C. F. LEATHERBEE.

WOOD TREATING MACHINE.

APPLICATION FILED AUG. 17, 1909.

1,183,887.

Patented May 23, 1916.

2 SHEETS—SHEET 1.

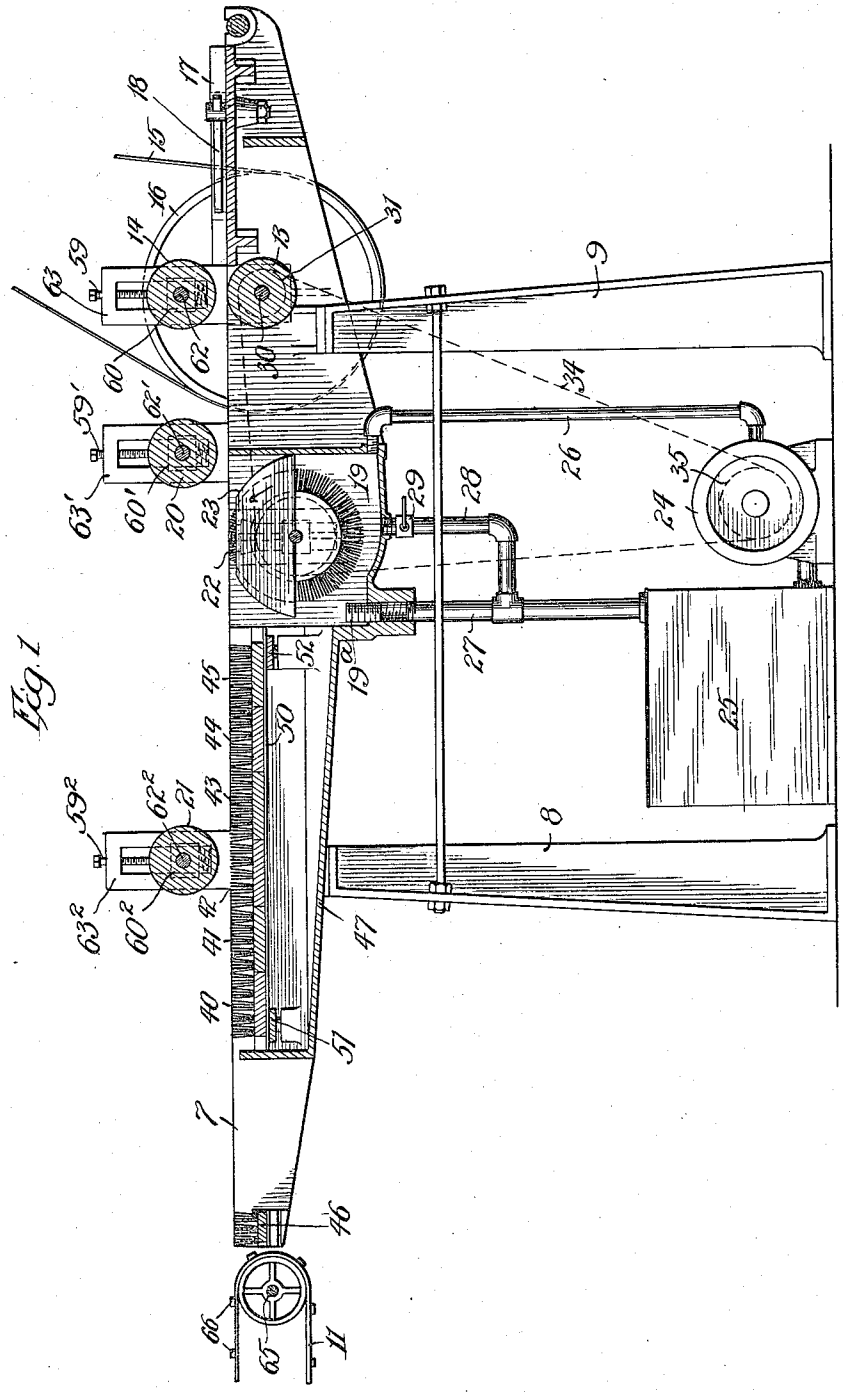


Fig. 1

WITNESSES

Geo. C. Davison

Maurice Goldberger

INVENTOR

Clifton F. Leatherbee

By attorneys

Dynnestvedt & Carpenter

C. F. LEATHERBEE.

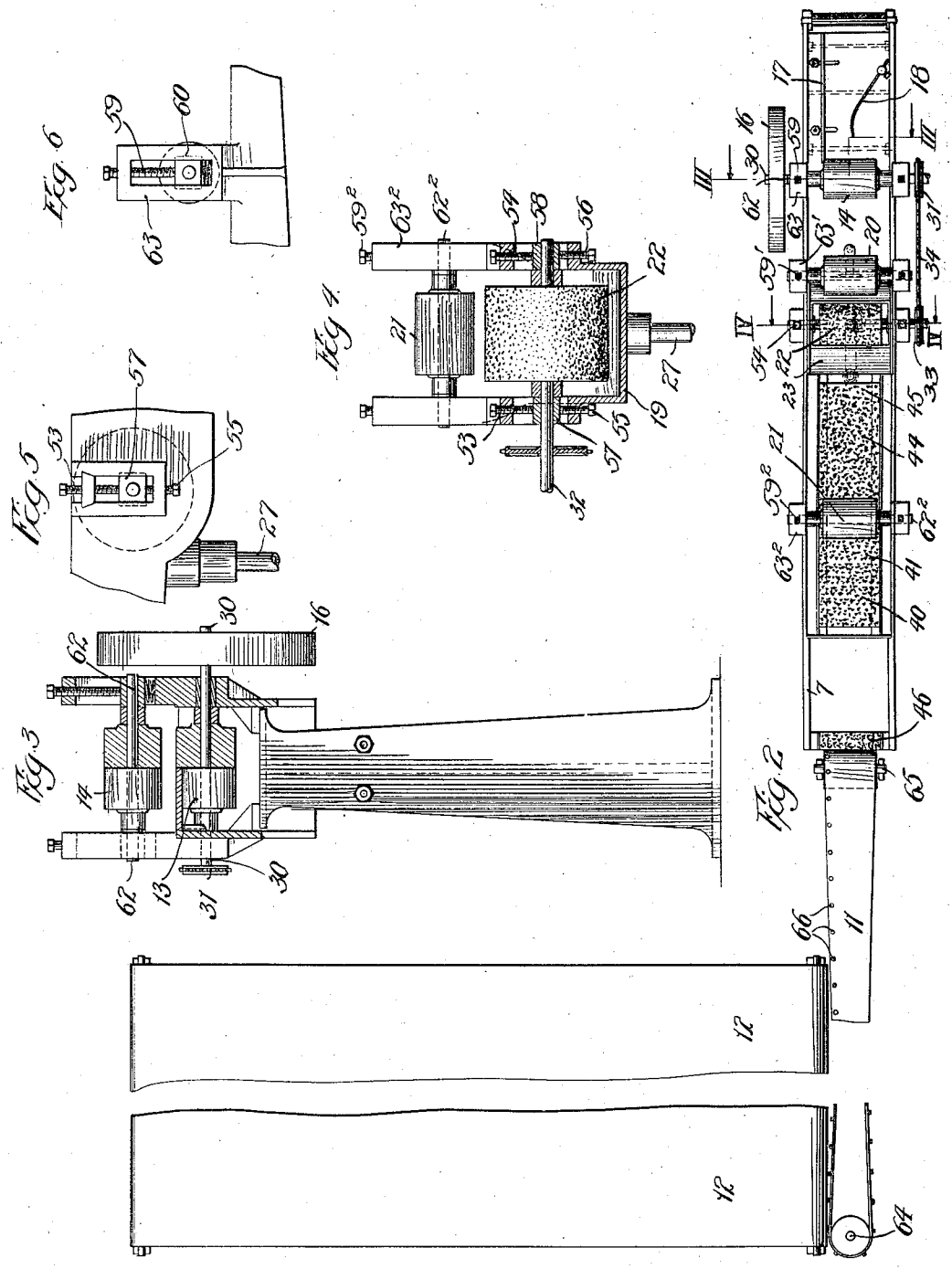
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WITNESSES

Fred C. Davison.

Maurice Goldberg.

INVENTOR

Clifton F. Leatherbee

by Attorneys

Synnestvedt & Carpenter

UNITED STATES PATENT OFFICE.

CLIFTON F. LEATHERBEE, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO PAINTING MACHINE COMPANY, OF KITTERY, MAINE, A CORPORATION OF MAINE.

WOOD-TREATING MACHINE.

