(No Model.) 2 Sheets—Sheet 1.

E. F. COMPTON.

GLUE SPREADING MACHINE.

No. 603,075. Patented Apr. 26, 1898.

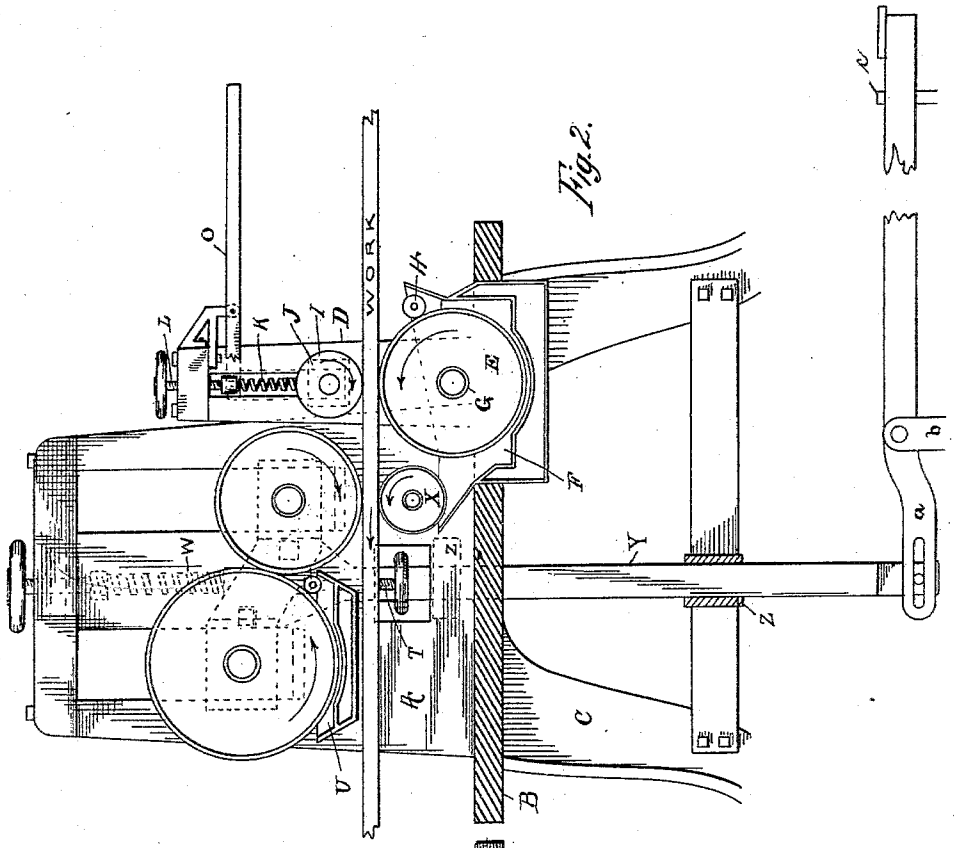


Fig. 2.

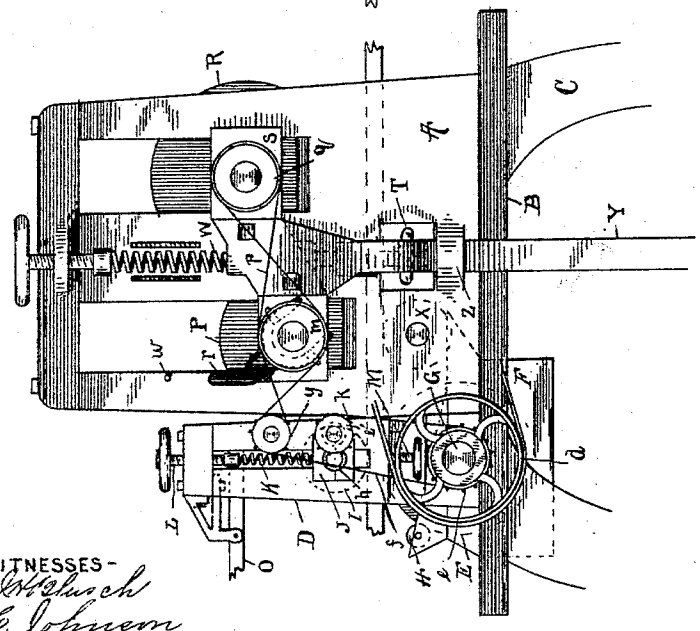


Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

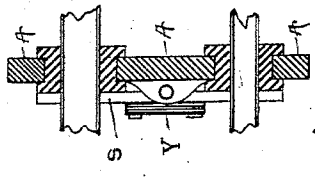


Fig. 9.

