T. G. PLANT.

SOLE LAYING AND LEVELING MACHINE.

APPLICATION FILED MAR. 15, 1910.

965,224.

Patented July 26, 1910.

2 SHEETS—SHEET 1.

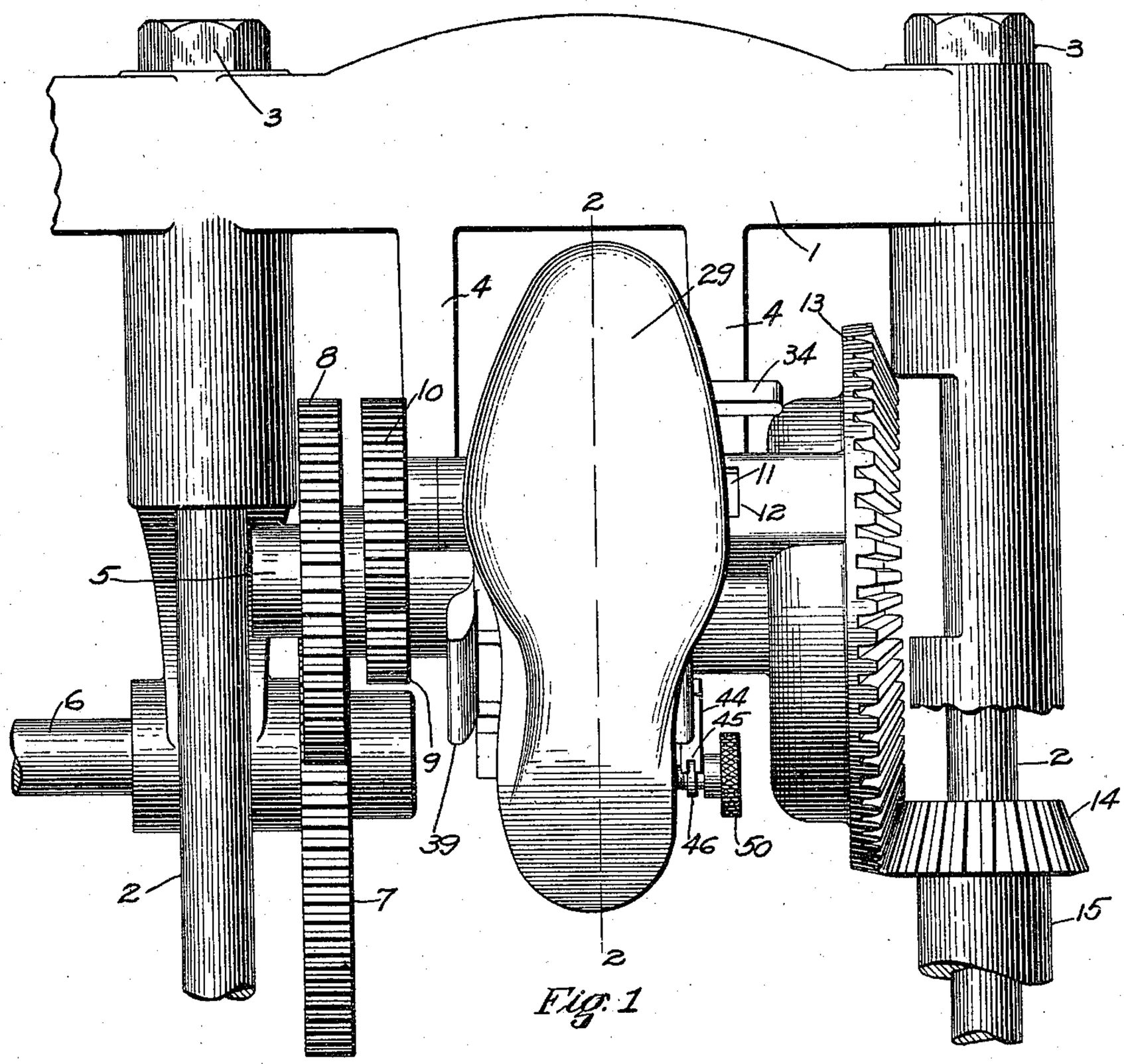

Fig. 1

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2 SHEETS—SHEET 2.

