

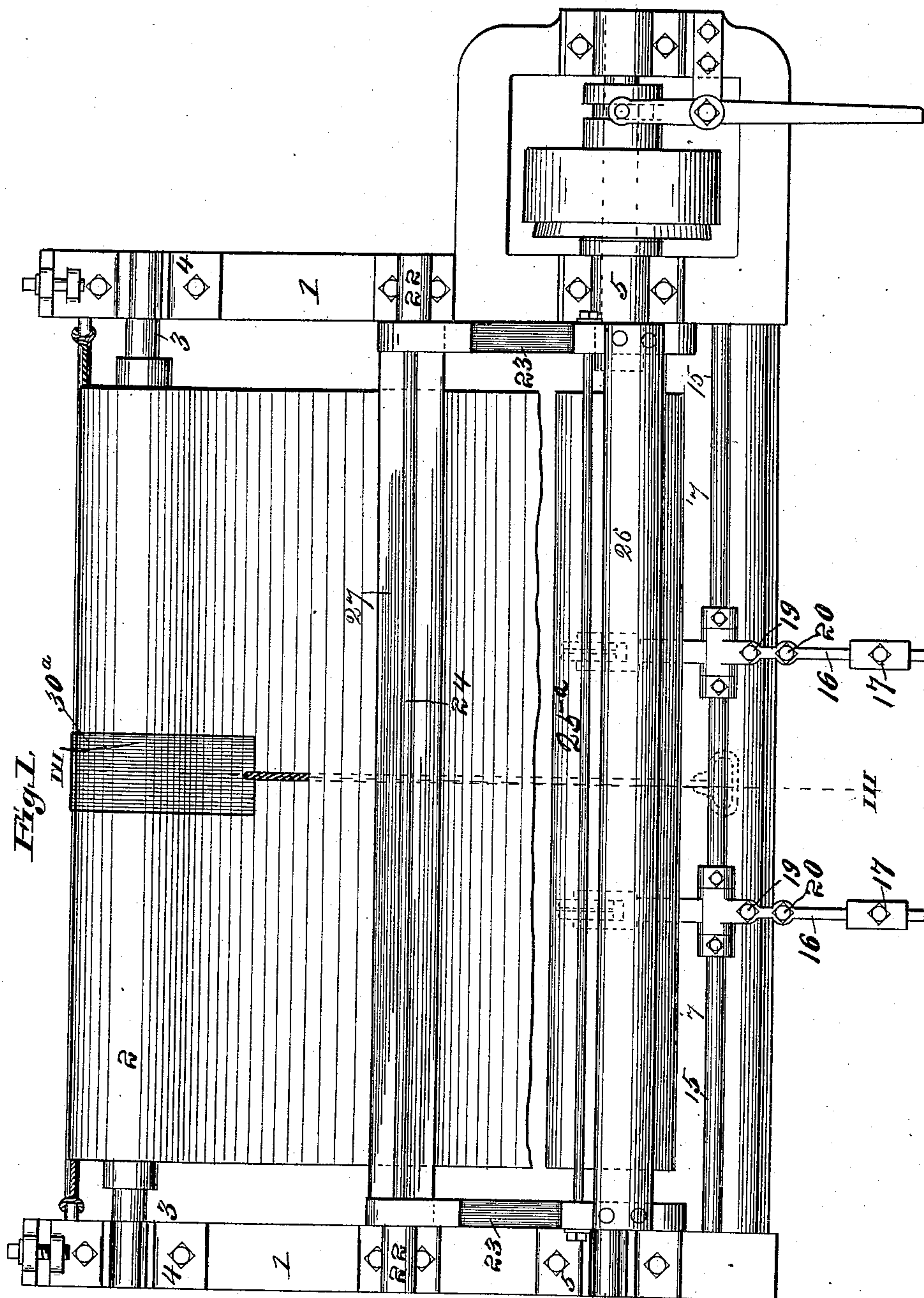
(No Model.)

3 Sheets—Sheet 1.

A. P. BROWN.
MACHINE FOR SLITTING AND WINDING PAPER.

No. 484,173.

Patented Oct. 11, 1892.



Attest:
George E. Cuel.
Edward D. Knight

Inventor:
Augustus P. Brown
By *Wright & Bro*
attys

(No Model.)

