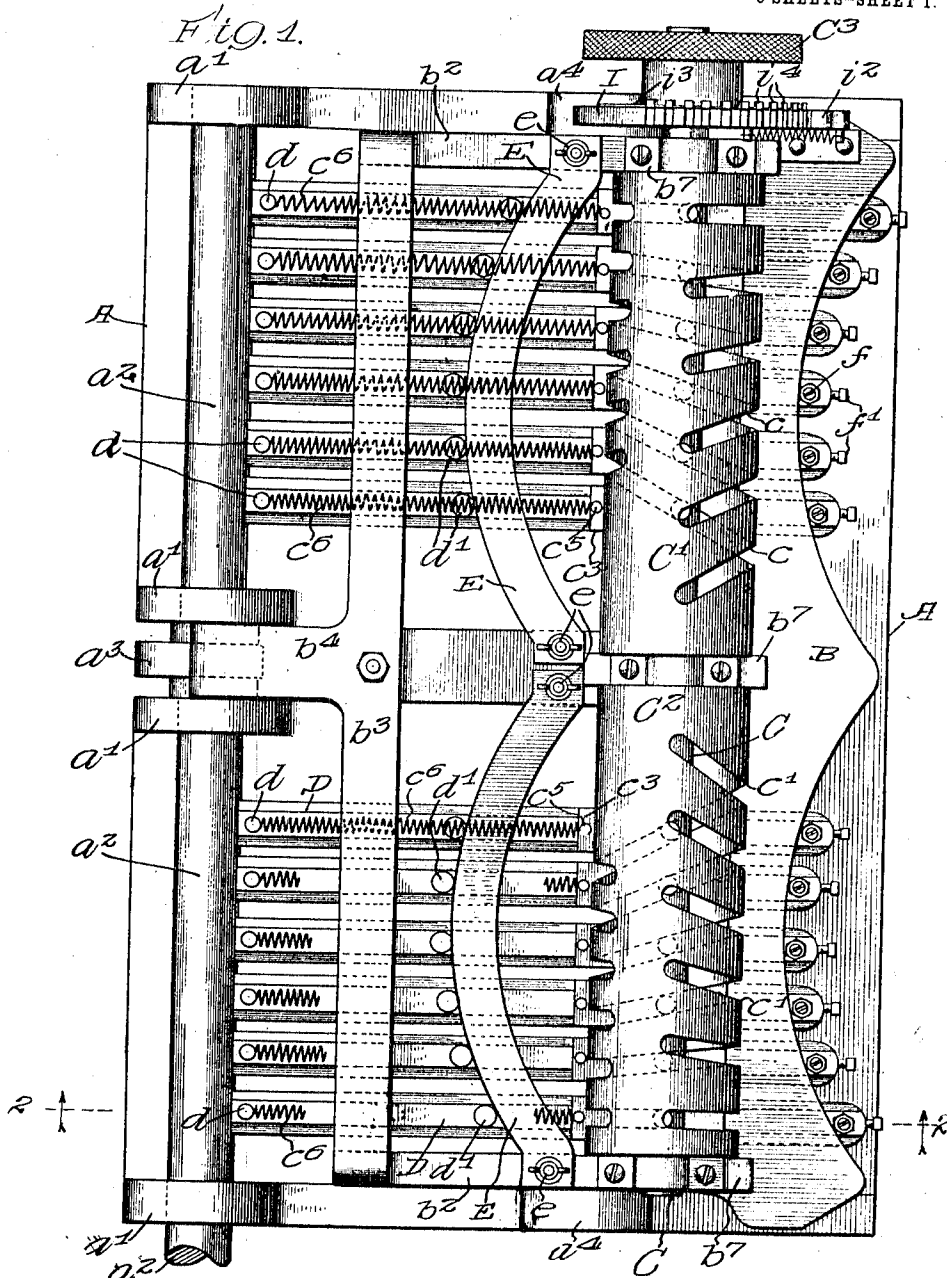


J. W. BARNA.
MACHINE FOR MARKING SHOE UPPERS.
APPLICATION FILED JUNE 12, 1911.

1,012,052.

Patented Dec. 19, 1911.

5 SHEETS-SHEET 1.



Witnesses:
G. H. Donaruss Jr.

