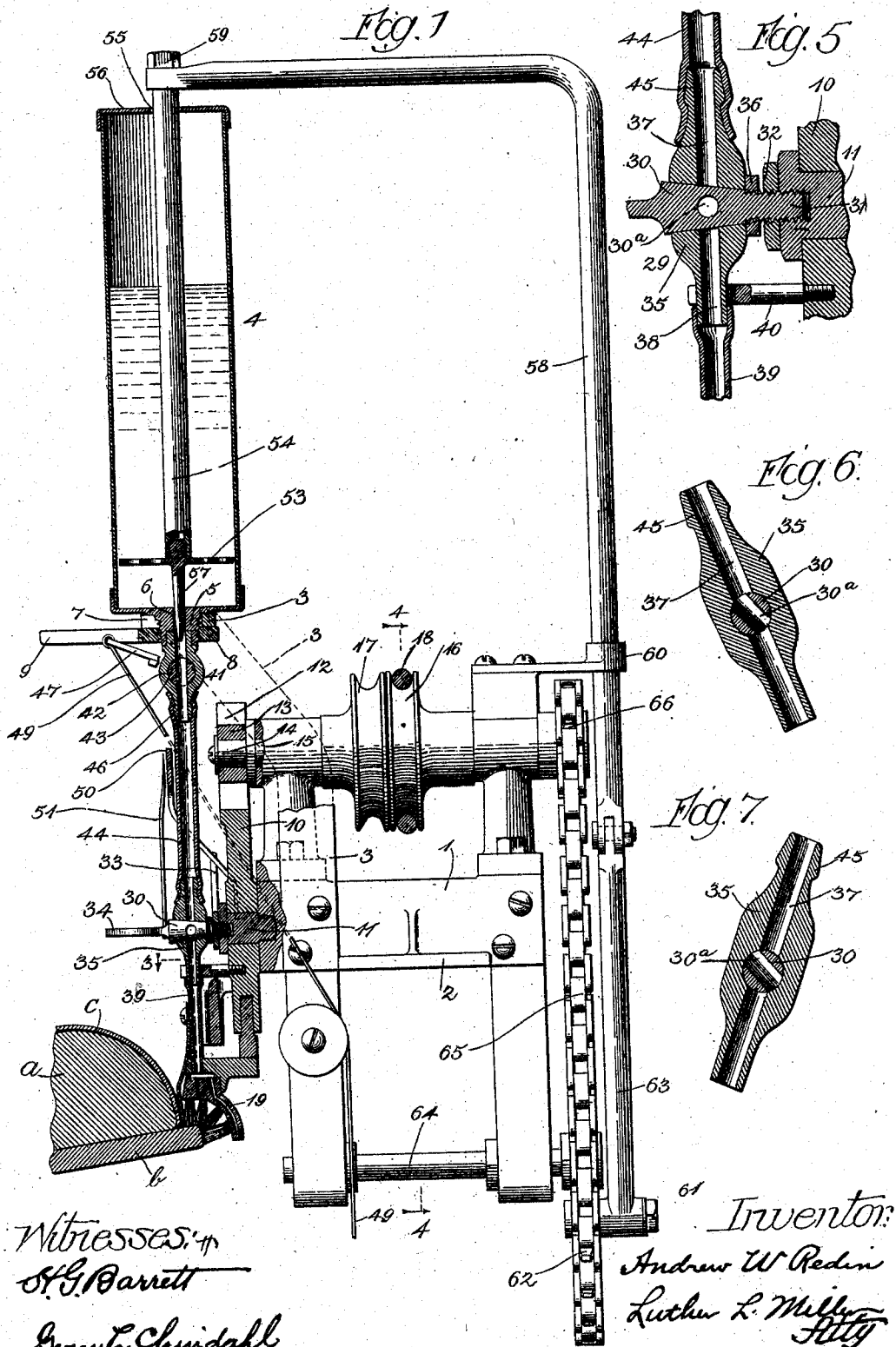


981,003.

