

No. 645,938.

Patented Mar. 27, 1900.

G. W. BROWN.

GAGE ATTACHMENT FOR FASTENER SETTING MACHINES.

(Application filed Jan. 5, 1900.)

(No Model.)

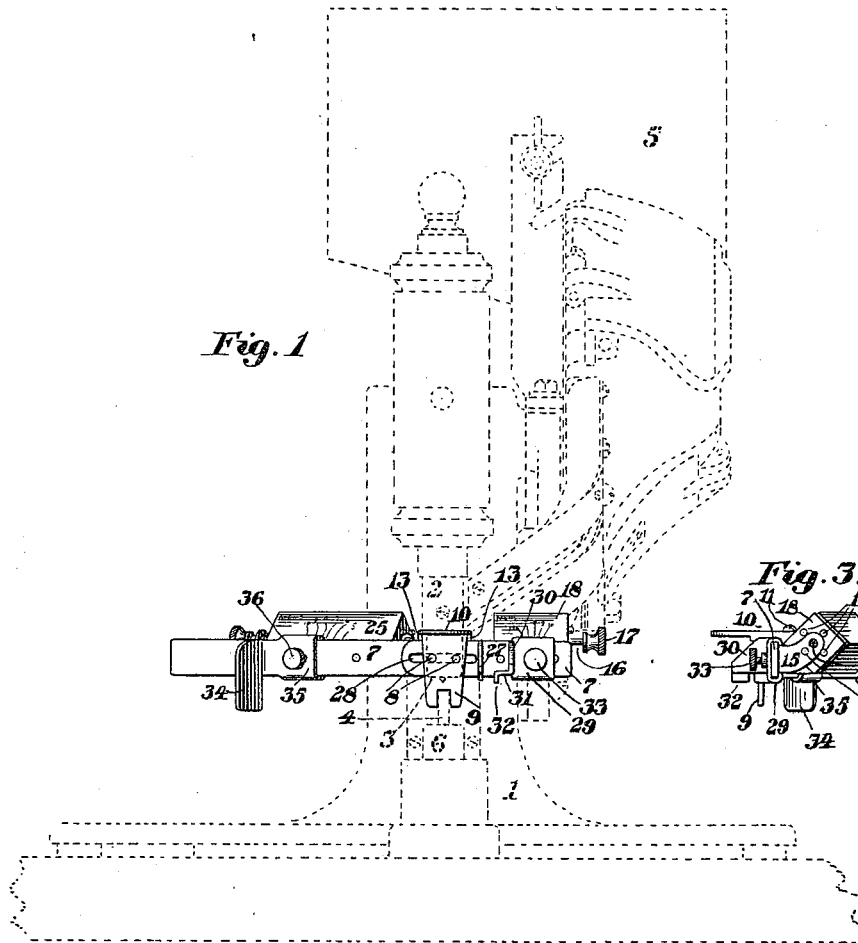


Fig. 1

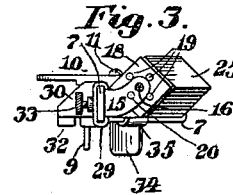


Fig. 3

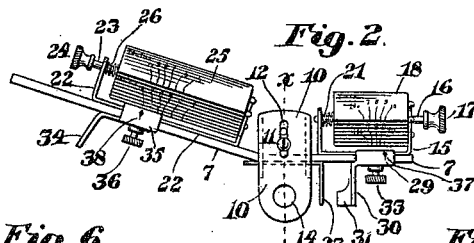


Fig. 2

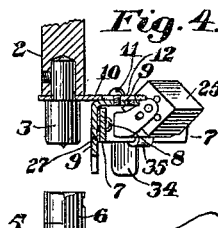


Fig. 4

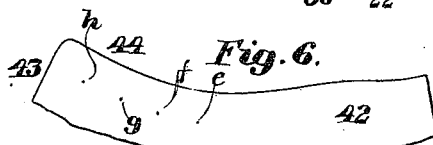


Fig. 6

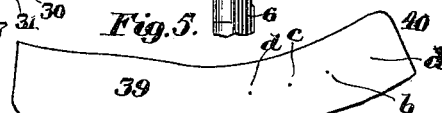


Fig. 5

Witnesses:

Walter E. Lombard
James A. Woodbury

Inventor:

George W. Brown,
by N. C. Lombard
Atty.

UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF QUINCY, MASSACHUSETTS, ASSIGNOR TO THE TUBULAR RIVET AND STUD COMPANY, OF BOSTON, MASSACHUSETTS.

GAGE ATTACHMENT FOR FASTENER-SETTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 645,938, dated March 27, 1900.

Application filed January 5, 1900. Serial No. 415. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BROWN, of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and
5 useful Improvements in Gage Attachments for Lacing-Stud-Setting Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a gage attachment
10 to lacing-stud-setting machines; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings
15 and to the claims hereto appended and in which my invention is clearly pointed out.

Figure 1 of the drawings is a front elevation of my gage attachment shown in full lines and showing in dotted lines so much of
20 a stud-setting machine as is necessary to illustrate how said attachment is applied to the machine. Fig. 2 is a plan of the gage attachment. Fig. 3 is an end elevation looking at the right-hand end of Fig. 1 with milled stud
25 removed. Fig. 4 is a sectional elevation, the cutting-plane being on line xx on Fig. 2 and looking toward the left of said figure. Figs. 5 and 6 are inside elevations of portions of the right and left quarters of a boot in which
30 studs are to be set.

In the drawings, 1 represents the frame of the head of a power stud-setting machine; 2, the spindle which carries the clenching-anvil 3. 4 is the raceway along which the studs are
35 conveyed from the reservoir 5 to the pocket in the upper end of the reciprocating plunger 6, all of which parts are constructed, arranged, and operate substantially as shown and described in the Letters Patent No. 277,985, issued to William C. Bray May 22, 1883.

The object of my invention is to provide a gage that may be readily and accurately adjusted to the proper position for determining the proper distance from the top of the boot-
45 quarter for setting the first stud, which in the right quarter is the stud nearest the top of the boot and in the left quarter is the stud farthest from the top of the boot; also, to determining the distance from the meeting
50 edges of said quarters for setting all of said studs, and also to aid the operator's eye in

determining the distance between two studs, and to this end I provide the angularly-bent bar 7, having a long and a short arm, to the short arm of which, near the bend of said bar, 55 is secured in a fixed position by the screws 8 the angular plate 9, the two arms of which are at right angles to each other, to the horizontal arm of which is adjustably secured the plate 10 by means of the screw 11, screwing 60 into the plate 9 after passing through the slot 12, formed in said plate 10, said plate 10 being provided with the downwardly-projecting lips 13, which embrace the edges of the horizontal arm of the plate 9 to prevent any swiv- 65 eling action of said plates 9 and 10 upon each other. The plate 10 has formed therein a circular hole 14 to receive the shank of the clenching-anvil 3, the shoulder on which bears against the under side of said plate 10 and 70 clamps it between said shoulder and the lower end of the spindle 2 to hold said bar 7 in the desired position, with its short arm substantially at a right angle to a vertical plane drawn through the center of the setting-tools 75 and the lower or terminal portion of the raceway 4.

The short arm of the bar 7 has riveted or otherwise secured to its back side the stand 15, having at each end a rearwardly-project- 80 ing ear, in bearings in which is mounted so as to be revoluble and movable endwise therein the spindle 16, having secured thereon or formed in one piece therewith the milled knob-like head 17 and has firmly secured thereon in 85 a fixed position between the ears of the stand 15 the four-sided block 18, having a length somewhat less than the distance between the ears of said stand. One end of the block 18 has set therein and projecting therefrom four 90 pins 19, at equal distances from the axis of the shaft or spindle 16 and from each other, one of which enters a hole 20 in one of the ears of said stand to lock the block 18 in the desired adjusted position, with each of its 95 faces preferably at an angle of forty-five degrees to a horizontal plane. Between the opposite end of the block 18 and the opposite ear of the stand 15 the spindle 16 has mounted thereon the coiled spring 21, the tension of 100 which tends to hold said block in its locked position. The long arm of said bar 7 has the

stand 22, constructed, arranged, and operating precisely like the stand 15, except that it is longer secured thereto, as shown, and said stand 22 has mounted in bearings therein the spindle 23, provided with the head 24 and carrying the block 25, provided with four locking-pins, and the spring 26, all constructed and arranged in the same manner as the similar parts on the other end of said bar 7.