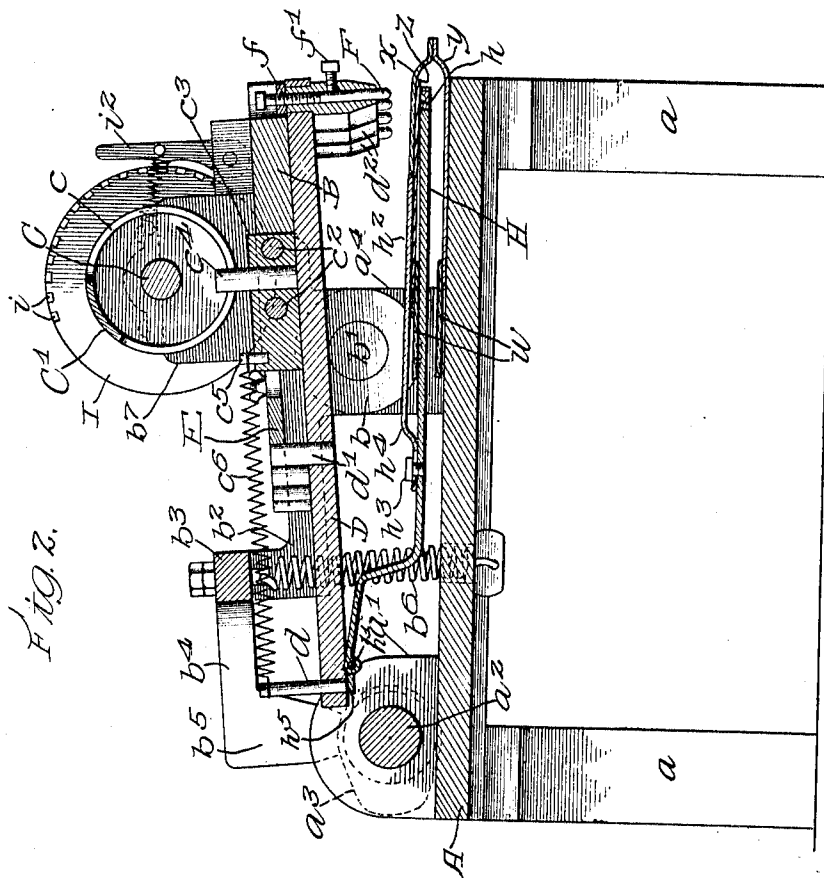
C. A. Paulschmidt

J. W. Barna
By: M. C. Roberts
Res. Atty:

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1,012,052.

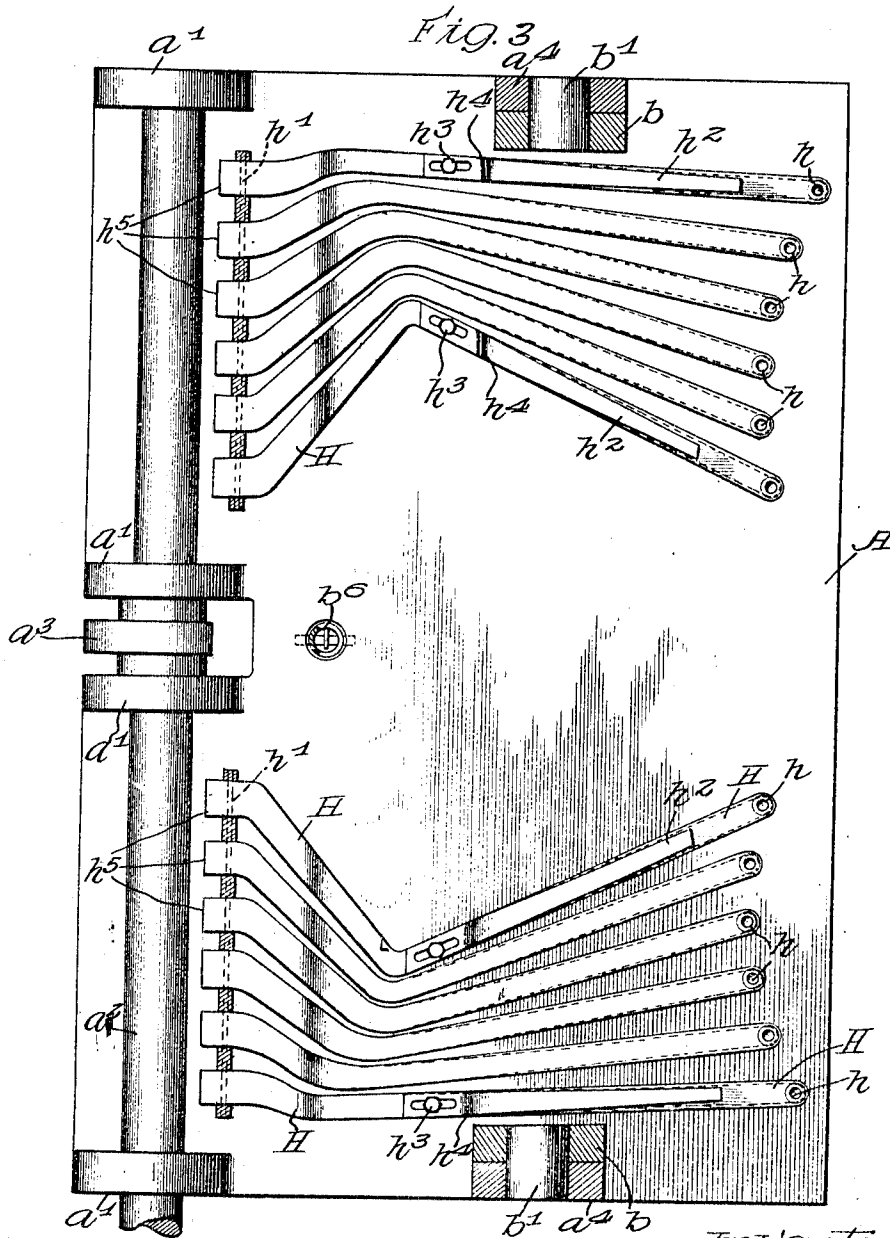
6 SHEETS—SHEET 2.