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EDGE INKING MACHINE.
APPLICATION FILED OCT. 16, 1909.

Patented Jan. 10, 1911.

3 SHEETS-SHEET 1.

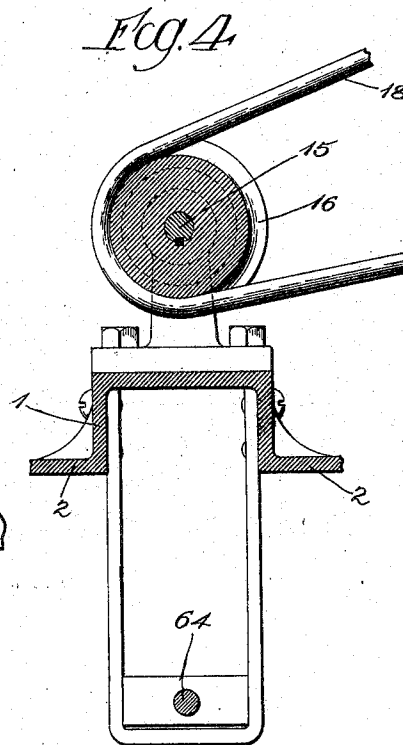
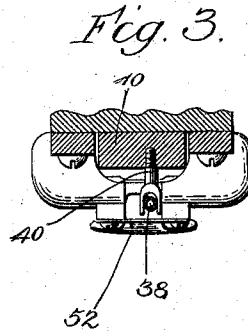
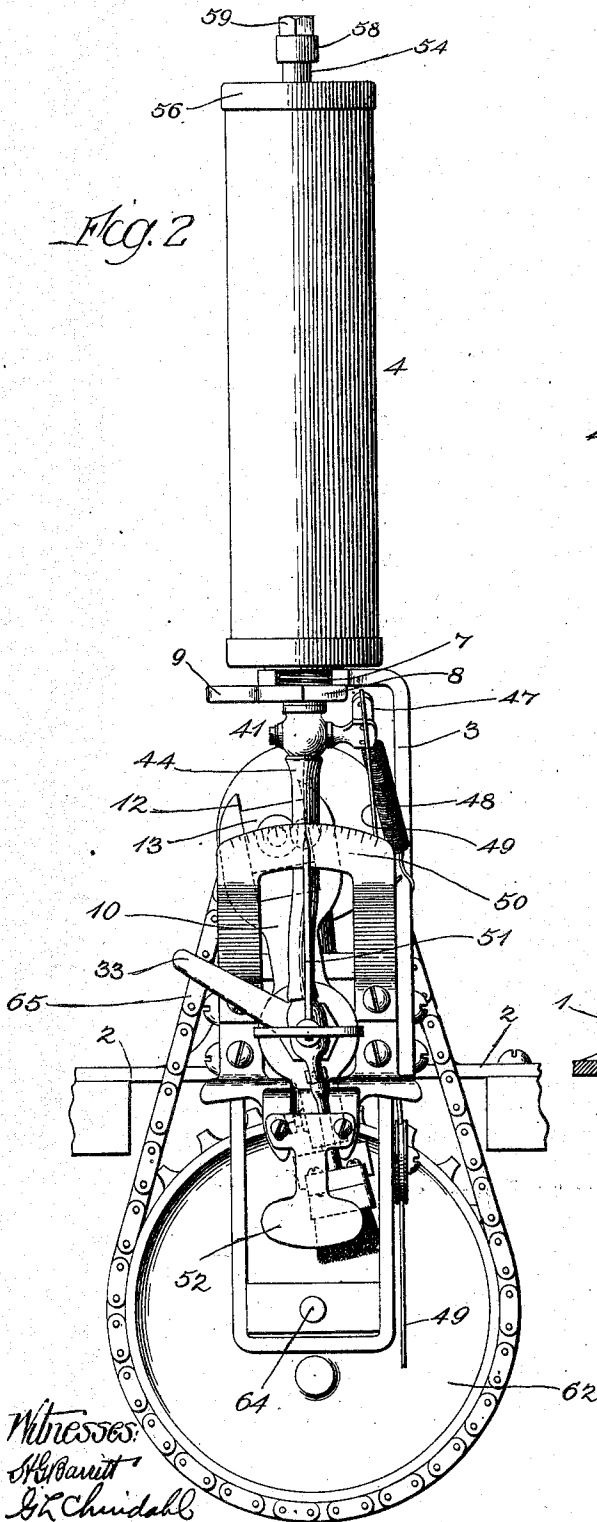


