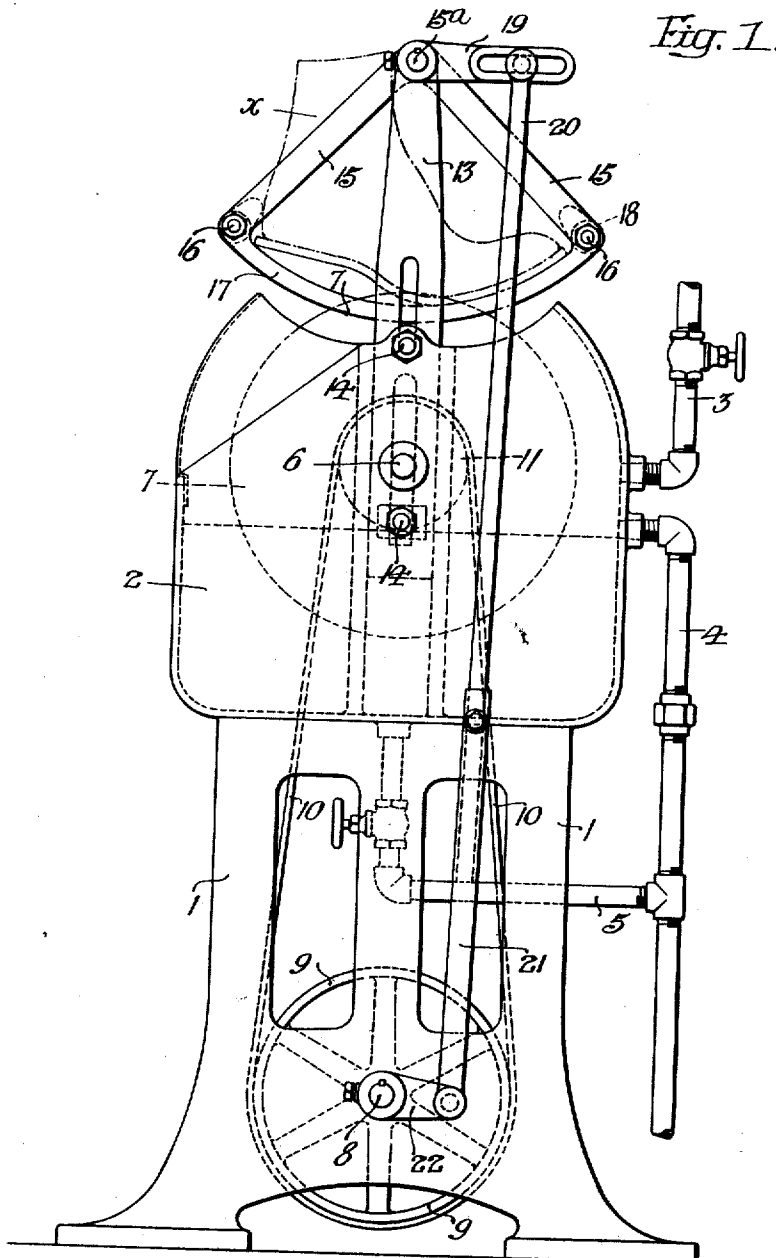


W. B. KEIGHLEY.
SOLE TEMPERING MACHINE.
APPLICATION FILED DEC. 1, 1910.

1,017,556.

Patented Feb. 13, 1912.

4 SHEETS—SHEET 1.



Witnesses—
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Walter E. Linn

Inventor—
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by His Attorneys—
Howard Brown
Charles H. Howard

