

(No Model.)

3 Sheets—Sheet 1.

F. J. MURPHY.
MACHINE FOR STIFFENING HAT BRIMS.

No. 519,194.

Patented May 1, 1894.

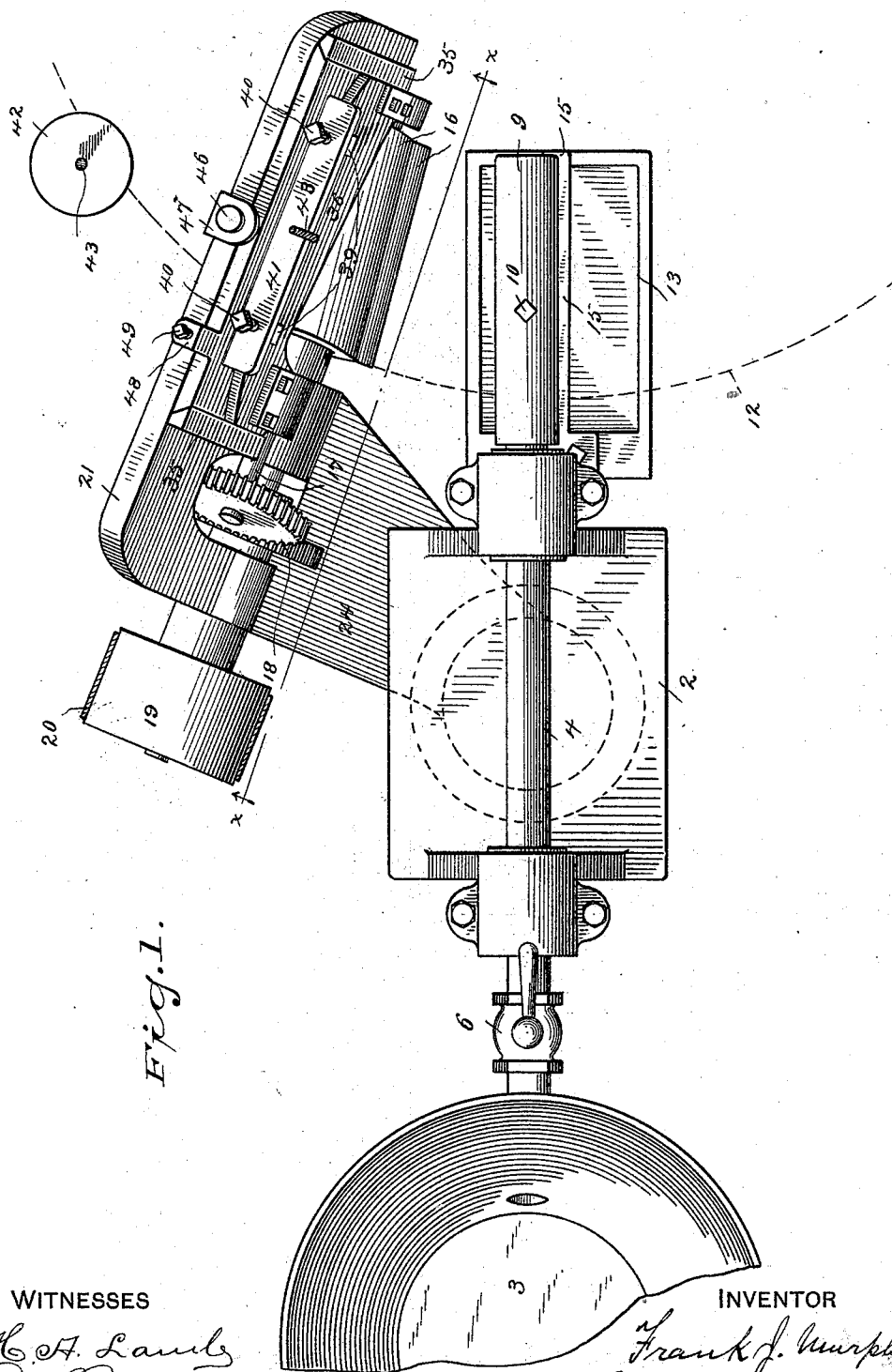


Fig. 1.

WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

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Fig. 3.

