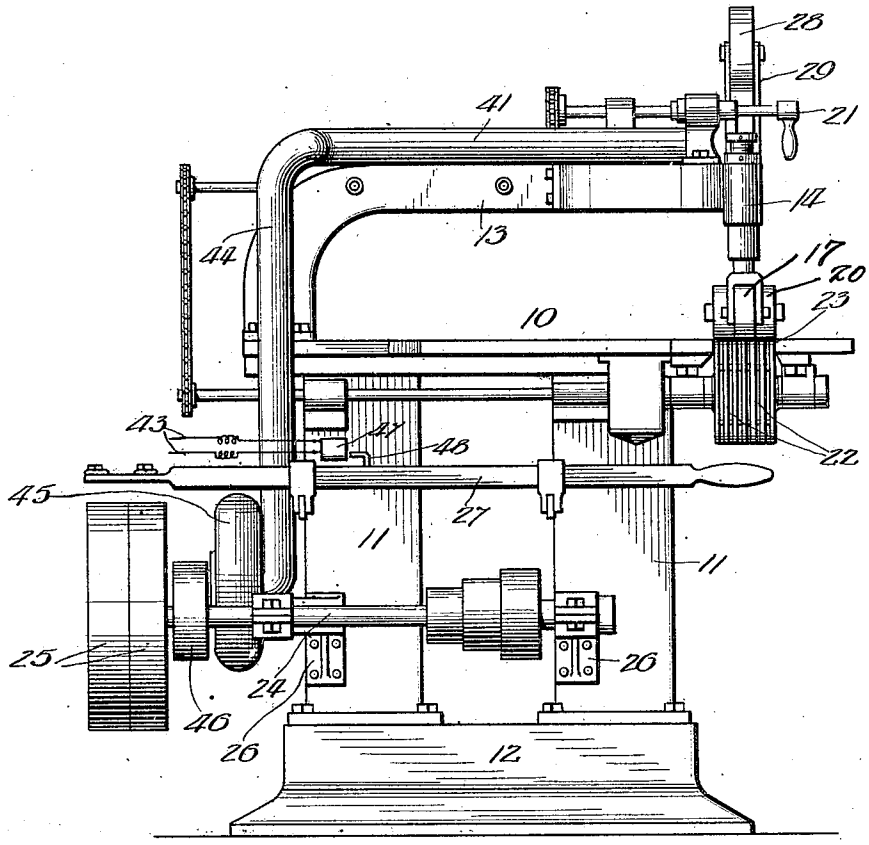
Jan. 30, 1923. 1,443,784.

J. BLACK.

VENEER TAPING MACHINE.

FILED JUNE 13, 1921. 2 SHEETS—SHEET 1.

Fig. 1



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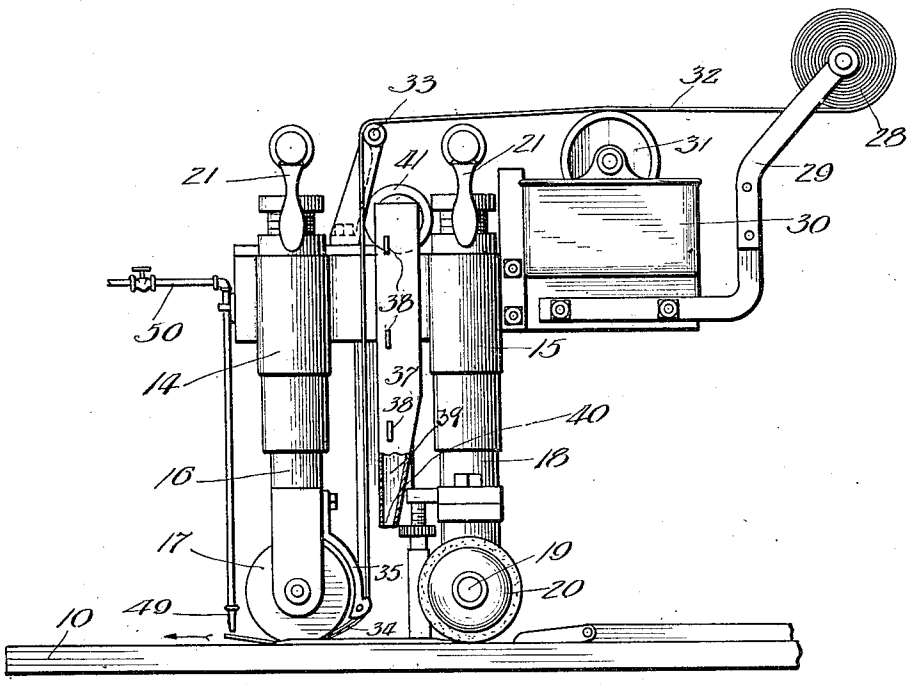
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FILED JUNE 13, 1921. 2 SHEETS—SHEET 2.

