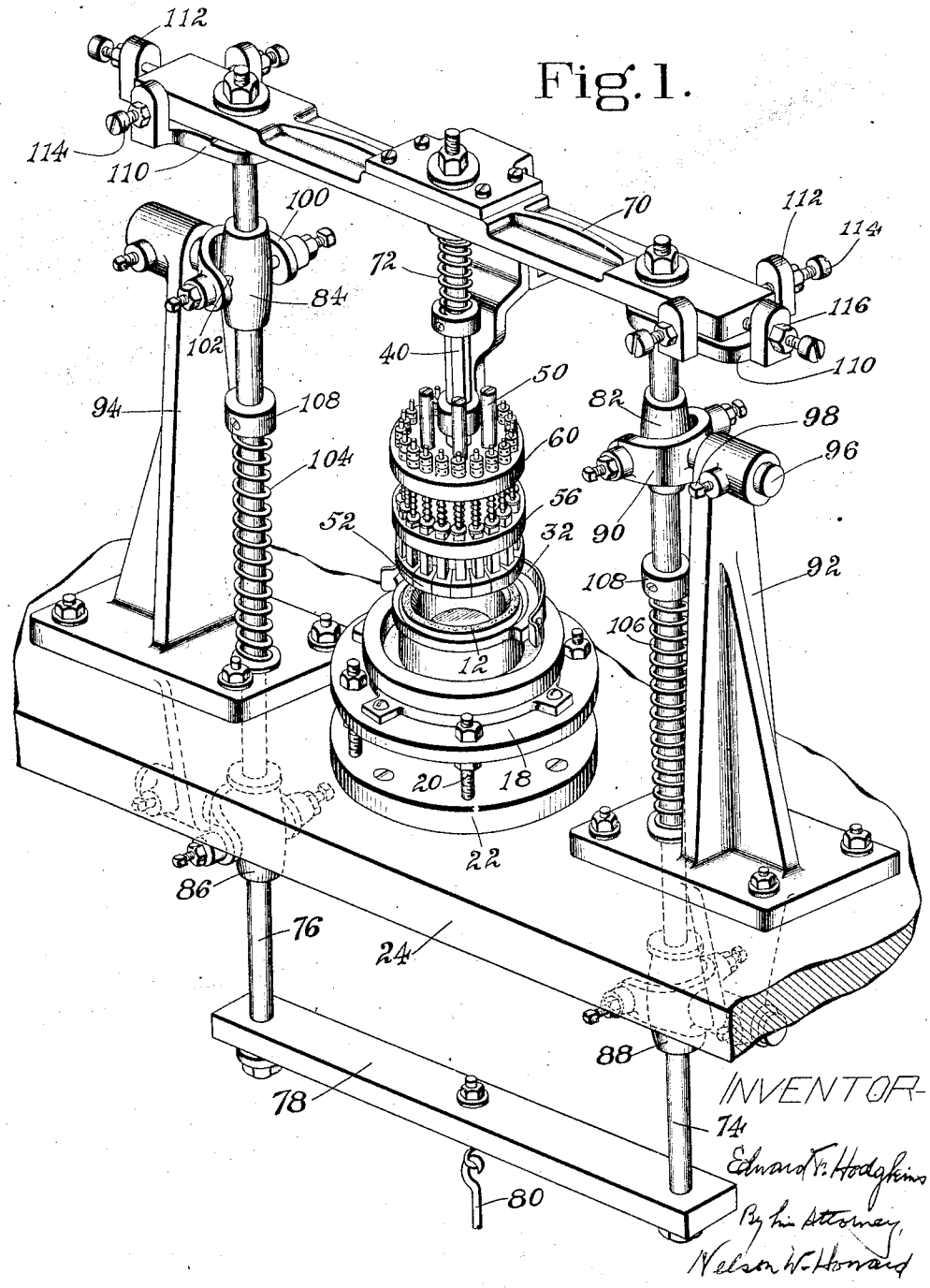
Nov. 23, 1926. 1,607,625

E. F. HODGKINS

MOISTENING APPARATUS

Filed Sept. 24, 1924 2 Sheets-Sheet 1

Fig. 1.