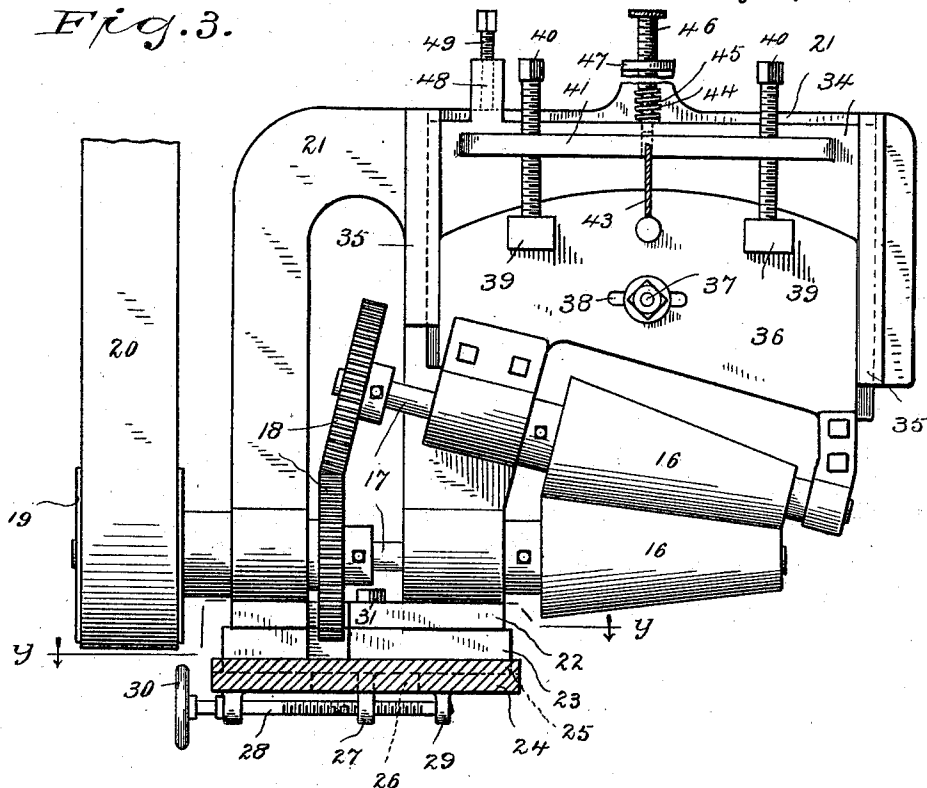


Fig. 4.

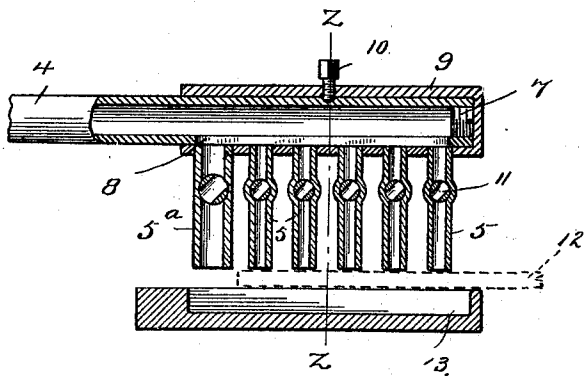
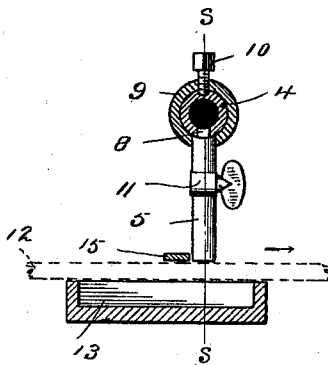


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK J. MURPHY, OF DANBURY, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO ANTHONY M. RUNDLE, OF SAME PLACE.

MACHINE FOR STIFFENING HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 519,194, dated May 1, 1894.

Application filed September 29, 1893. Serial No. 486,779. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. MURPHY, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Stiffening Hat-Brims; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the class of machines illustrated and described in Letters Patent to Murphy and Rundle, No. 361,073, dated April 12, 1887, and has for its object to simplify and improve the construction and mode of operation of the machine, a special feature of my improved construction being that it insures that both sides of the brim shall be stiffened simultaneously and uniformly.

With these ends in view I have devised the novel machine which I will now describe referring by numbers to the accompanying drawings forming part of this specification, in which—

Figure 1 is a plan view of my improved machine; Fig. 2 a side elevation thereof; Fig. 3 a section on the line *xx* in Fig. 1; Fig. 4 a section on the line *ss* in Fig. 5; Fig. 5 a section on the line *zz* in Fig. 4; Fig. 6 a section on the line *yy* in Fig. 3, and Fig. 7 is a section on the line *mm* in Fig. 6, all of said views being on a uniform scale.

