

No. 803,760.

PATENTED NOV. 7, 1905.

F. J. HEYBACH.
GLUING MACHINE.
APPLICATION FILED DEC. 20, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

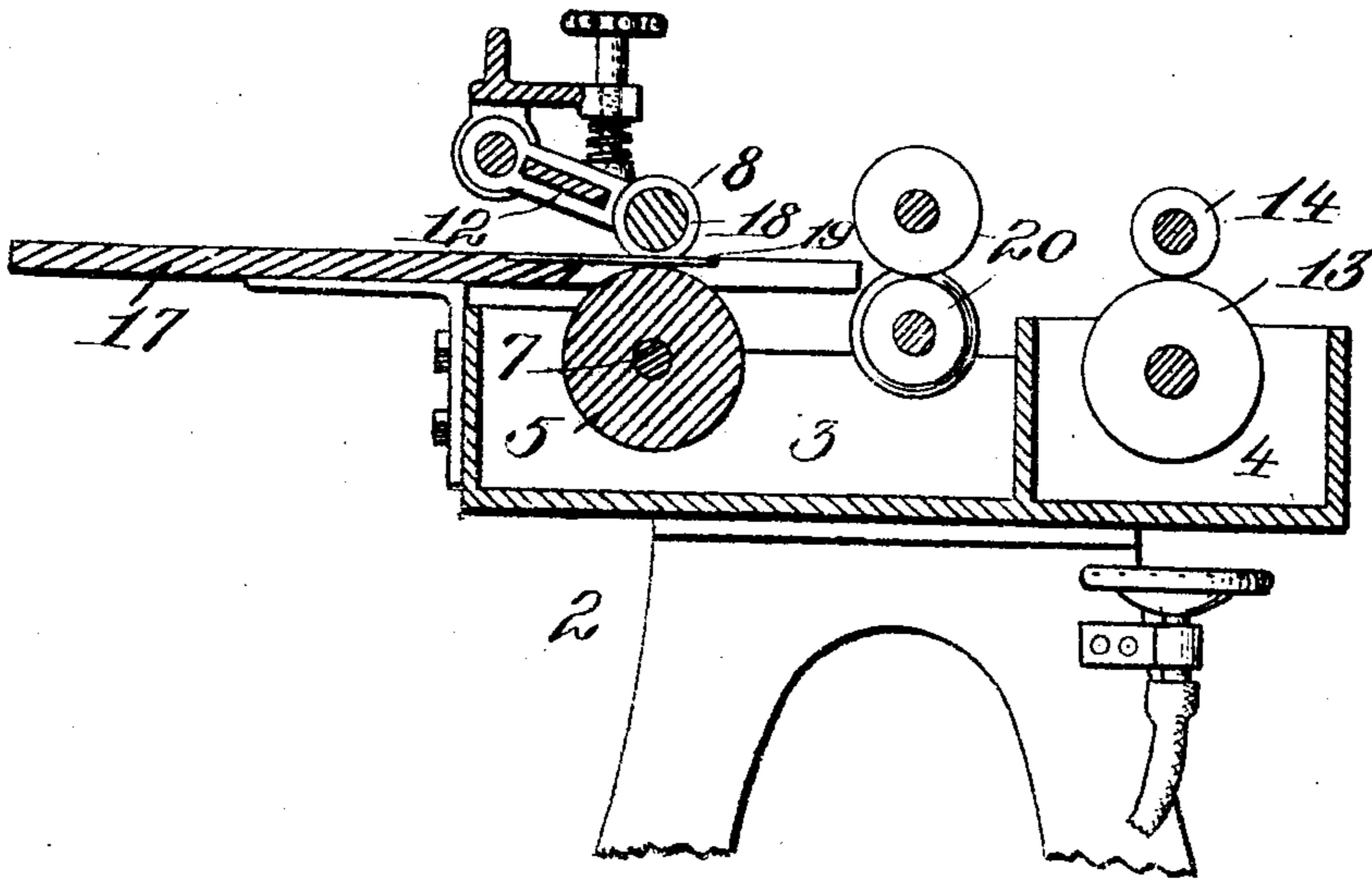
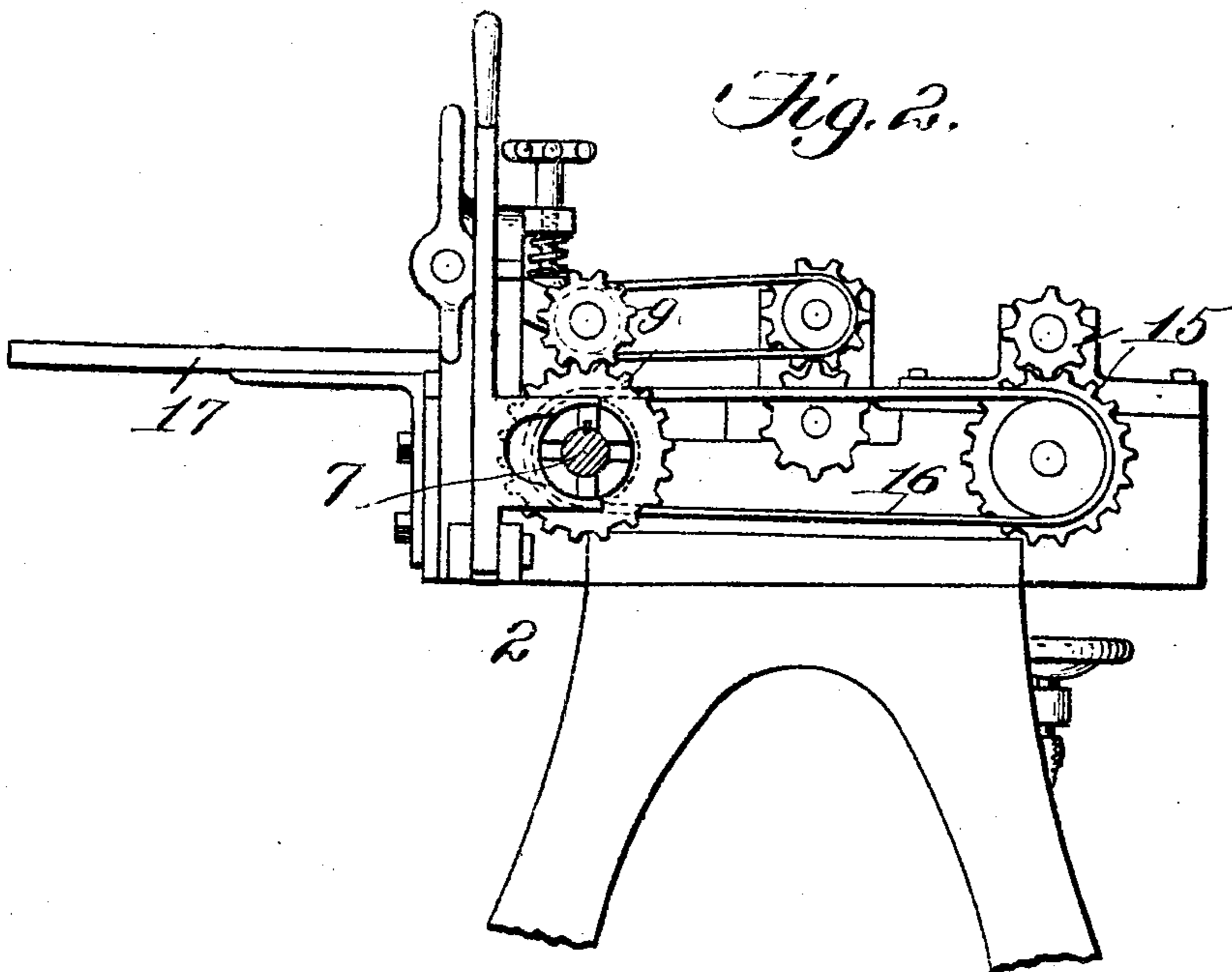


