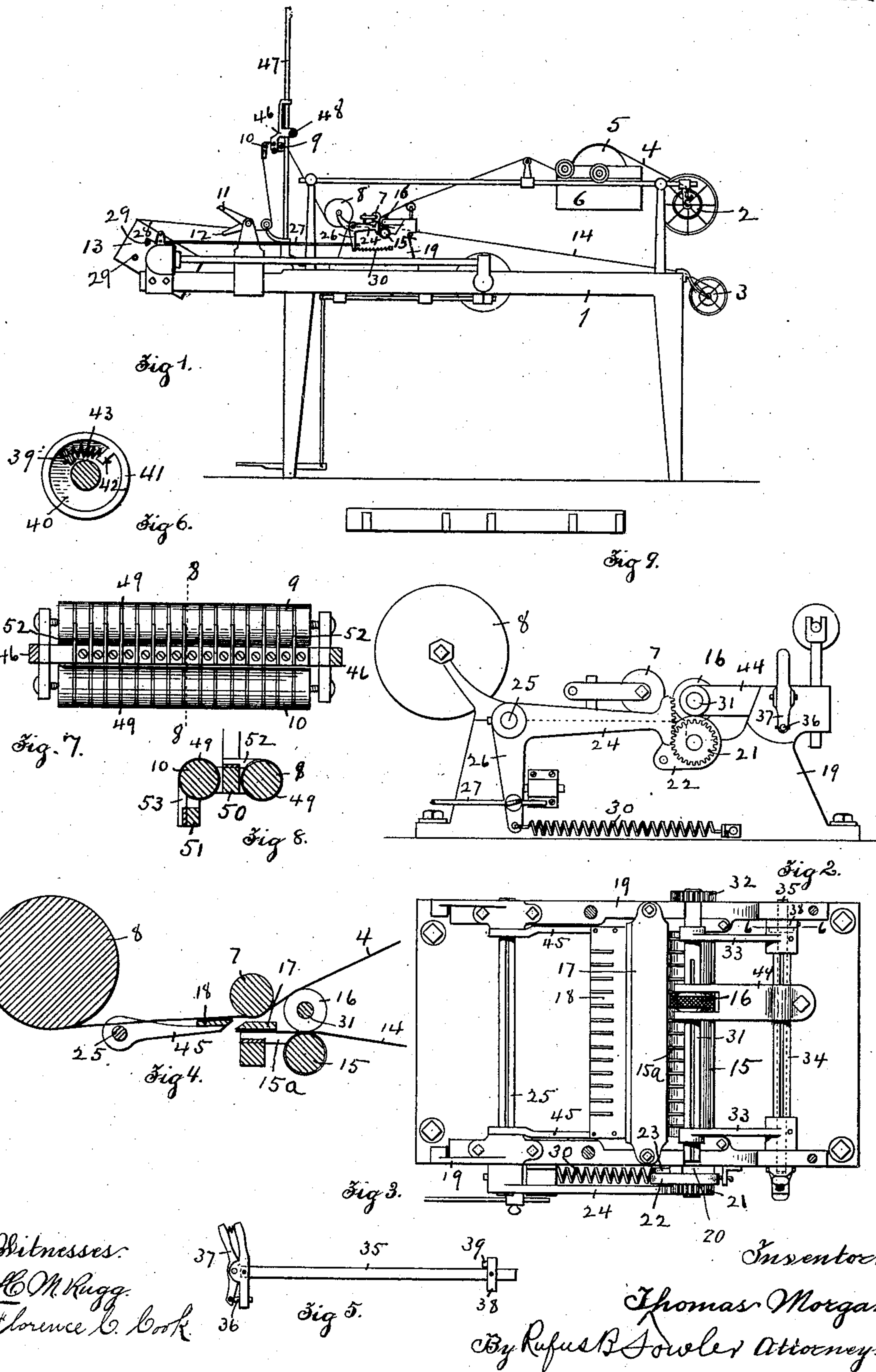


T. MORGAN.  
BOX COVERING AND CORNER STAYING MACHINE.

APPLICATION FILED JAN. 30, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
H. M. Rugg  
Florence C. Cook

