

No. 771,544.

PATENTED OCT. 4, 1904.

D. GOLDSMITH.

MACHINE FOR FINISHING VARNISHED SURFACES OR THE LIKE.

APPLICATION FILED FEB. 3, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

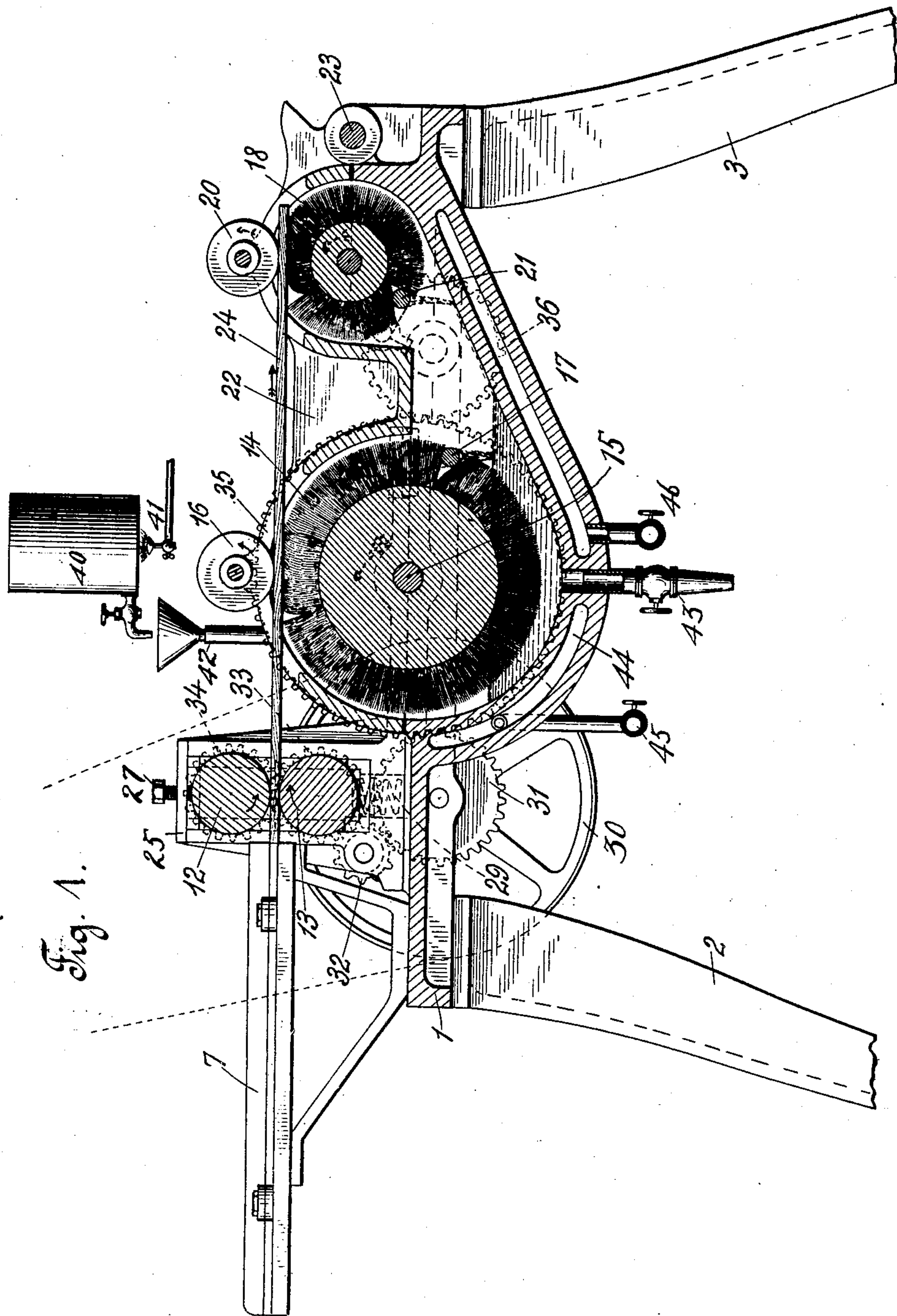


Fig. 1.