Fig. 2

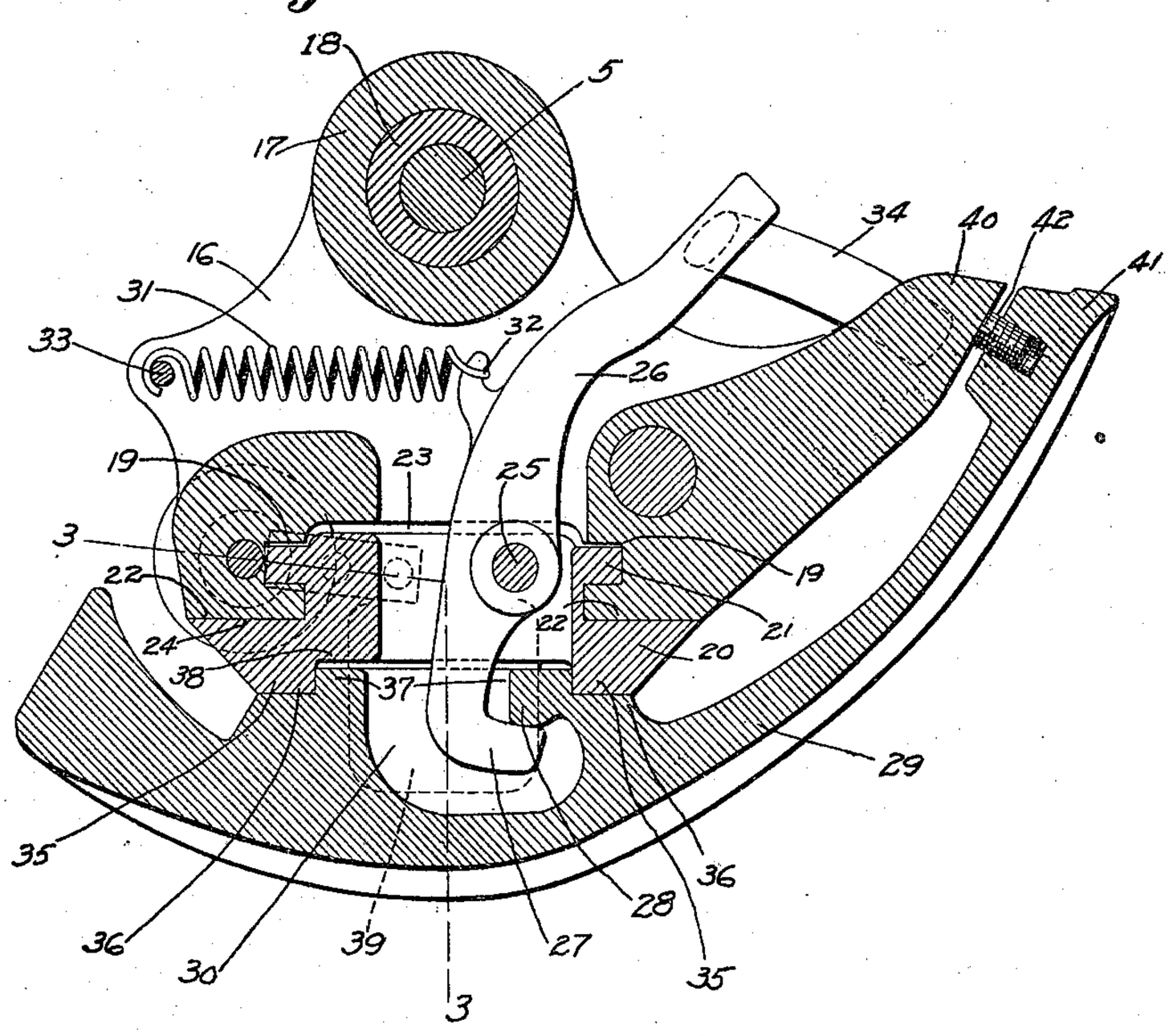
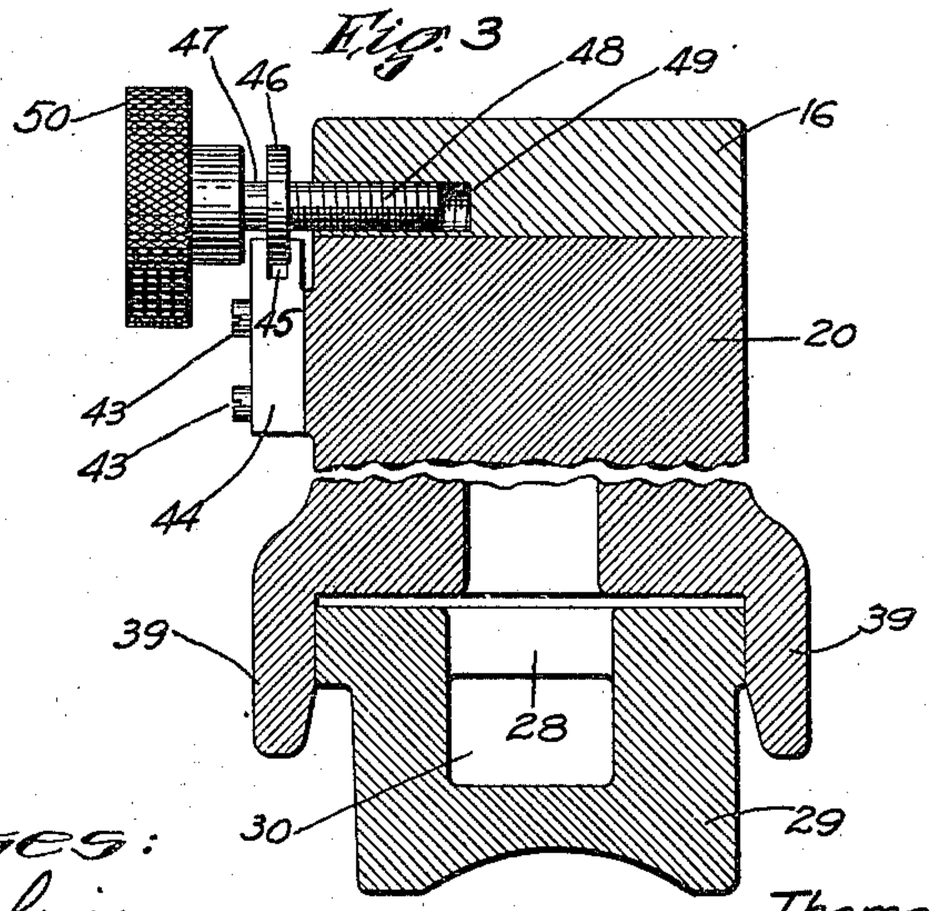


