

(No Model.)

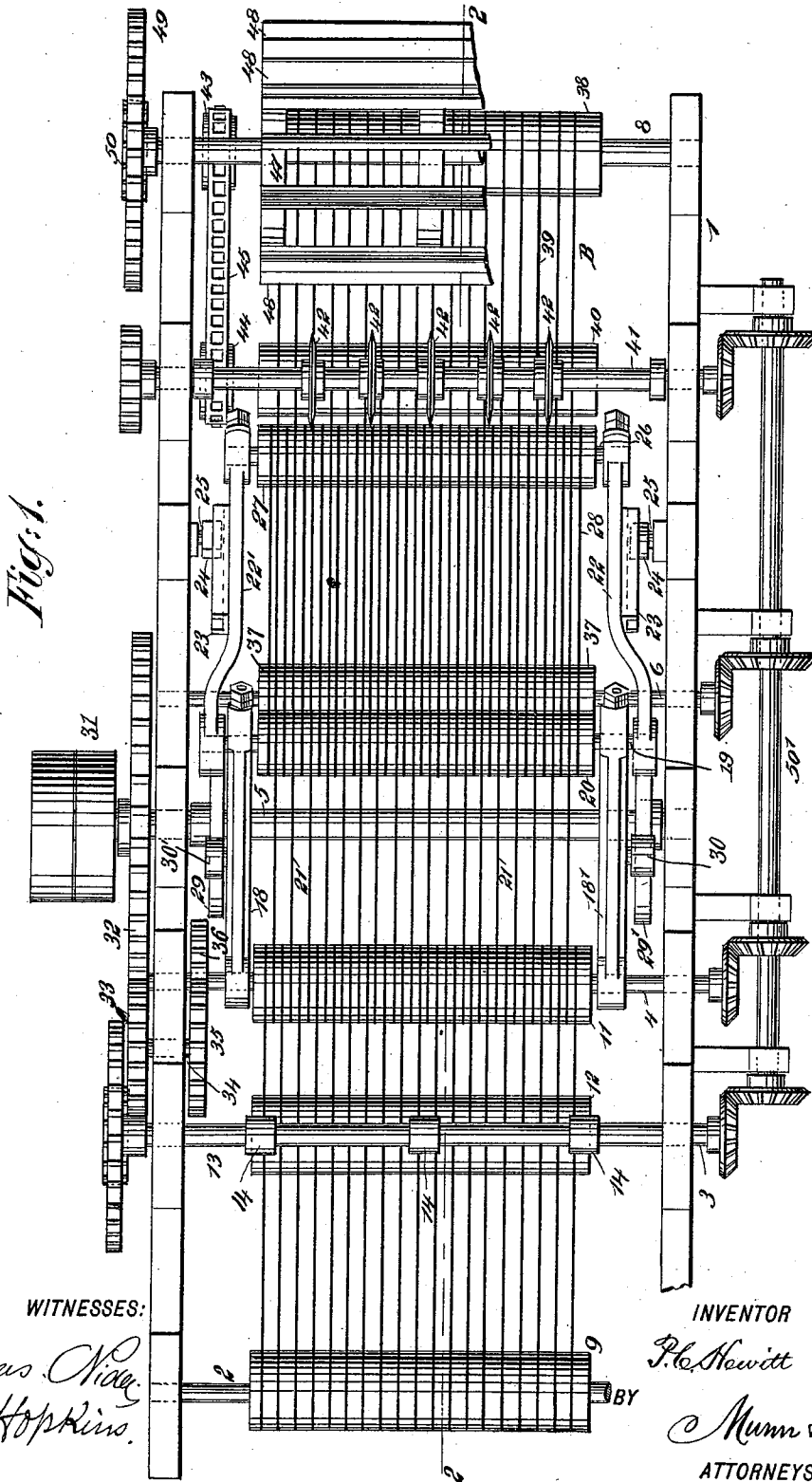
3 Sheets—Sheet 1.

P. C. HEWITT.

SHEET SPACER FOR GLUE MAKING MACHINERY.

No. 548,057.

Patented Oct. 15, 1895.