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1,012,052.

Patented Dec. 19, 1911.
5 SHEETS—SHEET 3.



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5 SHEETS-SHEET 4.

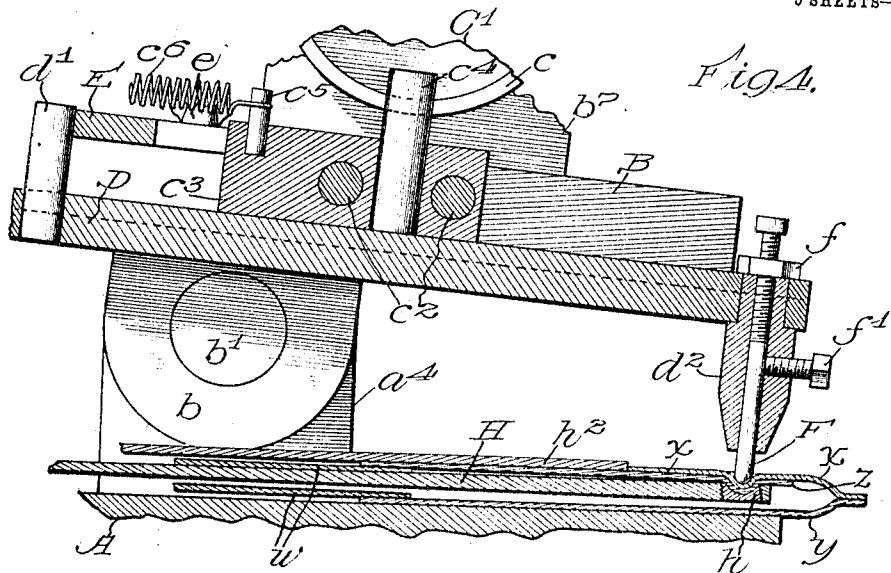


Fig. 5.

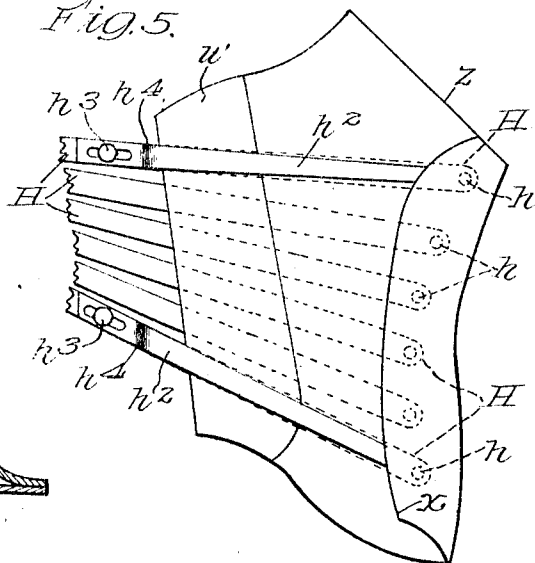
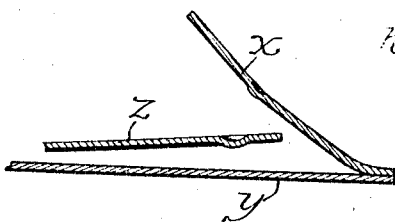


Fig. 6.