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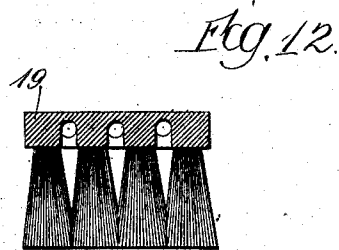
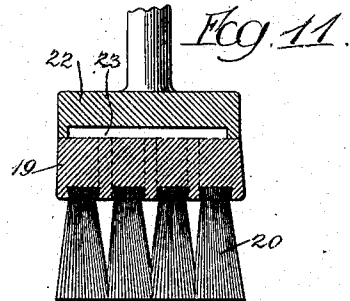
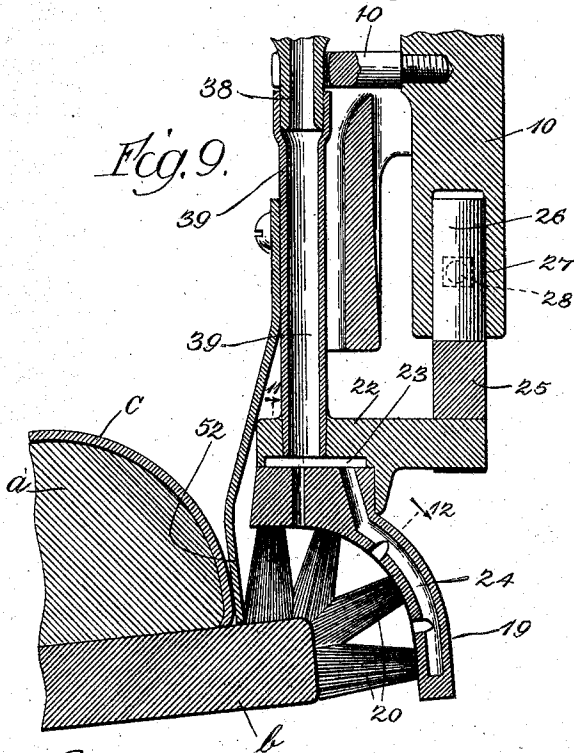
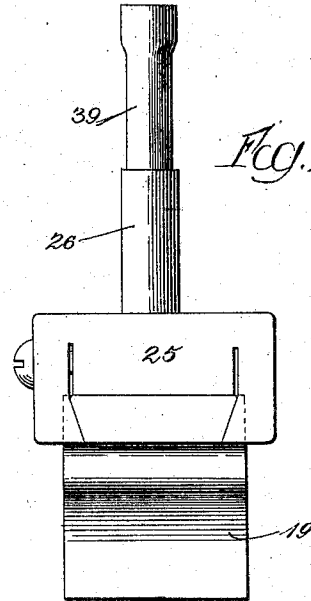
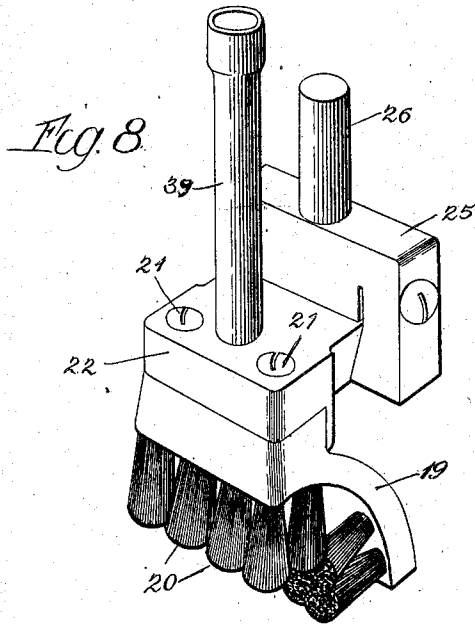
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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EDGE-INKING MACHINE.