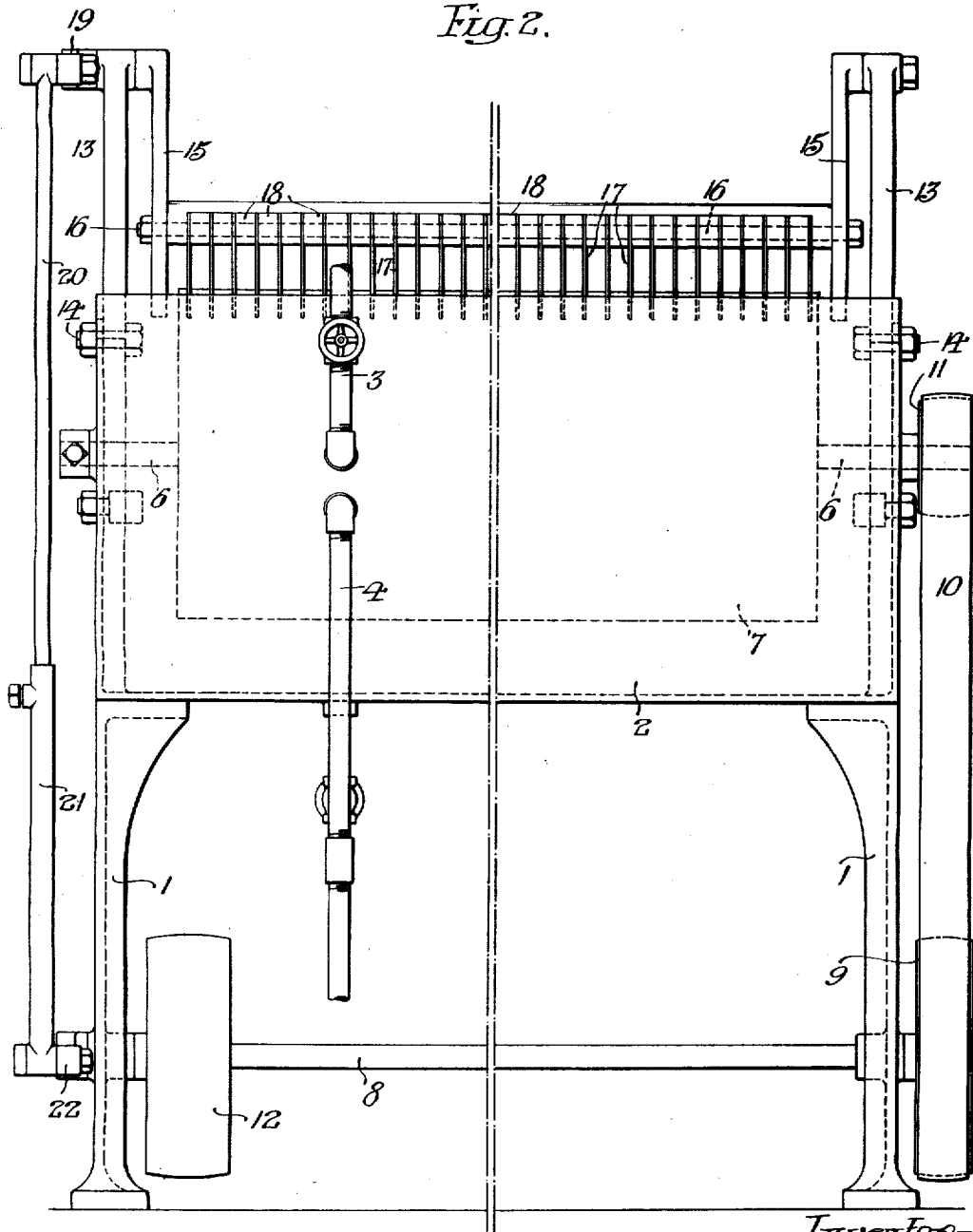
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4 SHEETS—SHEET 2.

Fig. 2.