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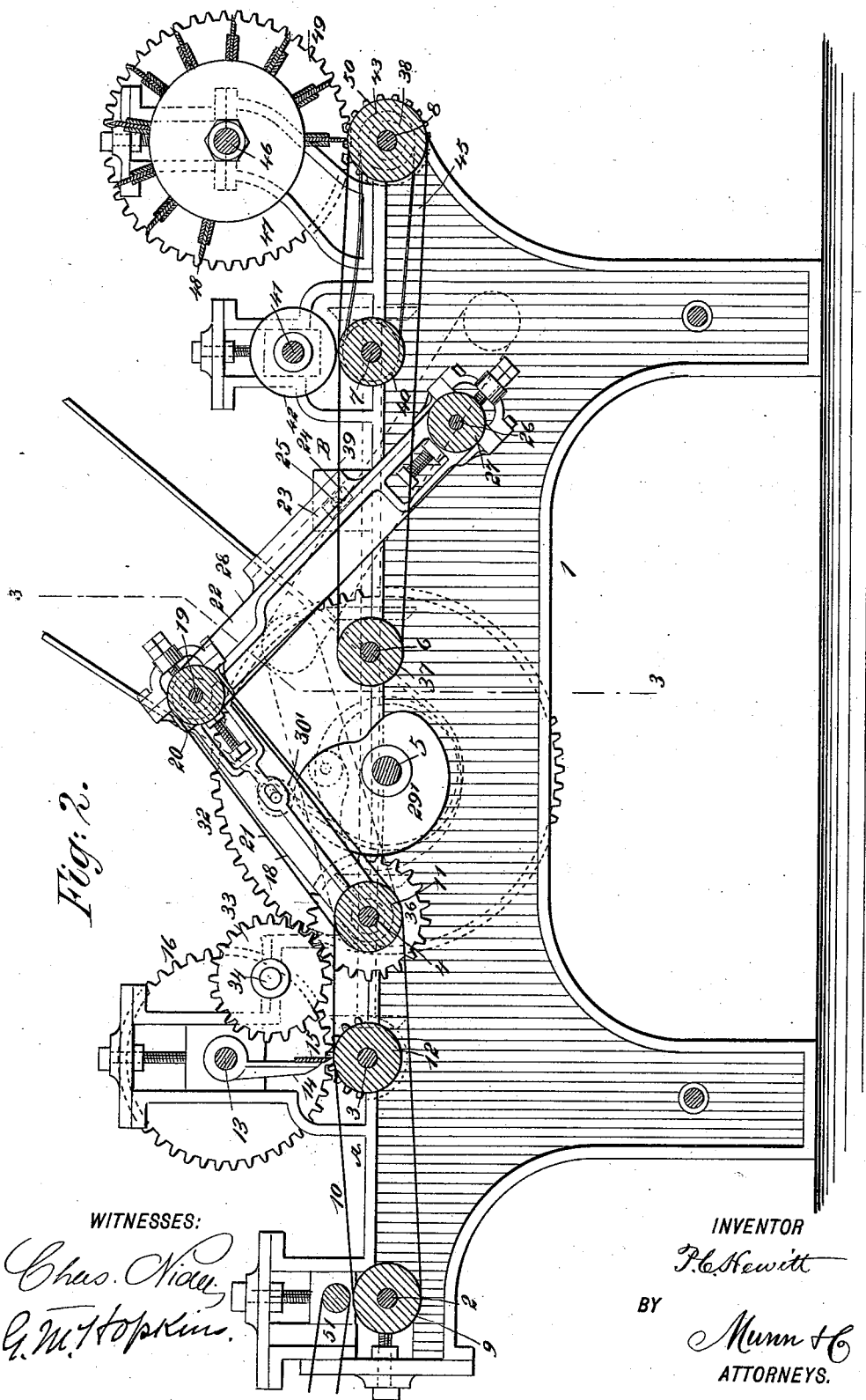
3 Sheets—Sheet 2.