981,003.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed October 16, 1909. Serial No. 523,005.

To all whom it may concern:

Be it known that I, ANDREW W. REDIN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Edge-Inking Machines, of which the following is a specification.

This invention relates to machines for applying ink or blacking to the edges of shoe soles and heels during the process of manufacturing shoes.

One of the objects of the invention is to produce means for rapidly and evenly applying ink to the edges of a sole, including the top of the portion of the sole which projects beyond the vamp and the beveled surfaces of the sole.

Another object is to prevent the ink from being applied to the vamp.

A further object is to provide means for stirring the supply of ink to prevent settling and to keep the ink of uniform consistency.

A further object is to provide means for regulating the flow of ink to the ink-applying device.

The invention also relates to the other features of improvement herein set forth.

In the accompanying drawings, Figure 1 is a side elevation, with parts in section, of a machine embodying the features of my invention. Fig. 2 is a front elevation of the machine. Fig. 3 is a section on line 3 of Fig. 1. Fig. 4 is a section on line 4 of Fig. 1. Fig. 5 is a sectional view through one of the valves, the view being taken in the plane of the axis of the valve. Figs. 6 and 7 are detail views of the valve, showing the latter in open and closed position, respectively. Fig. 8 is a detail perspective view of the brush used in inking the sole. Fig. 9 is a sectional view of said brush, and illustrates the manner of applying the shoe thereto. Fig. 10 is a rear side elevation of said brush. Figs. 11 and 12 are sections on lines 11 and 12, respectively, of Fig. 9.

The embodiment herein shown of my invention comprises a framework which may consist of the base 1, said base having lugs 2 thereon by means of which the machine may be secured to a bench or other suitable support. Rising from the base 1 is a bracket 3 upon which is supported a reservoir 4 for the ink or dye. Said reservoir, in the form

herein shown, is cylindrical and is removably secured to the bracket 3. Upon the lower end of the reservoir 4 is a boss 5 having an outlet passage 6 therein and adapted to be inserted into a slot 7 in the upper end of the bracket 3. The reservoir is removably secured to the bracket by means of a lock nut 8 turned upon the screw-threaded lower end of the boss 5 and arranged to clamp the reservoir to the bracket. The lock nut 8 is provided with an operating arm 9 by means of which it may be given a partial rotation to release or clamp the reservoir. From the reservoir 4 the ink flows to an oscillatory or swinging brush which is carried by a lever 10 pivoted intermediate its ends upon a stud 11 having a screw-thread connection with the base or frame of the machine. The upper end of the lever 10 is bifurcated, as shown in Figs. 1 and 2 at 12, the bifurcation receiving a slidable block 13 which is carried by a crank pin 14 upon the forward end of the shaft 15 carried by the base 1. On the shaft 15 is a tight pulley 16 and a loose pulley 17 to receive a drive belt 18. It will be seen that as the shaft 15 is rotated, the lever 10 will be oscillated upon its pivot 11.

The brush for applying the ink to the sole comprises, in this instance, a back 19 (Figs. 8 and 9) suitably curved so that the tufts of bristles 20 shall be adapted to engage properly the edge of a sole and the top of the portion of the sole projecting beyond the vamp. The back 19 is attached by means of screws 21 to a block 22 having a shallow recess 23 therein, said recess communicating with the concave face of the back 19 by means of ducts 24. The block 22 is rigidly secured to a block 25 having a shank 26 adapted to be inserted into a socket 27 in the lower end of the lever 10, said shank being removably clamped in said socket by means of a set screw 28.