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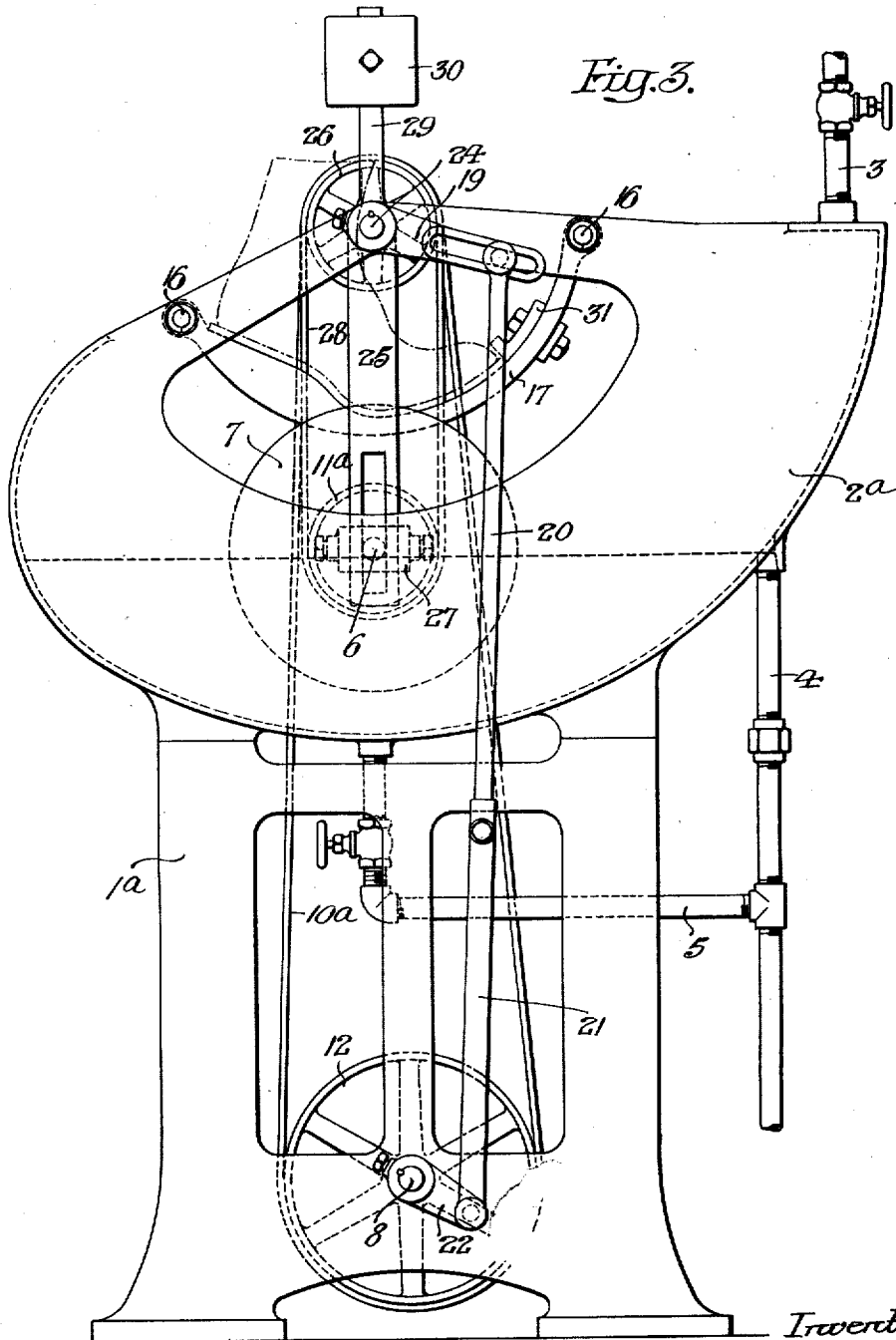
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4 SHEETS—SHEET 3.



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Willa A. Burrows
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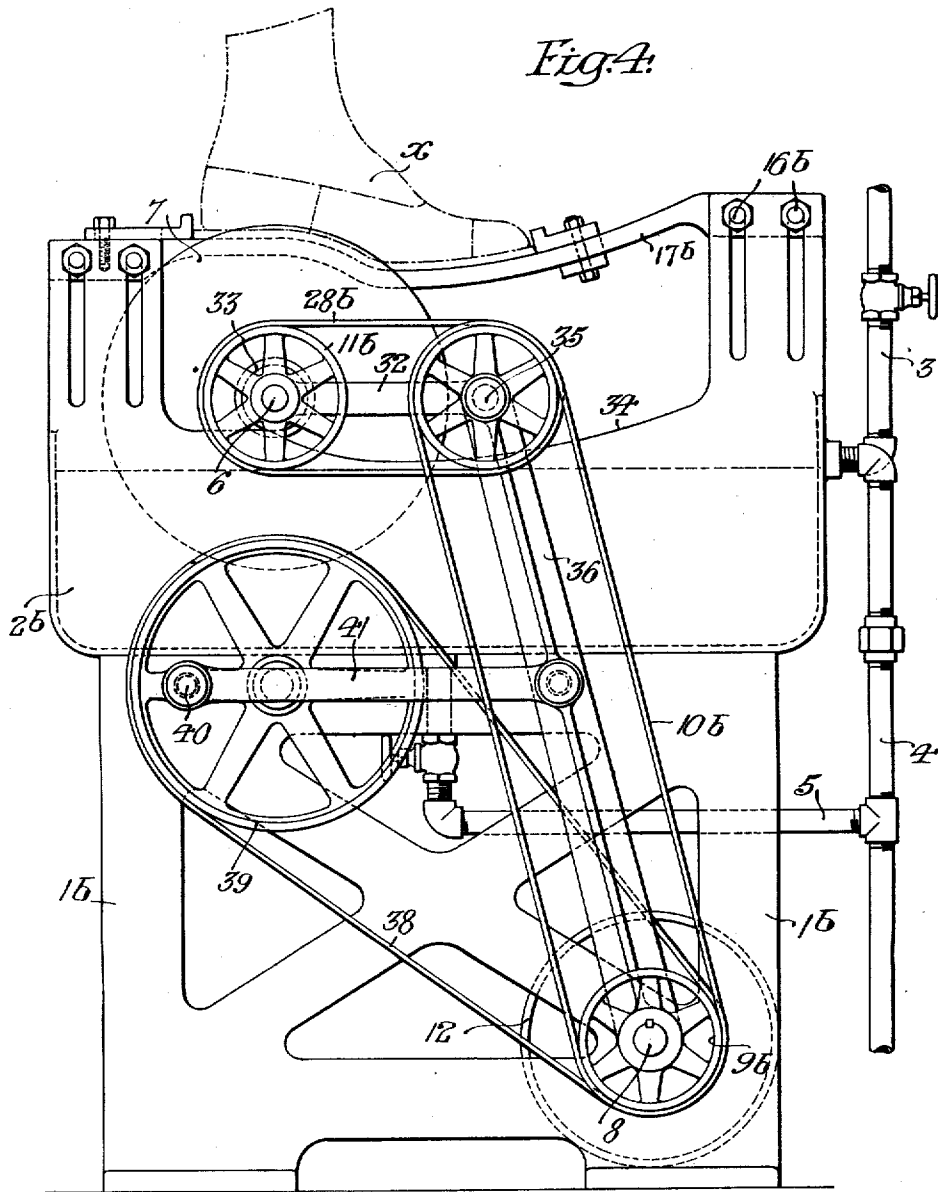
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