1,183,887. Specification of Letters Patent. Patented May 23, 1916.

Application filed August 17, 1909. Serial No. 513,240.

To all whom it may concern:

Be it known that I, CLIFTON F. LEATHERBEE, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Wood-Treating Machines, of which the following is a specification.

My invention relates to machines for applying liquids or fluids to the surfaces of materials, and particularly to the provision of an improved type of apparatus which is adapted to paint, stain, varnish, fireproof, creosote, weatherproof and otherwise treat materials or generally subject to the action of liquids, flooring molding, cross arms and other lengths of wood or strips of moving material and for polishing and finishing the same, coating them with insulation, etc.

The principal objects of my invention are the provision of a machine of the class described which is adapted to apply the liquid rapidly, easily and economically, and to apply it with facility and thoroughly to all the surfaces of material of irregular contour, especially such strips as picture molding, wainscoting, wall rails, conduit molding adapted to carry electrical wires, and the like; to provide means whereby the material may be kept at a constant level in the machine; to provide means whereby the excess material may be removed from the machine to the supply tank and reused in order to avoid wastage, together with additional objects which will be hereinafter disclosed.

To attain the foregoing objects as well as to gain certain further benefits and advantages, I have provided a construction illustrated in preferred form in the accompanying drawings, wherein—

Figure 1 is a side elevation, partly in section, of a machine embodying my improvements; Fig. 2 is a plan view of the machine illustrated in Fig. 1; Fig. 3 is a section taken on the line III—III of Fig. 2; Fig. 4 is a view partly in section taken on the line IV—IV of Fig. 2; and Figs. 5 and 6 are enlarged views of certain details of construction of the adjustable mountings of the revolving brush and rolls respectively.

Referring now more particularly to Figs. 1 and 2 it will be seen that in carrying out my invention I provide a casing or box like structure 7, which may be mounted adjacent the end of a planer or machine for forming flooring, molding and like articles, upon suitable supports 8 and 9, all of the parts of the wood treating mechanism being carried in or upon the casing 7 which is preferably provided with a cover extending throughout its entire length to prevent the entrance of dust, chips and other foreign matter therein and to prevent any splashing or throwing of liquid therefrom. At the delivery end of the machine I provide a belt conveyer 11 longitudinally disposed with relation thereto for receiving the treated articles delivered therefrom, and at the end of the said receiving conveyer, a conveyer 12 disposed transversely thereto for carrying away such articles.

To the end that the delay and additional expense ensuant upon rehandling of the material to be treated may be saved, and further to effect a direct feed of such material through the machine and thereby avoid lateral displacement thereof, such material may be fed by the live rolls of the planer or forming machine, but it is evident that if it be expedient to use a machine embodying my improvements in other locations, the material to be treated may be fed through my machine by means of the live roll 13 (to which is opposed an idler roll 14), actuated by a belt 15 driving a pulley 16 at the receiving end of the machine, a stationary guide block 17 and a spring guide member 18 coöperating therewith, being located adjacent the rolls 13 and 14 for the purpose of properly alining the fed material.

As the material passes the rolls 13 and 14 it is successively engaged by the idler rolls 20 and 21, adapted to hold it in contact with the brush devices now to be described.

On viewing Figs. 1, 2 and 5, it will be observed that I provide in the casing, 7, a liquid container 19 wherein I mount rotatably a brush 22, adapted to take up liquid from the container and to act upon the lower surface of the material passing through the machine, and provide the said brush with a shield 23 open at the top, to prevent throwing of the liquid taken up by such brush.

For supplying the container 19 with liquid, a pump 24 is provided for lifting the liquid from the supply tank 25 by the pipe 26 leading therefrom to the container, the said container being provided with a variable overflow device comprising a pipe 27 with a bushing 19^a whereby the level of the

liquid relatively to the brush may be maintained as the brush wears, or varied as circumstances may require, and with a drain pipe 28 leading into said over-flow pipe, the drain pipe being normally closed by a pet cock 29. It will be apparent however that various other devices for feeding the liquid might be used, depending upon the character of the fluid and of the material treated.

For driving the brush 22 and the pump 24 in unison with the roll 13, I provide the shaft 30, upon which the live roll 13 is mounted, with a sprocket 31, the shaft 32, upon which the rotating brush 22 is mounted, with a sprocket 33, and the pump 24 with a sprocket 35, a chain 34 engaging all three of said sprockets and driving the three devices simultaneously.