1 denotes the standard and 2 a casting resting thereon.

3 denotes a tank for the stiffening material and 4 a tube leading therefrom, through which the stiffening material is supplied to the distributing tubes 5. These parts are all supported by the standard and casting 2.

6 is a shut off cock by which the supply of stiffening material can be cut off from the tubes. The opposite end of tube 4 from the tank is closed by a screw plug 7 and is provided on its under side with a slot 8. A sleeve 9 closed at its outer end is placed over the end of tube 4 to which it is locked by a set screw 10. The distributing tubes 5 are tapped or soldered into sleeve 9 and register with the slot so as to receive stiffening ma-

terial from tube 4. Each of the distributing tubes is provided with a cock 11 by which the amount of stiffening material permitted to pass to the hat brim may be regulated.

12, see dotted lines, denotes a hat brim which is being stiffened. The brim while it is being operated upon passes over a trough 13 which is itself supported by a bracket 14 extending from the standard. In order to supply a sufficient quantity of stiffening material to the trough to insure that the under side of the brim will be stiffened I provide a larger tube denoted specifically by 5^a which in use lies beyond the edge of the hat brim. The cock in this tube is used to regulate the supply of stiffening material that passes to the trough, the trough being kept just full enough in use so that the under side of the hat brim will absorb stiffening material at the same time that it is being deposited on the upper side of the brim by the distributing tubes.

15 is a guard over the trough under which the brim passes. The lower side of this guard is just even with the lower ends of the distributing tubes. The guard holds the edge of the brim perfectly straight so that it takes the stiffening material evenly from the tubes.

In use the brims of the hats to be stiffened are placed between two cone shaped rollers 16 by which they are drawn forward over the trough and under the distributing tubes. The shafts 17 of these rollers are provided with gear wheels 18 which mesh with each other, one of said shafts carrying a belt pulley 19 by which power is received from a belt 20 passing over a suitable main or counter shaft, not shown. The cone shaped rollers are both carried by a plate 21 provided with a base 22 which is pivoted to a plate 23 itself adjustable transversely on a plate 24 which is rigidly secured to the standard. The transverse adjustment of plates 21 and 23 is effected by means of a dove tail 25 on plate 23 which engages a corresponding groove in plate 24.

26 is a slot in plate 24 through which a lug 27 extending downward from the dove-tail passes. A screw 28 which is held against endwise movement in ears 29 extending downward from plate 24, passes through lug 27

and is provided with a hand wheel 30 for convenience in operation. It will be seen that rotation of this screw through engagement therewith of lug 27 will cause plates 23 and 21 to move transversely of plate 24, this adjustment being frequently necessary in changing from one width of hat brim to another. In changing from large to small sized hats, and vice-versa, it is sometimes desirable to swing the outer or smaller ends of the cone shaped rollers inward toward the distributing tubes. This I accomplish by swinging the base 22 of plate 21 on the pivot 31 by which it is secured to plate 23. The base and parts carried thereby are locked in position after adjustment by a screw 32 which passes through a curved slot 33 in the base and engages plate 23, see Figs. 6 and 7. In practice the upper cone shaped roller is carried by a plate 36 which is adjustably secured to a slide 34 which moves in ways 35 in plate 21. This is in order to permit the upper roller to be lifted relatively to the lower roller so as to permit the convenient insertion of a hat brim in use, and also to permit the angle of the upper roller relative to the lower roller to be changed should this adjustment be desirable at any time in order to change the feed or to cause more or less stiffening material to enter the outer edge of the brim. Plate 36 is secured to slide 34 by means of a bolt 37 which passes through a slot 38 in plate 36 and engages the slide. Plate 36 is also provided with stumps 39 which are engaged by screws 40 carried by a ledge 41 on the slide. To change the angle of the upper roller relatively to the lower roller it is therefore simply necessary to loosen bolt 37 and then to turn down one of screws 40 and turn back the other. After the plate and roller have been adjusted by means of screws 40 they are additionally locked in place by tightening up bolt 37 again. For the convenience of the operator in raising the slide and upper roller in inserting or removing a hat brim I have counterbalanced the slide by means of a weight 42. A rope 43 extends from the slide, upward over a pulley suitably located overhead, but not shown in the drawings, and is attached to the weight. When it is desired to insert or remove a hat the operator pulls down upon rope 43 which raises the slide and upper roller and permits him to insert or remove a hat without difficulty. In order to insure that the slide and upper roller will return to the operative position the instant the operator lets go of the rope and will remain in that position under all circumstances except when the operator pulls down upon the rope, I provide a spring 44 which bears upon the upper edge of the slide and acts to force it downward. This spring surrounds a rod 45 which is made integral with a screw 46 which engages a lip 47 extending upward and inward from plate 21. The spring is held in place by the rod which extends downward into a recess in the edge of the slide. The

