

J. GOULDBOURN.
 POUNDING-UP ROLL.
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1,019,890.

Patented Mar. 12, 1912.

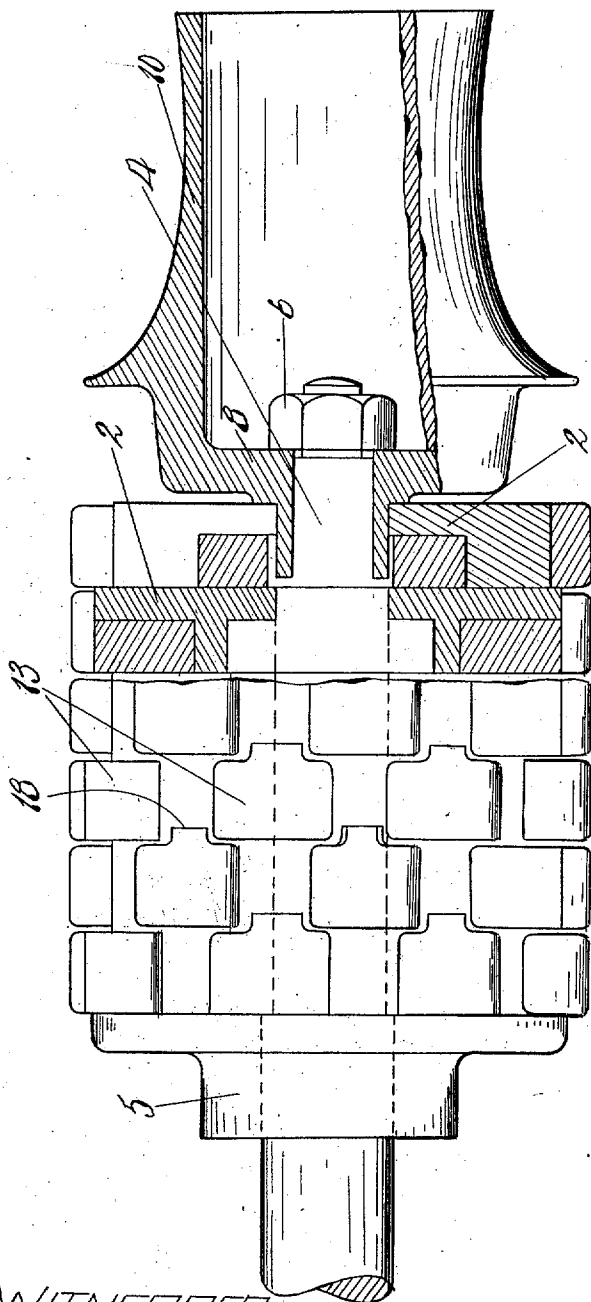


Fig. 1

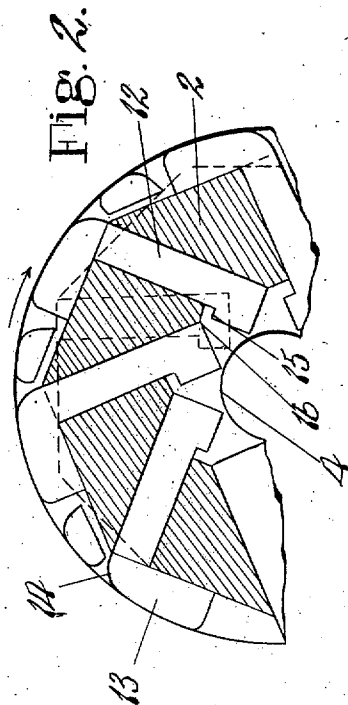


Fig. 2.

WITNESSES.

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POUNDING-UP ROLL.

1,019,890.

Specification of Letters Patent.

Patented Mar. 12, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH GOULDBOURN, a subject of the King of Great Britain, residing at Leicester, Leicestershire, England, have invented certain Improvements in Pounding-Up Rolls, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to pounding up, leveling or smoothing rolls used in the manufacture of boots and shoes, and particularly adapted for use in re-forming the bottoms of turn shoes.

The general object of the present invention is to provide an improved roll for the purposes above set forth which roll is more effective in operation and of greater durability than rolls as hitherto constructed for these particular purposes.

In the roll to which this invention particularly relates there is combined with the roll body a number of beating members carried by the said body, the said members being arranged to exert both a pounding-up effect and a smoothing action upon the surface of the material under treatment.

According to the illustrated embodiment of the invention the roll comprises a body part having a number of recesses or slots in which are received shank portions of a plurality of blocks or beating members. The shank portions of the blocks or beating members are adapted to slide in the recesses or slots and under the influence of centrifugal force the said blocks are moved to the extreme outer position when the roll is rotated. The blocks or the shanks thereof are provided with projecting parts to engage corresponding parts of the body part to limit the movement outwardly of the blocks when under the influence of centrifugal force and to prevent their disengagement from the roller. When the blocks have been depressed against the body part the whole will form a circular roller.