Fig. 3



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UNITED STATES PATENT OFFICE.

THOMAS G. PLANT, OF BOSTON, MASSACHUSETTS.

SOLE LAYING AND LEVELING MACHINE.

965,224. Specification of Letters Patent. **Patented July 26, 1910.**

Application filed March 15, 1910. Serial No. 549,475.

To all whom it may concern:

Be it known that I, THOMAS G. PLANT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Sole Laying and Leveling Machines, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

The invention to be hereinafter described relates to sole laying and leveling machines and more particularly to the means for positioning and detachably holding the laying or leveling form.

In machines of the general type mentioned, the lasted shoe is sustained upon a support or jack and is brought into coacting relation with the laying or leveling form by relative movement of approach; for instance, as pointed out in my application Serial No. 454,082, filed September 21, 1908. Since the laying or leveling form presents a working face that is a substantial reproduction of the shoe sole to be treated, it is desirable, for the best results, that the median longitudinal line of such form shall coincide substantially with the median longitudinal line of the shoe sole. It is also desirable that the forms be susceptible of ready and convenient change from time to time.

With these general matters in view, the aims and purposes of the invention will best be made clear from the following description and accompanying drawings of one form of means for carrying it into practical effect.

In the drawings:—Figure 1 is a front or face view of the upper portion of a sole laying or leveling machine containing the present invention and showing one form of means for causing the former to travel progressively over the shoe sole in a manner substantially as disclosed in said prior application; Fig. 2 is a section on the line 2—2, Fig. 1, showing the manner of mounting the former and means for adjusting it; and Fig. 3 is a section on the broken line 3—3, of Fig. 2.

While the present invention is generally applicable to any laying or leveling former, it is herein shown as applied to that general type disclosed in my prior application Serial No. 454,082, hereinbefore mentioned, wherein said former is given a progressive movement over the shoe sole either with or without a longitudinal vibratory action.