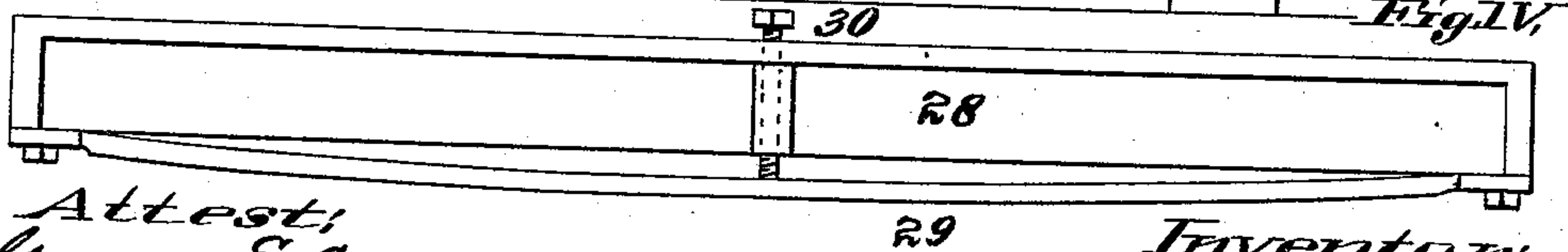
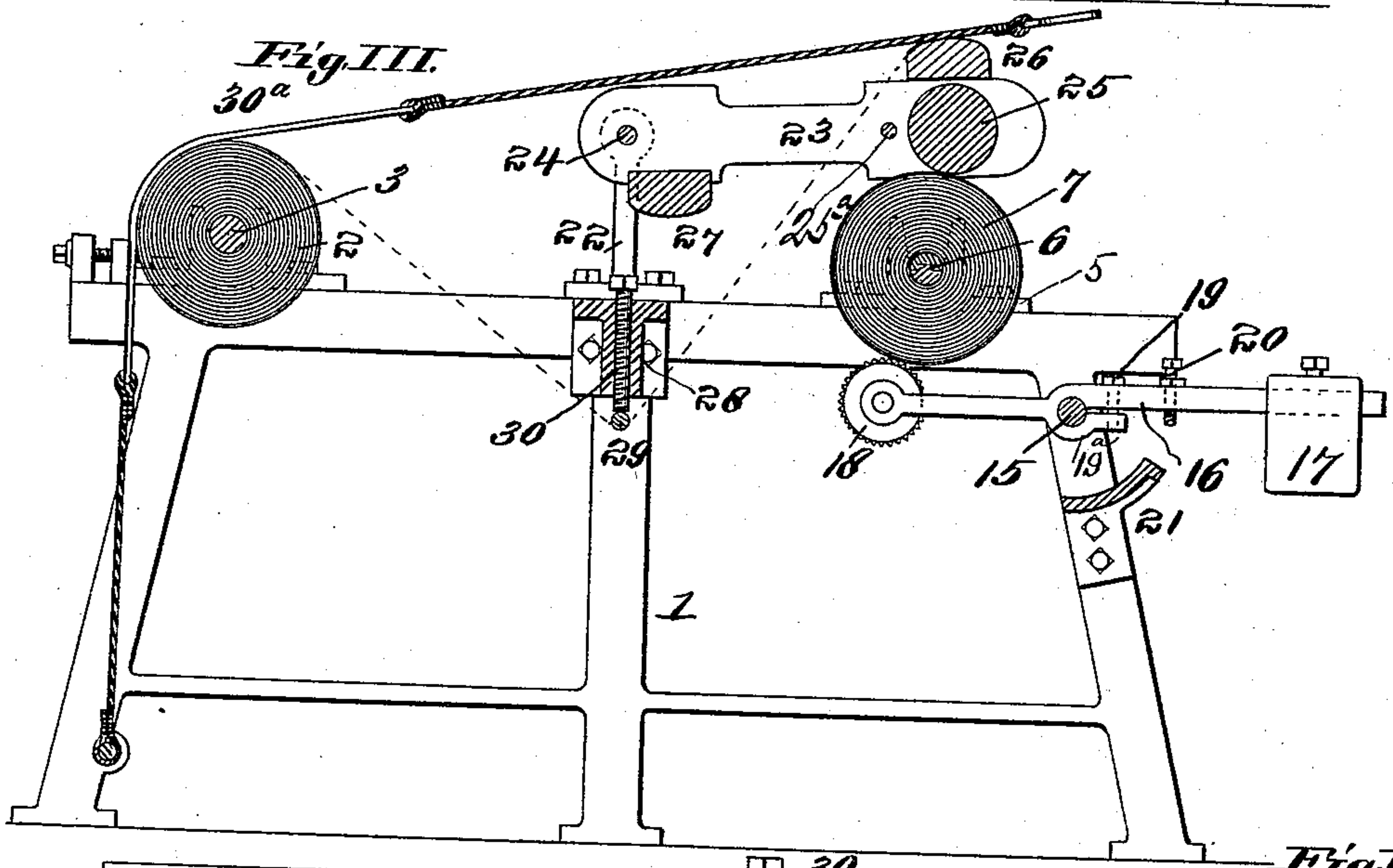