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By his Attorney,
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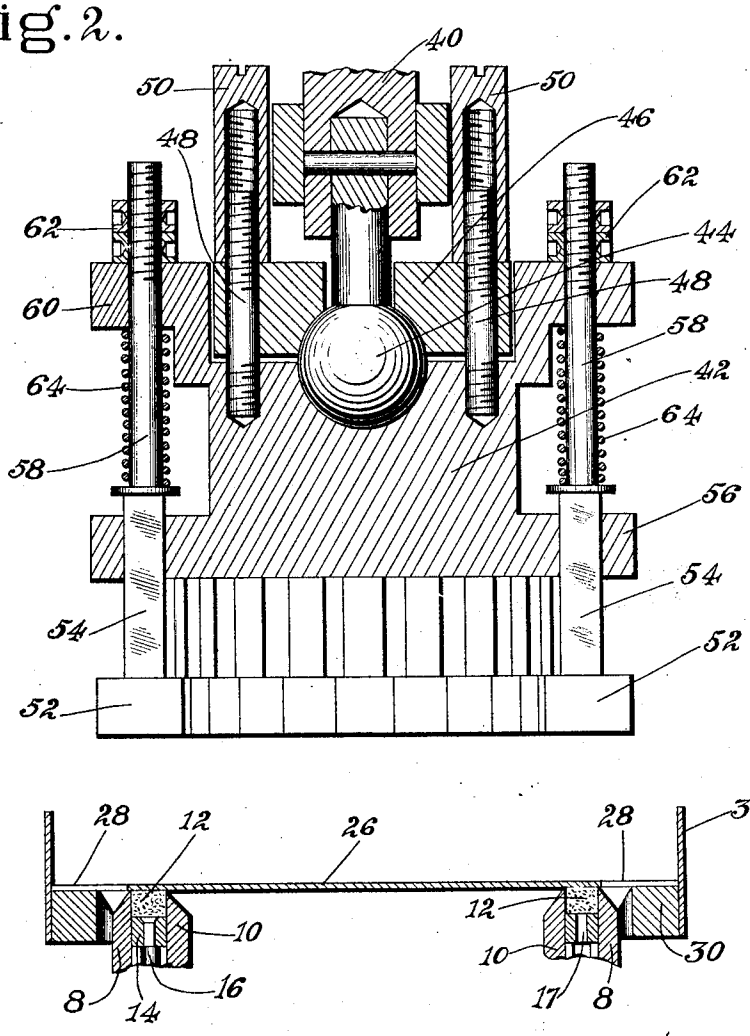
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MOISTENING APPARATUS

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Fig. 2.



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Patented Nov. 23, 1926. 1,607,625

UNITED STATES PATENT OFFICE.

EDWARD F. HODGKINS, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MOISTENING APPARATUS.

Application filed September 24, 1924. Serial No. 739,567.

This invention relates to moistening apparatus and is herein shown as embodied in an apparatus designed for wetting abrasive cloth blanks preparatory to the molding of said blanks into pad covers for use on buffing machines.

In machines of the type set forth in United States Letters Patent No. 822,154, granted May 29, 1906, on the application of A. W. Rogers and known commercially as Naumkeag buffing machines abrasive cloth pad covers are applied to inflated rubber pads which are mounted at the bottom end of rotating vertical shafts. In order to facilitate the application of the cloth covers to the rubber pads, it is the practice to mold these covers into such a shape that the periphery of the cover will be turned over so that with its peripheral tabs it may readily be applied to the inflated rubber pad in the buffing machine. It has been found, as explained in United States Letters Patent No. 1,555,846, granted October 6, 1925, upon my copending prior application, that the molding operation may be performed to much better advantage and with greater facility if a limited area adjacent to the periphery of the abrasive cloth disk out of which the cover is to be made is tempered by moistening prior to the molding operation. The use of apparatus such as that described in the last mentioned Letters Patent greatly facilitates the moistening of that portion of the abrasive cloth whose contour is to be changed most.

It is an object of this invention to provide moistening apparatus of the type set forth in said application by the use of which moistening operations such as that above-referred to may be still further facilitated without sacrificing any of the advantages characteristic of apparatus of that type.