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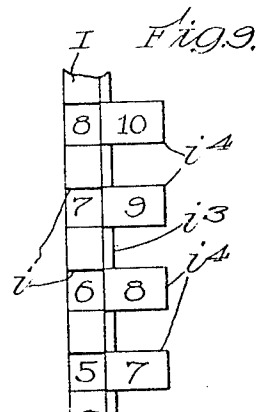
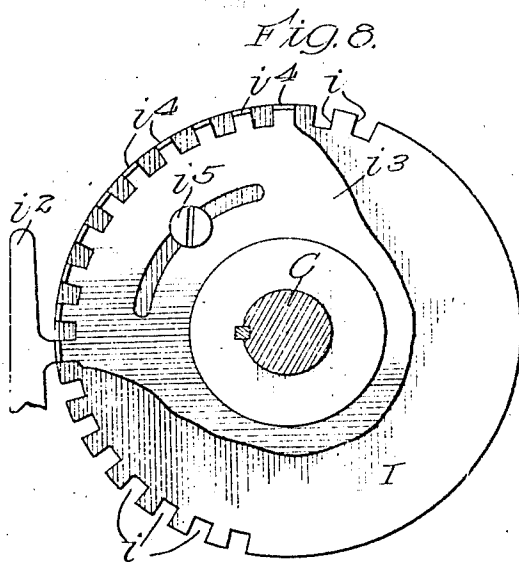
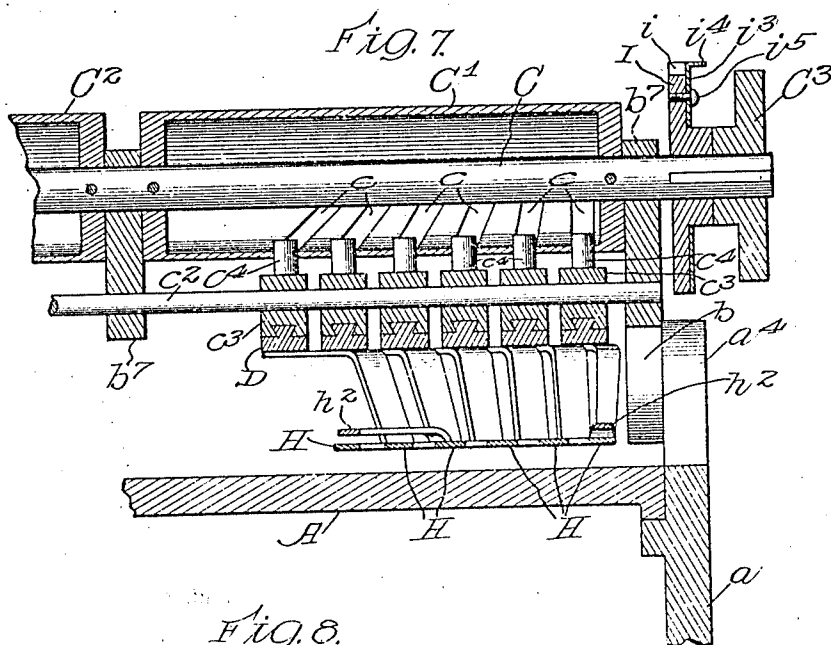
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1,012,052.

Patented Dec. 19, 1911.

5 SHEETS—SHEET 5.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH W. BARNA, OF CHICAGO, ILLINOIS.

MACHINE FOR MARKING SHOE-UPPERS.

1,012,052.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed June 12, 1911. Serial No. 632,683.

To all whom it may concern:

Be it known that I, JOSEPH W. BARNA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Marking Shoe-Uppers, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to machines for marking on shoe-uppers the location of the buttons and button-holes, and consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings in which the same reference characters indicate like parts in the several views:—Figure 1 is a top plan view of a machine embodying my invention, and containing the sets of markers and their respective associated parts for right and left shoes; Fig. 2 is a cross-sectional view on the line 2—2 of Fig. 1 showing the machine mounted upon a suitable table or standards with a shoe-upper in position and the markers in their raised position; Fig. 3 is a top plan view of the bed with certain parts omitted and others shown in section; Fig. 4 is a detail cross-sectional view on an enlarged scale with the markers in their operative position; Fig. 5 is a detail plan view of the combined die-carriers and protector plates or fingers and their gage-arms with a shoe-upper in position thereon; Fig. 6 is a detail view showing on an enlarged scale certain parts shown in Fig. 5; Fig. 7 is a longitudinal sectional view showing the operating cylinder and certain of its associated parts; Fig. 8 is a detail view showing an auxiliary gage for the markers, and Fig. 9 is a detail view of parts shown in Fig. 8.