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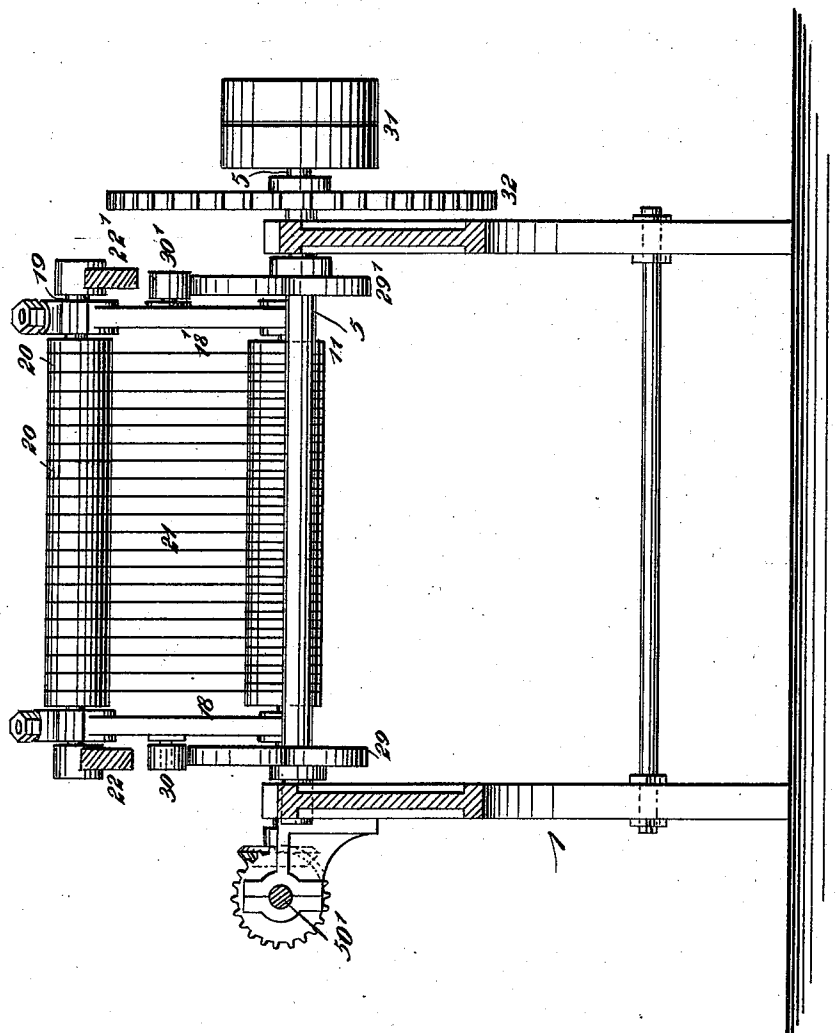
3 Sheets—Sheet 3.

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WITNESSES:

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PETER COOPER HEWITT, OF NEW YORK, N. Y.

SHEET-SPACER FOR GLUE-MAKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 548,057, dated October 15, 1895.

Application filed January 14, 1895. Serial No. 534,878. (No model.)

To all whom it may concern:

Be it known that I, PETER COOPER HEWITT, of New York city, in the county and State of New York, have invented a new and Improved Sheet-Spacer for Glue-Making Machinery, of which the following is a full, clear, and exact description.

The object of my invention is to construct a sheet-spacer for glue-making machinery in which the glue sheet will be supported during its entire travel and in its transfer from one conveyer to another and in which contiguous sheets will be separated and spaced while passing through the spacer.

My invention consists of a conveyer formed of three sections jointed together, the first section being stationary, the second section being arranged to swing on a fixed fulcrum, the third section being arranged to swing on the first section, the whole forming a slow-moving conveyer, and in the combination, with the slow-moving conveyer, of a conveyer geared to run at a higher speed, the slow conveyer being constructed to deliver the glue sheet to the more rapid conveyer at the speed of the rapid conveyer, all as will be hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of my improved sheet-spacer. Fig. 2 is a vertical longitudinal section taken on line 2 2 in Fig. 1, and Fig. 3 is a vertical transverse section taken on line 3 3 in Fig. 2.

My present invention is designed to take the place of the glue-sheet spacer shown and described in my application for Letters Patent of the United States filed October 25, 1893, Serial No. 489,081, and as it is used in connection with conveyers and a glue-sheet cutter and subdivider shown and described in the application to which reference has been made such parts will not be claimed in the present application, except in so far as they enter into combination with my improved spacer.

In the frame 1 are journaled the shafts 2, 3, 4, 5, 6, 7, and 8. The shaft 2 is adjustable in the frame and carries a grooved roller 9,

receiving a series of cords 10, which run over a grooved roller 11 on the shaft 4. On the shaft 3 is placed a grooved roller 12, which is below the series of cords 10, and in the grooves of which the said cords rest below the surface of the roller.