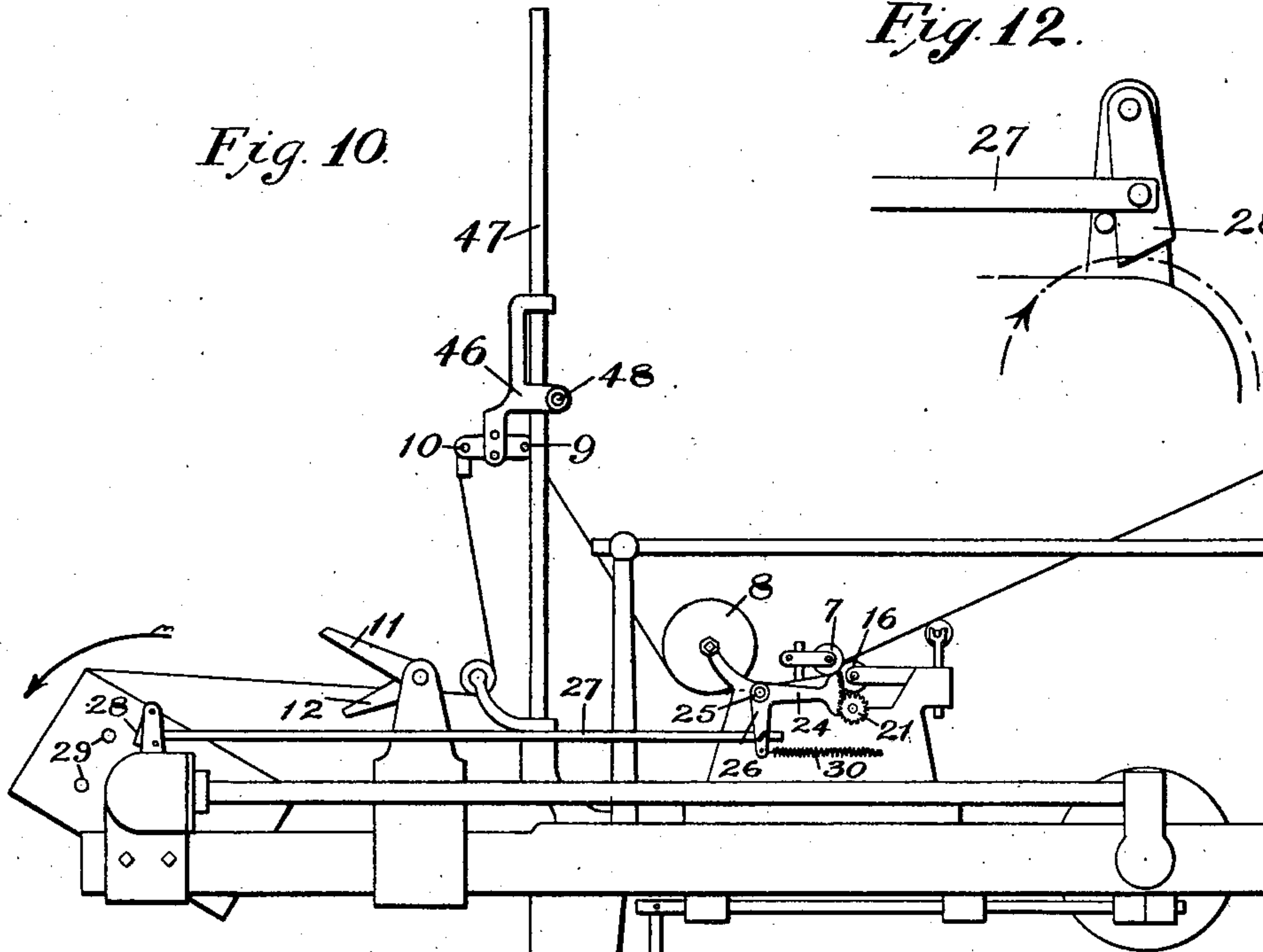
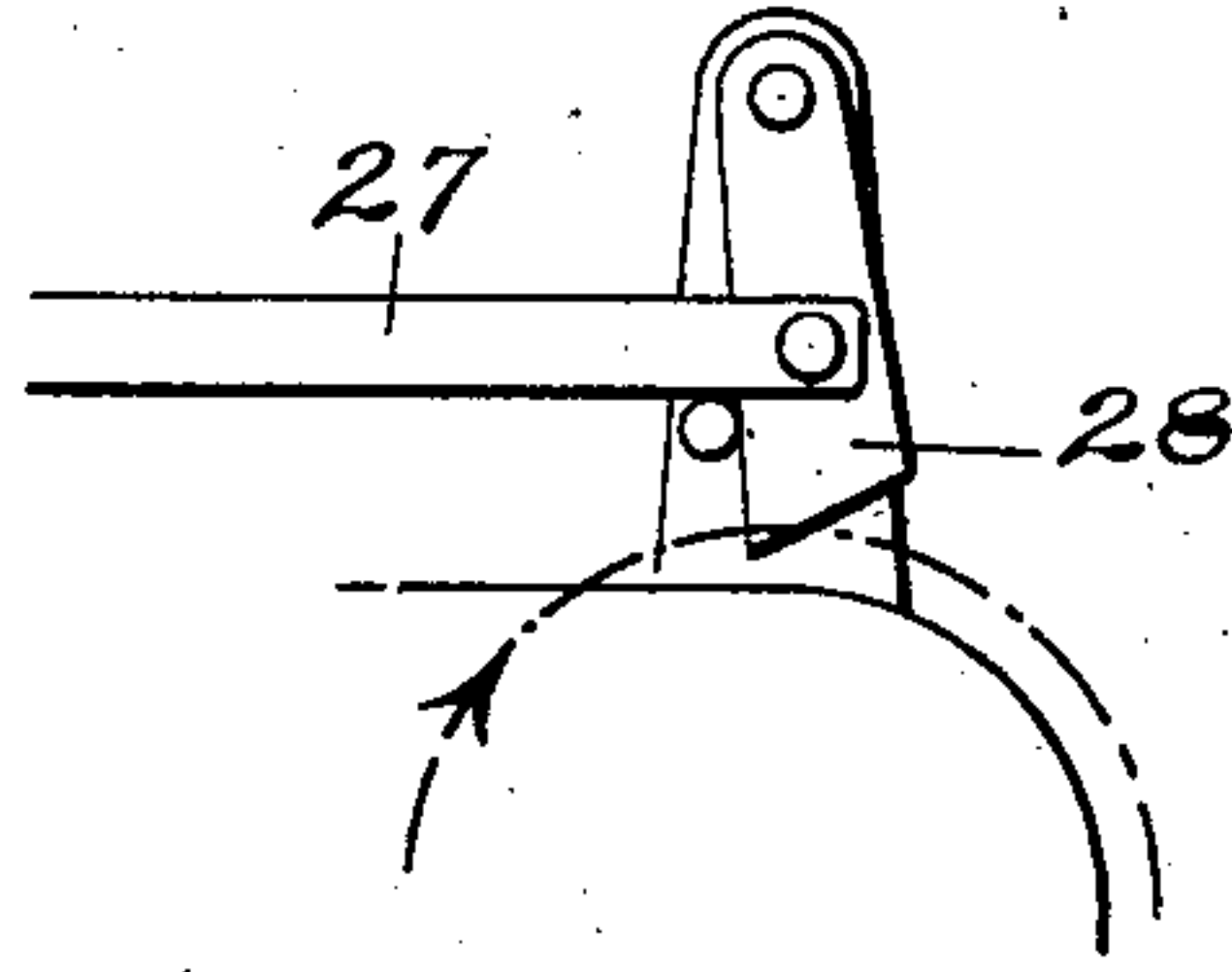