Fig. 2.



Witnesses:
C. D. Hester
[Signature]

Inventor
Fredrick J. Heybach
By *[Signature]*
James L. Norris
[Signature]

No. 803,760.

PATENTED NOV. 7, 1905.

F. J. HEYBACH.
GLUING MACHINE.

APPLICATION FILED DEC. 20, 1904.

2 SHEETS—SHEET 2.

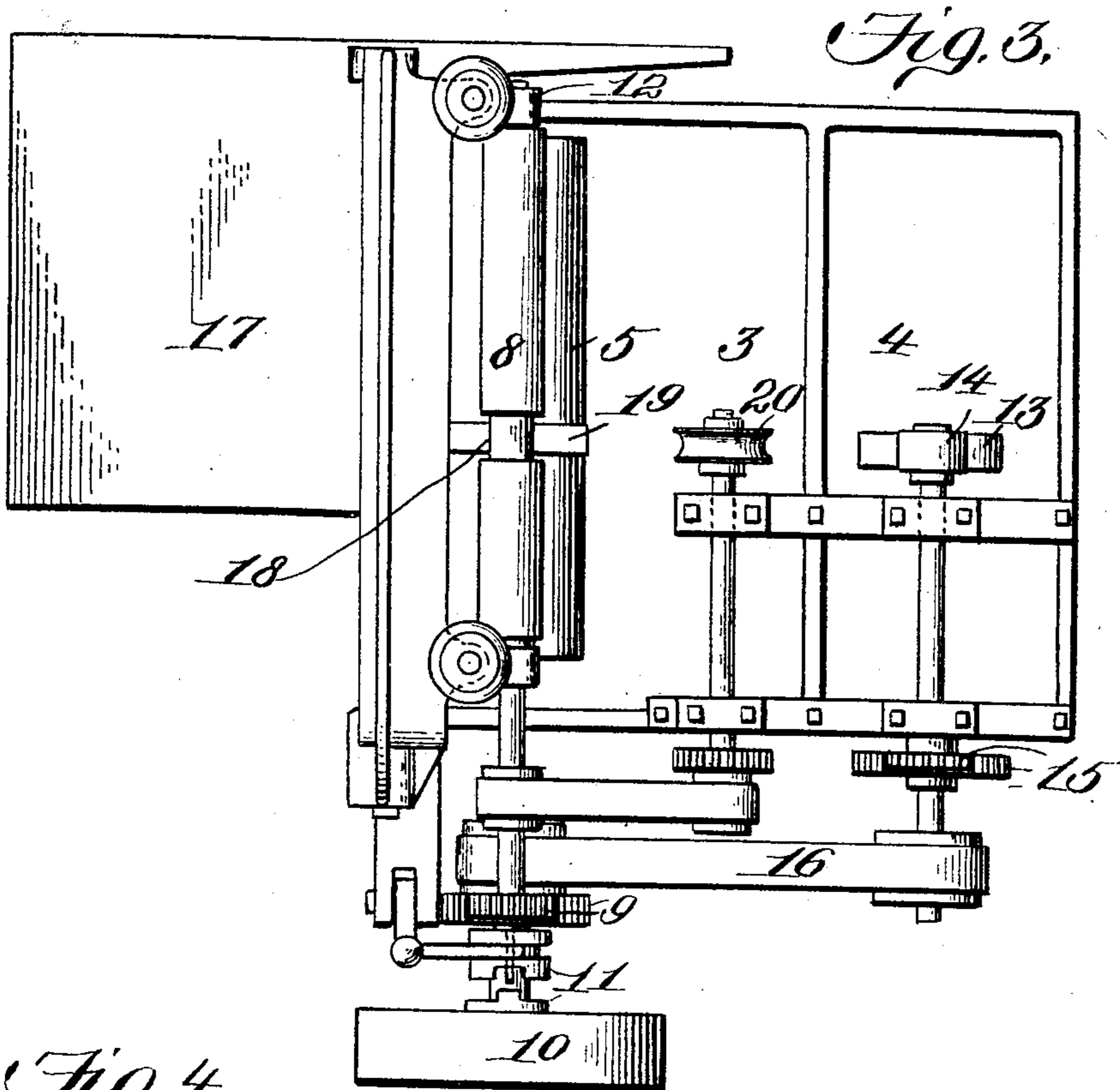


Fig. 4.

