L. A. CASGRAIN.

GAGE.

APPLICATION FILED MAY 20, 1910.

1,040,273. Patented Oct. 8, 1912.

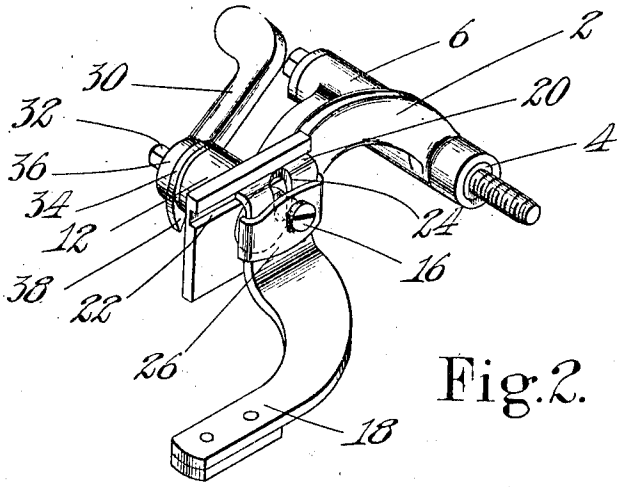


Fig. 2.

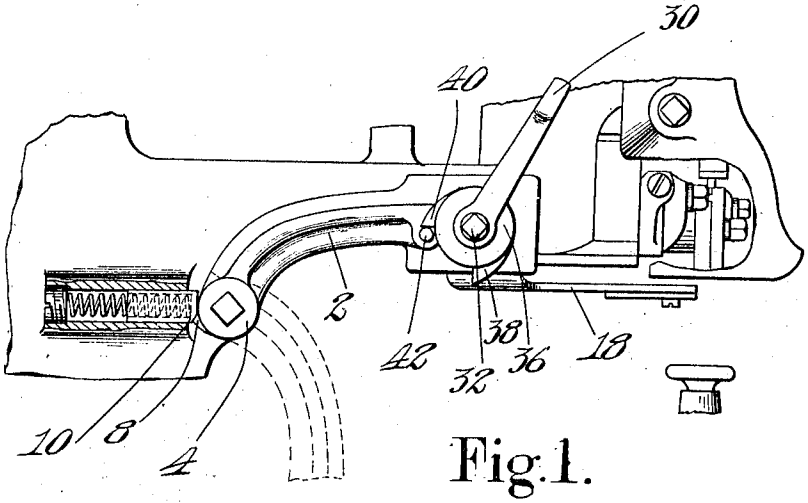


Fig. 1.

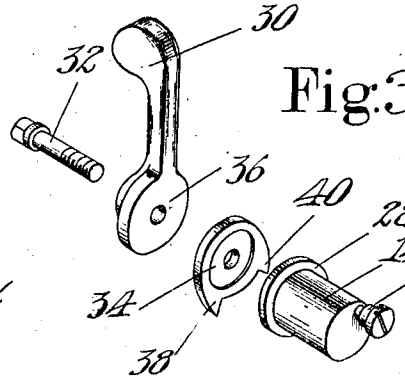


Fig. 3.

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# UNITED STATES PATENT OFFICE.

LOUIS A. CASGRAIN, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## GAGE.

1,040,273. Specification of Letters Patent. Patented Oct. 8, 1912.

Original application filed October 24, 1898, Serial No. 694,381. Divided and this application filed May 20, 1910. Serial No. 562,498.

*To all whom it may concern:*

Be it known that I, LOUIS A. CASGRAIN, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain Improvements in Gages, 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 work gages.

In its illustrated preferred embodiment the invention is shown as applied to a machine for inserting fastenings into the heels and soles of boots and shoes, the principal function of work gages in machines of this type being to determine the distance from the edge of a heel or sole at which the fastening is to be inserted, thus causing the fastenings which are successively inserted to form a row parallel to the edge of the work.

It is frequently desired, especially when doing ornamental work, to insert two or more parallel rows of fastenings, and a general object of the present invention is to provide an improved gage which can readily be set to determine rows of fastenings differently spaced from the edge of the work.

More specifically, the invention aims to provide an improved two-row or two-way gage which may readily be adjusted to different ranges of movement between the extreme limits of its movement and which may readily be moved from a determined first row position into a determined second row position, or vice versa, without especial attention on the part of the operator.

In the accompanying drawings,—Figure 1 is a side elevation of the gage and its carrying arm, the parts being shown in operative position in a machine for inserting fastenings; Fig. 2 is a perspective view of the gage and its carrying arm removed from the machine; Fig. 3 is a detail perspective of means for moving the gage.