The invention provides for marking at one operation the location of the button-holes on the "fly" *w* and of the buttons on the small "quarter" *z* of a shoe-upper, and for protecting the large "quarter" *y* from marking or injury; its embodiment in practical form is illustrated in the drawings.

The reference letter A represents a suitable bed or frame which may be mounted upon suitable standards *a* and is provided at its rear with uprights or ears *a'* in which a revolving shaft *a²* is suitably journaled and driven from any suitable

source of power, preferably through a clutch (not shown), the shaft being provided at or near its center with a cam or eccentric *a³* preferably located between its central pair of ears as shown in Fig. 1. The bed is also provided at its ends with intermediate uprights or ears *a⁴* to which a tilting frame B is pivotally secured by downwardly projecting ears *b* engaging pivot-pins *b'*. The frame B is extended toward the rear where it is provided with upwardly projecting center and end plates *b²* to which a cross-bar *b³* is rigidly secured, and the cross-bar is provided with a central rearwardly extending arm *b⁴* provided with a downwardly extending end *b⁵* in the path of the cam *a³*. The cross-bar *b³* is provided at or near its center with a retractile spring *b⁶* secured at its ends to the bar and the bed A and operating to normally hold the frame B in the position shown in Fig. 2 with the end *b⁵* of the arm *b⁴* in position to be operated upon by the cam *a³* to tilt the frame on its pivots *b'* as the shaft *a²* is revolved.

The frame B is provided near its front with uprights or ears *b⁷* in which a shaft C is journaled, and this shaft carries a pair of drums or cylinders *C¹* and *C²* each provided with a series of cam slots *c* and *c'*, respectively, extending circumferentially of the cylinders and arranged divergently, the slots of the respective cylinders extending in opposite direction, as clearly shown in Fig. 1. The ends of the frame B are connected by a pair of parallel rods *c²* upon which are mounted for lateral motion a series of carriers or guide blocks *c³* corresponding in number with the cam slots and each provided with a stud *c⁴* entering one of the slots so that the blocks are moved along their rods to vary the lateral spacing between the blocks as the cylinders are rotated in one direction or the other, the slots extending in such relation to each other that as the cylinders are turned the blocks will be moved simultaneously such relative distances as will space them equally in any position of lateral adjustment. Each block is provided with a pin *c⁵* to which one end of a retractile spring *c⁶* is secured, the other end of the spring being secured to a pin *d* on a carrier-plate D having a sliding connection with a block *c³*, as for example by the tongue and groove arrangement shown in Fig. 7. Each

block c^3 carries a plate D, and the springs c^6 tend to hold the plates forward in the position shown in Figs. 1, 2, and 4 with their stop-pins d' in contact with a gage E held in position on the parts b^2 of the frame B by any suitable means, such for example as the thumb-screws e . The forward end of each plate D carries the male die F of a marker, preferably in the form of a rod having a round lower end, and each die is adjustably mounted on its associated plate, as for example by means of a screw threaded connection with a head d^2 on the plate, being held by a set-nut f engaging its upper screw threaded end and a set-screw f' . The dies F mark on the "fly" x of the shoe-upper the location of the button-holes. Each plate D also carries a combined female die and protector for marking the locations of the buttons on the small "quarter" z of a shoe-upper and protecting the large "quarter" y from marking or injury, as fully hereinafter explained, and which is provided by a plate H carrying a female-die h at its outer end and preferably pivoted at its inner end to the plate D as at h' . Two or more of the plates H of each set, preferably the end ones, are provided with adjustable arms h^2 secured thereto by any suitable connections as the slot and screw-bolt shown at h^3 and upwardly curved as at h^4 to allow the material z of the small "quarter" z to pass between them and the plates H and to bring their outer ends in the plane of the "fly" x for which they act as a locating gage. Each plate H is pivoted to the underside of its associated plate D so as to permit its outer end to remain down in the same position with respect to the bed A when the frame B is raised by its spring b^5 , the inner ends h^5 of the plates H engaging the plates D to limit their movement and hold them substantially in the position shown in Fig. 2 when the frame B and plates D are raised. When the shoe-upper is inserted in place the plates H lie between the two "quarters" and act as female dies for marking the small "quarter" z and as protectors for the underlying large "quarter" y , the male dies F marking the "fly" x and coöperating of course with the female dies to mark the small "quarter". The plates H are curved as shown clearly in Fig. 3 to allow the plates to enter between the "quarters" without interfering with the heel-portion of the shoe-uppers and so that the stock will enter far enough over the plates to bring the markers to position with relation to the parts to be marked. The female dies are preferably provided in the form of removable disks, as for example by having screw-threaded engagement with the plates H.