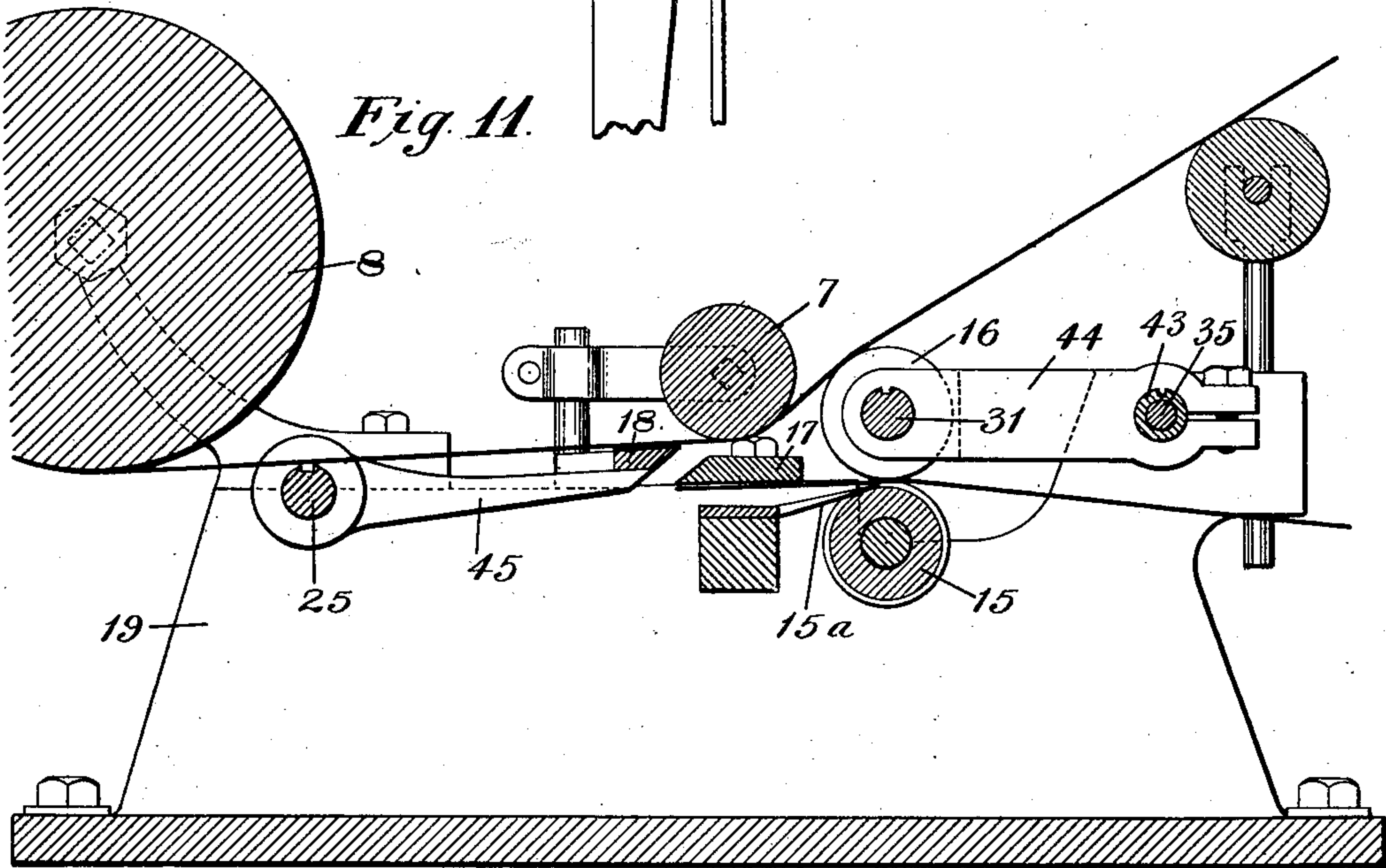
Inventor:  
Thomas Morgan  
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2 SHEETS—SHEET 2.