A gage 27, made from sheet metal by bending the gage proper at a right angle to its shank or supporting portion, is adjustably secured to said bar 7 by being clamped between said bar and the vertical portion of the angular plate 9 by the screws 8, which pass through the slot 28 in the shank of said gage, as shown in Fig. 1. The short arm of the bar 7 has adjustably mounted thereon the clip 29, from one end of which projects the gage-plate 30, a portion 31 of which is bent into a horizontal position and the extreme end portion 32 of which is bent downward into a perpendicular position and is the gage proper for determining the distance between any two studs. This gage and its clip are secured in their adjusted positions by the set-screw 33.

The long arm of the bar 7 has adjustably secured thereon the gage 34, which is formed in one piece with the clip 35, which is secured in the desired adjusted position on said bar by the set-screw 36.

The upper edge of the clip 29 has formed therein the index-mark 37, and the clip 35 has a similar index-mark 38 formed on its upper edge, as shown in Fig. 2.

The blocks 18 and 25 are preferably made of wood and have their sides covered with white paper, upon which are marked a series of graduation-marks indicating the several sizes from "5" to "10," inclusive, as shown. Each of the four sides of each of the blocks 18 and 25 may have such a series of graduation-marks placed thereon, one side of each block being marked for men's sizes, another for youths' sizes, another for boys' sizes, and another the "little gents'" sizes.

The operation of my invention is as follows: The blocks 18 and 25 being covered with fresh paper without marks of any kind thereon and placed in position in the stands 15 and 22, if a case of men's boots are to be supplied with lacing-studs and the manufacturer requires the upper stud to be at a given distance, say one-half inch from the top of the quarter, the gage 27 is adjusted to that distance from the center of the clenching-anvil, and the bar 7 and the vertical portion of the gage-plate 9 are so adjusted on the plate 10 that the front face of the plate 9 shall be at the desired distance from the center of said anvil, and the clip 29 is adjusted upon the bar 7 to bring the gage-point 32 at a distance from the center of said anvil equal to the required distance between two adjacent studs when set, say, on a No. 5 boot. When the clip 29 is firmly secured in position, a mark "No. 5" is made on the paper cover on the

face of the block 18 that is inclined toward the front and also other marks "6," "7," "8," "9," and "10" at such distances from each other as are due to the required varying distances between two adjacent studs in the different sizes of boots. The operator then places the quarter 39, a portion of which is shown in Fig. 5, beneath the anvil 3, with the end 40 thereof in line with the gage 27 and the edge 41 in contact with the vertical portion of the angular plate 9, with the inside of the quarter upward, and sets the first stud at *a*. The quarter is then fed to the right until the center of the stud just set is beneath the gage-point 32, when a second stud is set at *b*. Then the stock is fed till the point *b* is beneath the gage 32, and a third stud is set at *c*, and then another feed takes place and the fourth stud is set at *d*.

The above paragraph applies to a No. 5 boot. If any other size of boot-quarter is to be operated upon, the clip 29 is adjusted till the index-mark 37 is opposite the mark on the block 18 indicating the appropriate size of boot, and the operation will be the same as above described.

As the work is always fed toward the right, when studs are to be set in the quarter (shown in Fig. 6) the stud farthest from the top end 43 of said quarter must be set first. To determine the position of the first stud to be set in the quarter 42, a portion of which is shown in Fig. 6, the gage 34 and its clip 35 are adjusted on the bar 7 to bring the inner face of said gage at a distance from the center of the anvil 3 equal to the distance between the end 40 of the quarter 39 and the last stud set in said quarter. The several graduation-marks "5," "6," "7," "8," "9," and "10" are then made on the side of the paper-covered block 25 which is inclined toward the front, with the mark "5" opposite the index-mark 38 on the clip 35 and with the other graduation-marks at the proper distances from said mark "5" toward the left thereof, corresponding to the required distances between the top of the quarter and the center of the stud farthest from said top of the quarter, due to the variations in the different sizes. The operator then takes the quarter 42, places it beneath the anvil 3, with its top 43 against the gage 34 and its edge 44 in contact with the vertical portion of the plate 9, and sets the first stud at *e*. The work is then fed to the right until the center of the stud just set is beneath the gage-point 32, and the second stud is set at *f*, and in like manner the work is fed and studs set at *g* and *h* in succession, the stud set at *h* being the same distance from the top 43 of the quarter 42 that the stud set at *a* is from the top of the quarter 39.