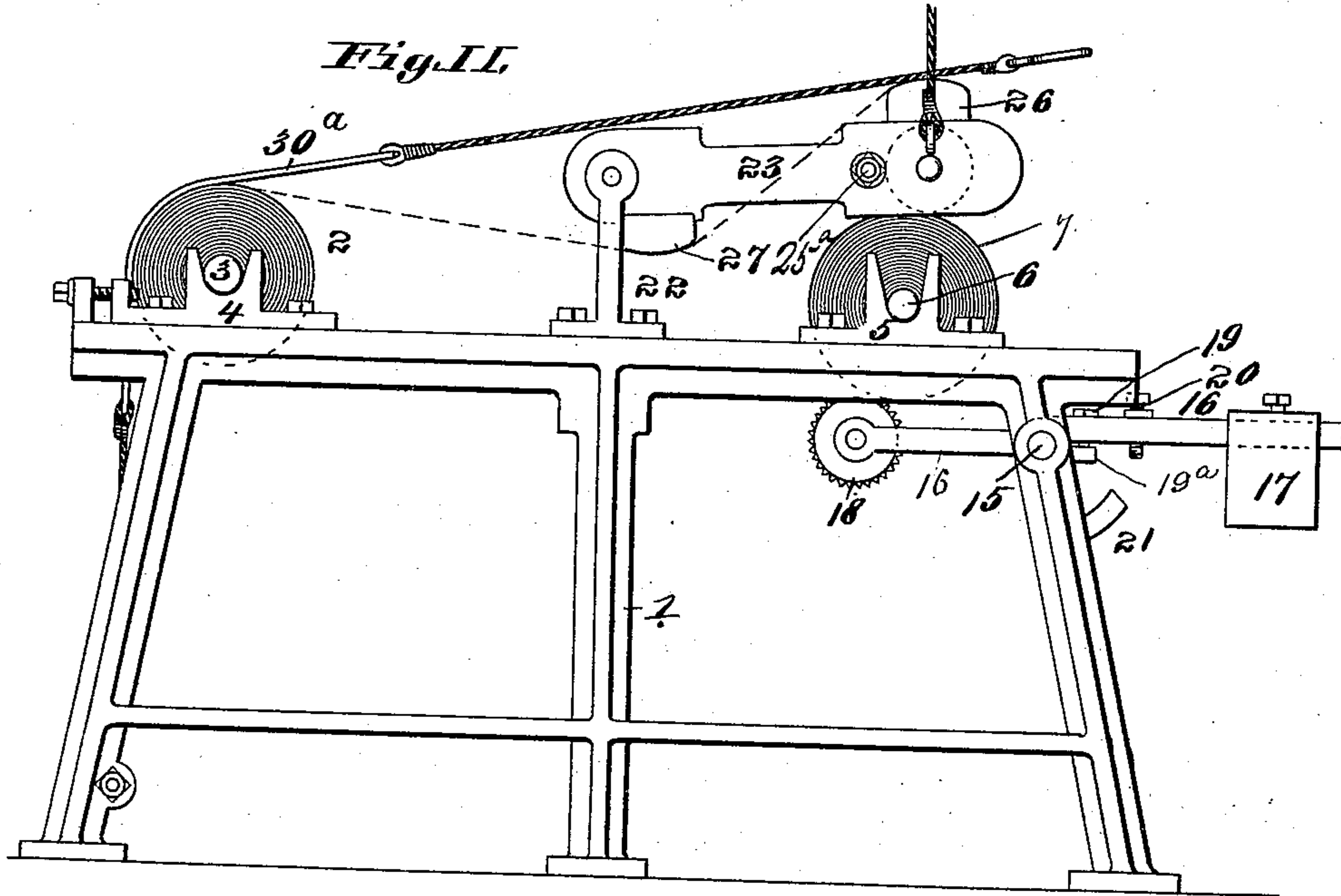
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A. P. BROWN.