*Fig. 10.**Fig. 12.**Fig. 11.*

Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS MORGAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CLARENCE W. HOBBS, OF WORCESTER, MASSACHUSETTS.

## BOX-COVERING AND CORNER-STAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,343, dated October 27, 1903.

Application filed January 30, 1901. Serial No. 45,281. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS MORGAN, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Box-Covering and Corner-Staying Machines, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side view of a machine embodying my invention. Fig. 2 is a side view, on a larger scale, of that part of the machine by which the stay-strips are cut from a continuous strip of paper and applied to the under side of the covering-strip. Fig. 3 is a top view of the same. Fig. 4 is a diagrammatical view illustrating the operation of the mechanism for severing the stay-strips and applying them to the covering-strip. Fig. 5 is a detached view of a part of the mechanism for feeding the stay-strips. Fig. 6 is a sectional view on line 6 6, Fig. 3. Fig. 7 is a top view of the rolls for transferring paste from the covering-strip to the stay-strips. Fig. 8 is a sectional view of the same on line 8 8, Fig. 7, and Fig. 9 represents a portion of the covering-strip with the stay-strips attached thereto. Fig. 10 represents a side view of a portion of the machine on a larger scale than shown in Fig. 1. Fig. 11 is a vertical longitudinal sectional view through the mechanism for applying the stay-strips of the mechanism for severing and applying the stay-strips to the pasted surface of the covering-strip, said mechanism being shown in side view in Fig. 2 and in plan view in Fig. 3; and Fig. 12 is an enlarged view of the latch 28, arranged to be engaged by the pins upon the side of the box-form for the purpose of imparting an intermittent motion to the mechanism for feeding and severing the stay-strips.

Similar reference-figures refer to similar parts in the different views.

My present invention relates to a machine for covering boxes and attaching stay-strips to their corners in which the stay-strips are stuck to the gummed side of a covering-strip in proper position to register with the corners of the box to which they are applied as the

covering-strip is wound upon the box; and it consists in the construction and arrangement of parts, as hereinafter described, and set forth in the accompanying claims.

In the machine forming the subject of my present invention the covering-strip of paper is taken from a coil and carried over a gummed roll, by which one side of the covering-strip is gummed. It is then conducted to a revolving box-form and wound upon the box in the same manner as the covering-strips now in common use. The stay-strips are cut from the end of a continuous strip of paper and applied to the gummed side of the covering-strip at the proper distance apart to cause them to register with the corners of the box upon the revolving box-form. That part of my machine which is concerned in severing and applying the stay-strips to the gummed surface of the covering-strip is substantially the same in its main features as the box-covering and corner-staying machine shown and described in Letters Patent of the United States issued to Morgan and Jones December 13, 1898, No. 616,062; but the Morgan and Jones machine applied gummed stay-strips to the gummed surface of the covering-strip and applied the covering-strip with the gummed stay-strip stuck thereon to the box upon the revolving box-form, whereas in my present machine ungummed stay-strips are first stuck upon the gummed side of the covering-strip and the gum or paste is subsequently applied to the stay-strips.

Referring to the accompanying drawings, 1 denotes a supporting-table, 2 a coil of covering-paper, and 3 a coil of stay-strip material. The covering-strip 4 is taken over a gummed roll 5, running in a gum-box 6, by which adhesive material is applied to the under side of the covering-strip. From the gummed roll 5 the covering-strip 4 is taken beneath the rolls 7 and 8 over a pair of paste-distributing rolls 9 and 10 and between the cutting mechanism 11 and 12 to the box-form 13.

The stay material 14 is taken from the coil 3 between a pair of feed-rolls 15 and 16 to a cutting mechanism consisting of a fixed shear-blade 17 and a reciprocating shear-