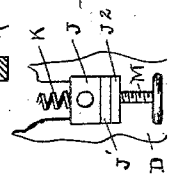


Fig. 3.

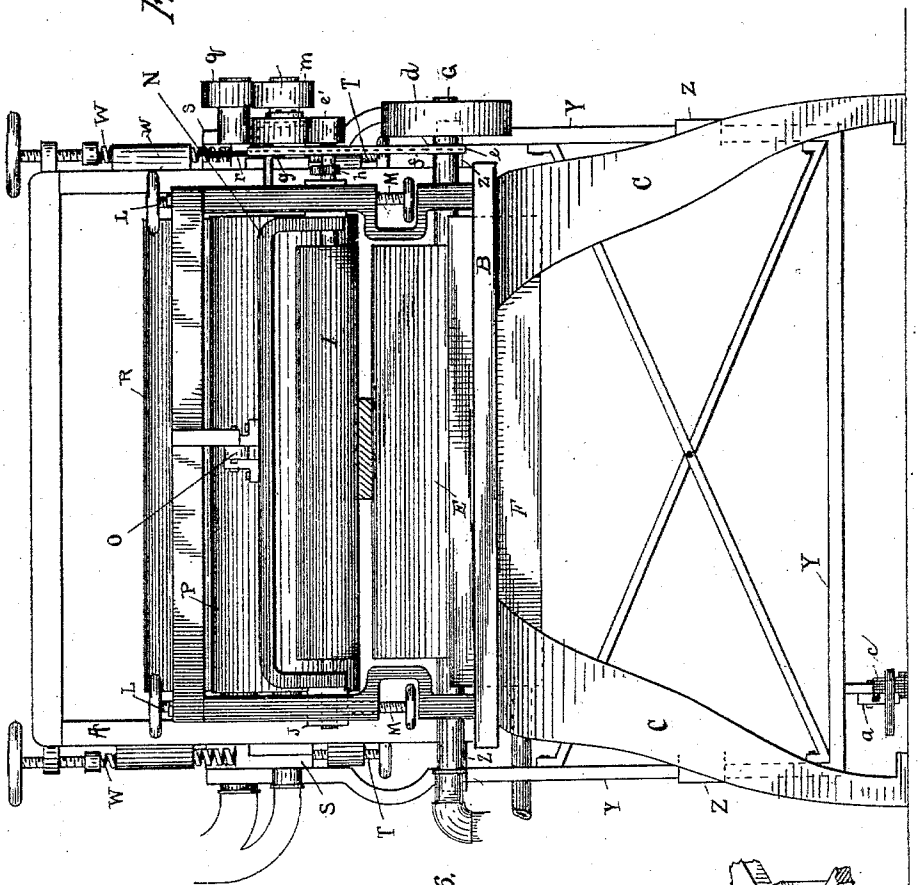


Fig. 5.

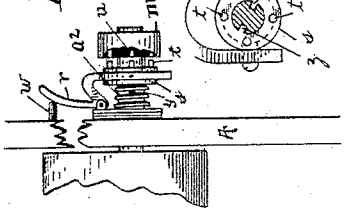


Fig. 6.

Fig. 7.

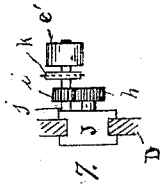
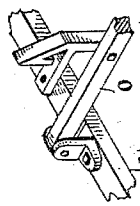


Fig. 8.



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UNITED STATES PATENT OFFICE.

EDWARD F. COMPTON, OF PEORIA, ILLINOIS.

GLUE-SPREADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 603,075, dated April 26, 1898.

Application filed April 23, 1897. Serial No. 633,526. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. COMPTON, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Glue-Spreading Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to glue-spreading machines, and has for its object to provide a more simple, convenient, and effective device for spreading glue upon both surfaces of a base preparatory to applying veneering thereto.

Machines for this purpose have been in use heretofore; but they are not convenient and do not accomplish the work intended without considerable manipulation and unnecessary maneuvering. In my device either or both sides of the work may be glued at the will of the operator and without stopping the machine, and any thickness of work may be accommodated. When one side only of the work is to be glued, the mechanism for coating the opposite side may be thrown out of position and out of gear at the one movement. Also in my device the glue is fed by power to the distributing-roll, which coats the upper surface of the work, instead of being allowed to flow by its own weight, a process uncertain in its action.