It is obvious from the disclosure that the dies F and h provide markers for the "fly" x and the small "quarter" z , and that the

two sets of markers associated respectively with the cylinders C and C' provide for marking right and left shoe-uppers. The shaft C is provided with a hand-wheel C³ and with a suitable setting gage and by turning the cylinders C and C' by the hand-wheel to predetermined position indicated on the gage the markers of each set or series will be moved simultaneously by the pins c^4 and slots c^5 to vary their lateral positions to conform to the contours of shoe-uppers of different sizes and shapes. The gages E determine the curvature of the line of the markers, and when shoe-uppers requiring buttons and button-holes upon a certain curve or shape are to be marked a gage-plate of corresponding curvature is mounted in position, the removal and replacement of these plates for predetermined styles or classes of work being readily accomplished by the thumb-screws e . When the proper gage-plate is in place and the markers are properly spaced laterally by rotation of the cylinders C and C', the rotation of the shaft a^2 from any suitable source of power through any suitable clutch will cause its cam a^3 to impinge upon the arm b^4 and tilt the frame B to bring the markers into contact with the material resting upon the bed A as shown in Fig. 4.

The shaft C is suitably provided with a gage for setting the lateral spacings of the markers, as for example by means of a wheel I keyed thereon and having notches i with suitable markings corresponding to the predetermined positions of the markers for different sizes of shoe-uppers, the notches being engaged by a spring-arm i^2 to hold the parts in set position.

In order to provide for variations in the spacings of the markers when the shoe-uppers of other than standard patterns are employed, as when variations in the heights of the uppers occur, I employ a disk i^3 loosely sleeved on a hub of the wheel I and having a lateral series of flanges or offsets i^4 spaced apart to correspond with the spacings of the notches i , the disk being held in any desired position on the wheel by the set screw i^5 passing through a slot therein into the wheel. The higher shoe-uppers of a given size shoe, say an eight, will require its markings to be on a larger scale or increased lateral spacing than a lower shoe-upper of the same size shoe, and so the auxiliary gage constituted by the disk i^3 will be set with its numeral eight at the space in the setting-wheel corresponding to the changed spacing, as say 6, and changes of spacings for all variations in heights of the uppers can be accurately and readily made and uniformly applied by turning the wheel to bring the desired number on the auxiliary scale at the stop-plate.

The two sets of markers provide for right

and left shoe-uppers, and the lateral spacings are uniformly adjustable for both uppers by means of the curved slots, while the alinement or curvature of the marks is uniform on each side by the uniformity of the curvatures of the opposite gages E, and these latter may of course be changed for any desired curvature. The markers are preferably in the form of male and female dies, and by having the lower dies plane-surfaced on their under sides the stock of the large "quarter" is not injured or marked; the term "die" as used herein of course means any suitable marker, and preferably I employ markers which emboss the stock or material as this form of marking remains fixed and durable during subsequent operations to which the material is subjected especially when cloth or similar fabric is employed in the shoe-uppers. The parts of form laterally movable carriers for spacing the markers under the control and action of the cam-slots, and the carrier-plates D provide means for moving the markers longitudinally to space their curvature or alinement under the control of the gages E. By the organization disclosed the locations of the buttonholes in the "fly" and of the corresponding buttons on the small quarter are marked by a single operation, and also for both right and left shoe-uppers simultaneously.

I claim:—

1. In a machine of the class described, markers to indicate on shoe uppers the location of buttons and corresponding button-holes composed of a series of opposed coöperating dies, means to adjust the dies to vary the spacing thereof, and means to operate the dies.

2. In a machine of the class described, markers to indicate on shoe uppers the location of buttons and corresponding button-holes composed of a series of opposed coöperating dies, means to adjust the dies to vary the alinement thereof, and means to operate the dies.