Conveniently, the body part of the roll may be made up of a number of disks placed side by side on a shaft or spindle, each of the disks being provided with recesses or slots for the reception of the shanks of the beating members. When the body part is thus composed of separate disks they may

each be secured to the shaft or spindle or one alone may be secured to the said shaft the others being loosely mounted thereon and made to revolve with the fixed disk by projections on the beating members of each disk which projections extend between the adjacent blocks of the neighboring disk and by engaging the sides of the said blocks impart rotary motion to the loose disk.

A convenient embodiment of the invention will now be described by way of example and then the invention particularly pointed out in the claims but it is to be understood that the construction and general arrangement of the parts may be varied without departing from the spirit of the invention.

In the drawings, Figure 1 is a side elevation of a beating roll having centrifugal beating elements; Fig. 2 is a section through Fig. 1.

In the embodiment of the invention a number of disks 2, forming a cylindrical hub, are mounted upon a shaft 4 and are secured thereon by a collar 5 at one end formed upon or fixed to the shaft. At the other end of the series of disks the shaft is provided with a threaded stud upon which is screwed a nut 6 which through a washer 8 forces all the disks into contact. Conveniently the washer may form the inside wall of a plain surfaced roller 10 for use in the process of manufacture of a boot or shoe which roll is thus, by means of the same screw, secured to the end of the shaft. Each disk 2 is formed in one of its faces with a number of recesses or slots which conveniently are not disposed radially of the roll but are inclined away somewhat from the radius of the roll in the direction of rotation. The recesses or slots each receive the shank 12 of a block or beating member which extends from the shank rearwardly away from the direction of the rotation of the roll. The blocks or beating members are shaped upon their outer surface 13 to conform to a circle struck from the center of the roll, preferably the working face of each block is arranged to come in line with the joints between the adjacent blocks before and behind and conveniently the leading surface of each block may be curved as at 14, Fig. 2. The inner end of each shank is provided with a projecting

part 15 which, at certain times, engages with the inner surface 16 of the body part which is cut away at the center of the face having the recesses to afford space for the said projections. Sufficient clearance is provided between the projecting parts 15 of the shank and the inner surface 16 of the disk to permit the blocks to move outwardly to the necessary extent under the influence of centrifugal force during the rotation of the roll before the said projecting parts come into engagement with the inner surface of the disk.

Each, or some of the blocks may be provided with projecting parts 18 on one of their faces which engage between the blocks of the neighboring disk and thereby insure rotation of the several disks when the shaft is revolved. When the roll is stationary and the blocks closed in against the body part the curved outside faces of the said blocks will constitute a circular roll. When, however, the roll is rotated the blocks will, under the influence of centrifugal force, be moved outwardly from the disks as far as is permitted by the projections on the shank and thereby be brought into a position to act upon the work which is presented to and pressed against the surface of the roll.

Having explained the nature of this invention, I claim as new and desire to secure by Letters Patent of the United States:—

1. An apparatus of the class described having, in combination, a body roll, comprising a number of disks placed side by side, a plurality of beating members carried by each of the disks, the beaters being arranged to exert both a pounding-up and a smoothing action upon the surface of the material under treatment and means for driving the roll.

2. An apparatus of the class described having, in combination, a plurality of annular series of beating members, each of which members has a shank portion, a body roll comprising a cylindrical hub having a plurality of annular series of recesses or separate pockets for said shanks and in which the shanks are arranged to slide outwardly under the influence of centrifugal force when the roll is rotated, and means for limiting the outward movement of the beating members.

3. An apparatus of the class described having, in combination, a body roll having a plurality of recesses or slots, a plurality of annular series of beating members having shank portions adapted to slide outwardly therein under the influence of centrifugal force when the roll is rotated, the beating members in said annular series be-

ing arranged in staggered relation with one another.

4. An apparatus of the class described having, in combination, a body roll having a plurality of recesses or slots, a plurality of beating members having shank portions adapted to slide outwardly therein under the influence of centrifugal force when the roll is rotated, the beating members being arranged in annular series and staggered and each beater having a projection extending laterally across the line dividing it from the next annular series.

5. An apparatus of the class described having, in combination, a body roll made up of a number of disks placed side by side, each of the disks being provided with recesses or slots, beating members having shanks retained in said slots, a driving shaft to which one of said disks is secured, and interlocking projections on the beating elements compelling the other disks to rotate with the shaft.

6. An apparatus of the class described having, in combination, a body roll made up of a number of disks 2 placed side by side, each of the disks having in one side face a plurality of slots inclined to radial lines of the roll in the direction of rotation, beating members having beating heads and relatively thin shanks sliding in said slots and having means to limit the sliding movement.

7. An apparatus of the class described having, in combination, a shaft, a collar fast thereon, a beating roll on the shaft adjacent to the collar, a washer at the opposite end of the roll, a threaded stud projecting from the end of the shaft, a nut on said stud which through the washer clamps the roll against the collar, and a hollow plain surfaced roller formed on the washer and inclosing the nut.

8. An apparatus of the class described having a carrier, and a plurality of annular series of beating members, restrained from forward and backward tipping movement therein, the members of each series being yielding independently of the other series and each of the beating members having a curved leading surface adapted to exert a pounding up action upon the surface of the material under treatment, and a relatively long following and rubbing surface adapted to exert in turn a smoothing action upon the said surface of the material.

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

JOSEPH GOULDBOURN.

Witnesses:

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