It is to be observed that in order to insure a thorough rubbing of the liquid into the surface of the material, and an incorporation of such liquid with such material, the brush 22 should be revolved at a speed different from that of the material, and the amount of this difference may be regulated as desired by the use of sprockets of varying sizes.

For a further rubbing in of the supplied liquid I provide a series of brushes, 40, 41, 42, 43, 44, 45 adapted to act upon the treated surface as it comes from the applying brush 22. These brushes are preferably made removable, and this brush device is made sectional as here shown, to the end that they may be renewed when worn, and only such part as may be worn renewed, and the plate 50 upon which said brushes are mounted is vertically adjustable by means of the screws 51 and 52 to accommodate different contours of material and compensate for wear of the brushes. That part of the casing below the brush device here described, is formed with its bottom 47 sloping toward the container 19, to the end that any liquid removed from the material may drain back to the tank 25 and be reused.

At the delivery end of the machine, I mount a third brush device 46 for the purpose of removing any small amount of liquid that may remain on the treated material after the previous treatment, in order that the conveyer 11 may not become soiled thereby.

On reference to Figs. 1, 4 and 5 it will be noted that the revolving brush 22, through which the liquid is supplied to the moving material, is vertically adjustable by means of the screws 53, 55, 55, 56 engaging the blocks 57 and 58 in which the shaft 32 carrying said brush is journaled, and on viewing Figs. 1, 3 and 6 it will be observed that the rolls 14, 20 and 21 are likewise vertically adjustable in the guides 63, 63′, 62^2 to accommodate material of different thicknesses and contours, by means of screws 59, 59′ and 59^2 engaging blocks 60, 60′, 60^2 in which the shafts 62, 62′ and 62^2, carrying said rolls, are journaled.

From Figs. 1 and 2 it will be seen that the axis of the pulley 64, which supports one end of the conveyer belt 11 is disposed at an angle with respect to the pulley 65 which supports the opposite end of said belt, and that one edge of the said belt 11 is provided with a series of outstanding pins or blocks 66, the purpose of this construction being that as the treated material comes from the machine it may be held on the conveyer belt 11 until by virtue of the angular disposition of said pulleys and the consequent twisting of said belt, the material is permitted to fall from the belt 11 on to the conveyer 12 arranged at a right angle with respect thereto.

It is to be noted that the belt 11 should be of sufficient length to accommodate the commercial lengths of flooring and other material treated, and that the belt 12 may be of such length as is required to convey the treated material to the drying or storage rooms.

It is believed that in view of the foregoing description, the mode of operation of a machine embodying my improvements will be clear to those who are skilled in the art without further explanation.

Having thus described my invention and illustrated its use what I claim as new and desire to secure by Letters Patent is the following:—

1. In a machine for treating material, in combination, means adapted to receive moving material, a container, a rotary brush in said container for applying liquid from said container directly to the moving material and movable in the same direction as material moved by said moving means, a shield for said brush located in said container and means for moving said brush at a rate of speed slower than said material.

2. In a machine for treating moving material, in combination, means adapted for receiving moving material, a container for liquid, liquid supplying means therefor, a rotary brush in said container, having that part of its periphery which contacts with the moving material moving in the same direction as said material, feeding rolls, pressure rolls upon opposite sides of said brush and rubbing means with which one of said pressure rolls coacts after the material passes the liquid applying brush.

3. In a machine for treating material, in combination, means adapted for receiving moving material, a container for liquid, liquid supplying means therefor, a rotary brush in said container, feeding rolls, pressure rolls upon opposite sides of said brush and rubbing means with which one of said pressure rolls coacts after the material passes the liquid applying brush, said rubbing

means having a continuous surface but being in independent sections.

4. In a machine for treating material, in combination, a casing upon which all of the parts of the material treating mechanism are carried, feeding rolls, pressure rolls, a rotary liquid applying device, rubbing means, a liquid supplying pump, driving shaft, means connecting said driving shaft, pump, and rotary applying means for driving them all simultaneously and means for giving to said rotary liquid applying means a speed slower than that of the material being fed, but giving that part of its periphery which is in contact with the moving material the same direction of movement as that of said material.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

CLIFTON F. LEATHERBEE.

Witnesses:

GIDEON M. MANSFIELD,

G. H. BRUNDAGE.