blade 18, by which the individual stay-strips are cut from the end of the continuous strip 14 and applied to the gummed surface of the covering-strip 4. The mechanism for feeding 5 and severing the stay-strips is mounted in a frame 19, in which the feed-roll 15 is journaled. The shaft of the feed-roll 15 carries a ratchet 20 and a loose gear 21, to which is attached a plate 22, carrying a pawl 23, engaging the ratchet 20. The gear 21 is engaged by a toothed sector 24, which is attached to a rocking shaft 25, provided with an arm 26, connected by a link 27 with a pivoted tripping-latch 28, which is arranged in 15 the path of a series of trip-pins 29, projecting from the side of the box-form, by which a pulling motion is intermittently given through the link 27 to the arm 26 to actuate the feed-roll 15 and draw the stay-strip from 20 the roll 3, the motion of the toothed sector being reversed by a spiral spring 30. The feed-roll 16 is a pressure-roll provided with a roughened or corrugated surface and having a spline connection with a shaft 31, which 25 carries a gear 32 in mesh with a similar gear (not shown) on the shaft of the lower feed-roll 15, whereby an intermittent motion is imparted to the pressure-roll 16 corresponding to the motion of the feed-roll 15. The 30 shaft 31 is carried in arms 33, which are attached to a sleeve 34, supported on a rod 35, which is held in the frame 19. The rod 35 has a latching mechanism at one end, consisting of a latch-pin 36, adapted to engage a 35 hole in the frame 19 and carried by a pivoted lever 37, and near the other end the shaft is provided with a collar 38, having a lug 39, Fig. 6, entering a chamber 40, formed in the hub 41 of one of the arms 33. 40 Between the lug 39 on the collar 38 and a lug 42 on the hub 41 is a spiral spring 43, arranged to press the roll 16 against the roll 15. The latching mechanism carried on the rod 35 enables the rod and its attached collar 38 45 to be rotated, thereby moving the lug 39 relatively to the lug 42 to cause the spiral spring 43 to press the roll 16 against the feed-roll 15 when the rod 35 is locked in position by the engagement of the latching mechanism 50 with a hole in the frame 19. Clamped upon the sleeve 34 is a bar 44, having a forked end inclosing the feed-roll 16, by which the feed-roll 16 is adjusted in proper position upon the shaft 31. Extending over 55 the feed-roll 15 is a series of stripping-fingers 15<sup>a</sup>, upon which the stay-strip 14 is conducted beneath the fixed shear-blade 17, arranged to act in conjunction with the reciprocating shear-blade 18, carried upon arms 60 45, which are attached to the rocking shaft 25, by which the reciprocating shear-blade is moved simultaneously with the feed-rolls to sever the projecting end of the stay-strip and carry the severed piece into con-

tact with the gummed side of the covering- 65 strip 4. The covering-strip, with the ungummed stay-strips attached thereto, passes beneath the roll 8 and over the pair of paste-distributing rolls 9 and 10, which are freely 70 journaled in a frame 46, capable of sliding upon and being adjustably attached to a vertical frame 47 by means of clamping-screws 48. The paste-distributing rolls 9 and 10 are 75 provided with circumferential grooves 49, and parallel with each of the rolls 9 and 10 are bars 50 and 51, to which are attached the stripping-fingers 52 and 53. As the covering-strip, with the stay-strips attached at 80 proper intervals on its gummed side, passes over the rolls 9 and 10, a portion of the adhesive material is taken by the action of the rollers from the gummed surface of the covering-strip and distributed over the un- 85 gummed stay-strips. The frame 46, containing the distributing-rolls 9 and 10, is raised or lowered on the vertical frame 47 for the purpose of varying the distance between the box- 90 form and the mechanism for severing the stay-strips and attaching them to the covering-strip, so that the first stay-strip will be brought into proper registration with the corner of the box, which is accomplished by ad- 95 justing the frame 46 until the length of the covering-strip between the box-form and the stay-strip mechanism is a multiple of the distance around the box, the adjustment being varied for boxes of different sizes.

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

1. In a box-covering machine, the combination with a box-form and means for presenting a gummed covering-strip thereto, having a series of stay-strips attached to its gummed side, of means for distributing the adhesive material from said covering-strip over the 105 surface of said stay-strips, substantially as described.

2. In a box-covering machine, the combination with a box-form and means for presenting a strip of covering-paper to a box held 110 thereon, of means for applying stay-strips to the gummed surface of said covering-strip, and means for distributing adhesive material to said stay-strips, and comprising a distributing-roll arranged to run in contact with the 115 gummed side of the covering-strip after the stay-strips have been attached thereto, substantially as described.

3. In a box-covering machine, the combination with a box-form, of the following instrumentalities; means for gumming the covering-strip, means for applying ungummed stay-strips to the gummed surface of the covering-strip, means for applying adhesive material to the ungummed stay-strips as they 125 are carried along by the covering-strip, substantially as described.

4. The combination with a box-form and



means for presenting a strip of covering-paper to a box held thereon, of means for applying stay-strips to the gummed surface of said covering-strip, and a pair of grooved rolls arranged to run in contact with the gummed side of said covering-strip after the stay-strips have been attached thereto, and a series of stripping-fingers entering the

grooves in said rolls, substantially as described.

Dated this 29th day of December, 1900.

THOMAS MORGAN.

Witnesses:

RUFUS B. FOWLER,  
FLORENCE C. COOK.