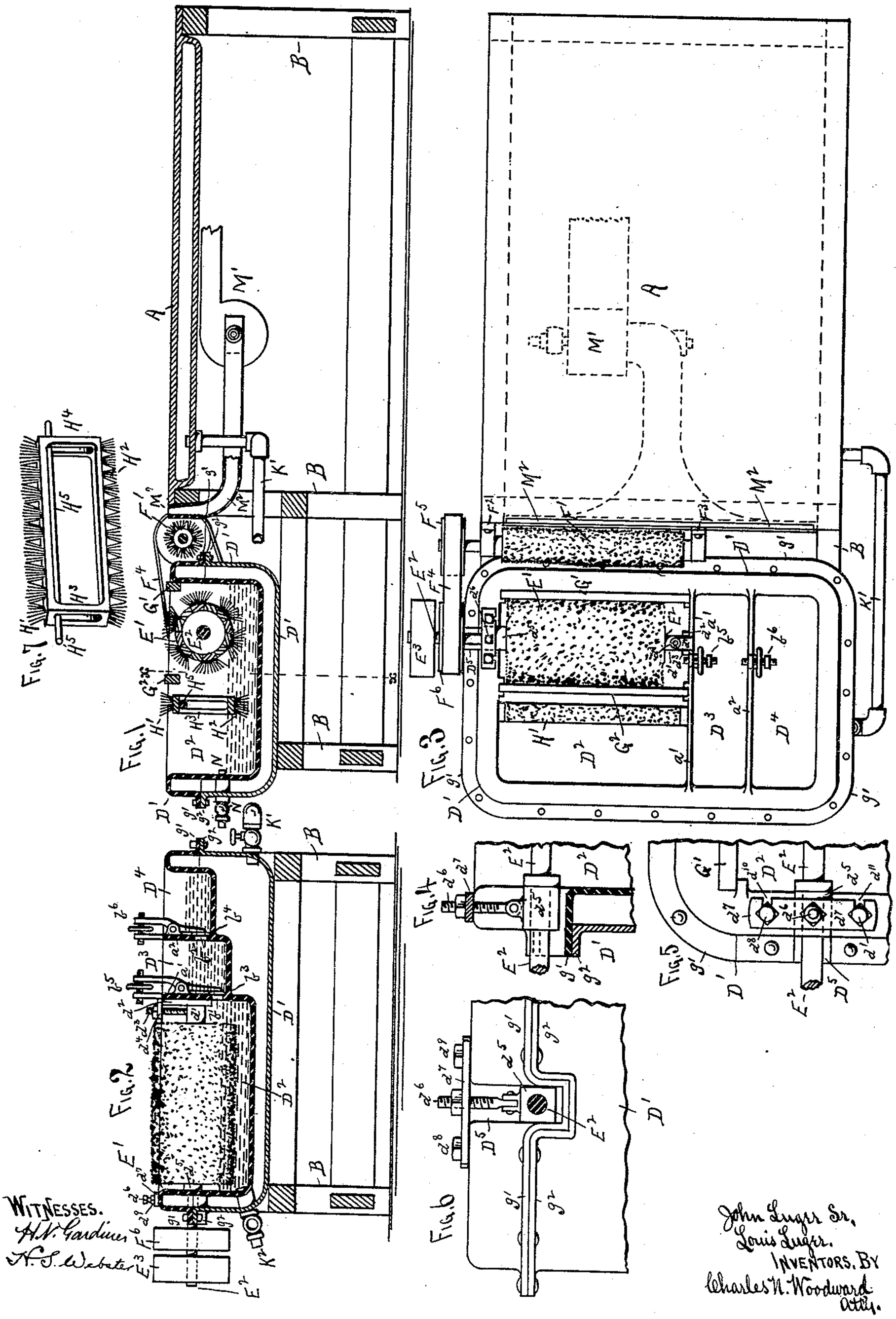
(No Model.)

J. LUGER, Sr. & L. LUGER.

GLUE APPLYING APPARATUS.

No. 484,031. Patented Oct. 11, 1892.



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JOHN LUGER, SR., AND LOUIS LUGER, OF NORTH ST. PAUL, MINNESOTA.

GLUE-APPLYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 484,031, dated October 11, 1892.