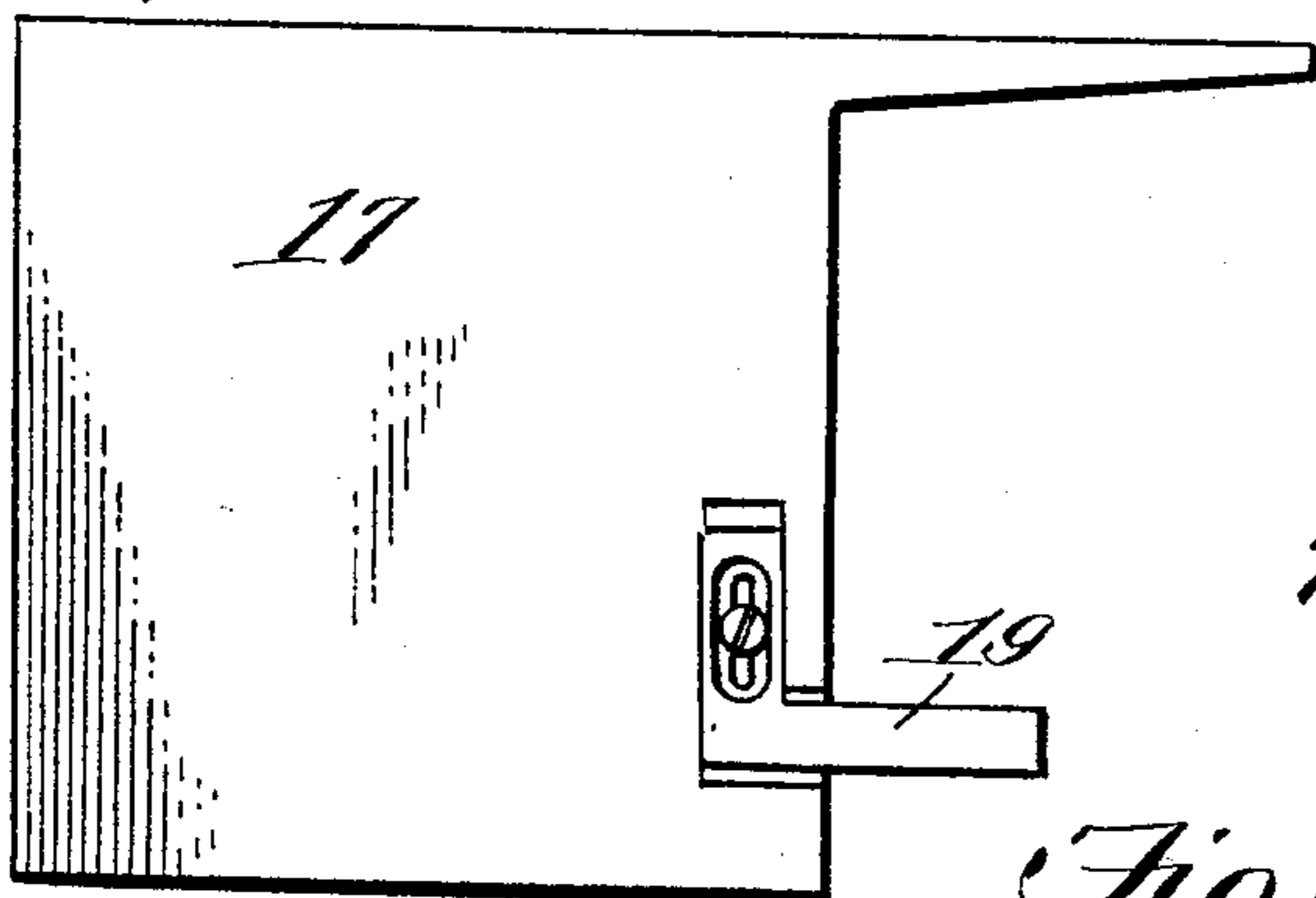


Fig. 5.

