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PRESSURE DEVICE FOR LEATHER SKIVING MACHINES.

APPLICATION FILED SEPT. 23, 1907.

975,495. **Patented Nov. 15, 1910.**

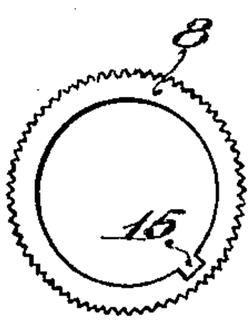

Fig. 3.

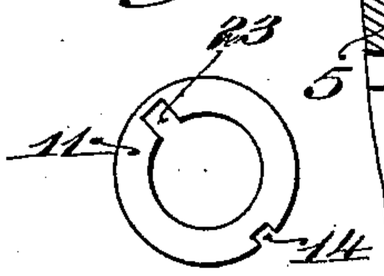

Fig. 5.

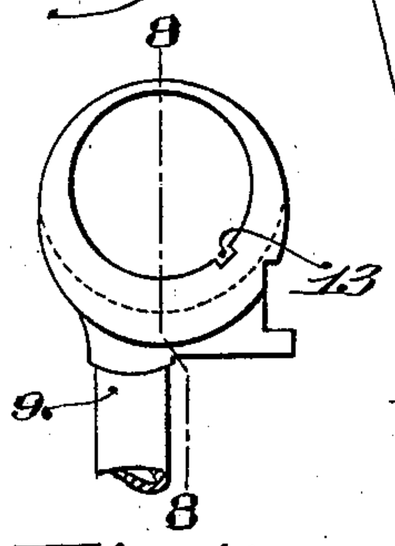

Fig. 7.