The frame of the machine may be of any suitable character, comprising, for instance, the top cross-beam 1, connected by tie rods 2 and nuts 3 with the lower portion of the frame, as in said application. The hangers 4, the former carrier shaft 5 for sustaining the former carrier block, the shaft 6, the gears 7, 8, 9, 10 and their mountings, for imparting longitudinal vibratory action to the former through the slide block 11 and guide 12, the gear 13 for progressing the former over the shoe sole, and the bevel gear 14 and sleeve 15, may all be of the same general character as in said prior application; the construction being such as therein stated, that as the former is progressively moved or rolled over the shoe sole, a vibratory action may be imparted thereto, if desired, to subject the shoe sole to attritive action in some portions thereof. Further detail description of these features of structure need not be given herein, because they are fully shown and described in said prior application, to which reference may be had; and, moreover, the invention is not dependent thereon, but may be employed in connection with any character of laying or leveling action.

The former carrier block 16 is sustained by the hub-portion 17 from the former carrier shaft 5, a sleeve or bushing 18 being preferably interposed between the hub 17 and the shaft, as indicated in Fig. 2.

The former carrier block 16 is provided with guiding grooves 19, which may be formed in suitable manner, such, for instance, as shown in Fig. 2. Slidingly mounted in the grooves 19 of the carrier block 16 is the former carrier slide 20 having portions 21 for engaging said grooves 19 and for guiding the slide in its lateral movement with respect to the carrier block.

The lower face 22 of the carrier block at each side of the lateral passageway 23 in which moves the slide 20 forms a widened side portion for a bearing surface 24 of the former carrier slide 20, the construction being such that the former carrier slide 20, while movable laterally in the opening 23

of the carrier block and guided in its lateral movement by the guides 19 and flanges 21, has a broad bearing contact at 24 with the lower face of the bearing block in order that the pressure applied to said former carrier slide may be properly distributed on and taken up by the former carrier block.

Pivotally mounted at 25 on the former carrier slide 20 is an arm 26 having a lower hook portion 27 which is adapted to engage a coacting portion 28 of the former 29, the face of said former being shaped appropriately in substantial reproduction of the surface of the shoe sole to be treated.

The former 29 is provided with a recess 30 into which the end 27 of the arm 26 is adapted to pass when the former 29 is pushed into place for connecting it with the former carrier slide 20, the end 27 and shoulder 28 being normally brought into coacting relation when the former is in position by means of a spring 31, one end of which is connected at 32 to the upper portion of the arm 26, and the other end of which is connected at 33 with the former carrier block. The arm 26 has projecting laterally therefrom a handle 34, Fig. 2, by which it may be readily manipulated to disengage the end 27 from the shoulder 28 of the former when it is desired to disconnect the latter from the former carrier slide.

It will be noted from the construction thus far described that the end 27 of the arm 26 engages beneath the shoulder 28 and holds the former against the carrier slide, but said arm 26 takes none of the thrust or pressure exerted by the former 29 during the laying or leveling operation. In order to properly take up and distribute the thrust or pressure of the former during its laying or leveling action, the slide 20 has a bearing portion 35 which engages a corresponding surfaced portion 36 on the former, said portion 36 being preferably formed with a shoulder 37 adapted to fit within a corresponding recess 38 on the former carrier slide.

At each side of the recess 38 in the former carrier slide 20 is a guiding wing 39, shown by dotted lines in Fig. 2 and full lines in Fig. 3, the construction being such that upon moving the former 29 into operative relation with the former carrier slide 20 the wings or guide portions 39 will properly direct the former 29 into coöperative relation with the former carrier slide 20, so that the surfaces 35 and 36 will be brought into coacting relation and the hooked end 27 of the arm 26 will be caused to engage the shoulder 28 of the former.

Disposed between the end 40 of the former carrier block 16 and the end 41 of the former 29 is an adjusting device 42, preferably formed in the present instance as a screw threaded block tapped into the end portion of the former 29, whereby upon proper adjustment of said adjusting device, the former 29 may be properly positioned with respect to the former carrier block 16 when the parts are brought into operative relation.

As hereinbefore indicated, it is desirable at times to adjust the former carrier slide in order to bring the longitudinal median line of the former 29 into coincidence with the longitudinal median line of the shoe sole to be laid or leveled, and the present invention further contemplates means to this end, said means in the present embodiment of the invention being applied to the former carrier slide and adapted to adjust the same transversely of the carrier block, although, as is obvious, various means may be employed for this purpose.