In the illustrated machine, in accordance with features of the invention, there is provided a novel presser organization for applying work to a moistening device. The presser member herein illustrated comprises a plurality of presser feet arranged, in the present instance, in an annular formation, and each mounted for independent movement under the tension of a spring so that regardless of the exact position in which the presser member as a whole is brought against the work, all portions of the work will be uniformly pressed against the moistening device and any lateral displacement of the work will be avoided. The illustrated presser member is supported upon a crosshead and is mounted for universal movement with respect to said crosshead which is actuated by treadle-operated rods. Universally adjustable connections are provided between these rods and the crosshead and the trunnions for the treadle-operated plungers are universally adjustable, thus greatly facilitating the mounting of the machine upon a bench and ensuring against binding of the treadle-operated parts.

Other features and advantages of the invention will appear from a consideration of the following specification taken in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of the moistening apparatus and the treadle-operated presser member; and

Fig. 2 is a section through the work support and the presser member.

The illustrated work support, which is constructed substantially as disclosed in my prior application, comprises annular walls 8 and 10, (Fig. 2) providing a fluid-holding recess within which may be mounted if desired a restraining and diffusing porous pad in the form of a ring-shaped piece of felt 12 supported in position by a ring 14 held up by posts 16 and perforated at 17. The parts 8, 10 and 14 are supported upon a plate 18 (Fig. 1), which in turn is supported by bolts 20 upon a plate 22 attached to a bench 24. By adjustment of the nuts upon the bolts 20, the work-supporting and moisture-applying members may be leveled so that the upper edges of the annular walls 8 and 10 are in an exactly horizontal plane. The work for which the illustrated machine has been particularly designed comprises a circular abrasive cloth disk 26 (Fig. 2) having peripheral tabs 28. To facilitate the positioning of the work upon the moistening device, a gage is provided comprising a ring member 30 having a semicircular rim 32 positioned so that if the ends of the tabs are brought into contact with the semicircular

rim, the work will be properly positioned upon the annular walls 8 and 10.

The proper contact of the work with the moistening device is effected by means of a presser member carried at the lower end of a plunger 40. The presser member comprises a head 42 mounted for universal movement through a limited range upon the lower end of the plunger. To this end, a ball member 44 is provided upon the lower end of the plunger and a hemispherical recess is provided in the upper end of the presser head 42. A clamping disk 46 having a similar hemispherical recess and a hole for the passage of the plunger serves to clamp the presser head 42 to the ball. The clamping disk 46 may be held in position by studs 48 threaded into the head 42 and passing freely through the clamping disk 46, which is secured to said studs by means of threaded screw sleeves 50 bearing against the upper surface of the ring and threaded on the upper ends of the studs. Mounted for independent sliding movement in the presser head 42 are several presser feet 52 the work-contacting end of each of which is formed as a segment of an annulus for the purposes of the particular kind of work in question. Each of these presser feet is provided with a rectangular shank 54 mounted in a corresponding aperture in a lower flange 56 of the presser head and has a round extension 58 passing through an upper flange 60 of the presser head. Each of these presser feet is adjustably held in position by means of nuts and locks 62 and is normally urged downwardly by a spring 64 surrounding the shank 58 and bearing against a washer placed against a shoulder on said shank. Whenever, therefore, the presser feet are brought into contact with the upper side of the work 26, even contact is assured over the whole extent of the annulus which is to be moistened regardless of any uneven qualities in the work or of contact by one side of the presser ahead of the other side and any tendency to a lateral displacement of the work is avoided.

The actuation of the presser plunger 40 is effected by slidably connecting it to a crosshead 70 as to which it is normally maintained in its lower position by a moderately stiff spring 72. The crosshead 70 is arranged to be actuated by means of treadle rods 74 and 76 connected at their lower ends by a strut 78. A link 80, which is attached to the strut 78, may be directly connected to suitable actuating means such as a foot treadle (not shown). Bearing sleeves 82, 84, 86 and 88 for the treadle rods are mounted for universal adjustment in trunnions 90 supported in upward and downward extensions of standards 92 and 94 attached to the bench. Each of the trunnions comprises a stud 96 which is adjustably retained in position in the standards by a set screw 98 and forked arms 100 provided with trunnion points 102 threaded into said arms and locked in position by locking nuts. By sliding and swinging the studs 96 of the trunnions and by adjusting the trunnion points 102 a universal adjustment is provided for the bearing sleeves of the treadle rods 74 and 76 so that very easy operation of said rods is assured. Springs 104 and 106 bearing against the base flanges of the standards 92 and 94 at their lower ends and against collars 108 on said rods at their upper ends serve to hold the treadle rods, crosshead and presser member in uppermost position until the treadle is depressed.