tension of the spring is regulated by turning the screw. In order to avoid the possibility of slide 34 moving downward too far so that the upper roller will come violently in contact with the lower roller I provide an arm 48 which extends upward from the slide the upper end of said arm being bent at an angle and carrying a set screw 49, the lower end of which comes in contact with the top of plate 21 thereby checking the downward movement of the slide.

Having thus described my invention, I claim—

1. The combination with a trough 13 by which the brims are supported, of a tube for stiffening material closed at its outer end, and distributing tubes connected therewith by which stiffening material is deposited upon the brims one of said tubes serving to convey stiffening material to the trough so that both sides of the brims are stiffened simultaneously.

2. The combination with a trough over which the brims pass, of a tube for stiffening material, distributing tubes 5 connected with said tube by which stiffening material is placed upon the upper side of the brim, a tube 5^a by which stiffening material is conveyed to the trough to stiffen the under side of the brim, and cocks 11 in said tubes by which the supply of stiffening material passing to the upper side of the brim and to the trough may be regulated.

3. The combination with the trough, tube 4 and the distributing tubes, of a guard 15 over the trough under which the brim passes the lower side of said guard being even with the lower ends of the distributing tubes so that the brim is held straight while taking stiffening material from the distributing tubes.

4. The combination with trough 13, tube 4 and the distributing tubes, of rollers 16 by which hat brims are drawn forward over the trough and under the distributing tubes.

5. The combination with rollers 16 and plate 21 by which they are carried and which is provided with a base 22, of a plate 23 to which the base is pivoted and which is provided with a dove tail 25 and a lug 27, a plate 24 having a groove to receive the dove tail, a slot 26 through which the lug extends and ears 29, and a screw 28 held in said ears and engaging lug 27 whereby plate 23 and the parts carried thereby may be moved transversely on plate 24.

6. The combination with suitable means for distributing the stiffening material rollers 16, and plate 21 provided with a base 22 having a curved slot, of a plate 23 to which the base is pivoted and to which it is locked by a screw passing through the curved slot so that the inner ends of the rollers may be adjusted relatively to the means for distributing the stiffening material said plate having on its under side a dove tail and lug, a plate 24 having a transverse groove to receive the dove tail, and a screw 28 engaging the lug by which the rollers are adjustable transversely.

7. The combination with plate 21 having a lip 47 and ways 35, and the lower roller carried by said plate, of a slide 34 adapted to move in said ways and carrying the upper roller, a weight 42 connected to the slide by a rope, a spring 44 bearing upon the upper edge of the slide, a screw 46 engaging lip 47 and bearing upon the spring, and a rod 45 made integral with the screw which passes within the spring and retains it in operative position.

8. The combination with plate 21 having ways 35 and the lower roller carried by said plate, of a slide 34 which moves in said ways and is provided with an arm 48 and carries the upper roller, a weight 42 connected to the slide by a rope by which the slide and parts carried thereby are counterbalanced, a spring acting to hold the slide and upper roller in operative position, and a set screw 49 in arm 48 which engages the top of plate 21 to limit the downward movement of the slide and upper roller.

9. The combination with rollers 16 and plate 21, of slide 34 having ledge 41, a plate 36 by

which the upper roller is carried and which is pivoted to the slide and is provided with stumps 39, and set screws 40 engaging the ledge and bearing upon the stumps whereby the upper roller may be placed at any desired angle relatively to the lower roller.

10. The combination with rollers 16 and plate 21, of slide 34 having a ledge 41, a plate 36 by which the upper roller is carried and which is pivoted to the slide and is provided with stumps 39 and a slot 38, a bolt 37 passing through said slot by which plate 36 is pivotally secured to the slide, and set screws 40 engaging the ledge and bearing upon the stumps whereby the upper roller may be held in any desired angle relatively to the lower roller in which position it is locked by bolt 37.

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

FRANK J. MURPHY.

Witnesses:

LEVI K. MANSFIELD,
ANTHONY M. RUNDLE.