Fig. 2.



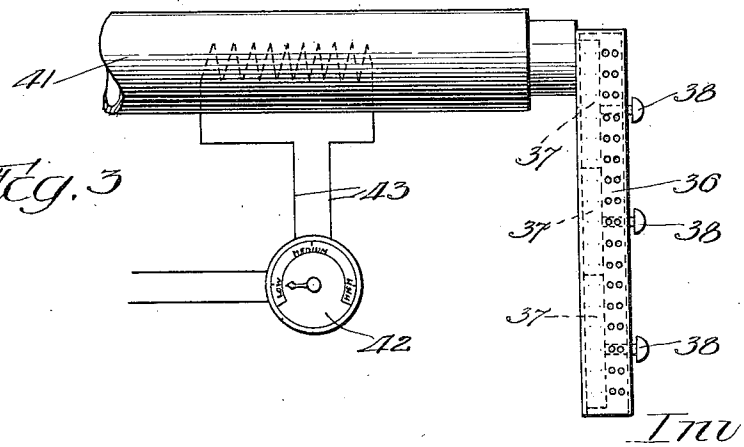


Fig. 3

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UNITED STATES PATENT OFFICE.

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VENEER-TAPING MACHINE.

Application filed June 13, 1921. Serial No. 477,191.

To all whom it may concern:

Be it known that I, JOHN BLACK, a citizen of the United States, residing at Mendota, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Veneer-Taping Machines, of which the following is a specification.

This invention relates to certain improvements intended primarily for use on veneer taping machines of the type set forth in my Patent No. 1,010,846 issued December 5, 1911, although the special features of construction which form the subject matter of this application may be applied to veneer taping machines generally.

The object of the present invention is to provide means for softening the glue. In the operation of veneer taping machines, it is customary, according to modern practice, to employ a strip of previously gummed paper tape which is fed from a roll and applied under pressure to the butt joint between the two sections of veneer, and in machines of this class it is essential that the gummed tape at the time of application to the veneer strips, shall be in proper condition to adhere firmly to the strips after the latter are fed beyond the rolls. This necessitates a proper softening of the glue on the strip during the interval of its travel from the tape roll to the pressure roller.

In the machines in general use at the present time it is customary to moisten the gummed surface and then carry it back and forth around a number of rolls in order to afford sufficient time for the softening of the glue without unduly retarding the feeding speed of the machine. This practice is objectionable since, even at the best, it involves a comparatively slow feeding speed and complications in the construction of the machine which it is deemed desirable to avoid.

I have discovered that better results may be attained by providing mechanism whereby a blast of heated air is directed against the moistened tape at a point immediately above the point of application to the veneer, which blast of air, properly distributed, serves to heat the moistened gummed tape, thereby instantly softening the glue to the degree required to ensure firm adhesion to the veneer.