In the upward extension of the frame 1 is journaled a shaft 13, which carries arms 14, to which is attached a knife 15, capable of contacting with the surface of the roller 12 at given intervals. The shaft 13 is provided with a spur-wheel 16, which receives motion from a pinion 17 on the shaft 3.

On the shaft 4 at the ends of the roller 11 are pivoted the arms 18 18', in the ends of which is journaled a shaft 19, carrying a grooved roller 20. Cords 21 pass around the rollers 11 and 20. The journal-boxes of the shaft 19 are adjustable in the ends of the arms 18 18', and on the ends of the shaft 19 are placed bars 22 22'. The said bars are each provided with a slot 23, which receives a sliding block 24, pivoted on a stud 25, projecting inwardly from an upward extension of the frame 1, so that the bars 22 22' can slide on the blocks 24 and swing on the studs 25 as centers. In the lower ends of the bars 22 22' is journaled a shaft 26, on which is placed a grooved roller 27, and cords 28 pass around the rollers 27 20. The journal-boxes of the shaft 26 are adjustable in the ends of the bars 22 22'.

Upon the shaft 5 are secured cams 29 29', upon which rest rollers 30 30', which turn on adjustable studs projecting from the arms 18 18'. The cams are made in suitable form to lower the movable end of the conveyer A, so that the speed of its downward movement, added to the speed of the cords, will cause the glue sheet at the time of its delivery to the conveyer A to move at the same speed as the said conveyer and to cause a return movement of the movable end of the conveyer A to be at a speed equal to the movement of the cords on that conveyer. Upon the shaft 5 are secured pulleys 31, by means of which the machine is driven, and also a spur-wheel 32, which engages a wheel 33 on the shaft 34, which carries a spur-wheel 35, meshing into a spur-wheel 36 on the shaft 4.

On the shaft 6 is placed a grooved roller 37 and on the shaft 8 is placed a grooved roller

38, and cords 39 pass over the rollers 37 38, and the said cords and rollers constitute a conveyer B. The cords 39 pass over a roller 40 on the shaft 7, and above the roller 40 in an upward extension of the frame is journaled a shaft 41, which carries a series of circular cutters 42, which bear upon the periphery of the roller 40. On the shaft 8 is placed a sprocket-wheel 43, and on the shaft 7 is placed a sprocket-wheel 44, and a chain 45 extends around the sprocket-wheels 43 44 and serves to communicate motion to the shaft 8. Above the shaft 8, in an upward extension of the frame 1, is journaled a shaft 46, on which is placed a cylinder 47, carrying a series of knives 48, which are capable of contacting with the surface of the roller 38. The shaft 46 is furnished with a spur-wheel 49, which engages a spur-wheel 50 on the shaft 8.

The operation of my improved machine is as follows: Glue is delivered in a continuous sheet to the conveyer A by the conveyer 51, which receives it from the glue-cooler, and it is carried forward by the conveyer A over the roller 12, where the glue is cut into sheets by the cutter 15. The sheets are carried forward by the first section of the conveyer A and are received upon the cords 21 of the second section, which move at the same rate of speed as the cords of the first section of the conveyer A. The glue sheet is carried upward and at the roller 20 is transferred to the cords 28 of the third section, which also move at the same rate of speed as the cords 10 of the first section of the conveyer A. The sheet of glue is delivered to the series of cords 28 at the same speed as the said series of cords make while being raised by the action of the cams 29 on the rollers 30, or approximately so, so that, although the sheet of glue is advancing in the machine, it is not approaching the conveyer B while the arms 18 18' are being raised. The conveyer B moves at such a rate of speed as to carry forward the sheet through a distance equal to the length of the sheet and the width of the space between the glue sheet and the next succeeding glue sheet while the conveyer A moves the length of the sheet—that is to say, in actual practice the conveyer A moves a sheet forward sixty-six inches while the conveyer B moves a glue sheet forward seventy-eight inches, sixty-six inches being the length of the sheet and twelve inches being the width of the space. When the arms 18 18' and the bars 22 22' descend, the downward movement of the glue sheet is accelerated by the amount of movement of the third section of the conveyer A. The amount of the downward movement of the cords, added to their rotary movement, gives the glue sheet carried by the cords 28 a velocity equal to the velocity of the conveyer B, so that the sheet is delivered to the conveyer B without being stretched or torn. While the cords 28 carried by the bars 22 22' are being raised, the sheet already delivered to the conveyer B moves on and thus pro-

duces a space between it and the sheet to follow. In its forward passage through the machine the sheet is slit up into strips by the rotary cutters 42 and subdivided by the cutters 48.