MACHINE FOR SLITTING AND WINDING PAPER.

No. 484,173.

Patented Oct. 11, 1892.



Attest:
George E. Cross
Edward D. Knight

Inventor:
Augustus P. Brown
By *Wright Bros*
attys

(No Model.)

3 Sheets—Sheet 3.

A. P. BROWN.

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Fig.V.

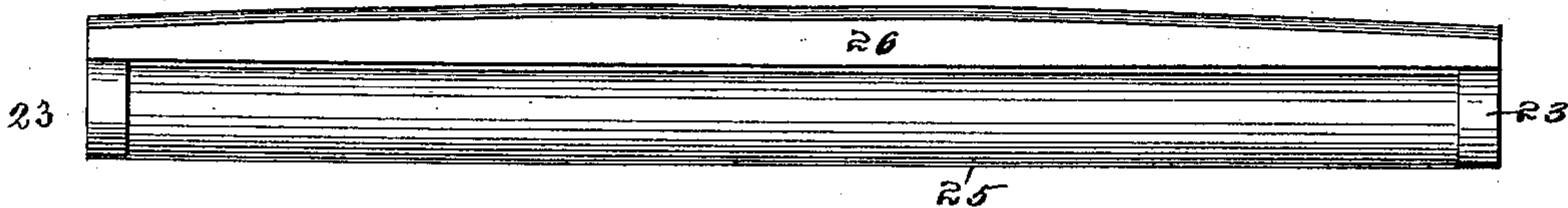


Fig.VI.



Fig.VII.



Fig.VIII.