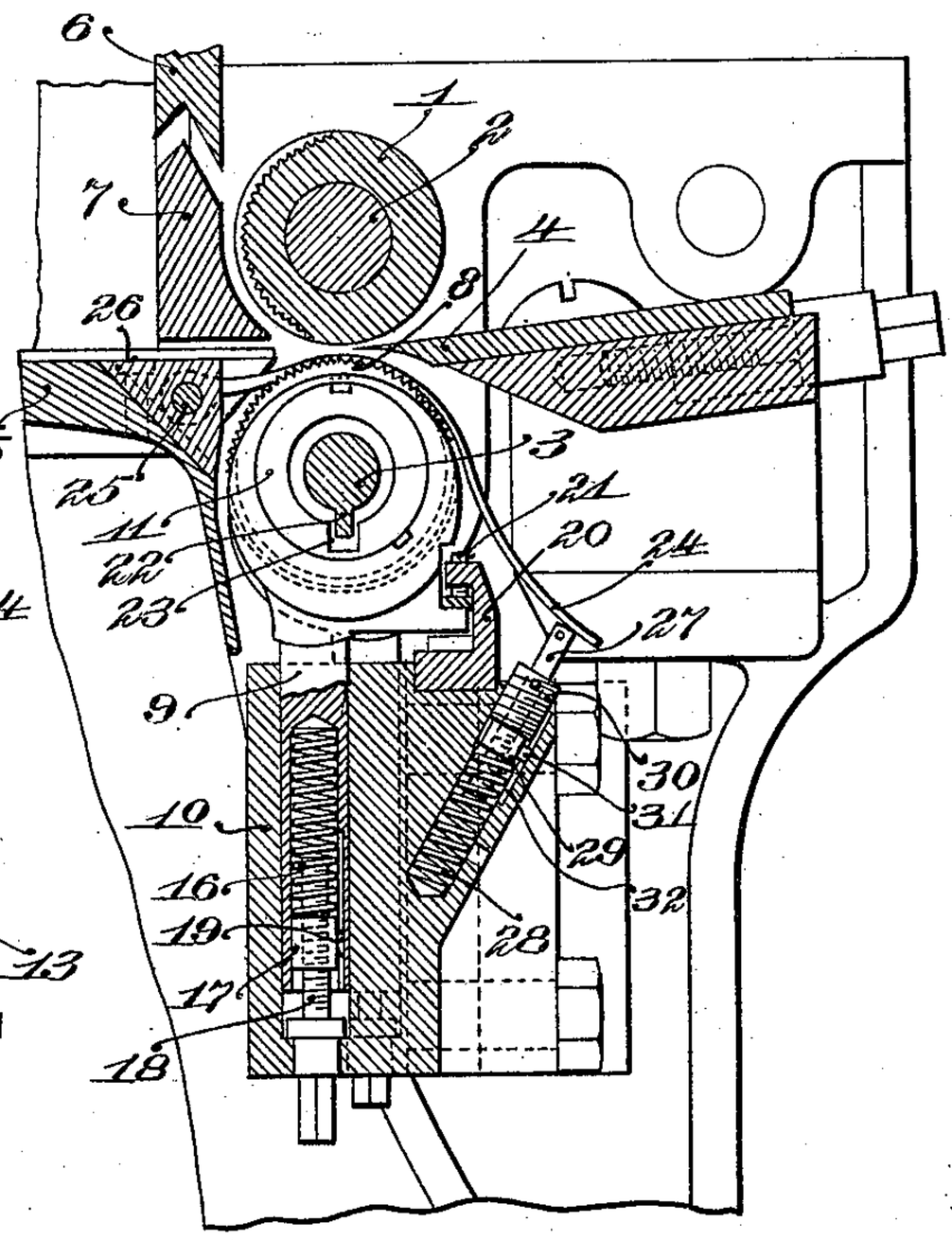

Fig. 1.

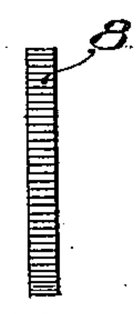

Fig. 4.

Fig. 6.

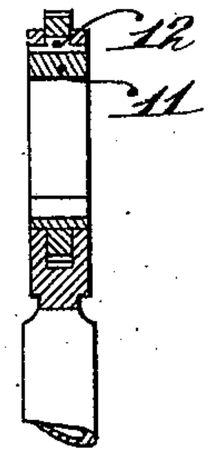

Fig. 8.