In the illustrated form of the invention, the former carrier slide 20 has secured thereto by suitable means, as the screws 43, a lug or projection 44, having a bifurcated or recessed end 45, Fig. 3, adapted to engage a collar 46 fixed to the threaded adjusting shaft 47. The shaft 47 is provided with a screw thread 48 to engage coacting screw threads 49 formed in the recess of the former carrier block 16, Fig. 3, a suitable hand wheel 50 being provided for rotating the said shaft 47. Obviously, the particular means for adjusting the former carrier slide may be modified in many respects, the construction being such that upon rotation of the hand wheel 50, the former carrier slide 20, and with it the former 29 carried thereon, may be moved laterally to one side or the other of the former carrier block 16 in order to bring the longitudinal median line of the former and the sole into substantial coincidence, or, should it be desired, to adjust said former laterally of the block for any other purpose.

From the construction hereinbefore described, it will be noted that the former carrier block 16 carries a member mounted to slide laterally toward one side or the other of the block, and that this sliding member which, for identification, is herein named the former carrier slide, has mounted thereon the means for connecting the former in operative position. The relation between the former carrier block and said sliding member is such that while the sliding member and block may be relatively moved transversely, the bearing surfaced connection between the block and sliding member remains such as to properly distribute the laying or leveling pressure. It will also be noted that regardless of the adjusted position of the sliding member with respect to the block, the former 29 may be readily and conveniently detached from and attached to the sliding member by simple manipulation of the handle 34 which projects conveniently to one side for that purpose.

Various changes and modifications may be made in the parts of structure embodying the present invention without departing from the true scope of the invention which is definitely set forth by the claims.

What is claimed is:

1. In a sole laying or leveling machine, the combination of a former carrier block, a shaft on which it is mounted for oscillatory movement, a former carrier slide mounted on and movable transversely with relation to said block, means for connecting a former to said former carrier slide, and means for moving the former carrier slide transversely of said carrier block.

2. In a sole laying or leveling machine, the combination of a former carrier block, a former carrier slide mounted on and movable transversely with relation to said block, means carried by the slide for connecting a former to said former carrier slide, and means for bodily moving the former carrier slide and with it the former transversely of said carrier block.

3. In a sole laying or leveling machine, the combination of a shaft, a former carrier block sustained by said shaft, means for moving said block about the axis of said shaft, a sliding member mounted on said carrier block, means for moving said member transversely of said block, and a former carried by said sliding member and movable therewith.

4. In a sole laying or leveling machine, the combination of a laterally movable former carrier block, a sliding member carried by said block, a former carried by said sliding member, and means for moving the slide and former transversely of the block to vary the path of travel of the median portion of the former over the shoe sole.

5. In a sole laying or leveling machine, the combination of an oscillating former carrier block, a former having a face portion corresponding substantially to the surface of the sole to be treated and carried by said block, and means for moving the former transversely with relation to the carrier block to vary the path of the longitudinal median line of the former as it moves progressively over the shoe sole longitudinally thereof.

6. In a sole laying or leveling machine, the combination of an oscillating former carrier block, a former having a face portion corresponding substantially to the surface of the sole to be treated and carried by said block, means for detachably connecting the former and block, and means for moving the former transversely with relation to the carrier block to vary the path of the longitudinal median line of the former as it moves progressively over the shoe sole longitudinally thereof.

7. In a sole laying or leveling machine, the combination of an oscillating former carrier block, a sliding member carried by said block and movable transversely with respect thereto, a former connected to said slide, and means to move the former transversely of the block to vary the path of travel of the median line of the former in its movement longitudinally over the shoe sole.

8. In a sole laying or leveling machine, the combination of a former carrier block, a former having a laying or leveling surface corresponding substantially to the shoe sole to be treated, means for oscillating the former carrier block to progressively move the former longitudinally over the shoe sole, and means for moving the former laterally with respect to the carrier block to cause the longitudinal median line of the former to be moved transversely with relation to the median line of the shoe sole.

9. In a sole laying or leveling machine, the combination of a former carrier block, a former having a laying or leveling surface corresponding substantially to the shoe sole to be treated, means for oscillating the former carrier block to progressively move the former longitudinally over the shoe sole, a slide movable transversely of said former carrier block, a catch on the slide for engaging the former, and means for moving the slide laterally of the carrier block to shift the longitudinal path of movement of the median line of the former with respect to the median line of the shoe sole over which it travels.

10. In a sole laying or leveling machine, the combination of an oscillating former carrier block, a transversely movable slide carried by said block, a former having a surface corresponding substantially to the shoe sole to be treated, means for connecting the slide and former, means for moving the slide transversely of the block, and a bearing member interposed between the carrier block and an end portion of the former.