With 28 figures
F. N. Roehrich

David Goldsmith Inventor
Bartlett, Carmichael & Mitchell Attorneys

No. 771,544.

PATENTED OCT. 4, 1904.

D. GOLDSMITH.

MACHINE FOR FINISHING VARNISHED SURFACES OR THE LIKE.

APPLICATION FILED FEB. 3, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

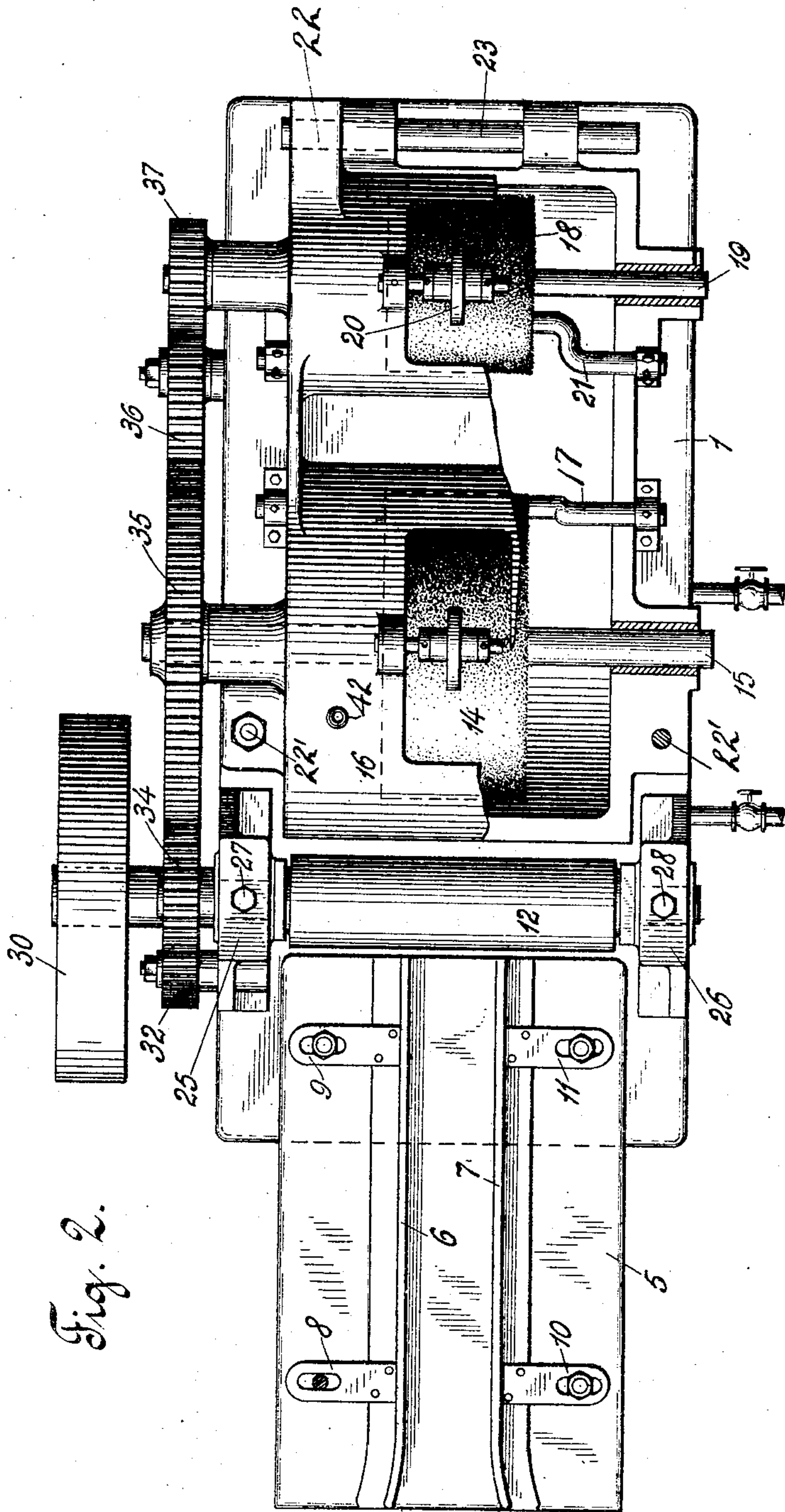


Fig. 2.

