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TREEING-MACHINE.

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*To all whom it may concern:*

Be it known that I, EDWIN N. CHANDLER, a citizen of the United States, residing at Brockton, in the county of Plymouth, State of Massachusetts, have invented a certain new and useful Improvement in Treeing-Machines and the Like for Boots and Shoes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention comprises improvements in means of supporting a form having a boot or shoe applied thereto, while such boot or shoe is being subjected to a treeing, ironing, or other operation in the process of manufacture.

I have illustrated an embodiment of my invention in the accompanying drawings, in which latter,—

Figure 1 shows in side elevation a machine constructed in conformity with my invention and having a form mounted in position thereon. Fig. 2 shows the said machine in plan, with one of the form-supporting arms turned into a vertical position for economy of space in the illustration. Fig. 3 is a partial plan, partly in horizontal transverse section on line 3, 3, Fig. 1. Figs. 4 and 5 show in side and end elevation, respectively, on a larger scale than Figs. 1 to 3, the grooved collar or sleeve which is attached to the base of the form. Fig. 6 is a view in vertical section on the plane indicated by the dotted line 6, 6, Fig. 2, with the form and form-supporting arm omitted, and also with a small portion of the latch broken off at one side thereof. Fig. 7 is a bottom view of the turn-table, with its brackets, and the arms which are supported thereby, omitted. Fig. 8 is a plan view of the base or bed. Fig. 9 shows separately, on an enlarged scale a "bal" attachment which may be employed if desired.

At 1 is indicated a form. It will be understood that in actual practice the forms which are applied to machines embodying my invention will vary in shape, construction, etc., according to requirements in practice, and to the views of users, and also according to the character of the operations to which the boots or shoes mounted thereon are designed to be subjected. The form 1 is mounted upon a form-supporting arm 2, with which it is detachably connected, the manner and means of connection being such as to permit the form to be swung in a transverse direc-

tion relative to the length of the arm 2, to enable all required portions of the shoe to be operated upon. To enable the form to be thus mounted upon the arm 2 and connected therewith, the form has a hole 11, Fig. 3, bored lengthwise into its ankle or leg-portion, and the said ankle or leg-portion also is furnished with a cylindrical collar or sleeve 3 projecting therefrom. As a convenient means of attaching the collar or sleeve to the form the collar or sleeve is provided with oppositely-extending flanges 31, 31, Figs. 4 and 5, having holes 32, 32, made therethrough which receive screws 33, one of which is shown in Fig. 1, that enter the end of the ankle or leg-portion of the form. The central bore, 34, of the collar or sleeve registers with the hole 11. In addition, the form-supporting arm 2 is formed with a cylindrical chamber or socket 21 which is of a proper diameter to receive and contain the collar or sleeve 3, see Fig. 3, and has secured thereto, at the center of the said chamber or socket 21, a cylindrical spindle 22, Fig. 3, which latter is of a proper diameter to fit within the central bore 34 of the collar or sleeve 3, and also within the hole 11 of the form. The free end of the said spindle projects beyond the upper or free end of the arm 2, the spindle being long enough to pass through the collar or sleeve and extend some distance into the hole 11 in the form, when the form is applied to the said arm, as in Fig. 3. When the form is thus applied, the socketed or chambered arm furnishes an exterior lateral support and bearing for the collar or sleeve, while the spindle 22 furnishes in addition an interior lateral support and bearing therefor, the said spindle also affording a lengthened bearing and support within the form itself. Thereby, the form is held with great steadiness, and is efficiently supported and braced against the pressure which is applied to the boot or shoe upon the form. For the purpose of removably securing the form in place upon the arm 2, the collar or sleeve 3 is formed with a peripheral groove 35, extending around the same, to receive a latching device in connection with the arm 2. In the present case the latching device consists of a screw 4, Fig. 3. The threaded stem of the latter is screwed into a threaded hole that is tapped through one side of the arm and also through a boss 23 projecting from the said side, the outer end of the said screw



being furnished with a head 41 for convenience in turning the same manually, and the reduced plain inner end of the screw entering into the groove 35. When the said inner end occupies the groove, the form is locked or latched to the arm 2, but with capability of being turned or swung transversely around the spindle 22. For the purpose of preventing too free a swinging or turning movement of the form, a retarding device is employed. This consists in the present instance of an expanding spiral spring, 5, which occupies the inner end of the chamber or socket 21 of arm 2. When the form is applied to the said arm the free end of the collar or sleeve 3 presses against the spring as in Fig. 3 and compresses the latter, the reaction of the spring causing it to act as a brake.

The form-supporting arm 2 is attached to a support which herein is constituted by a bracket 6. Preferably, the arm is mounted in a manner permitting the same to be adjusted into various positions in a vertical plane, the capacity for such adjustment being secured by connecting the arm to the bracket 6 by means of a horizontal pivot 61 which herein is constituted of a stud having a portion thereof screw-threaded to screw into a threaded hole which is tapped horizontally in the bracket 6, the stud having a disk or head 62 for convenience in turning the same by hand, and the hub of the arm 2 being compressed between the hub of the said disk or head and one side of the bracket 6. Means of positively locking the arm 2 from accidental loss of adjustment is provided. I have shown the proximate lateral faces of the arm and bracket formed, to this end, with mutually-engaging serrations or teeth.