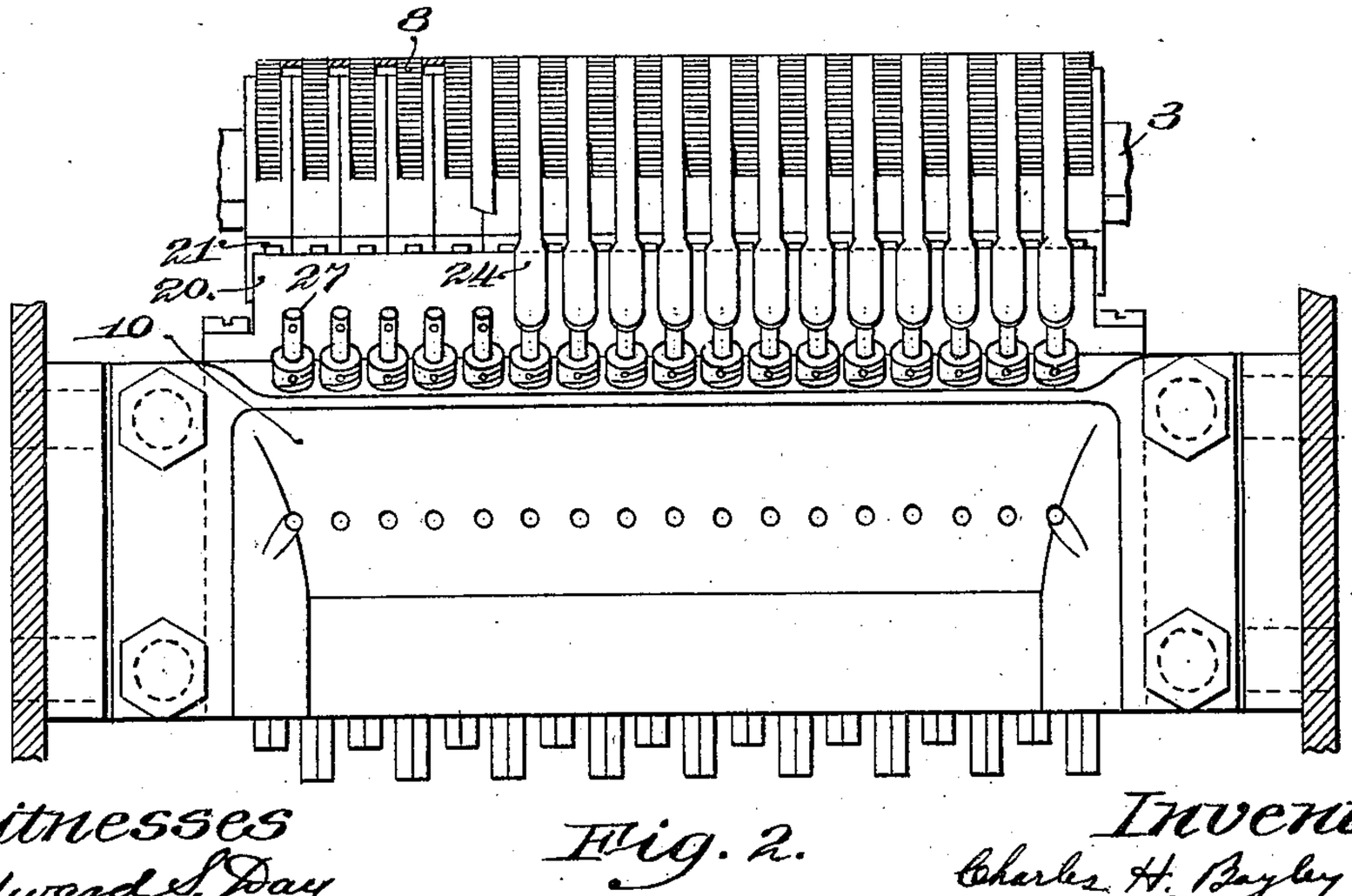

Fig. 2.

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UNITED STATES PATENT OFFICE.

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PRESSURE DEVICE FOR LEATHER-SKIVING MACHINES.

975,495. Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed September 23, 1907. Serial No. 394,084.

To all whom it may concern:

Be it known that we, CHARLES H. BAYLEY and BENJAMIN F. MAYO, citizens of the United States, residing at Boston and Salem, respectively, in the counties of Suffolk and Essex and State of Massachusetts, have invented certain new and useful Improvements in Pressure Devices for Leather-Skiving Machines; and we 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.

The present invention relates to an improved pressure device for leather skiving machines and is intended primarily for use in machines for skiving articles of leather such as boot and shoe counters, box toe pieces and the like of the type disclosed in U. S. Patent No. 760,082, dated May 17, 1904. It is to be understood, however, that while the invention is particularly adapted for use in machines of the class disclosed in said patent, the invention is also applicable to other forms of leather skiving machines.

In the machine of the patent above referred to the pressure device consists of a pressure roller which is provided with a yielding surface of rubber in order that the leather blank may be firmly seated against the bottom of the die cavity in the die roller and held securely therein while the blank is being forced against the skiving knife. This roller gives satisfactory results with many grades of stock. With certain grades of stock however, and particularly with hard and dry stock the pressure roller sometimes fails to hold a blank in position in the die cavity while it is being forced against the skiving knife, so that the blank is improperly skived. Also with these grades of stock the surface of the pressure roller is often cut and injured and rapidly deteriorates.

The object of the present invention is to provide a pressure device which will be free from the objections above noted, which will be simple and compact in construction and which will operate upon hard and dry stock in a satisfactory manner.