WILLIAM BOTTOMLEY KEIGHLEY, OF VINELAND, NEW JERSEY, ASSIGNOR TO THE KEIGHLEY COMPANY, OF VINELAND, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-TEMPERING MACHINE.

1,017,556.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed December 1, 1910. Serial No. 595,123.

To all whom it may concern:

Be it known that I, WILLIAM B. KEIGHLEY, a citizen of the United States, and a resident of Vineland, Cumberland county, New Jersey, have invented certain Improvements in Sole-Tempering Machines, of which the following is a specification.

One object of this invention is to provide a machine capable of applying water to the soles of shoes during their manufacture; the construction being relatively simple, inexpensive to make and operate, and capable of efficiently performing the work for which it was designed.

Another object of the invention is to provide a sole moistening or tempering machine capable of applying liquid simultaneously to the soles of a number of shoes without causing said liquid to be applied to any other portions thereof, and in which it shall be possible to adjust certain parts to compensate for the wear of the brushes employed.

I also desire to provide a sole wetting machine in which a revolving brush is employed to supply the liquid; the arrangement being such that said brush and a structure holding a number of shoes shall be moved relatively to each other to cause the water or other tempering agent to be supplied in the desired manner over the full extent of the soles thereof.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which;—

Figure 1, is an end elevation of a shoe sole tempering machine constructed according to my invention; Fig. 2, is a side elevation of the machine shown in Fig. 1, and Figs. 3 and 4 are respectively end elevations of two modified forms of the invention in which the brush is moved relatively to the main portions of the machine instead of the shoe supporting structure as in Figs. 1 and 2.

In Figs. 1 and 2 of the above drawings, 1 are supporting standards carrying a suitably formed tank or liquid container 2 provided with a liquid inlet pipe 3, and an overflow pipe 4 whereby the liquid level in said tank may be maintained substantially constant. In addition there is a pipe 5 connected to the bottom of the tank for completely draining it when it is desired. In

this form of my invention the ends of the tank 2 are provided with bearings for a shaft 6 on which is mounted a cylindrical brush 7 whose lower portion extends into the liquid in the tank and which is driven from a main shaft 8 through a pulley 9, a belt 10 and a pulley 11 on the shaft 6; power being applied to the shaft 8 through a pulley 12 thereon.