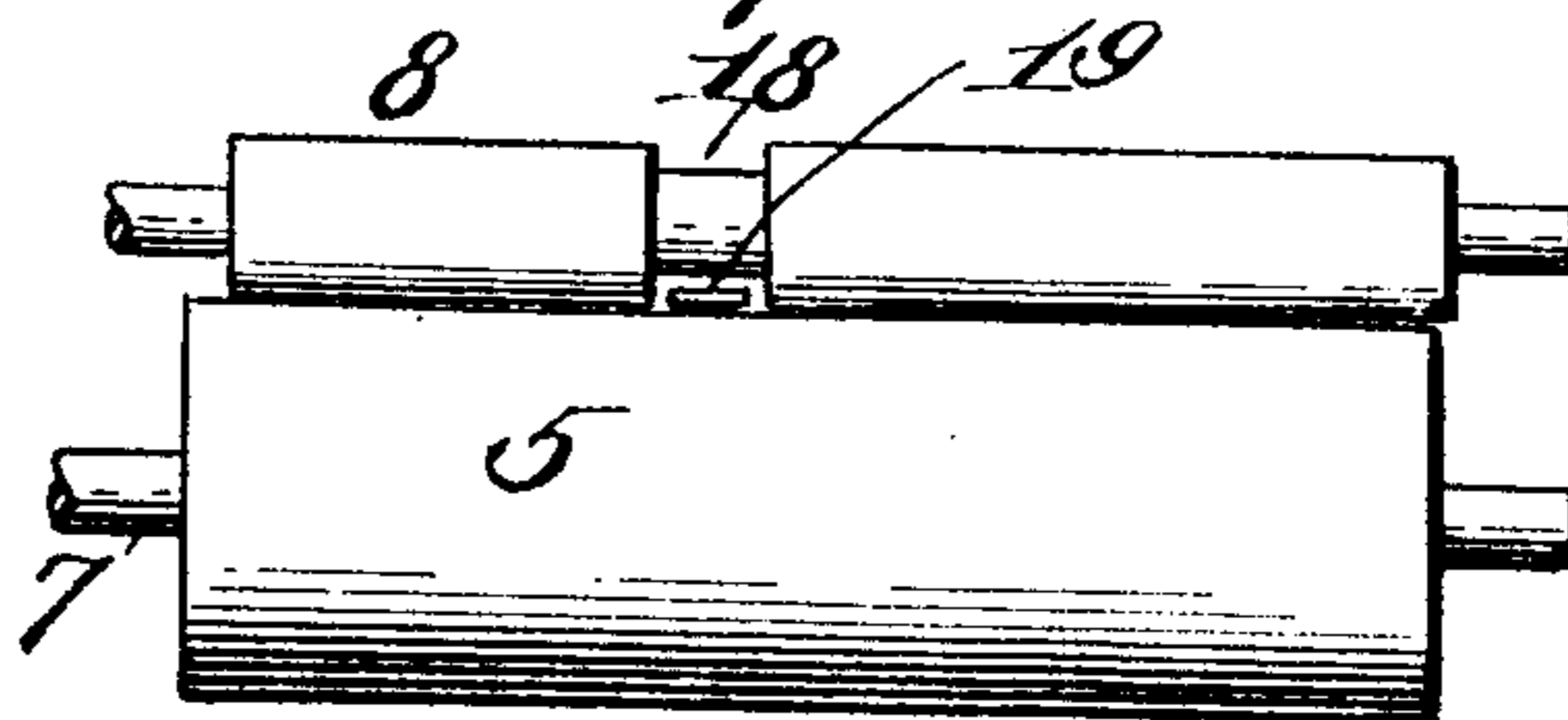


Fig. 7.