For the purposes of this description the gage herein shown may be considered as employed with a machine of the type disclosed in my co-pending application Ser. No. 694,381, filed October 24, 1898, for Letters Patent for improvements in nailing machines, the present application constituting a division of said co-pending application, or it may be considered as employed with machines of other types, for example, with the machine shown in United States Letters Patent 786,190, granted March 28, 1905.

Referring to the drawings, the gage and the mechanism for moving it are preferably supported by an arm 2 pivoted upon a stud 4 screwed into the machine head, the hub 6 of the arm being provided with a flattened portion 8 which is engaged by a spring-pressed plunger 10 to maintain the arm in its elevated position, provision being thus made for moving the arm into a position to carry the gage out of operative relation to the inserting mechanism, such position of the arm being shown in dotted lines in Fig. 1.

The end of the arm 2 remote from its hub is enlarged and provided with a bearing 12 for crank shaft 14 which carries a crank pin 16 by which longitudinal movement of the gage 18 is effected, the crank pin 16 being eccentrically positioned upon the shaft 14 and being threaded into the end of said shaft. The gage 18 is upturned at its rear end, said upturned end being inturned at its upper edge at 20 to enter and be guided by a horizontal groove 22 formed in a plane vertical face of the arm 2, said face being formed upon one end of the bearing 12. The crank pin 16 enters a vertical slot 24 in the upturned end of the gage 18 and thus transmits movement to the gage as it turns about the axis of the shaft 14. A spring 26 on the crank pin 16, bearing against the upturned end of the gage 18 and hooked over the sides of said upturned end, presses the inturned part of the gage into the groove 22 and at the same time provides friction by which too easy turning of the shaft 14 is prevented.

The shaft 14 is provided at its end opposite to that which carries the crank pin 16 with a flange 28 which is held against the other end of the bearing 12 by the action of the spring 26. A handle 30 for turning the shaft 14 is clamped upon said shaft by means of a set screw 32 threaded into the end of said shaft, the handle being free to be adjusted into different angular relations to said shaft. If desired, the flange 28 may be replaced by a washer to be clamped to the shaft 14 together with the handle 30 and the stop plate hereinafter described.

From the foregoing description it will be

seen that the extreme limits of movement of the gage 18 are determined by the eccentricity of the crank pin 16 to the shaft 14 and by the depth of the slot 24, the crank pin 16 engaging the bottom of this slot at each of the limits of movement of the gage in the illustrated construction. This eccentricity is preferably made great enough to cover the extreme range of movement of the gage 18 which would be desired with the different classes of work which the machine is designed to handle. It is, however, very rarely desirable to space two rows of fastenings the distance apart provided by the extreme range of movement of the gage 18, and means is therefore provided for determining a range of movement less than that of the extreme movement provided by the eccentricity of the crank pin 16 to the shaft 14. The illustrated means comprises a notched stop plate 34 clamped between the hub 36 of the handle 30 and the flange 28 upon the shaft 14, said stop plate being provided with two stops 38 and 40 angularly spaced with respect to the axis of rotation of the shaft 14 to determine two limits of movement of the gage 18 as they coöperate with a fixed stop pin 42 upon the arm 2. The stop plate 34 is adjustable about the set screw 32 into different angular relations to the shaft 14 and also into different angular relations to the handle 30. The first row and second row positions of the gage can therefore be adjusted at the will of the operator.

When the desired first row and second row positions of the gage have been determined, the stop plate 34 is clamped to the shaft 14 and the operator thereafter merely turns the handle 30 to the two limits of its movement determined by the engagement of the respective stops 38 and 40 with the fixed pin 42, such movement of the handle effecting the movement of the gage from first row to second row position, or vice versa.

It will be seen from an inspection of the drawings that the stop plate 34 may be so adjusted that only one of the stops 38, 40 will engage the fixed pin 42 when the gage is moved from its first row position to its second row position and back again, and that thus by causing one of the stops to coöperate with one of the extreme limits of movement of the gage a distance between the first and second rows less than that determined by the angular spacing of the stops 38 and 40 may be provided. It will be seen further that the stop plate 34 may be adjusted to cooperate in this way with either of the extreme limits of movement of the gage. The operation of the gage in this case will be the same as when both stops are used, except that one limit of movement of the handle 30 will be determined by the engagement of the crank pin 16 with the bottom of the slot 24.

When it is desired to provide, within the extreme limits of movement of the gage 18, a spacing between the first and second rows different from that provided by the angular spacing of the stops 38 and 40, a stop plate having a different angular spacing of these stops may be substituted for the stop plate 34.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A two-way gage comprising, in combination, a gage slide, eccentric means through which said slide may be moved to and fro longitudinally between limits determined by the eccentricity of said means, and means for determining other limits between which said slide may be freely moved, comprising coöperating stops one of which is fixed and the other of which is adjustable about the axis of turning of said eccentric means into different angular relations to said means to determine different limits for the effective free movement of said means.