With this object in view the present invention contemplates the provision of a pressure device comprising a series of metallic pressure disks journaled in separate yieldingly supported carriers and rotated by means of a shaft passing through the disks and connected thereto so that the disks are rotated by the shaft and at the same time are permitted to move transversely to the shaft. The disks are arranged in close proximity to each other so as to constitute in effect a roll, the peripheral surface of which, being of metal, is practically indestructible, and which if desired can be provided with corrugations or teeth so that a leather blank can be positively engaged by the roll and forced against the cutting edge of the skiving knife without any liability of displacement. The provision of a plurality of spring pressed disks which are movable transversely of the pressure roll shaft permits the surface of the roll in contact with the blank to yield so that the blank can be forced into a die cavity in substantially the same manner as when a rubber covered roll is used. The journals of the disks hold the disks in position independently of the shaft and the disks are thereby prevented from being displaced with relation to each other except as such displacement is produced by the relative movements of the carriers. The roll therefore can be used in the same relation to the skiving knife and other parts of a leather skiving machine as a rubber covered roll. The peripheral surface of the disks is preferably corrugated or toothed and in order to strip the skiving from the disks, strippers are preferably provided between adjacent disks and these strippers are preferably so arranged as to limit the penetration of the teeth into the blank. In the preferred form of the invention hereinafter described the strippers consist of strips of metal which are mounted so as to yield to permit the teeth of the disks to penetrate the blank and means are provided for adjusting the strippers to vary the position of their work engaging surfaces with relation to the teeth of the disks.

In the preferred form of the present invention, certain novel constructions and arrangements of parts are provided which are hereinafter described and claimed. The advantages of these constructions will be apparent to those skilled in the art from the following description of the preferred form of the several features of the present invention.

In the drawing accompanying this appli-

cation Figure 1 is a longitudinal sectional view of a portion of a leather skiving machine embodying the several features of the present invention in their preferred form. Fig. 2 is a view in rear elevation of the parts illustrated in Fig. 1. Fig. 3 is a detail view in side elevation of one of the metal pressure disks. Fig. 4 is an edge view of the disk illustrated in Fig. 3. Figs. 5 and 6 are respectively a side and an edge view of a bushing which is used to mount a pressure disk in its carrier. Fig. 7 is a view in side elevation of the upper end of one of the disk carriers, and Fig. 8 is a sectional view of the upper end of one of the disk carriers with a disk mounted therein, the section being taken on the line 8—8 of Fig. 7.

In the drawing 1 indicates the die roller of a leather skiving machine for skiving counter or box toe blanks, 2 the die roll shaft, 3 the pressure roll shaft, 4 the skiving knife, 5 the bed plate of the blank supporting hopper, 6 the front wall of the hopper and 7 the guard plate at the lower end of the front wall of the hopper, said parts being constructed and arranged to operate in the manner fully described in Patent No. 760,082, hereinbefore referred to.

The improved pressure device illustrated in the drawings comprises a series of metallic disks 8 each of which is mounted in the upper end of a spring supported slide 9. Each slide is provided with a cylindrical stem by means of which it is mounted in a cross bar 10 secured to the frame of the machine, and with a head above the cylindrical stem suitably bored and slotted to receive the pressure disk. Each disk is journaled in the head of a slide by means of a bushing 11 which closely fits the internal surface of the disk and which is wider than the disk so as to engage bearing surfaces in the head of the slide as clearly illustrated in Fig. 8. In mounting a disk in a slide the disk is first placed in position in the slot which is cut in the slide to receive it and then the bushing is inserted endwise through the bearings in the slide and through the disk. The bushing and disk are then secured together by means of a key 12 (see Fig. 8) which is passed through notches 13 in the slide and engages recesses 14 and 15 in the bushing and disk. When the bushing and disk are in position in the slide, the bushing and disk can rotate freely but are held against axial movement by the sides of the slot in the slide which receives the disk. The cylindrical stems of the slides are received in cylindrical guideways bored in the cross bar 10, and to enable the stems to be arranged close together and still be of the desired size, the guideways for the stems are arranged in two rows as indicated in Fig. 1. Each slide is yieldingly supported by means of a coiled spring 16 which is seated in a recess in the stem of the slide and bears against a block 17. To enable the pressure of the springs to be varied as desired, each block 17 is mounted upon an adjusting screw 18 and is held against rotation with the screw by means of a projection 19 engaging a longitudinal slot in the stem of the slide. The screws 18 are mounted in the cross bar 10 and are provided below the cross bar with squared portions by means of which they can be conveniently turned to adjust the tension of the springs 16. The upward movement of the slides under the influence of the springs 16 is limited by adjustable stops 20 which are actuated by a series of adjusting screws 21.