For applying ink to the heel, I use a brush (not shown) having a surface conforming to the shape of the edge of the heel, the heel-inking brush being interchangeable with the sole brush.

A valve 29 (Fig. 5) located intermediate the reservoir and the brush comprises a plug having a screw-threaded stem 31, which stem is turned into a screw-threaded opening in the stud 11. A port 30^a is formed

through the plug 30. The valve plug 30 is locked against movement by means of a lock nut 32 on the screw-threaded stem 31, said nut being arranged to be turned into
 5 locking engagement with the adjacent end of the stud 11 by means of an operating arm 33. On the forward end of the valve plug 30 is a finger piece 34. The valve casing 35 is mounted to swing upon the valve plug
 10 30, being held in proper relation to said valve plug by means of a nut 36. Extending through the casing 35 is a passage 37. On the lower end of the valve casing 35 is a nipple 38 which communicates with the
 15 chambered brush back by means of a tube 39 attached to the brush. The tube 39 has a slip connection with the nipple 38 so that the brush may be readily removed and another form of brush substituted. A pin 40
 20 fixed in the lever 10 and having a forked forward end which embraces the nipple 38 causes the valve casing 35 to oscillate with said lever and the brush.

To the lower end of the boss 5 on the reservoir 4 is fixed a valve 41 comprising a valve casing 42 and an oscillatory valve plug 43. The valves 29 and 41 are flexibly connected together by means of a tube 44 of rubber or the like, the ends of said tube being
 30 slipped over the nipples 45 and 46 upon said valves. The oscillatory valve plug 43 has an operating arm 47 fixed thereto. To the rear end of the arm 47 is attached a spring 48 which tends to rock the valve plug 43 in the direction to close the valve. The
 35 arm 47 may be manually operated in any suitable way to open the valve, as, for example, by means of a flexible connection 49 extending to a treadle (not shown).

40 When the opening 30^a through the valve plug 30 extends horizontally, as shown in Fig. 5, the oscillations of the valve casing 35 do not bring the passage 37 into register with said opening, and the valve 29 therefore is closed even though the shaft 15 may be rotating. When the valve plug 30 is
 45 turned either to the right or the left by means of the finger piece 34, the oscillations of the valve casing 35 will bring the passage 37 therein into register with the opening 30^a, the extent to which said openings register depending upon the extent to which the
 50 valve plug 30 is turned from the horizontal by the operator. It will be seen from Figs. 6 and 7 that when the lever 10 swings in one direction, the valve 29 will open, and that when the lever swings in the opposite direction the valve will close. The relative
 55 movement between the valve casing 29 and the valve plug 30 prevents the ink from clogging in said valve.

To indicate the extent to which the valve 29 is opened, a graduated plate 50 may be provided, said plate being fixed to the frame
 65 of the machine, the valve plug 30 being pro-

vided with a pointer 51 arranged to swing across the face of said graduated plate.

In order to prevent the application of the ink to the vamp, I provide a guard plate 52 which is secured to the machine frame. Said
 70 guard plate lies in front of the forward portion of the brush.

In order to agitate the contents of the reservoir 4 and thereby keep the ink of uniform consistency, I provide a perforated dasher
 75 disk 53 fixed to the end of a stem 54 which extends through a central opening 55 in the cap 56 of the reservoir. To the lower side of the disk 53 is fixed a central pin 57 arranged to enter the outlet opening 6 to prevent clog-
 80 ging of said opening and to positively force ink therethrough. The dasher disk 53 and the pin 57 are reciprocated by means comprising, in this instance, a rod 58 secured to the stem 54 by means of a screw 59, the rod
 85 58 being vertically reciprocable in a guide 60 fixed to the machine frame. The lower end of the rod 58 is connected to a wrist pin 61 upon a sprocket wheel 62 by means of a connecting rod 63. The sprocket wheel 62 is
 90 mounted upon a shaft 64 and receives a chain 65 extending over a sprocket wheel 66 fixed upon the shaft 15. When the shaft 15 is rotated, the rod 58 is reciprocated to operate the disk 53 and the pin 57.