The present invention is directed to the means employed for securing the above results, and also to the employment of a stream of air directed under high pressure upon the taped veneer as it leaves the pressure roller which better serves to secure adhesion and also assists in drying the moisture from the glue.

In the drawings:

Figure 1 is a side elevation of the machine as a whole;

Fig. 2 is an enlarged front elevation showing the feed and pressure rolls and the heating appliances; and

Fig. 3 is a detail of the hot blast conduit.

The machine as a whole comprises a table 10 carried upon standards 11 springing from a base plate 12. The table has bolted thereto an overhanging arm 13 which, at its outward end on each side, is provided with a forward spindle head 14 and a rear spindle head 15. The terms "forward and rear" have reference to the direction of feed of the veneer.

The forward spindle head carries a forward spindle 16 which is bifurcated at its lower end and serves to journal a center pressure roller 17, and the rear spindle head 15 carries a spindle 18 which at its lower end is provided with a cross shaft 19 upon which is mounted a pair of feed rolls 20. The forward and rear spindles are adapted to be raised and lowered by means of hand levers 21, and suitable appliances (not shown in detail) are provided for imparting spring pressure to the respective rolls. This arrangement of two rear rolls and one forward roll serves to bring the forward pressure roll immediately above the point where the joint is formed between the two veneer sections. The veneer is fed forward by means of two endless feeding chains 22, the upper surfaces of which protrude very slightly through a slot 23 in the table so that as two sections of veneer are fed to the proper point with their edges in butt contact, they will be gripped between the moving chains and feed rolls and carried forward under the pressure roller. In order to bring the edges of the veneer into firm butt contact, the two sets of feeding chains converge slightly toward the forward end which imparts the degree of compression required to effect an absolutely tight butt joint which is essential in the successful

taping of veneer sections. These general features of construction, however, are set forth in my prior patent above referred to, and it is not deemed necessary to make further reference to same.

The feeding chains are driven through suitable connections, not shown, from a shaft 24 carrying a fast and loose pulley 25, which shaft is carried by journal brackets 26 outstanding from the standards 11. A longitudinally movable belt shifter 27 is provided to throw the belt from the fast to the loose pulley or vice versa.

The special features forming the particular subject of the present invention are superadded to the foregoing structure which is old and in common use. The gummed tape is fed from a roll 28 carried by a bracket 29 outstanding from the rear of the arm 13, which bracket supports a water box 30 upon which is journaled a moistening roller 31 against which the gummed tape 32 impinges as it passes from the roller 28. The tape 32 passes over an idle roller 33 and thence vertically downwardly and under a shoe 34 supported by a bracket 35 depending from the bifurcated spindle 16. From the shoe 34 the tape proceeds under the pressure roller 37 where it is applied to the joint between the veneer sections. During this vertical passage to the pressure roller the tape with its gummed and moistened surface presented toward the rear passes in close proximity to the perforated facing 36 of a hot blast box 37 which occupies a position intermediate the spindle heads 14 and 15.

The perforations in the facing 36 are arranged in rows, and within the box are arranged a series of three slide dampers 37 each of which is controlled by means of a handle 38 protruding from the side of the hot blast box, which handles can be adjusted in or out to regulate the position of the associated part with respect to the perforations so that by proper adjustment of the several dampers the amount of air projected through the perforations can be regulated and its point of application to the moving tape adjusted as may be required.

The hot blast box converges at its lower end 39 and terminates in a bottom opening 40, as shown in Fig. 2. The hot blast box is secured to the forward end of a heating shell 41 whereon are located resistance coils conventionally indicated in Fig. 3. It is preferred to have at least three of these coils which can be regulated by means of a switch 42, whereby a greater or less amount of resistance can be thrown into the circuit 43 in order to regulate the heat to the desired degree.