3. In a machine of the class described, markers to indicate on shoe uppers the location of buttons and corresponding button-holes composed of a series of opposed coöperating dies, means to adjust the dies to vary the spacing and alinement thereof, and means to operate the dies.

4. In a machine of the class described, two sets of markers for the uppers of right and left shoes, each set composed of a series of opposed coöperating dies, means to adjust the dies of both sets to vary the relation thereof, and means to operate the dies.

5. In a machine of the class described, two sets of markers for the uppers of right and left shoes, each set composed of a series of opposed coöperating dies, means to simultaneously adjust the dies of both sets to vary

the spacing thereof, and means to operate both sets.

6. In a machine of the class described, two sets of markers for the uppers of right and left shoes, each set composed of a series of opposed coöperating dies, means to simultaneously adjust the dies of both sets to vary the spacing and alinement thereof, and means to operate both sets periodically.

7. In a machine of the class described, two sets of markers for the uppers of right and left shoes, each set composed of a series of opposed coöperating dies, a stock-protector associated with each pair of dies, means to adjust the protectors and dies of both sets to vary the spacing thereof, and means to operate the dies.

8. In a machine of the class described, a series of opposed markers each comprising relatively stationary and movable marking members, means to adjust the markers to vary the spacing thereof, and means to move the movable members toward the stationary members.

9. In a machine of the class described, a series of opposed markers each comprising relatively stationary and movable members, means to adjust the markers to vary the alinement thereof, and means to move the movable members toward the stationary members.

10. In a machine of the class described, a series of opposed markers each comprising relatively stationary and movable members, means to adjust the markers to vary the alinement and spacing thereof, and means to move the movable members toward the stationary members.

11. In a machine of the class described, a series of opposed markers each comprising relatively stationary and movable members, one of the members also forming a stock-protector, means to adjust the markers to vary the spacing thereof, and means to move the movable members toward the stationary members.

12. In a machine of the class described, a bed, a frame pivotally mounted on the bed, a series of opposed markers carried by the frame comprising relatively stationary and movable dies, means to adjust the markers to vary the spacing thereof, and means to move the frame on its pivot to bring the dies into register.

13. In a machine of the class described, a bed, a frame pivotally mounted on the bed, a series of opposed markers carried by the frame comprising relatively stationary and movable dies, means to adjust the markers to vary the alinement thereof, and means to move the frame on its pivot to bring the dies into register.

14. In a machine of the class described, a bed, a frame pivotally mounted on the bed, a series of opposed markers carried by the

frame comprising relatively stationary and movable dies, means to adjust the markers to vary the alinement and spacing thereof, and means to move the frame on its pivot to bring the dies into register.

15. In a machine of the class described, a bed, a frame pivotally mounted on the bed, a series of opposed markers carried by the frame comprising relatively stationary and movable dies, means to adjust the markers to vary the spacing thereof, and means to move the frame on its pivot to bring the dies into and out of operative relation.

16. In a device of the class described, two sets of markers each composed of opposed cooperating dies one of which is movable relatively to the other, a carrier for each pair of dies, means to adjust the carriers, and means to adjust the dies on the carriers.

17. In a device of the class described, two sets of markers each composed of a series of opposed cooperating dies one of which is movable relatively to the other, a carrier plate for each pair of dies, a carrier each plate, means to adjust the carriers, and means to adjust the plates on the carriers.

18. In a device of the class described, a plurality of carriers each of which is provided with a fixed die and a relatively movable die, means for moving the movable dies to cooperate with the fixed dies and means to adjust the carriers simultaneously to vary the spacing of the dies.

19. In a device of the class described, a plurality of plates each of which is provided with a fixed die and a relatively movable die, carriers for plates, means for moving the movable dies to cooperate with the fixed dies, means to adjust the carriers simultaneously to vary the spacing of the dies, and means to vary the positions of the plates on the carriers.

20. In a device of the class described, a plurality of carriers each having an opposing pair of dies, a member having cam slots cooperating with the carriers to adjust the same laterally to vary the spacing of the dies, and means to move the dies into and out of operative position.

21. In a device of the class described, a tilting frame, a plurality of carriers on the frame each having an opposing pair of dies, one of each pair of the dies having pivotal relation to the carrier, a member having cam slots cooperating with the carriers to adjust the same laterally to vary the spacing of the dies, and means to tilt the frame to move the other of each pair of dies into and out of operative position.