Two brackets 6, 6, are provided upon a swinging turn-table 7, they being arranged at or near 90 degrees apart upon the said turn-table, as in Figs. 1, 2 and 3. Each of the said brackets is equipped with a form-supporting arm 2 and its appurtenances, as already described. By providing two of the said brackets, each having its form-supporting arm, I am enabled to apply a right form to one of the said arms and a left form to the other thereof, which permits one of the shoes of a pair to be fitted upon one of the said forms, and the other shoe of such pair to be fitted upon the other thereof. This enables both of the shoes constituting a pair to be applied to the machine at the same time, and both to undergo treatment without being separated as heretofore necessary in machines equipped to receive a single form, in which case a form for one foot, say the right, is first applied to the machine, and all the right shoes of a series prepared to undergo treatment are operated upon in succession, the form being then replaced by a left one, and all the left shoes of the lot being operated upon in succession. The swinging turn-

table enables the two shoes, which at a given time are upon the two forms with which the machine is equipped, to be brought alternately into position for being operated upon. The said turn-table 7 rests upon a base or bed 8, and is centered with reference thereto by means of a cylindrical boss 81 which rises from the latter. The turn-table is formed with a central hole 71 and at its upper side has a hub 72. The boss 81 enters the said central hole of the turn-table, the vertical prolongation of the central bearing by means of the hub 72 operating to prevent tipping of the turn-table under pressure applied to the boot or shoe which is being operated upon, and also preventing the turn-table from binding in its movements. The turn-table is prevented from rising by means of a cap-disk 9 which is applied to the upper end of the boss 81 and provided with a flange which extends over the upper end of the hub 72. The said cap-disk is secured in place by means of a bolt or screw 91, the stem of which passes through a central hole in the said cap-disk and screws into a threaded hole that is tapped vertically into the upper end of boss 81, while the head of such screw takes against the upper side of the cap-disk.

For the purpose of limiting the swinging movements of the turn-table, and arresting the same in its opposite positions with the respective arms thereof alternately presented in the working position, stops are provided in connection with the same. The said stops are constituted, in the illustrated construction, of a cylindrical stud 73, Fig. 7, projecting downward from the under side of the turn-table into a slot 82, Fig. 8, which is formed in the base or bed 8 concentric with the boss 81, and the opposite ends of the said slot. Means is provided, also, for locking the turn-table in the respective working positions thereof. Such means is shown as consisting of a latch-lever 83, which is pivoted at 84 to a lug 85 with which the base or bed 8 is furnished, the said latch-lever being actuated by an expanding spiral spring 86, Fig. 6, which is located between its inner arm and the base or bed. The said inner arm is caused by the said spring to enter notches 74, 74, Fig. 7, which are formed in the marginal portion of the turn-table at the under side of the latter.

The bal-attachment shown in the drawings is furnished with a suitable device, as 10, Figs. 1, 2 and 9, for engagement with the top of the bal or upper of a boot or shoe at the front of the latter, a support 100, a contracting spiral spring 101 intervening between the engaging device 10 and the support 100, and a washer or the like 102 applied in connection with the spring and engaging-device and serving as a convenient hand-hold by means of which the spring may be extended manually to facilitate the operation of engaging



e device 10 with the bal or upper. The support 100 is formed as an arm having at the inner extremity thereof a pin or post 103, which latter extends from the adjoining portion of the said arm at substantially right-angles. For the reception of the said pin or post, the end of the ankle or leg-portion of the form is bored longitudinally, as at 104, Fig. 1, in which figure the said pin or post is shown occupying the hole 104. When the bal-attachment is applied to the form, the arm 100 projects from the ankle or leg-portion of the form in line with the foot-portion of the latter. In order to hold the arm rigidly it is shaped and arranged at 105 to rest against the end of the ankle or leg-portion of the form, as indicated in Fig. 1, whereby strain tending to carry the outer end of the arm toward the right in Fig. 1 is withstood by the contact of the portion 105 of the arm with the said end of the ankle or leg-portion of the form. In order to prevent the arm from turning or swinging transversely relative to the form, one of the flanges 31 of the collar or sleeve 3 is made long enough to extend past the hole 104, and is slotted as at 36, Fig. 5, to receive the inner portion of the arm 100. The side-walls of the slot 36 support the arm against transverse movement. I do not lay claim herein to the "bal" attachment, inasmuch as it constitutes an independent invention.

I claim as my invention:—

1. The combination with the form having the hole extended within the same, and the collar or sleeve, of the post having the cham-

ber or socket which receives the said collar or sleeve, and also having the spindle located at the center of the said chamber or socket and projecting beyond the post to take a prolonged bearing within the form.

2. The combination with the form, and the bracket secured to the ankle end of the form and having the collar or sleeve formed with the circumferential latching groove, of the post having the chamber or socket which receives the said collar or sleeve and within which the latter is rotatable, and also having the spindle located at the center of the said chamber or socket and projecting beyond the post to take a prolonged bearing within the form, and the latching device entering the said groove to retain the collar or sleeve within the said chamber or socket.

3. The combination with the form having the hole extended within the same, and the collar or sleeve, of the post having the chamber or socket which receives the said collar or sleeve, the spindle located at the center of the said chamber or socket and projecting beyond the post to take a prolonged bearing within the form, the device to latch the collar or sleeve within the said chamber or socket, and the retarding spring occupying the chamber or socket.

In testimony whereof I affix my signature, in presence of two witnesses.

EDWIN N. CHANDLER.

Witnesses:

CHAS. F. RANDALL,  
EDITH J. ANDERSON.