By the construction so far described the pressure disks 8 are held in position to act upon a blank passing between the disks and the die roll, and are allowed to move with relation to each other so as to force the blank into the die cavity. The pressure roll shaft 3 passes through all of the disks, and to cause the disks to be rotated by the shaft and at the same time permit the disks to move transversely of the shaft independently of each other, the openings in the bushings 11 through which the shaft passes are considerably larger than the shaft, and the shaft and bushings are provided respectively with a rib 22 and with notches 23, said rib and notches constituting means for connecting the shaft and disks to cause the disks to be positively rotated by the shaft.

To insure the removal of the skiving from the disks, strippers are provided, which, as illustrated, consist of curved metal strips 24 extending over the disk carriers and between the disks. At their forward ends these strippers are pivotally mounted at 25 in a bar 26 secured to the bottom plate 5 of the hopper for the blanks, and at their rear ends the strippers rest upon pins 27. Each pin 27 extends into a recess in the cross bar 10 and is acted upon by a coiled spring 28 seated in the recess and bearing against a block 29 having a screw-threaded engagement with the pin. The outward movement of the pin is limited by the screw-threaded sleeve 30, and by rotating this sleeve the position of the pin can be adjusted and consequently the position of the work engaging surface of the strippers resting on the pin with relation to the teeth of the pressure disks. Each block 29 is held from rotation by means of a projection 31 engaging a slot 32, and by rotating the pin, the pin can be adjusted independently of the sleeve 30. By rotating both the sleeve 30 and the pin 27 the tension of the spring 28 can be adjusted as desired without changing the position of the pin.

The operation of the pressure device illustrated in the drawing has been indicated in

connection with the description given above of the construction and arrangement of its various parts and will be readily understood by those skilled in the art without a separate description thereof.

The nature and scope of the present invention having been indicated, and the preferred form of the invention having been specifically described, what is claimed is:—

1. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a separate carrier for each disk in which the disk is journaled, a rotary shaft passing through the disks, connections between the shaft and disks for rotating the disks while permitting the disks to move transversely to the shaft, and means for yieldingly supporting the disks.

2. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a separate carrier for each disk in which the disk in journaled, a rotary shaft passing through the disks, connections between the shaft and disks for rotating the disks while permitting the disks to move transversely to the shaft, a separate spring supporting each carrier, and means for adjusting the tension of the springs independently.

3. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a separate carrier for each disk in which the disk is journaled, a rotary shaft passing through the disks, connections between the shaft and disks for rotating the disks while permitting the disks to move transversely to the shaft, springs supporting the carriers, and adjustable stops to limit the movement of the carriers.

4. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a separate slide for each disk provided with a head in which the disk is journaled and a guiding stem, means for yieldingly supporting the slides, a rotary shaft passing through the disks, and connections between the shaft and disks for rotating the disks while permitting the disks to move transversely to the shaft.

5. A leather skiving machine, having, in combination, a skiving knife, a series of pressure disks, a device coöperating therewith to hold the work in position to be acted upon by the skiving knife, and a series of strippers located between the disks in position to remove a skiving from the disks, said strippers being arranged to yield radially of the disks and extending between the disks and the said coöperating device.

6. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a series of strippers located between the disks in position to remove a skiving from the disks, and means for adjusting the strippers with relation to the peripheral surface of the disks.

7. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a series of strippers located between the disks in position to remove a skiving from the disks, a separate spring supporting each stripper, and means for adjusting the tension of the springs independently.

8. A pressure device for leather skiving machines, having, in combination, a series of pressure disks, a series of strippers located between the disks in position to remove a skiving from the disks, means for pivotally supporting the strippers at one end, and a series of spring-pressed pins for supporting the other ends of the strippers.

9. A leather skiving machine, having, in combination, a series of pressure disks, a series of independently movable slides in which the disks are journaled arranged side by side in contact with each other, means for yieldingly supporting the slides, a rotary shaft passing through the disks, and connections between the shaft and disks for rotating the disks while permitting the disks to move transversely to the shaft.

In testimony whereof we affix our signatures, in presence of two witnesses.

CHARLES H. BAYLEY.
BENJAMIN F. MAYO.

Witnesses:
EDITH C. HOLBROOK,
FREDERICK L. EDMANDS.