22. In a device of the class described, a movable frame, a plurality of carriers on the frame each of which is provided with a pair of opposed cooperating dies, means for moving the frame to bring the dies into cooperation, a rotatable member having cam slots

cooperating with the carriers to adjust the same laterally to vary the spacing of the dies, and a curved plate for alining the dies.

23. In a device of the class described, a movable frame, a plurality of carriers on the frame, a plate on each carrier provided with a die, a second plate pivoted to the first plate and provided with an opposed cooperating die, means for moving the frame to bring the dies into cooperation, a rotatable member having cam slots cooperating with the carriers to adjust the same laterally to vary the spacing of the dies, and means to vary the alinement of the dies.

24. In a device of the class described, a plurality of carriers each of which is provided with a stud, a plate slidably mounted on each carrier and provided with a pair of cooperating dies, springs for moving the plates on the carriers, means to bring the dies into cooperation, and an axially mounted curved plate having cam slots engaged by the studs whereby when the curved plate is moved on its axis the carriers will be adjusted laterally to vary the spacing of the dies.

25. In a device of the class described, a plurality of carriers each of which is provided with a stud, a plate slidably mounted on each carrier and provided with a pair of cooperating dies, springs to move the plates on the carriers, a curved stop-gage for the plates, means to bring the dies into cooperation, and an axially mounted curved plate having cam slots engaged by the studs whereby when the curved plate is moved on its axis the carriers will be adjusted laterally to vary the spacing of the dies.

26. In a device of the class described, a plurality of sets of pairs of marking dies for right and left shoe-uppers, a series of plates each having a cooperating pair of said markers, a carrier on which each plate is adjusted longitudinally to adjust its dies to vary the line of their markings, means to determine said adjustment, means for moving the carriers laterally to vary the spacing of the dies, a gage to indicate the lateral spacing of the dies, and means to bring the dies into cooperation.

27. In a device of the class described, a plurality of sets of pairs of markers for right and left shoe-uppers, a spring-pressed plate on which a pair of markers is supported, a carrier on which each plate is adjusted longitudinally to adjust the dies to vary the line of their markings, means for moving the carriers laterally to vary the spacing of the dies, a gage to indicate the lateral spacing of the dies, and means to bring the dies into cooperation.

28. In a device of the class described, a plurality of carriers each of which carries a male die, an opposed series of female dies pivotally connected with the carriers and

movable therewith, means for adjusting the carriers laterally to vary the spacing of the dies, and means to bring the dies into co-operation.

29. In a device of the class described, a plurality of carriers, a plate movable on each carrier and having a male die, a plate pivoted to each said first plate and having a female die, means for adjusting the carriers laterally to vary the spacing of the dies, and means to bring the dies into co-operation.

30. In a device of the class described, a plurality of carriers each of which has a pair of cooperating markers, a rotatable member having cam slots for moving the carriers laterally to vary the spacing of the markers, and a plate movably mounted in the rotatable member to indicate different spacings of the markers.

31. In a device of the class described, a plurality of carriers each of which has a pair of cooperating markers movable thereon, means to adjust the markers on the carriers, a rotatable shaft provided with a member having cam slots for moving the carriers laterally to vary the spacing of the markers, a setting-wheel mounted on the shaft, and a disk adjustably mounted on the wheel to indicate different spacings of the markers.

32. In a device of the class described, a plurality of carriers each of which is provided with cooperating markers, and a movable plate having two oppositely extending series of diverging cam-slots to move the carriers laterally to vary the spacing of the markers.

33. In a device of the class described, a

plurality of carriers each of which is provided with cooperating markers, a cylindrical member having two oppositely extending series of diverging cam slots engaged by the carriers to move them laterally to vary the spacing of the markers.

34. In a device of the class described, laterally slidable carriers each of which is provided with cooperating markers, a movable shaft having a pair of drums each provided with diverging circumferential slots engaged by the carriers, the slots of the drums extending in opposite directions, a setting-gage on the shaft, and means for moving the markers into co-operation.

35. In a machine of the class described, a series of opposed adjustable markers each comprising relatively stationary and movable members, a series of plates carrying the stationary members, and a pair of upwardly bent arms carried by certain of the said plates and shorter than the plates to form a fly-gage.

36. In a machine of the class described, a series of opposed adjustable markers each comprising relatively stationary and movable members, a series of plates carrying the stationary members, and a pair of arms adjustably secured at their inner ends to the end plates of the series and bent upwardly intermediate their length.

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

JOSEPH W. BARNA.

Witnesses:

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HERBERT C. LUST.