:

Be it known that I, EZRA P. WATERHOUSE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Gumming Mechanism, of which the following is a specification.

My invention relates to gumming mechanism or mechanism for gumming surfaces, and more particularly to the mechanism in an envelop-machine which supplies gum to the rolls or gummers which pass back and forth under the pick-ups which engage and raise the envelop-blanks in the well-known way. This application is a division of my application, Serial No. 51,966, filed March 20, 1901.

The object of my invention is to provide an improved gumming mechanism more particularly adapted for use in connection with an envelop-machine; and my invention consists in certain novel features of construction of my improvements, as will be hereinafter fully described.

I have only shown in the drawings sufficient portions of a gumming mechanism adapted to be used in connection with an envelop-machine to illustrate the nature of my improvements.

Referring to the drawings, Figure 1 is a plan view of the gumming mechanism embodying my improvements. Fig. 2 is a transverse section taken at a point indicated by line 2 2, Fig. 1, looking in the direction of arrow *a*, same figure. Fig. 3 is a cross-section through the two gum-rolls detached. Fig. 4 is a section on line 4 4, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 5 is an end view of the gumming mechanism shown in Fig. 1 looking in the direction of arrow *c*, same figure, with a portion broken away; and Fig. 6 is a plan view of the two gum-rolls detached.

In the accompanying drawings, 1 is a box or receptacle for holding the gum and which may be of the ordinary construction usually employed in envelop-machines. The box 1 has in this instance a central horizontal division-plate 2, secured at its ends by screws 3 upon ears or lugs 1' on the inner surface of the ends of the box 1 in the usual way, as shown in Figs. 1 and 2. The plate 2 is preferably curved upwardly at its front edge.

On the ends of the box 1 are bearings 4 for the journals 5' and 5'' of the gum-box roll 5, which extends in the front part of the box 1 and is rotated therein in the usual way. One of the journals 5'' of the gum-box roll 5 is extended and has fast thereon the bevel-gear 6, which meshes with and is driven by a bevel-gear (not shown) to communicate a continuous motion to the gum-box roll 5. Also fast on the extended journal 5'' of the gum-box roll 5 is a pinion 7, which meshes with and drives a gear 8, fast on a shaft 9, mounted in bearing 4. On the other end of the shaft 9 is fast a pinion 11, which meshes with a pinion 12, mounted on a stud 13. The pinion 12 also meshes with a pinion 14, fast on the journal 15'' of the gum-regulating roll 15, which is mounted to turn in bearings on the ends of the box 1.

The gum-regulating roll 15 has preferably eccentric bearings 16 for its journals 15' and 15'', as shown in Fig. 5, which bearings are supported and adapted to be partially rotated in boxes 17 on the ends of the gum-box 1. The boxes 17 have a slot or opening 17' therein, through which extends the threaded end 18' of a thumb-screw 18. The inner end of the threaded end 18' of the thumb-screw 18 is screwed into the eccentric bearing 16, as shown in Fig. 5. On the threaded portion 18' of the thumb-screw 18 is loosely mounted a collar 19, having projections 19' thereon, which collar is adapted to engage the outer edge of the box 17.

By means of the eccentric bearings 16 of the gum-regulating roll 15 through the thumb-screw 18 to turn said bearings the gum-regulating roll 15 may be moved away from the gum-box roll 5 to leave a free open space between the rolls 5 and 15 for the removing of the gum or for any other purpose and may then be moved in contact with the gum-box roll 5, and the degree of contact or the amount of space between the rolls 15 and 5 may also be regulated by moving the eccentric bearings 16 of the gum-regulating roll 15 by means of the thumb-screw 18, as above described.

The gum-regulating roll 15 has, intermediate its ends on its periphery in the direction of the length of the roll, a flat surface or recessed portion 15''', as shown in the draw-

ings. Each end of the recessed portion of the roll 15 is preferably left circular and the full diameter of the roll.

I have found in practice that by means of the flat surface 15''' on the gum-regulating roll 15 between its ends small particles and foreign substances in the gum can and will readily pass between the rolls 15 and 5 through the space formed by the flat surface 15''' (shown in sectional view, Fig. 3) and back into the gum-box instead of onto the gummers (not shown) from their contact with the gum-box roll 5 in the usual way.

In order not to have the flat surface 15''' of the gum-regulating roll 15 come opposite or contiguous to the gum-box roll 5 just at the time the gummers engage the roll 5 and apply too much gum to the gummers, it is necessary to time the revolution of the gum-regulating roll 15, and this is done by means of the arrangement and the size of the pinions intermediate the large gear 6 and the gear 14 on the gum-regulating roll 15. The size of the pinions and their position is such that the flat surface 15''' on the gum-regulating roll 15 will pass by the gum-box roll 5 just before the gummers (not shown) engage the gum-box roll 5.

The advantages of my improvements will be readily appreciated by those skilled in the art.

By the construction of the gum-regulating roll 15 with the flat surface thereon I provide for the passage between said roll and the gum-box roll and their return into the gum-box of any particles and foreign substances in the gum, and thus prevent their passing onto the gummers. I also provide for the position of the gum-regulating roll 15 relative to the gum-box roll 5, close to it or farther from it, according to the amount of gum to be carried on the gum-box roll 5. I also provide, by means of the gearing for driving the gum-regulating roll 15, the timing of the revolution of said roll relative to the revolution of the gum-box roll 5, all as above described.

It will be understood that the details of construction of my improvements may be varied, if desired.

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

1. A gum-regulating roll having a flat surface on its periphery, extending in the direction of the length of the roll, and intermediate the ends thereof, said ends being of circular shape, and of the full diameter of the roll, substantially as shown and described. 55

2. In gumming mechanism, the combination with the gum-box roll, of a gum-regulating roll having its ends of uniform circular shape to engage the gum-box roll throughout the complete rotation of both rolls, and having its periphery intermediate said ends recessed in the direction of its length, to form a flat surface which will not be in engagement with the gum-box roll during the revolution of said rolls, substantially as shown and described. 65

3. In gumming mechanism, the combination with the gum-box roll, and the gum-regulating roll having circular ends of uniform diameter, and having a flat surface on its periphery intermediate its ends and means for rotating said rolls, of means for moving the gum-regulating roll toward and away from the gum-box roll, and for regulating the distances between said rolls, substantially as shown and described. 75

4. In gumming mechanism, the combination with the gum-box roll, and the gum-regulating roll having a flat surface on its periphery intermediate its ends, and means for rotating said rolls, of means for moving the gum-regulating roll toward and away from the gum-box roll, and for regulating the distances between said rolls, said means consisting of eccentric bearings for the gum-regulating roll, and means for adjusting said bearings and holding them in their adjusted position, substantially as shown and described. 85

5. In gumming mechanism, the combination with the gum-box roll, and the gum-regulating roll having a flat surface on its periphery, of gearing intermediate said rolls to regulate the time of rotation of the gum-regulating roll, so that the flat surface thereon will be contiguous to the surface of the gum-regulating roll at the proper time, relative to the engagement of said gum-box roll by the gummers, substantially as shown and described. 95

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