Witnesses
F. N. Roehrich

Inventor
David Goldsmith
By *his* Attorneys
Barrett, Bernier & Mitchell

UNITED STATES PATENT OFFICE.

DAVID GOLDSMITH, OF NEWARK, NEW JERSEY.

MACHINE FOR FINISHING VARNISHED SURFACES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 771,544, dated October 4, 1904.

Application filed February 3, 1904. Serial No. 191,800. (No model.)

To all whom it may concern:

Be it known that I, DAVID GOLDSMITH, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Machines for Finishing Varnished Surfaces or the Like, of which the following is a full, clear, and exact description.

My invention relates to an automatic machine for applying liquid coatings, and particularly to a machine adapted to apply a coat of varnish to strips of wood.

The object of the invention is to provide a simple and economical machine which may be operated automatically for rapidly coating slats or strips of wood and smoothing down and finishing the surface in a proper and acceptable manner.

The invention consists in employing mechanism for feeding the strips to the proper position, guiding them, applying a coating, and removing the excess of coating and finishing the surface. The details of construction by which this process is effected and the operations facilitated will be more plainly seen on an inspection of the accompanying two sheets of drawings, in which—

Figure 1 is a longitudinal cross-section of a machine embodying the improvements of my invention. Fig. 2 is a plan view of the same, portions of the covering being removed to make the interior construction more apparent.

In the drawings, 1 indicates the main body or frame of the machine, having legs 2 and 3. This frame has a tank or vessel 4, supported in the top for containing the varnish or other material which is to constitute the coating to be applied.

5 is a table on which the slats or strips to be coated are laid preparatory to being fed into the machine.

6 and 7 are vertical guides which are mounted on the table 5 for directing the strips in the proper manner.

8, 9, 10, and 11 are extensions from the guides 6 and 7, secured to the table 5 by bolts or other suitable means, so that the guides may

be adjusted to provide a narrower or wider guideway.

12 and 13 are the feeding-rollers, which are employed to feed the material which is to be coated.

14 is a coating-brush, having suitable soft yielding bristles which dip down into the liquid contained in the vessel 4 for applying the coating.

15 is the axle of the brush 14.

16 is a guide-roller mounted above the brush 14.

17 is a wiper-rod which extends transversely of the machine and may be brought into contact with the bristles of the brush 14, so as to wipe off any excess of liquid and regulate the coating.

18 is a finishing-brush, having suitable bristles, which is mounted on the shaft 19 and above the liquid contained in the vessel 4.

20 is a guide-roller situated above the brush 18.

21 is a wiper for the brush 18 for the purpose of wiping off the liquid which is taken up by the brush 18 from the coating previously applied. Any liquid which is wiped off by the rod 21 will fall down into the vessel and flow into the lowest portion, where it is adapted to be again applied by the brush 14.

22 is a cover which is provided, preferably hinged at 23, for the purpose of protecting the brushes and preventing the liquid from being spattered about. This cover is provided with openings immediately above each of the brushes 14 and 18, so that the strip or slat 24 may have a passage-way beneath the guide-rollers 16 and 20. These guide-rollers are preferably carried by this cover. The cover may be secured in place in any suitable manner, as by the bolts 22'. When the cover is raised, access may be had to the interior of the tank or vessel 4 and to the brushes 14 and 18.

The feed-rollers 12 and 13 are mounted in housings 25 26 and provided with adjusting-screws 27 28.