At each end of the tank 2 I provide vertically extending standards or bars 13 adjustable in vertical guides formed in the inner faces of said ends. These standards are slotted for the passage of the shaft 6 so as to be vertically movable in their guides and may be held in any adjusted position by suitable clamping bolts 14. Their upper ends carry short spindles each having fixed to it a downwardly extending segmental frame 15. These frames are rigidly connected to form a unitary structure, by means of elongated bolts or rods 16 and these two rods serve to support a series of narrow edgewise-set strips 17, spaced apart by suitable washers 18 so as to lie parallel with each other between the two frames 15. These various strips 17 are curved concentrically with the line of the pivot spindles or bolts whereby the frames 15 are supported on the standards 13, and these latter are so adjusted as to height that the brush 7 extends between said strips 17 and engages the soles of shoes X which may be mounted thereon in the positions shown in Fig. 1.

One of the spindles 15^a at the upper end of the standard 13 has fixed to it a slotted arm 19 connected by a link 20—21 to a crank arm 22 on the shaft 8; the proportioning and adjustment of parts being such that as said shaft is turned, the spindle 15^a and with it the shoe supporting structure formed by the frames 15, the rods 16 and the strips 17, are oscillated over the brush 7. The height of this shoe supporting structure is adjusted by moving the standards 13 up or down in order to bring the strips 17 into the proper relation with the brush 7 and the two parts 20 and 21 of the operating link are thereafter relatively adjusted to suit this position;—a greater or less angle of oscillation of this shoe supporting structure being obtainable by shifting the point of attachment of the link to the arm 19.

Under operating conditions the tank 2 is supplied with water or other suitable

liquid maintained at the level indicated by means of the overflow pipe 4, and when the shaft 8 is turned at about 30 revolutions a minute for example, the brush 7 is likewise turned and the shoe supporting structure is swung back and forth above said brush. If now a number of shoes whose soles are to be wetted are placed on the strips 17 in the positions shown in Fig. 1, the brush, extending between said strips, supplies liquid directly to the soles as they are moved back and forth with their supporting structure over it. Said strips 17 in this case are provided at their ends with suitable stops to prevent longitudinal movement of the shoes and it is obvious that by the time a workman has successively placed a number of shoes on the support, those first put in position will have had their soles engaged and wetted several times by the brush so that they are ready for removal. It is to be noted that with this machine there is no throwing of the liquid nor any danger of the latter being applied to any portion of the shoe other than the sole. While in this case I bodily move all of the shoes back and forth over the revolving brush, I may, if found advisable hold the shoes still while moving the brush bodily back and forth over them.

One form of machine for operating in this manner is illustrated in Fig. 3 where the liquid-containing tank is preferably formed as indicated at 2^a and has at its upper portion a bearing for a transversely extending shaft 24. This has fixed to it a pair of depending arms 25 slotted at their lower ends, and is driven by power applied to a pulley 26 through a belt 10^a operative on the pulley 12. Each of the arms 25 at the ends of the tank 2^a carries a block 27 slidable thereon in which is journaled the shaft 6 carrying the brush 7. In this instance, however, said shaft has fixed to it within the tank a pulley 11^a driven through a belt 28 from a pulley on the shaft 24. The arms 25 preferably have one or more upward extensions 29 to which a counterweight 30 may be connected. In this case the shaft 24 has fixed to it a slotted arm 19 to which is adjustably attached the two part link 20—21 driven as heretofore described, and the two rods 16 extend between the opposite ends of the tank 2^a so as to support the curved edgewise set strips 17 on which the shoes are directly mounted. An adjustable stop 31 extending parallel with the bolts 16 may be mounted on the strips 17 so as to serve as an abutment for the toes of the shoes and similar stops may be provided for the other forms of my machine as shown. When the shaft 8 is turned, the shoes remain stationary on their supporting structure while the brush is not only revolved through the belts 10^a 28 and the pulley 11^a, but is swung bodily back and forth by reason of the oscilla-

tory movement imparted to the bars 25 through the shaft 24, arm 19, link 20—21 and crank arm 22. As the brush wears, its position may be vertically adjusted by moving its spindle bearing blocks 27 upwardly on the bars or arms 25 so that its bristles or fabric sections may extend between the strips 17 to properly moisten or wet the shoe soles.