2. A two-way gage comprising in combination a gage slide, eccentric means through which said slide may be moved to and fro longitudinally between two limits determined by the eccentricity of said means, a fixed stop and two movable stops coöperating with said fixed stop, said movable stops being carried by said eccentric means and being adjustable about the axis of turning of said means to vary the limits of free movement of said eccentric means and consequently of said slide.

3. A two-row gage comprising in combination a support, a gage slide guided in said support, eccentric means through which the movements of said gage slide to and fro between its first row and second row positions are effected, and means for determining different first row and second row positions comprising a fixed stop, and two movable stops carried by said eccentric means and adjustable about the axis of turning of said means, one of said movable stops being constructed and arranged to coöperate with said fixed stop to limit the movement of said slide when moving in one direction and the other of said movable stops being constructed and arranged to coöperate with said fixed stop to limit the movement of said slide when moving in the other direction.

4. A two-way gage having in combination, a support, a gage slide guided in said support, a rotatable member having bearings in said support, connections between said member and slide for causing the turning of said member to effect longitudinal movement of said slide to and fro between limits determined by said connections, and means for determining other limits of movement between said extreme limits comprising a fixed stop and a movable stop carried by said rotatable member and adjustable

about the axis of turning of said member into any angular relation to said member, and means for securing said movable stop in its different adjusted relations to said member.

5. A two-way gage having in combination, a support, a gage slide guided in said support, a rotatable member having a pin and slot connection with said slide and adjustable means for providing two limits between which said slide can be moved without interference comprising a fixed stop and two movable stops connected to said rotatable member to turn therewith from a position in which one movable stop engages said fixed stop to a position in which the other movable stop engages said fixed stop, said movable stops being adjustable about the axis of rotation of said rotatable member into different angular relations to said pin and slot connection, and means for securing said stops in the different positions of adjustment.

6. In a machine for inserting fastenings, a pivoted supporting arm having a bearing at its outer end, one end face of said bearing being provided with a guideway, an edge gage guided in said end face of said bearing, eccentric means mounted in said bearing and connected to said gage to effect a longitudinal movement thereof to vary the position of the gage with respect to the point at which the fastenings are inserted, and adjustable means for determining limits of longitudinal movement of said gage other than the limits determined by the eccentricity of said eccentric means.

7. A two-way gage comprising a supporting arm, a transverse bearing in the outer end of said arm provided with a horizontal groove in one end face, an edge gage having its inner end upturned and slotted, the upper edge of said inner end being inturned to enter and be guided by the aforementioned groove, a crank shaft mounted in said bearing and provided with a crank pin entering the slot in the upturned end of said gage and an adjustable stop to limit the turning movement of said crank shaft.

8. A two-way gage comprising a support having a vertical face provided with a horizontal groove, an edge gage having its inner end upturned and slotted, the upper edge of said upturned end being inturned to enter and be guided in said groove, a crank shaft provided with a crank pin entering said slot, and means for frictionally resisting the turning of said crank shaft.

9. A two-way gage comprising in combination a support, a slide guided in said support, means for effecting longitudinal movement of said slide comprising a crank shaft having a pin and slot connection with said slide, a handle removably connected to said crank shaft for turning said shaft, and means for limiting the movement of said slide comprising a fixed stop and a movable stop, said movable stop being formed upon a plate arranged to be clamped between said handle and said shaft in different adjusted relations thereto.

10. A two-way gage having in combination a support, a gage slide guided in said support, means for effecting longitudinal movement of said slide comprising a crank shaft having a pin and slot connection with said slide, said slot being formed in said slide and being arranged to limit the travel of said slide in each direction by limiting the movement of said pin, and means comprising a fixed stop and a movable stop adjustable about the axis of rotation of said crank shaft for determining other limits of travel between the aforementioned limits.

11. A two-way gage comprising in combination a gage slide, eccentric means through which said slide may be moved to and fro longitudinally between two limits determined by the eccentricity of said means, means for determining other limits between which said slide may move without interference comprising two movable stops carried by said eccentric means, a fixed stop located between said movable stops, said movable stops being adjustable about the axis of turning of said eccentric means into any angular relation to said means to vary the limits of movement of said means, and means for securing said stops in the different positions of adjustment.

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

LOUIS A. CASGRAIN.

Witnesses:
CHARLES E. GRUSH,
H. DORSEY SPENCER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."