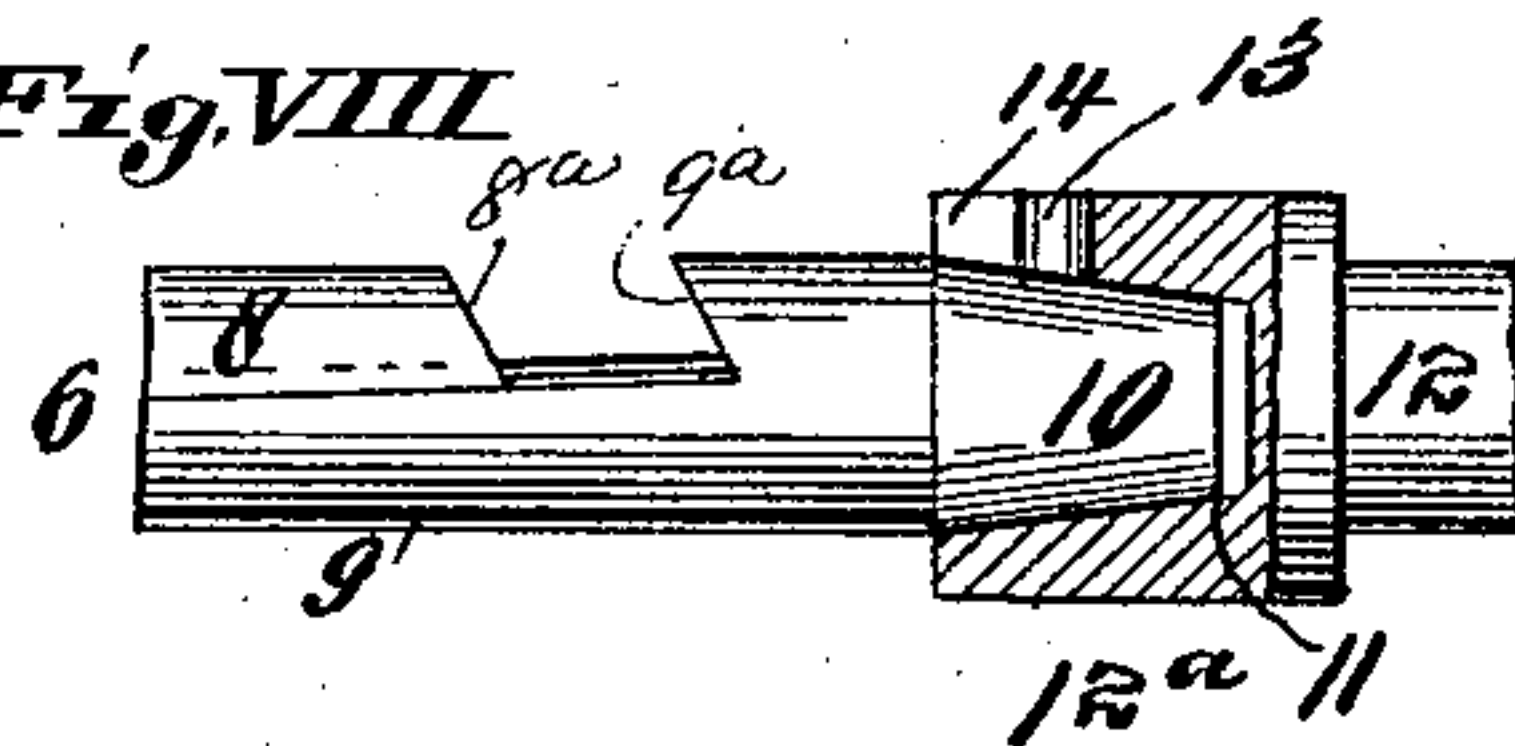


Fig.IX.

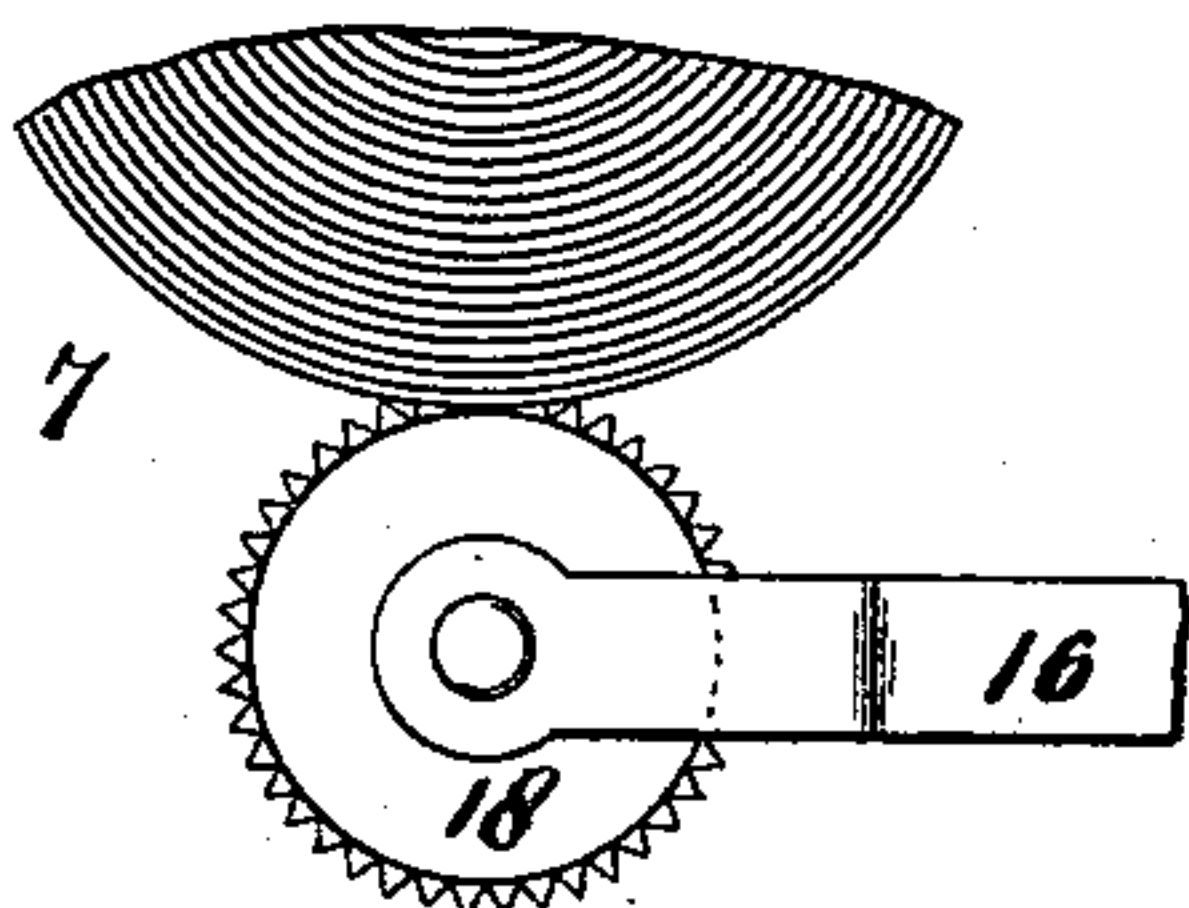
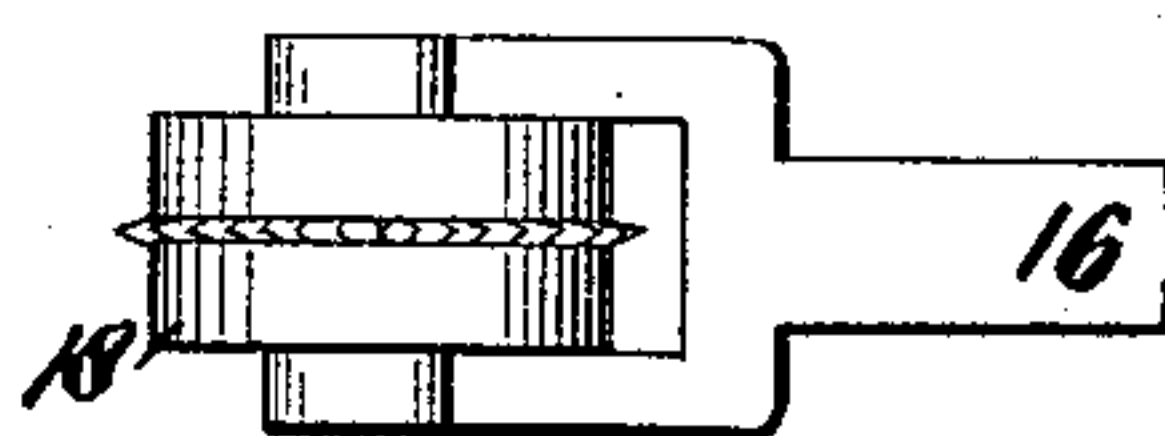