Application filed January 25, 1892. Serial No. 419,229. (No model.)

To all whom it may concern:

Be it known that we, JOHN LUGER, Sr., and LOUIS LUGER, citizens of the United States, and both residing at North St. Paul, in the county of Ramsey and State of Minnesota, have jointly invented certain new and useful Improvements in Glue-Applying Apparatus, of which the following is a specification.

This invention relates to apparatus for applying glue in manufactories; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a longitudinal sectional elevation of the apparatus. Fig. 2 is a cross-section on the line X X of Fig. 1. Fig. 3 is a plan view. Figs. 4, 5, and 6 are enlarged details illustrating more fully the construction of the brush-cylinder-supporting mechanism. Fig. 7 is a perspective view of the reversible wiper-brush detached.

A is a hollow steam-heated table supported upon a frame B, and upon which the lumber to be glued is first assembled, and the surfaces to which the glue is to be applied thereby heated. Supported upon the same frame B, below the line of the table A at one end, is a hollow glue-receptacle D′, adapted to be heated by steam or hot water and divided by partitions a' a^2 into three compartments D^2 D^3 D^4, the compartment D^2 being the largest and deepest and the compartment D^4 being smaller and the most shallow, while the intermediate compartment D^3 is of a depth between the compartments D^2 and D^4, as shown in Fig. 2.

Each of the partitions a' a^2 is provided with a port b' b^2, covered by valves b^3 b^4, the latter adapted to be actuated by screw-controlled levers b^5 b^6, as shown. By this means the contents of the compartments D^3 D^4 may be discharged into the larger compartment D^2. The glue after being dissolved is placed in the first compartment D^4, and when sufficiently reduced by the heat is allowed to flow through the port b^2 into the compartment D^3, and there again subjected to the action of the heat, and when of the proper consistency for use is discharged into the large compartment D^2 through the port b', wherein it is kept in the proper condition by the heat surrounding the compartment. By providing the valves b^3 b^4 with the screw-actuated levers b^5 b^6 they may be perfectly controlled, so that the flow of the glue from one compartment to the other may be perfectly regulated and controlled.

Supported within the compartment D^2 is a brush-cylinder E′, having its shaft E^2 on one end journaled in a block d', fitting between ribs d^2 d^3 on the partition a', and adapted to be raised and lowered by a screw d^{12}, the latter supported by a lug d^4 on the partition a'. The other end of the same shaft E^2 is journaled through a similar block d^5, resting between the walls of an opening D^5 in the receptacle D′, and in which it is adapted to be raised and lowered by a screw d^6, fitting through a strap d^7, secured by cap-screws d^8 d^9 upon the upper rim of the receptacle D′, as shown more clearly in Figs. 4, 5, and 6. The holes in the strap d^7 for the reception of the cap-screws d^8 and d^9 are formed with one side open, as at d^{10} d^{11} in Fig. 5, so that when the cap-screws are loosened and the screw d^3 removed the brush-cylinder may be removed bodily from the casing for repairs or renewal, or to be immersed in water when not in use.

The outer end of the shaft E^2 of the brush-cylinder is provided with a pulley E^3, by which it may be revolved.

By means of the screws d^{12} d^{12} the brush-cylinder may be adjusted higher or lower to adapt it to the work to be performed, as well as to take up the wear of the material of which the brush is composed.

Between the receptacle D′ and the "hot table" A is a circular dusting-brush F′, suitably mounted in hangers F^2 F^3 and adapted to be revolved by a belt F^4 and pulleys F^5 F^6 from the shaft E^2, as shown, the function of this brush being to remove the dust and other extraneous matter from the surface to which the glue is to be applied in its passage from the table A to the glue-applying cylindrical brush E′.

G′ G^2 are two stationary guard-bars in a line with the upper surface of the table A and arranged upon each side of the cylindrical brush and adapted to support the material as it passes over it.

M′ represents a suction-fan arranged beneath the table A and connected to a wide nozzle M^2, leading up through the table between the receptacle D′ and the table to draw the dust and other extraneous matter down-

ward away from the material to which the glue is to be applied.