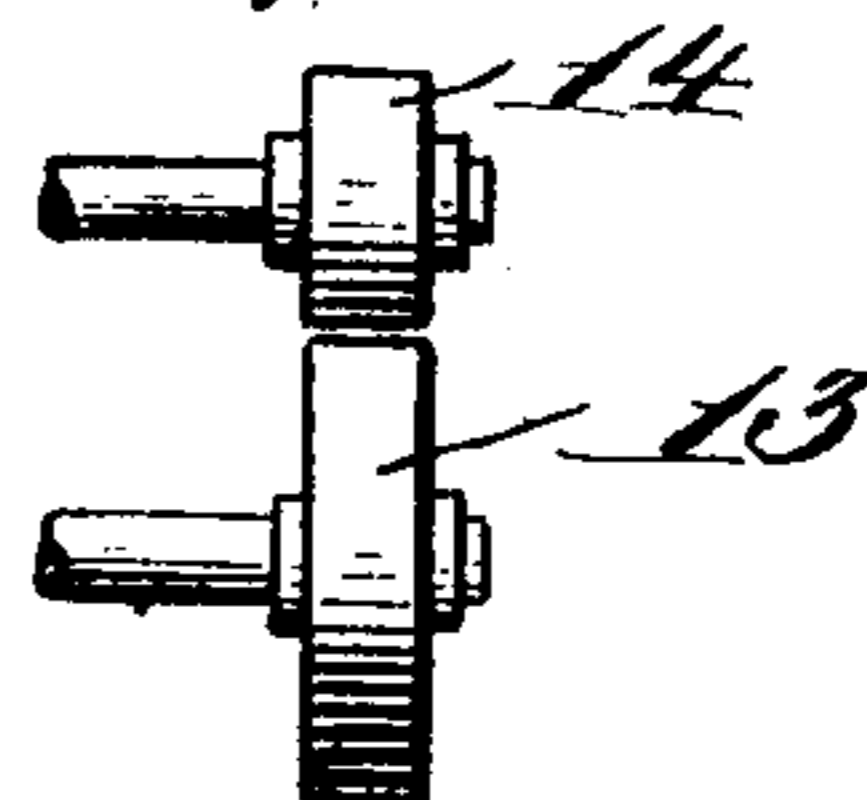
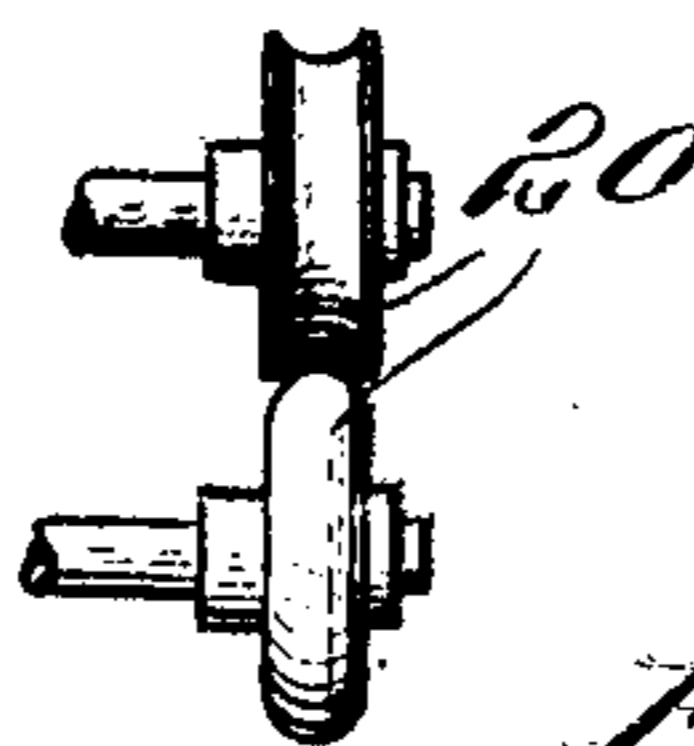


Fig. 6.



Witnesses:
C. D. Hessler

J. B. Kupper

Inventor
Fredrick J. Heybach
By *James L. Noring*

attly

UNITED STATES PATENT OFFICE.

FREDRICK J. HEYBACH, OF SAVANNAH, GEORGIA, ASSIGNOR OF ONE-HALF TO MOREHOUSE MANUFACTURING COMPANY, OF SAVANNAH, GEORGIA, A CORPORATION OF GEORGIA.

GLUING-MACHINE.

No. 803,760.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed December 20, 1904. Serial No. 237,727.

To all whom it may concern:

Be it known that I, FREDRICK J. HEYBACH, a citizen of the United States, residing at Savannah, in the county of Chatham and State of Georgia, have invented new and useful Improvements in Gluing-Machines, of which the following is a specification.

This invention relates to a gluing-machine.

The machine is simple in construction, compact, and may be effectively employed with advantage for a variety of purposes. For example, I have found it of prime utility in the application of glue to the sheets of material or blanks employed in the making of composite can-bodies—say of tin-foil and pasteboard or equivalent materials. An example of a can having a tin-foil and pasteboard body is illustrated in the patent to E. M. Jones, No. 732,862, of July 7, 1903. I will describe the machine as organized for applying glue or paste to a can-body blank composed of a sheet of tin-foil and one of pasteboard, the body-blank being previously suitably formed. In making the body from the blank I find it essential to apply thereto hot and cold glue, and in the adaptation of the machine which I have illustrated in the accompanying drawings, forming a part of this specification, I am enabled to do this in a continuous, rapid, and thorough manner. While the cold glue, which in proportion is very much greater than that of the hot glue, effectively holds the plies of material together, it will not secure a good lap-joint, whereas the hot glue will.