The preferred form of my invention in which the brush is also bodily movable is shown in Fig. 4, where the tank 2^b is broader than in the other forms of the invention and is carried on relatively heavy standards or legs 1^b. In this case the shoe supporting strips 17^b are carried at each end upon a pair of bolts 16^b movable up or down in vertical slots formed in the ends of the tank to vary their position relative to that of the brush. In this case the brush shaft 6 is journaled in one end of a pair of arms, of which one is shown at 32 and has mounted on it rollers 33 designed to operate on cam surfaces or tracks 34 formed on the ends of the tank. This brush shaft has a pulley 11^b connected through a belt 28^b to a second pulley mounted on a spindle 35 journaled in the second end of the arms 32. Said spindle 35 is also mounted in bearings in the upper end of a pair of elongated arms 36 mounted so as to be free to swing concentrically with the shaft 8. In this case said shaft has a pulley 9^b connected through a belt 10^b with a second pulley on the spindle 35 and likewise has a third pulley connected through a belt 38 with a crank pulley 39 carried on a shaft having suitable bearings in one of the standards 1^b. This latter pulley has a crank pin 40 connected through a rod 41 with the rod 36 so that when the shaft 8 is turned, the revolution of the pulley 39 by power transmitted through the belt 38, causes the arms 36 to be swung back and forth on the said shaft 8 as a pivot or center. The brush 7 is thus caused to move back and forth across the tank while being revolved from power transmitted through the belt 10^b, the pulleys on the spindle 35, belt 28^b and pulley 11^b. As before the sections or bristles of the brush project between the thin strips 17^b and evenly apply water or other liquid to the under sides of the soles of the shoes mounted thereon. In this case it is noted that the belt for driving the pulley on the brush shaft 6 does not enter the liquid in the tank.

The particular construction of shoe support shown in Fig. 4 may be adjusted as to its position so as to incline the shoes supported thereon to cause any surplus liquid to drain off of the soles thereof or to cause said support to occupy such position relatively to the brush that this latter cannot come in contact with the heels of the shoes. It is noted that the cam or curved rail struc-

ture 34 is preferably shaped as to conform to the outline of the soles of the shoes operated on and its arrangement may be such that as is the case when the shoe supporting structure is properly tilted, the brush cannot engage the heels of the shoes mounted on it.

While I have shown and illustrated the rotary brush as employed for supplying liquid to the soles of shoes, it is obvious that the particular form and construction of this device is for many purposes immaterial, since its construction and shape may be widely varied without departing from my invention.

I claim;—

1. The combination in a sole wetting machine of a brush; means for supplying a liquid thereto; a shoe supporting structure including a number of substantially parallel strips; and means for supporting said strips over the brush so that the latter projects between them; with means for moving the brush and the shoe supporting structure relatively to each other to cause the brush to engage different parts of the soles of shoes mounted on the structure.

2. The combination in a sole wetting machine of a brush; means for supplying liquid thereto; a shoe supporting structure; and means for oscillating the brush and structure relatively to each other to cause said brush to engage different parts of the soles of shoes mounted on the structure.

3. The combination in a sole wetting machine of a brush; means for supplying liquid thereto; a shoe supporting structure; and means for oscillating the brush and structure relatively to each other to cause said brush to engage different parts of the soles of shoes mounted on the structure; with means for varying the arc of oscillation in which such movement occurs.

4. The combination in a sole wetting machine of a brush; means for supplying liquid to the brush; and a shoe supporting structure adjacent the brush; said structure including a series of substantially parallel, edgewise set strips placed to permit portions of the brush to extend between them; with means for oscillating the brush and

supporting structure relatively to each other.

5. The combination in a sole wetting machine of a brush; means for supplying liquid to the brush; and a shoe supporting structure adjacent the brush; said structure including a series of substantially parallel edgewise-set strips placed to permit portions of the brush to extend between them; means for oscillating the brush and supporting structure relatively to each other; with a stop on said strips for holding the shoes in definite positions.

6. A sole tempering machine consisting of a brush; means for supplying liquid thereto; a shoe supporting structure; and means for moving said structure relatively to the brush, said structure being adjustable to alter the parts of the shoes thereon engaged by said brush.

7. The combination in a sole tempering machine of a brush; means for supplying liquid to said brush; a shoe supporting structure; a track for supporting the brush; and means for moving said brush over the track to cause it to engage different parts of a shoe.

8. The combination in a sole tempering machine of a brush; means for supplying liquid to said brush; a grating for supporting a number of shoes; means for moving the grating and the brush relatively to each other to cause the brush to engage different parts of the shoes; said grating being adjustable to vary its position relatively to said brush.

9. The combination in a sole tempering machine of a brush; means for supplying liquid to the brush; a grating mounted adjacent the brush for supporting a series of shoes; means for moving the brush and the grating relatively to each other and a stop on the grating to prevent movement of the shoes.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM BOTTOMLEY KEIGHLEY.

Witnesses:

HARRY C. DOWN,
E. D. GOODELL.