In front of the cylindrical brush E′ is a double brush H′ H², the two brushes being connected by slotted end frames H³ H⁴, the latter resting upon a cross-rod H⁵ (see Fig. 7) in the receptacle D′. One brush H′ is adapted to wipe off the superfluous glue from the surfaces of the material as it leaves the cylindrical brush E′, while the other brush H² is constantly immersed in the hot glue, as shown. Then when the brush H′ becomes dry and surcharged with the hardening glue their positions are reversed, the brush H² being set uppermost and the brush H′ being immersed in the hot glue, where it is soon restored to its proper condition. Then when the brush H² becomes hardened the process is repeated, and so on, as often as may be required.

K′ represents the piping, whereby steam or hot water is admitted to the receptacle D′ and table A.

In operating the apparatus, the glue having been reduced to the proper consistency in the several compartments D⁴, D³, and D², and the cylindrical brushes E′ and dusting-brush F′ set in motion, the material to which the glue is to be applied is placed upon the hot table A and allowed to remain there until the surface is sufficiently heated, when it is passed over the brush F′, which removes any dust or other extraneous matter from it, and then as it is passed over the guards G′ G² the cylindrical brush applies the glue and the brush H′ or H² wipes off the superfluous glue.

The cylindrical brush, running with its lower surface constantly in the hot glue, dips up and applies the glue to surface of the material, passing over it with a constant and uniform consistency, employing only just a sufficient quantity to secure a good joint and without wasting any of the glue.

By employing the preparatory compartments D³ D⁴ a constant uniform supply of the glue may be fed to the larger receptacle D², so that the cylindrical brush will always run at the same depth in the glue, and thereby insure the uniformity of the supply and the uniformity of the application.

K² represents an outlet for the glue from the compartment D² when it is desired to remove the glue therefrom.

The receptacle D′ is formed in two parts united by flanges g' g^2 for convenience of casting.

The suction-tubing M² may be connected to the ordinary suction in the factory, which is employed to remove the dust and shavings from the machinery instead of by a separate fan M′, if preferred.

To assure the retention of the glue in the compartment D² at the required height and to prevent it from rising above a certain point I arrange in the receptacle D′ an overflow N. This is an important feature, as the glue if permitted to rise too high in the compartment D² the rapid revolution of the cylindrical brush E′ will throw the glue out of the receptacle.

Having thus described our invention, what we claim as new is—

1. In a glue-applying apparatus, a hollow table A, adapted to be heated, in combination with a glue-receptacle D′, adapted to be heated and having a revolving cylindrical brush therein, whereby when the material after being heated on the hot table is passed over said cylindrical brush the glue is applied thereby to its surface, substantially as and for the purpose set forth.

2. In a glue-applying apparatus, the combination of a table A, adapted to be heated, a glue-receptacle adapted to be heated and having cylindrical brush E′ journaled therein and adapted to be revolved to apply the glue, and a dusting-brush F′ between said hot table and cylindrical brush, substantially as and for the purpose set forth.

3. In a glue-applying apparatus, the combination of a glue-receptacle adapted to be heated and having cylindrical brush E′ journaled therein and adapted to be revolved to apply the glue, and guards G′ G², secured across said receptacle and adapted to support the material upon each side of said brush in passing over it, substantially as and for the purpose set forth.

4. In a glue-applying apparatus, the combination of a table A, adapted to be heated, a glue-receptacle adapted to be heated and having cylindrical brush E′ journaled therein and adapted to be revolved to apply the glue, and a double reversible wiper-brush H′ H² in said receptacle in advance of said cylindrical brush, substantially as and for the purpose set forth.

5. In a glue-applying apparatus, a glue-receptacle having hollow walls and divided into compartments of increasing depth with valves between said compartments, and a cylindrical brush within the deepest of said compartments and adapted to be revolved therein, whereby the glue may be reduced in the more shallow of said compartments and fed to the compartment containing the revolving brush as fast as required, substantially as and for the purpose set forth.

6. In a glue-applying apparatus, the combination of a table A, adapted to be heated, a glue-receptacle adapted to be heated and having cylindrical brush E′ journaled therein and adapted to be revolved to apply the glue, and suction-tubing M², arranged between said table and receptacle, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN LUGER, SR.
LOUIS LUGER.

Witnesses:
C. N. WOODWARD,
H. S. WEBSTER.