The heating chamber 41 is preferably supported upon the top of the arm 13 and communicates at its rear end with a blower pipe 44 which leads downwardly to a blower 45 driven from a pulley 46 on the main shaft 24, and in order to automatically cut off the electric current when the machine is not in service, the circuit for supplying the resistance coil is led through a switch 47, the moving element 48 of which is mounted upon the belt shifter 27, so that as the latter is moved the switch element 48 will be moved into or out of contact with the switch 47, thereby closing or opening the circuit, as the case may be.

In front of the pressure roller—that is, to the left, as indicated in Fig. 2—is located a compressed air nozzle 49 which receives a supply of compressed air through a pipe 50 and directs the same under heavy compression against the tape at its point of emergence from under the pressure roller, and this blast of air serves to hold firmly the tape and also assists in drying out the moisture to secure a firm adhesion of the glue. This feature may be employed or dispensed with as desired, since its inclusion is not essential to the employment of the hot blast feature previously described.

In operation, the veneer sections will be fed by the user to the slightly converging endless feed chains upon which they will be carried forward with their edges in firm contact under the feed rollers, and thence under the pressure roller at which point the tape with its gummed surface downward will be applied to the joint. The tape in its progress from the roll will be moistened by contact with the moistening roller and in this moistened condition will pass in close proximity to the blast of hot air projected from the hot air box. The force of impingement of the heated air serves to quickly heat the moistened glue which causes the moisture to instantly permeate the glue and reduce it to the sticky conditions required at the time of its application to the veneer, and the use of this method avoids the necessity of using a series of relaying rollers to feed the tape back and forth after moistening for a sufficient period of time to permit softening of the glue prior to the taping operation.

The effect of swiftly moving currents of air impinging upon the moistening tape is much more instantaneous and effective than the application of heat which is merely radiated from a heated surface since the force of impingement appears to be requisite to the securing of the best results.

I claim:

1. In a veneer taping machine, the combination of means for feeding the sections of veneer forward in edgewise relation, means for applying a strip of gummed tape to the joint between the veneer sections, means for moistening the gummed surface of the tape, and means for applying a blast of heated air to the gummed surface

of the tape intermediate the point of moistening and the point of application to the veneer sections, substantially as described.

2. In a veneer taping machine, the combination of means for feeding the sections of veneer forward in edgewise relation, means for applying a strip of gummed tape to the joint between the veneer sections, means for moistening the gummed surfaces of the tape, means for applying a blast of heated air to the gummed surface of the tape intermediate the point of moistening and the point of application to the veneer sections, and an air nozzle for directing a blast of air under pressure against the tape after application to the veneer sections, substantially as described.

3. In a veneer taping machine, the combination of means for feeding forward two sections of veneer in edgewise relation, a pressure roller for applying pressure above the joint, means for supporting a roll of gummed tape, means for feeding said tape from said supporting roll to the point of application to the veneer sections, means for moistening the gummed surface of the tape, and means for directing a blast of heated air against said surface after moistening in quantity and temperature adequate to soften the gum on the tape prior to its application to the veneer sections, substantially as described.

4. In a veneer taping machine, the combination of means for feeding forward two sections of veneer in edgewise relation, a pressure roller for applying pressure above the joint, means for supporting a roll of gummed tape, means for feeding said tape from said supporting roll to the point of application to the veneer sections, means for moistening the gummed surface of the tape, a hot blast box provided with a perporated wall closely contiguous to the line of travel of the moistened tape, a heating chamber provided with heat supplying means, and a fan for directing a blast of air through the heating chamber and out of the hot blast box, substantially as described.

5. In a veneer taping machine, the combination of means for feeding two sections of veneer in edgewise relation, a pressure roller for applying pressure to the joint between the sections, means for supporting a roll of gummed tape, moistening means for applying moisture to the gummed surface of the tape, means for directing the travel of the tape from the moistening means to the pressure roller, a hot blast box provided with a perforated wall for directing a blast of heated air against the moistened gummed surface, means for supplying heated air to the hot blast box, and means for regulating the discharge of the heated air through the perforations, substantially as described.

JOHN BLACK.