In practice, it is desirable to place in the reservoir 4 a quantity of the solution sufficient for a day's work, and to remove the reservoir at night in order that it may be thoroughly cleaned and a fresh supply of
 100 ink placed therein when beginning the following day's work. The reservoir may be removed by turning the lock nut 8 to release the lower end of the reservoir, removing the screw 59, and disconnecting the rubber tube
 105 44 from the nipple 46. The cap 56 may have a slip connection with the upper end of the reservoir so that it may be readily removed and replaced in replenishing the supply of ink.

In operation, the operator opens the valve 29 by turning the valve plug 30 into, say, the position said plug is shown to occupy in Fig. 6. When he is ready to present a shoe to the machine, the operator opens the valve
 110 41, as by means of the treadle hereinbefore alluded to. The shaft 15 being rotated, the ink will flow to the swinging brush. The operator now takes a shoe, preferably with a last *a* therein, and presents the edge of the sole *b* to the brush, as indicated in Figs. 1 and 9. The guard plate 52 not only keeps the ink off the vamp *c*, but also serves as a guide as the shoe is moved by the operator, the said guard lying in the angle between
 115 the vamp and the sole. The back of the sole brush is curved so as to present the ends of the tufts of bristles squarely to the sole. As the operator moves the edge of the sole along under the rapidly swinging brush, the latter
 120

spreads the ink evenly upon the vertical edge of the sole and the top of the projecting portion thereof, as well as upon any beveled surfaces that may be formed on the edge portion of the sole. For inking the heel, a brush having a face conforming to the shape of the heel-edge is substituted for the brush 19 20, the heel brush having an attaching stem and a tube similar to the stem 26 and the tube 39 of the sole brush.

I would have it understood that I desire not to be limited to the details of construction herein shown and described, for various modifications will occur to persons skilled in the art.

I claim as my invention:

1. In an edge-brushing machine, in combination, a brush supported to swing; means for supplying ink to the brush, said means including a valve comprising a portion arranged to swing upon the axis of said brush to open and close the valve; and means for connecting the brush and said valve portion to swing together.

2. In an edge-inking machine, in combination, a movably mounted brush; means for supplying ink to the brush, said means including a valve comprising a portion arranged to move to alternately open and close the valve during the movements of the brush; and means for moving said valve portion.

3. In an edge-inking machine, in combination, a brush supported to swing; and means for supplying ink to said brush, said means including a valve comprising a relatively stationary valve plug and a valve casing arranged to swing on said plug and attached to said brush to swing therewith.

4. In an edge-inking machine, in combination, a brush supported to swing; and means for supplying ink to the brush, said means including a valve comprising a valve plug arranged to be turned, means for locking the plug in adjusted position, and a valve casing arranged to swing on said plug and attached to said brush to swing therewith.

5. In an edge-inking machine, in combination, a pivot; a member arranged to oscillate upon said pivot; a brush attached to said member; a valve plug adjustably fixed to said pivot; a valve casing arranged to oscillate on said plug and connected to swing with said member; a conductor communicating between said valve casing and the brush; and a fluid supply communicating with said valve casing.

6. In an edge-inking machine, in combination, a pivoted member; a brush having a shank detachably connected to said pivoted member; a tube fixed to said brush for conveying fluid thereto; a valve arranged to open and close alternately during the movement of the pivoted member, said tube be-

ing detachably connected with said valve; and a fluid supply communicating with said valve.