In veneering material for doors and the like it was necessary to pass the work through the machine twice, then pass the veneering through and afterward place it upon the work, and subject the whole to pressure. In the use of the device about to be described it is only necessary to pass the material through the machine once, gluing both sides simultaneously, then place the two sheets of veneering together and pass them through, and then glue them up, as before. This last operation takes only the fractional part of the time required to accomplish the same task by the former method, and the time being of only a short duration the glue has no time in which to become cold and thicken.

In the drawings herewith presented and which form a portion of this application, Figure 1 is an elevation of one end of the machine. Fig. 2 is a cross-section of the machine through the middle of its length, looking from the opposite end. Fig. 3 is a front elevation of the machine. Fig. 4 is a detail plan view in cross-section of the bearing portions of two of the rolls, showing construction of slides and other parts. Fig. 5 is a detail view of a clutch and its parts, used in throwing a portion of the operating mechanism out of gear. Fig. 6 is a detail of the clutch device. Fig. 7 is a detail plan view of a driving portion of the machine. Fig. 8 is a perspective view in detail of a lever arrangement for raising one of the rolls of the machine. Fig. 9 is a detail of a rubber buffer used under the bearings of the rolls.

In the several figures, A is the main frame, which is mounted on the table B, having the legs C.

D is a small supporting-frame set in front of the frame A, the use of which will be presently explained. A hollow roll E is journaled in the frame A and revolves within a glue-tank F, which is steam-jacketed for the purpose of keeping the glue hot. The said roll E is also heated with steam through a hollow shaft G. A covering of Brussels carpet or other suitable material is provided for the said roll, with which to coat the work. A scraper H is placed in contact with the roll E, which keeps the glue evenly distributed and scrapes off any excess, which returns to the tank above which it is situated. Above this roll E is a pressure-roll I, which is mounted in bearings J, which slide smoothly within the slotted frame D. A coil-spring K rests upon each of the bearings J, and a thread-bar L, by means of a hand-wheel, exerts a constant pressure upon the said bearings, thus imparting a steady pressure to the roll E and on the work in the machine. An adjusting-screw M, located in the frame D below the bearings J, provides means for allowing the roll to descend to a fixed point, so that work of a certain thickness may only receive a pressure sufficient to accomplish the proper result in the spreading of the glue. A detail of this adjustment is shown in Fig. 9, in which J is the bearing, K the coil-spring, J′ a rubber buffer, and J^2 a metal block which receives the thrust of the screw M. A yoke N is secured at either end to the bearings J or

simply encircles the shaft and is provided with a lever O, pivoted to the frame D by suitable means, with which to raise and control the roll I when great thicknesses of material are to be entered. To the rear of this frame D is the frame A before referred to. A hollow roll P is mounted in bearings Q, which slide in the said frame A, similarly to the bearings J of the roll I. A larger hollow roll R revolves in contact with the roll P and is journaled in the same manner as said roll. These two rolls P and R are held in fixed relation to each other by means of a plate S, secured to the bearings Q. An adjusting-screw T serves the same purpose with reference to the rolls P and R as the screw M to the roll I. A glue-receptacle U is hung beneath the roll R and carries a scraper V, which distributes the glue and, as in the above case, scrapes off any excess. A coil-spring W also bears upon the plate S from above and acts in the same capacity as the spring K. A roll X is journaled in the frame A, below the roll P, and serves to support the work and is so situated as to permit any glue which might adhere to it to run back into the glue-receptacle F.

The scrapers H and V are rollers and accomplish their work better than would a fixed scraper.

At times it is only necessary to glue one side of a piece of work, and that this may be done without the use of the upper gluing portions I provide means for elevating the rolls P and R, and this is accomplished by the use of a perpendicular frame Y, which moves in guides Z on the framework. The side arms are secured at their upper extremities to the plate S, and the lower portion of the frame is pivotally secured to the end of a lever *a*, having its fulcrum at *b*, while the power is applied to the forward end in front and at one side of the machine. A catch *c* is also provided, so that the said lever is depressed and swung under the catch. This operation raises the rolls to a height sufficient to carry said rolls out of reach of the heaviest work. In Fig. 1 the means of driving the several rolls is shown, and consists in providing the shaft which carries the roll E with a driving-pulley *d*. Upon the same shaft is a sprocket-wheel *e*, driving a chain *f*, which runs over an idler *g*.