Fig.X.



Attest:
George E. Case
Edward D. Knight

Inventor:
Augustus P. Brown
By *Knight Bros*
attys

UNITED STATES PATENT OFFICE.

AUGUSTUS P. BROWN, OF FORT MADISON, IOWA.

MACHINE FOR SLITTING AND WINDING PAPER.

SPECIFICATION forming part of Letters Patent No. 484,173, dated October 11, 1892.

Application filed December 26, 1891. Serial No. 416,180. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS P. BROWN, of Fort Madison, in the county of Lee and State of Iowa, have invented a certain new and useful Improvement in Machines for Slitting and Winding Paper, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a machine for unwinding roll-paper from a single roll and slitting it into narrow widths and winding the different widths into separate rolls; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I represents a top or plan view of the machine. Fig. II is a side elevation. Fig. III is a vertical cross-section taken on line III III, Fig. I. Figs. IV, V, and VI are detail elevations. Fig. VII is a transverse section taken on line VII VII, Fig. VI. Fig. VIII is a detail elevation part in section. Fig. IX is a detail side elevation. Fig. X is a detail top view.

Referring to the drawings, 1 represents the frame of the machine.

2 represents a large roll of paper to be unreeled and made into smaller rolls. This roll of paper 2 is mounted upon a spindle 3, that has journal-bearing in boxes 4, secured on top of the frame 1.

6 represents a spindle journaled in boxes 5 and upon which the paper 7 is wound from roll 2. The spindle 6 is of peculiar construction and is clearly shown in Figs. VI, VII and VIII. It is composed of two parts 3 and 9, that are dovetailed together, and each part tapers on its inner surface from its outer end to its inner end, the taper being clearly illustrated in Fig. VIII, which shows the outer end of the part 9 of the spindle and the inner end of the part 8. The object of this construction is to enable the easy removal of the spindle from the rolls of paper that have been wound upon it, and this is accomplished through the two parts being tapered, as shown, so that the size of the spindle lessens as the two parts are drawn apart, and the spindle may thus be readily removed from the rolls of paper. The meeting faces of the ends of the parts 8

and 9 are beveled, as shown at 8^a and 9^a. The outer end of the part 9 of the spindle 6 is conical, as shown at 10, Fig. VIII, and fits in a conical seat 11 of a head 12^a on the driving-shaft 12 of the machine. On the conical portion of the spindle is a pin 13, that engages in a groove 14 of the head 12^a of the shaft 12, by which means when the spindle is inserted in the machine it is locked firmly in position and made to turn with the driving-shaft.