In the drawings accompanying and forming a part of this specification, Figure 1 is a longitudinal sectional side elevation of a machine including my invention. Fig. 2 is a side elevation of said machine. Fig. 3 is a top plan view of the same. Fig. 4 is a similar view of the table and the finger carried thereby. Fig. 5 is a detail view of the cold-glue roll and the cooperating pressure-roll. Fig. 6 is a similar view of the crimping-rolls. Fig. 7 is a like view of the hot-glue roll and cooperating pressure-roll.

Like characters refer to like parts through the different views.

The different parts of the machine may be supported upon any suitable framework, such as that denoted in a general way by 2. The machine represented is adapted to apply in a

continuous manner to a blank hot and cold glue or paste, and for this purpose it is represented as involving two tanks—a cold-glue tank 3 and a hot-glue tank 4, the former being of greater capacity than the latter. Both tanks are suitably associated with the framework of the machine, the hot-glue tank being in the present instance arranged in advance of the cold-glue tank. In practice one or more burners of a suitable kind will be arranged under the hot-glue tank to maintain the substance therein at the desired temperature.

As a means for applying cold glue to a blank fed through the machine I represent a roll 5 in the tank 3 and extending transversely thereof. The said roll 5 is supported by a shaft 7 and is located under a pressure-roll 8 of less diameter than the cold-glue-applying roll 5. The shaft 7 and that of the pressure-roll 8 are represented as connected by gearing, (denoted in a general way by 9.) Upon the main shaft 7 is loosely mounted a pulley or equivalent driver 10, adapted to be clutched thereto by a clutch, (denoted in a general way by 11.) When the pulley 10 is clutched to the shaft 7, the two rollers 5 and 8 will be rotated, so that as the roll 5 turns it will take up glue or paste in the tank and apply the same to a blank fed between it and the cooperating pressure-roller 8. The pressure-roller is illustrated as carried by a yieldably-mounted yoke 12, pivotally supported upon an overhanging bracket constituting part of the framing of the machine.

As a means for applying hot glue I represent a roll 13, arranged to rotate in the glue in the tank 4 and cooperating with a pressure-roll 14, arranged above the same, the shafts of the two rolls being geared together for movement in unison by means of gearing, (denoted in a general way by 15.)

As a means for operating the hot-glue-applying roll I illustrate belt-transmission means (designated in a general way by 16) and which operatively connects the shaft of the roll 13 and the main shaft 7. It will be evident that when the driving member 10 is clutched to the shaft 7 the several glue-applying and pressure rollers will through the cooperating driving devices be actuated simultaneously.

The cold-glue-applying roll is very much longer than the hot-glue-applying roll, the

face of the latter being, in fact, quite narrow, as it is only necessary to apply a comparatively narrow width of hot glue to the blank or just sufficient to secure a proper lap-joint in the finished can-body.

To support the blanks to be fed in succession through the two pairs of cooperating rolls 5 and 8 and 13 and 14, I provide a table 17, from the upper side of which the blanks can be fed initially between the rolls 5 and 8 to first receive a coating of cold glue. I provide means for positively holding what might be considered the inner portion of the blank out of contact with the cold-glue-applying roll while the cold glue is being applied, the surface thus left free subsequently having hot glue applied thereto, and I will now set forth the means illustrated for securing the result named.

The pressure-roller 8 is represented as having an annular circumferential groove 18, with which the inner portion of the blank registers as the blank is being fed through the rolls 5 and 8, and I provide means, such as the finger 19, for holding the inner portion of the blank up into the groove and out of the way of the roll 5. The shank or body of the finger is suitably rigidly united to the table 17. Upon the under surface of that part of the blank which passes through the rolls and which is not coated I apply afterward the hot glue, but prior to this I render the said free or uncoated surface pliable, so that it will lie flat in making the lap-joint in the can-body. This pliancy I may secure by crimping means, such as the rollers 20, which are in line with the rollers 13 and 14 and groove 18, laterally of the rollers 5 and 8. The shafts of the rolls 20 can be connected together by gearing, while the upper shaft may be belted up to the initial pressure-roller 8. The upper crimping-roller is circumferentially grooved, while the lower one is beaded, so that by the rolls I make the inner portion of the blank pliant or soft, or slightly break its fibers, not sufficiently, however, as to injure the pasteboard, but enough to insure that the same will not curl or bulge at the lap-joint. The bites of the three pairs of rolls are in a common plane.