29 is a counterbalancing-spring for pressing the lower roller toward the upper roller.

Obviously the mechanism heretofore described may be driven in a variety of ways. I have, however, found that the power may be economically transmitted and the proper relative speeds of the different parts best attained by means of the gearing and connections herein shown.

30 is a main driving-pulley connected by a belt or some other means to a suitable source of power.

31 is a gear-wheel driven with the pulley 30, which engages the pinion 32. Pinion 32 transmits power to the gears 33 and 34, carried by the feed-rollers 13 and 12. The brushes are driven by this same gear 31.

35 is a large gear-wheel meshing with gear 31, which gear-wheel is on the shaft 15 of the brush 14.

36 is an intermediate gear connecting gear-wheel 35 with the gear 37 on the shaft 19.

40 is a receptacle for containing the fluid to be used. 41 is a gas-jet for warming the same.

42 is an inlet-pipe through which the tank may be conveniently filled.

43 is an outlet to drain the tank.

44 is a steam-jacket having inlet 45 and outlet 46. This means of keeping the tank and contents warm is used when necessary—for instance, when certain "stains" are being applied by the brushes.

All the parts of the construction are simple and made in such a way that there is no danger of the machine becoming disabled or inoperative for any reason consequent upon ordinary use. The machine may be operated at a high rate of speed and perform the labor of a large number of men, besides having the added advantage of producing a uniform result, which is otherwise difficult to attain.

The use of the brush 18 not only serves to produce a much smoother finished surface, but to effect a considerable saving in the liquid coating. The distance between the two brushes is such that the varnish or coating applied by the brush 14 has time enough to sink into the wood to a considerable extent before being affected by the brush 18. The amount of coating applied may be readily and nicely adjusted by means of the wipers 17 and 21, the first one affecting the amount of liquid applied by the principal brush and the second affecting the amount of liquid permitted to remain on the finishing-brush.

What I claim is—

1. In a machine of the character described in combination, a frame having a liquid-holding tank, a rotary brush dipping therein, a finishing-brush mounted above said tank, an

introductory guide with adjustable sides, and means for feeding a strip of wood or the like by said brushes.

2. In a machine of the character described in combination, a main frame having a liquid-holding tank, a brush dipping therein, a wiper for said brush, a finishing-brush mounted above the surface of the liquid in said tank, a wiper for said finishing-brush and guiding means above said brushes.

3. In a machine of the character described in combination, a holding-tank, a pair of rotary brushes mounted above the same, a hinged cover for said tank having openings above said brushes and guiding-rollers, carried by said cover for the purpose specified.

4. In a machine of the character described in combination, a main frame, a liquid-holding tank carried thereby, a rotary brush having yielding bristles dipping into said tank, a wiper member above said tank coacting with said brush, a presser-roller above said brush and means for feeding and guiding a strip of wood between said brush and presser-roller.

5. In a machine of the character described in combination, a liquid-holding tank, a rotary brush dipping into said tank, an auxiliary finishing-brush mounted above the level of the liquid contained in said tank, an introductory guide-table, means for feeding a strip to said brushes and a pivoted adjustable means for removing the coating liquid from said auxiliary brush.

6. In a machine of the character described, a tank, a cover therefor, means for feeding a strip of wood or the like, a rotating brush for removing liquid from said strip and having a surface speed such that the strip will move relatively thereto, a guide-roller carried by said cover above said brush, a wiper for removing liquid from said brush and means for rotating said brush.

7. In a slat-coating machine, the combination of a frame, a pair of feed-rollers, means for varying the space between them, a long introductory guide-table with guide-flanges in front of said rollers, a tank carried by said frame, means for applying a liquid coating to a slat, a finishing-brush mounted above the level of the liquid in said tank and means for holding said slat into uniform contact with said brush.

Signed at New York, N. Y., this 2d day of February, 1904.

DAVID GOLDSMITH.

Witnesses:

R. C. MITCHELL,
L. VREELAND.