7. In an edge-inking machine, in combination, a base adapted for attachment to a bench; an upwardly extending bracket on said base; a reservoir detachably secured to said bracket; a lever pivoted intermediate its ends to the base; a brush attached to the lower end of said lever; an ink conduit separably connecting the reservoir and the lever, the latter having means for conducting ink to the brush; and means for swinging said lever.

8. In an edge-inking machine, in combination, a supporting frame; a reservoir secured to the frame; a brush mounted to swing; a valve comprising a stationary valve plug and a casing arranged to oscillate with the brush, said casing communicating with the brush; and a flexible connection between the reservoir and the valve casing.

9. In an edge-inking machine, in combination, a supporting frame; a reservoir removably secured to the frame; a brush mounted to swing; and means for conducting fluid from the reservoir to the brush, said means comprising a flexible tube detachable to permit removal of the reservoir.

10. In an edge-inking machine, in combination, a supporting frame; a reservoir removably secured to the frame; a brush mounted to swing; and means for conducting fluid from the reservoir to the brush, said means comprising a valve fixed to the reservoir, a valve communicating with the brush, and a flexible tube connecting said valves and detachably secured to the first mentioned valve.

11. In an edge-inking machine, in combination, a base adapted for attachment to a bench; an upwardly extending bracket on said base; a reservoir detachably secured to said bracket; a lever pivoted intermediate its ends to the base; a brush attached to the lower end of said lever; an ink conduit separably connecting the reservoir and the lever, the latter having means for conducting ink to the brush; valve means for controlling the flow of ink to the brush; and means for swinging said lever.

12. In an edge-inking machine, in combination, a supporting frame; a reservoir attached to said frame in vertical position; a brush communicating with said reservoir; a shaft mounted in the frame; connections between the shaft and the brush for swinging the latter; an agitating element mounted in the reservoir for reciprocation longitudinally of said reservoir; and connections between the shaft and the agitating element for reciprocating the latter.

13. In an edge-inking machine, in combination, a supporting frame; a reservoir at-

tached to said frame in vertical position; a brush communicating with said reservoir; a rotatory shaft in said frame; connections between said shaft and the brush for moving
 5 the latter, said connections including a wheel carried by said shaft; an agitating element mounted in the reservoir for reciprocation longitudinally of said reservoir; and means for reciprocating said agitating element
 10 comprising a vertically reciprocatory rod, a wrist-pin on said wheel, and a rod connecting said rod and said wrist-pin.

14. In an edge-inking machine, in combination, a brush supported to swing; a reservoir connected to said brush; a reciprocatory agitating device in the reservoir; and means for swinging said brush and reciprocating said agitator device.
 15

15. In an edge-inking machine, in combination, a brush; a reservoir having an outlet passage which is connected to said brush; and a reciprocatory pin arranged to enter said outlet passage and positively force fluid therethrough.
 20

16. In an edge-inking machine, in combination, a base adapted for attachment to a bench; an upwardly extending bracket on said base; a reservoir detachably secured in vertical position to said bracket; ink-applying means communicating with said reservoir
 25 30

and separably connected thereto; a perforated dasher disk in said reservoir; a stem to the lower end of which said disk is fixed, said stem being mounted for vertical reciprocation; and means for reciprocating said stem and dasher disk, said means being detachably secured to said stem.
 35

17. In an edge-inking machine, in combination, ink-applying means; a reservoir having an outlet passage which is connected to said means; a reciprocatory agitating device in the reservoir; and a pin attached to said device and arranged to positively force ink through said outlet passage.
 40

18. In an edge-inking machine, in combination, ink-applying means; a reservoir having an outlet passage in its lower end, said passage being connected to said ink-applying means; a stem mounted in said reservoir for movement longitudinally of the reservoir; a dasher disk fixed to the lower part of said stem; a pin fixed to the lower side of said disk, said pin being arranged to enter said outlet passage and positively force fluid therethrough; and means for longitudinally reciprocating said stem.
 45 50 55

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