A previously-formed blank of, say, tin-foil and pasteboard is fed into the machine from the table 17, with the tin-foil side up, and it passes initially between the rollers 5 and 8, it being understood, of course, that the main shaft 7 is in operation, and as the sheet passes through said rolls the lower one will apply to the under surface or the pasteboard part of the blank glue, extending from the outer wall of the groove 18 to the outer end of the said rolls 5 and 8. The extreme inner portion of the blank does not have glue applied thereto, the finger 19 serving to hold said inner portion up into the groove 18, for, as I have hereinbefore pointed out, I have found that I cannot make a proper lap-joint with cold glue.

When the stock emerges from between the rolls 5 and 8, it passes between the crimping-rollers 20, which crimp, mash down, or soften said inner portion, so as to render it pliant. When the inner portion of the blank emerges from between the crimping-rollers, it passes between the hot-glue roller 13 and the cooperating pressure-roller 14, so that a narrow film of hot glue is applied to the under side of the blank and covers the space that was not covered by the cold-glue roll. The two-part sheet or blank after being removed from the machine will have on its under surface two areas of glue, and in such condition is placed around a mandrel to form it into cylindrical form, such as disclosed in the Letters Patent hereinbefore mentioned. The cold glue holds together the body, but will not maintain the lap-joint or what might be considered the outer pasteboard end of the blank. To this outer end and what in the finished article would be the inner surface is applied the hot glue, it being applied to the softened surface, so that when a lap-joint is made it will lie down perfectly flat and will retain the set condition.

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

1. In a machine of the class described, a glue-applying roll and a pressure-roll, arranged to receive between them a blank, combined with means for holding a part of the blank which passes between the rolls out of contact with the glue-applying roll, a second glue-applying roll operative to apply glue to that part of the blank which was held out of contact with the first-mentioned glue-applying roll, a pressure-roll cooperative with the second glue-applying roll, and tanks for containing cold and hot glue and to receive the respective glue-applying rolls.

2. In a machine of the class described, a glue-applying roll, a pressure-roll cooperative therewith and having a circumferential groove, the two rolls being arranged to receive between them a blank, means for holding a part of the blank which passes between the rolls in said groove, a second glue-applying roll operative to apply glue to that part of the blank which was held out of contact with the first-mentioned glue-applying roll, a pressure-roll cooperative with the second glue-applying roll, and tanks for containing cold and hot glue and to receive the respective glue-applying rolls.

3. In a machine of the class described, a cold-glue-applying roll and a pressure-roll cooperating to receive between them a blank, means for holding a part of the blank which passes between the rolls out of contact with the glue-applying roll, and means for applying hot glue to that part of the blank which was held out of contact with the first-mentioned glue-applying roll.

4. In a machine of the class described, a glue-applying roll and a pressure-roll arranged to receive between them a blank, the pressure-roll having a circumferential groove, and a finger supported independently of the rolls for holding a part of the blank which passes between the rolls out of contact with the glue-applying roll.

5. In a machine of the class described, a cold-glue-applying roll and a pressure-roll arranged to receive between them a blank, means for holding a part of the blank which passes between the rolls out of contact with the cold-glue-applying roll, means for rendering pliant that part of the blank which was held out of contact with the cold-glue-applying roll, and means for applying hot glue to the pliant part of the blank.

6. In a machine of the class described, means for applying cold glue to a blank, means for rendering pliant a part of the blank, and means for applying hot glue to the pliant part of the blank.

7. In a machine of the class described, means

for applying cold glue to a blank, means for holding a part of the blank which passes under the action of the glue-applying means out of the range of action thereof, and means for applying hot glue to that part of the blank which was held out of the range of action of the first-mentioned glue-applying means.

8. In a machine of the class described, means for applying cold glue to a blank, means for holding a part of the blank which passes under the action of the glue-applying means out of the range of action thereof, means for rendering pliant that part of the blank held out of the range of action of the cold-glue-applying means, and means for applying hot glue to the pliant part of the blank.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDRICK J. HEYBACH.

Witnesses:

J. H. SCHERER,
H. JONES.