11. In a laying or leveling machine, the combination of an oscillating former carrier block, a slide carried by the block, means to move the slide transversely of the block, a former, and means for detachably connecting the slide and former.

12. In a laying or leveling machine, the combination of an oscillating former carrier block, a slide carried thereby and movable transversely, a catch carried by the slide, a former having a part engaged by the catch on the slide, and means to move the slide laterally to vary the latter position of the longitudinal median line of the former.

13. In a laying or leveling machine, the combination of a former carrier block, a former having a surface corresponding substantially with the contour of the shoe sole, a catch for connecting the carrier block and

former and holding them in working relation, and an adjustable bearing member disposed between the block and one end of the former.

14. In a laying or leveling machine, the combination of a former carrier block, a former having a surface corresponding substantially with the contour of the shoe sole, a catch for connecting the carrier block and former and holding them in working relation, wing guides for directing the former into operative relation with the carrier block, and an adjustable bearing member disposed between the block and one end of the former.

15. In a laying or leveling machine, the combination of an oscillating former carrier block, a slide movable transversely of said block, a spring actuated catch carried by the slide, a former having means to be engaged by the catch for holding the former to the slide, and means for moving the slide transversely of the block to vary the path made by the longitudinal median line of the former as it is progressed over the sole of a shoe.

16. In a laying or leveling machine, the combination of an oscillating former carrier block, a slide movable transversely of said block, a catch carried by the slide, a former having means to be engaged by the catch for holding the former to the slide, means for moving the slide transversely of the block to vary the path made by the longitudinal median line of the former as it is progressed over the sole of a shoe, and a bearing member interposed between the block and one end of the former.

17. In a laying or leveling machine, the combination of an oscillating former carrier block, a slide movable transversely of said block, a catch carried by the slide, a former having means to be engaged by the catch for holding the former to the slide, wing guides projecting from the slide to direct the former into working relation with the block, and means for moving the slide transversely of the block to vary the path made by the longitudinal median line of the former as it is progressed over the sole of a shoe.

18. In a laying or leveling machine, the combination of the oscillating former carrier block 16, a former 29 having a surface corresponding substantially with the contour of the sole to be treated, said former having a recess 30 and shoulder 28, and an arm 26 having an end 27 to enter said recess and engage the shoulder 28.

19. In a laying or leveling machine, the combination of the oscillating former carrier block 16, a former 29 having a surface corresponding substantially with the contour of the sole to be treated, said former having a recess 30 and shoulder 28, a spring actuated arm 26 having a catch 27 to enter said recess and engage the shoulder 28, and a bearing member 42 disposed between the end of the former and carrier block.

20. In a laying or leveling machine, the combination of an oscillating former carrier block, a transversely movable slide mounted on said block and having a receiving recess 38, a former having a shoulder portion 37 to engage said recess, and a spring catch mounted on the slide to engage the former and connect it to the slide.

21. In a sole laying or leveling machine, the combination of a former carrier block, a former having a face portion corresponding substantially to the surface of the shoe sole to be treated, means for moving the block and former to progressively travel the former over the shoe sole, a catch for detachably connecting the former and block, and means intermediate the former and block for laterally moving them relatively and holding them in adjusted lateral relation.

22. In a sole laying or leveling machine, the combination of a former carrier block, a former having a face portion corresponding substantially to the surface of the shoe sole to be treated, means for moving the block and former to progressively travel the former over the shoe sole, a catch for detachably connecting the former and block, and an adjusting screw for laterally altering the relation of the former and block and holding them in laterally adjusted relation.

23. In a sole laying or leveling machine, the combination of a former carrier block, a former having a face portion corresponding substantially to the surface of the shoe sole to be treated, means for moving the block and former to progressively travel the former over the shoe sole, a catch for detachably connecting the former and block, side wings for guiding the former into proper relation with the block, and means for moving the former laterally with relation to the block.

24. In a sole laying or leveling machine, the combination of an oscillating former carrier block, a transversely movable slide carried by the block, a former, a spring actuated catch carried by one of said parts to detachably connect the former and slide, and an adjusting device for laterally moving the slide with relation to the block.

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

THOMAS G. PLANT.

Witnesses:
ANNA L. HAGGERTY,
ALFRED H. HANDLEY.