The shafts 3, 4, 6, and 7 are provided with bevel-wheels, which mesh into bevel-wheels on the shaft 50', journaled in brackets projecting from the frame 1, so that the shafts so connected are compelled to move in unison.

It is obvious that I may construct a spacer in which the movable portion of the conveyer may run at the higher speed and the movement of the cords may be reversed and the glue sheet may go in the opposite direction through the machine. Therefore I do not confine my invention to the exact arrangement herein shown and described.

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

1. In a glue sheet spacer, a slow conveyer and a fast conveyer inclined to each other, the slow conveyer being constructed for moving the glue sheet forward with an accelerated speed equal to that of the fast conveyer at the time of the delivery of the glue sheet to the fast conveyer, and constructed to treat after discharging the glue sheet at approximately the rate of speed at which the cords of the slow conveyer run, as specified.

2. In a glue sheet spacer, the combination, with a stationary conveyer formed of endless cords, of a movable conveyer formed of endless cords, the cords of the movable conveyer passing between the cords of the stationary conveyer, as specified.

3. In a glue sheet spacer, the combination, with a fast stationary conveyer formed of endless cords, of a movable slow conveyer formed of endless cords, the cords of the movable conveyer passing between the cords of the stationary conveyer, as specified.

4. A sheet spacer for glue making machinery, the same comprising a conveyer formed of three sections jointed together and furnished with series of endless cords all running at the same speed, but capable of moving forward while rotating, to change the speed of the glue sheet and a second conveyer running at a different speed, for receiving the glue sheet and forming spaces between successive sheets, as specified.

5. A sheet spacer for glue making machinery, the same comprising a jointed frame provided with series of endless cords, a conveyer for delivering the glue sheet to one of the series of endless cords, and a conveyer geared to run at a different speed, for taking the glue sheet from the jointed conveyer and forming spaces between the sheets, the said jointed conveyer while the cords are rotating, moving forward with the speed of the last conveyer substantially as specified.

6. In a glue sheet spacer, the combination of two conveyers geared to run at different speeds, a jointed frame formed of two parts

each provided with a series of endless cords, one part of the jointed frame being constructed to swing on a fixed center, the other part being constructed to swing on a movable center and slide and swing on a fixed center, the endless cords of the swinging and sliding part of the frame being arranged to cross the cords of the other conveyer, substantially as specified.

7. In a glue sheet spacer, the combination with the swinging jointed frame of the conveyer, of cam mechanism operatively connected with the driving mechanism of the spacer, and constructed to impart to the jointed frame a variable speed, substantially as specified.

8. In a glue sheet spacer, the combination, with a swinging jointed frame carrying conveyer cords, of mechanism adapted to move the jointed frame with a variable speed, and a conveyer for receiving the glue sheet from the conveyer cords of the movable frame, substantially as specified.

9. In a glue sheet spacer, the combination, with a movable conveyer, and a stationary conveyer geared to run at a different speed, of a cutter for dividing the continuous web of glue into sheets, substantially as specified.

10. In a glue sheet spacer, the combination, with a movable conveyer, and a stationary con-

veyer geared to run at a different speed, of a cutter for dividing the continuous web of glue into sheets, and cutters for subdividing the sheets of glue, substantially as specified.

11. In a glue sheet spacer, the combination of the conveyer A, the arms 18, 18', the bars 22, 22' provided with a slip joint 23, fixed studs 25, the shaft 19 forming the pivotal connection between the arms 18, 18' and bars 22, 22', the rollers 20, 27, cords 21, 28, the conveyer B, and the cams 29, 29', substantially as specified.

12. A glue sheet spacing device, formed of two stationary endless conveyers, a movable conveyer, and mechanism constructed to move the movable endless conveyer, whereby the glue sheet is moved forward during the time of its delivery to the last conveyer of the series at the speed of that conveyer, substantially as specified.

13. In a glue sheet spacer, two conveyers constructed to run at different speeds, one being arranged to advance on the other, the advancing conveyer being constructed to advance on the other conveyer without change in length, substantially as specified.

PETER COOPER HEWITT.

Witnesses:

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C. SEDGWICK.