For the proper operation of the device it is necessary that the presser member shall bear upon the work in exact relation to the moistening ring and to this end the treadle rods 74 and 76 pass through enlarged openings in the crosshead 70 and are provided with flanges 110 having upwardly directed lips 112 in which there are mounted set screws 114 held in place by lock nuts 116. The arrangement of these set screws is such that upon a universal adjustment between the treadle rods and the crosshead is provided so that the machine may be mounted upon a bench with a minimum of skill on the part of the mechanic and proper operation of the machine assured.

In the operation of the illustrated apparatus liquid is supplied to the annular recess between the walls 8 and 10 by suitable mechanism such as that described in Letters Patent No. 1,555,846 above mentioned including a connected liquid receptacle and a plunger to raise the level of the liquid in the receptacle and the recess. Preferably the arrangement is such that the liquid is raised to the level of the supporting edges of the walls 8 and 10 whenever the treadle is depressed to press the work into contact with the moistening ring above, the clamping movement preceding the actuation of the liquid raising means (not shown). It is only necessary then for the operator to place a piece of work in position upon said moistening ring, which position is determined by the rim 32 of the gage, and to depress the treadle so as to bring the presser feet against the work and firmly and uniformly to press it into contact with said ring. The treadle may then be released and the work removed and replaced by another piece.

Having described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an apparatus for moistening a designated area of a disk-shaped piece of work, a work-supporting member provided with a fluid-containing recess and arranged to moisten the desired area of one side of

the piece of work, and a plurality of individually supported presser members arranged to be brought into contact with the other side of the work at points above said fluid-applying recess.

2. In an apparatus of the character described, a pair of spaced walls forming a liquid-holding recess, the upper edges of the walls terminating in a horizontal plane to form a support for a piece of work, means for applying liquid through said recess to a limited area of a piece of work supported on said walls, and a plurality of individually guided spring-pressed clamping members adapted to be brought against the other face of the work to press it uniformly against the upper edges of said walls.

3. In an apparatus of the class described, work-supporting means provided with moistening means adapted to be applied to a limited area of one surface of a piece of work supported by said work-supporting means, and a presser member for bringing all parts of the desired area of the work into firm contact with said work-supporting means comprising a head, a plurality of presser feet guided in said head for individual movement, and resilient means urging said presser members toward the work.

4. In an apparatus of the class described, work-supporting and moistening means, and a presser member for uniformly applying the work to said moistening means comprising a head, a plunger for moving said head toward and away from the work, a universal connection between said plunger and said head, a plurality of presser feet slidably mounted upon said head, and resilient means urging each of said presser feet individually toward the work.

5. In an apparatus of the class described, a presser member comprising a plunger, a head connected to said plunger for universal movement, presser feet slidably supported in said head, resilient means urging said presser feet away from said head and adjusting means for determining the initial position of said presser feet in the head.

6. In an apparatus of the class described, a supporting platform, a moistening work-supporting device mounted in fixed position on said platform, a presser member for applying the work to said moistening device, a crosshead supporting said presser member, treadle-operated rods mounted for sliding movement in paths fixed with respect to said platform, and means for connecting said rods to said crosshead providing for universal adjustment of the one with respect to the other.

7. In an apparatus of the class described, a presser member, treadle-operated rods for operating said presser member, guiding sleeves for said rods, and universally adjustable trunnions supporting said guiding sleeves.

In testimony whereof I have signed my name to this specification.

EDWARD F. HODGKINS.

Certificate of Correction.

Patent No. 1,607,625. Granted November 23, 1926, to

EDWARD F. HODGKINS.

It is hereby certified that error appears in the printed specification of the above-numbered patent requiring correction as follows: Page 2, line 93, strike out the word "upon"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23d day of August, A. D. 1927.

[SEAL.]

M. J. MOORE,
Acting Commissioner of Patents.