In the forward part of the frame 1 is a rod 15, on which are mounted levers 16, that carry weights 17 on their outer ends, and upon their inner ends are rotary cutters 18, which cutters are adapted to bear up against the rolls 7 and slit the web of paper as it is wound onto the spindle 6. There may be any number of these cutters upon the rod 15, so as to slit the web and make as many short rolls 7 as desired. The levers 16 are loosely mounted on the rod 15, and when it is desired to throw any one of them out of operation it may be readily done by throwing up the outer end of the lever and then clamping it in that position by tightening a screw 19, which works through the lever and engages a jaw or arm 19^a on the other side of the rod, by which means the levers will be made to retain their elevated position.

20 is a set-screw set in each lever 16, and 21 is a stop on frame 1, with which the set-screw comes in contact when the cutter is in its most elevated position, and which set-screw and stop keep the cutter from coming in contact with the metal spindle 6 when the machine is first started.

22 represents standards secured to the top of the frame of the machine, to whose upper ends are pivoted arms 23 by means of a rod 24. Journaled in these arms 23 is a friction-roller 25, that rests upon the upper surface of the rolls 7.

25^a represents a tension-rod extending through the arms 23, connecting them together, and provided on its ends with nuts through means of which the arms may be drawn toward each other and their inner surface made to bind against the ends of the friction-roller 25 with more or less tightness and cause a greater amount of friction when the nuts on the rod are tightened. By this means

the degree of tightness with which the paper is wound on the rolls 7 may be varied, as desired, and a tighter and more compact roll of paper may be produced than it has been found possible to produce heretofore in this class of machines. Washers may be inserted between the ends of the roller 25 and the arms 23. 26 and 27 are bars secured, respectively, to the upper and lower sides of the arm 23, which bars are rounded on their outer surfaces and are higher in the center of their length than at their ends, the object of which form is to cause the paper to run even onto the spindle 6 and prevent tearing at the edges. Secured within the frame of the machine and extending from side to side is a cross-bar 28, that holds a bar or rod 29.

30 is a set-screw that passes through the cross-bar 28 and bears against the bar or rod 29 and which when screwed down causes the center of the bar or rod 29 to bulge downward at the center, forming a guide and friction for the paper, as does the bars 26 and 27. This cross-bar 28 is shown in side elevation in Fig. IV.

In winding the paper from the large roll onto the spindle 6 it passes either as shown in dotted lines in Fig. II or as shown in dotted lines in Fig. III, (according to the amount of friction required,) the bars 26 and 27 and the rod 29 serving to guide the paper and give sufficient resistance to its movement to cause it to be wound tightly on the spindle 6.

30^a is a strap, which may be pulled against the roll 2 to keep it from turning too fast.

I claim as my invention—

1. In a machine for winding roll-paper, a spindle divided longitudinally on a diagonal line, forming two parts 8 and 9, dovetailed together and fitted together at their tapered

ends by beveled faces 8^a and 9^a, substantially as described.

2. In a machine for slitting and winding roll-paper, the combination of a suitable frame supporting a roll from which the paper is wound and a spindle upon which the paper is wound, arms pivoted to said frame, a bar 26 on said arms, a friction-roller 25 on said arms, and cutters, substantially as and for the purpose set forth.

3. In a machine for slitting and winding roll-paper, the combination of a suitable frame, a support for a roll from which the paper is wound, a support for a spindle upon which the paper is wound, pivoted arms 23, an intermediate tension-bar, friction-bar 26, secured to said arms, a roller 25, journaled in said arms, and cutters 18, substantially as and for the purpose set forth.

4. In a machine for slitting and winding roll-paper, the combination of a suitable frame, a support for a roll from which the paper is wound, a support for a spindle upon which the paper is wound, a cross-piece 28, a rod 29, a set-screw 30, a bar 26, and cutters 18, substantially as and for the purpose set forth.

5. In a machine for slitting and winding roll-paper, the combination of a suitable frame supporting a roll from which the paper is wound and a spindle upon which the paper is wound, arms pivoted to said frame, a friction-roller journaled in said arms, and a tension-rod in said arms, substantially as and for the purpose set forth.

AUGUSTUS P. BROWN.

In presence of—

W. E. BROWN,

REUBEN BEARDSLEE.