When viewing the machine in the position shown in Fig. 1, the top of the roll E runs to the right, while the upper roll I revolves in a contrary direction, and that this may be accomplished so as to draw the work into the machine I provide the shaft carrying the roll I with a gear-wheel *h*, which meshes with a similar wheel *i* on a stud *j*, secured to the bearing J, and this wheel, together with a sprocket-wheel *k* and a pulley *e'*, are mounted on a sleeve which turns on the said stud. The sprocket-chain *f* engages the said sprocket *k*, imparts motion to the gear-wheels *i* and *h*, and drives the roll I in the reverse direction, so that both rolls revolve in a direction to carry the work through the machine. The pulley *e'* drives, by means of a crossed belt, the roll P by the pulley *m*, and a pulley *o* on the same shaft drives the roll R by means of a crossed belt *p* and pulley *q*. The rolls P and R are both covered with carpet or other suitable material which will carry the glue. The rolls E, P, R, and X are all hollow and kept hot by steam through the hollow shafts, as before set out. The steam enters through suitable piping and steam-joint connections, the upper rolls having flexible-hose connections, the reason for which is obvious.

Means are provided for throwing the upper rolls out of gear when not in use, and this is accomplished in the manner following: Upon one of the bearings carrying the roll P is pivotally secured the fork *r*, which straddles the sleeve *s*, having a shifting motion on the shaft of said roll P. The said sleeve carries a number of pins *t*, which are designed to engage with a number of apertures *u* in the loose pulley *m*. A lug *w* is located on the frame A somewhat above the pivoted fork *r*, and when the foot-lever is depressed far enough to allow of its being thrown under the catch *c* the fork *r*, as it meets the said lug, is thrown outwardly, thus disengaging the pins *t* from the said pulley. In Fig. 6 is a cross-section of the shaft on which the sleeve *s* is mounted, said shaft having a slot *y* on diametrically opposite sides thereof, and projections *z* on the inside of the sleeve engage with said slots, and by this means the driving is accomplished. A spring a^2 surrounds the shaft and exerts a pressure upon the sleeve and keeps it in its seat in the pulley when not disengaged by the lug *w*.

In the operation of this device it is only necessary to start the machine, raise the roll I by the hand-lever O, and start the work through. The glue being continually fed into the tanks F and U from separate boiling-tanks and kept hot therein is carried to and deposited upon the work in an even coat.

When the upper rolls are not required, the foot-lever quickly lifts them up and out of the way, and this movement serves to throw them out of gear by the means above set forth.

This machine may carry more than one spreading-roll above and below the work, if desired, and other changes may be made without departing from the spirit of my invention. For instance, the upper rolls may be fixed and the lower ones movable instead, as above described.

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

1. In a gluing-machine, the combination with a series of lower stationary, power-driven rolls, and the frames D and A, of an upper, power-driven yielding pressure-roll journaled in said frame D, springs K K for regulating pressure of same, a lever O pivoted on the said frame for controlling the said roll, the upper spreading and supplying rolls P and R respectively, mounted in the

frame A, the springs W W for controlling pressure of said rolls, a foot-power mechanism for raising the rolls from the work without the stopping of the machine, and means for automatically throwing same out of gear when in the raised position substantially as set forth and described.

2. In a gluing-machine, the combination with a table B with its legs C, of a glue-fount supported thereon, a steam-jacket surrounding the same, the supporting-frame D mounted on said table, a lower power-driven gluing-roll journaled on the table, a rolling scraper H in contact with said roll, a yielding adjustable power-driven pressure-roll above said gluing-roll, a hand-lever O pivoted on said frame D for controlling said pressure-roll, a supporting-frame A, a supporting-roll X journaled therein, a power-driven yielding gluing-roll P above said supporting-roll, a power-driven glue-supplying roll having contact with said glue-spreading roll, in fixed relation thereto, a steam-jacketed glue-receptacle located under said roll, a rolling scraper V journaled in said glue-receptacle in contact with the said supplying-roll, a foot-lever mechanism for raising the rolls P and R simultaneously, a catch *c* for holding the lever, springs W for regulating the pressure of the rolls upon the work and means for automatically throwing said rolls out of gear when raised out of position as set forth and described.

3. In a gluing-machine, the combination with the rolls P and R the vertical arms Y supporting the same, the lever *a* and catch *c*, for controlling the said vertical arms, the frame A a pin or lug *w*, on the said frame of the automatic gear-releasing mechanism consisting of the loose pulley *m* on the shaft of the roll P and having the apertures *u*, the collar or sleeve *s* on said shaft, the pins *t* on said sleeve, the fork *r* straddling the said sleeve *s* and pivoted to the roll-bearing, and the spring *y* surrounding the shaft, all substantially as and for the purposes herein set forth and described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD F. COMPTON.

Witnesses:
C. JOHNSON,
J. H. BLUSCH.