The gage 34 and its clip 35 are adjusted to different positions for every change in the size of the boot to be acted upon—that is, the index-mark 38 must be placed opposite the graduation-mark indicating the size of the boot to be operated upon.

The drawings of the boot-quarter shown indicate that only four studs are to be set in each quarter; but it is obvious that more or less than four studs may be set in each quarter and the blocks 18 and 25 for one or more additional sizes, if desired.

If youths', boys', or little gents' sizes are to be operated upon, the blocks 18 and 25 are partially rotated to bring a fresh unmarked side to the front, when the operations above described in relation to men's sizes are repeated.

To change the blocks 18 and 25 so as to bring a different side thereof into a position inclined toward the front, the block is moved endwise against the tension of the spring 21 or 26, as the case may be, by pressing upon the head 17 or 24 to unlock said block, which is then partially rotated until the desired side is inclined toward the front, when the pressure being removed from the head the spring 21 or 26 will again cause the block to be tacked in said new position.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A gage attachment for stud-setting machines comprising a supporting-plate constructed and arranged to embrace and be clamped to the clenching-anvil of said machine; a pendent gage-plate to determine the distance from the meeting edges of the boot-quarter at which the lacing-studs shall be set, said gage-plate being mounted at the rear of said anvil and adjustable to a greater or less distance therefrom; a gage-carrying bar secured, between its two ends, to said supporting-plate, at the rear of said anvil, and adjustable to a greater or less distance therefrom toward the rear; a gage adjustably mounted upon said bar at the right of said anvil for determining the distance from the top of the right boot-quarter for setting the upper stud; a gage adjustably mounted upon said bar at the left of said anvil, for determining the distance from the top of the left quarter for setting the lowermost stud; and another gage adjustably mounted upon said bar at the right of said anvil for determining the distance between two adjacent studs in either of the boot-quarters.

2. In a gage attachment for lacing-stud-setting machines, the combination of a supporting-plate constructed, and arranged to embrace and be secured to the clenching-anvil of said machine; the angularly-bent bar 7, and the gage-plate 9, both secured to said supporting-plate in the rear of said anvil and adjustable together to a greater or less dis-

tance from said anvil toward the rear; the gages 27, 32, and 34, carried by said bar 7 to determine the locations for setting the various studs in the two quarters of a boot or shoe; a pair of rectangular blocks, carried by said bar, and upon one or more faces of which are marked graduated scales indicating the different sizes of boots or shoes as set forth; and index-marks 37 and 38 connected respectively with the gages 32 and 34.

3. The combination of the bar 7; supporting-plate 10; stands 15 and 22; the revoluble blocks 18 and 25, mounted respectively in said stands 15 and 22, and revoluble therein; means for revolving the said blocks; and means for locking said blocks in the desired adjusted positions; the gages 32 and 34 carried by the clips 29 and 35 respectively, and index-marks upon said clips whereby said gages may be readily adjusted to the graduation-marks on said blocks 18 and 25, for the particular size and class of boot or shoe to be operated upon.

4. The combination in a gage attachment for stud-setting machines of a supporting-plate to be secured to the clenching-anvil; a gage-carrying bar secured between its ends to said supporting-plate, at the rear of said anvil, and adjustable to a greater or less distance therefrom; a clip carrying a gage for gaging the distance between the points of attachment of two adjacent studs, mounted upon said bar and adjustable thereon, and provided with an index-mark; a pair of rearwardly-projecting ears carried by said bar, one of which is provided with a locking-socket; a spindle mounted in bearings in said ears so as to be revoluble and movable endwise therein, and provided with a suitable head for operating the same; a multiple-sided block firmly secured upon said spindle and movable therewith and provided in one end with as many locking-pins, projecting therefrom, as there are sides to said block, arranged at equal distances from the axis of said spindle and from each other, and adapted to successively engage said locking-socket; and a spring arranged to press said block endwise and cause said pins to enter said socket, and lock said block.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 30th day of December, A. D. 1899.

GEORGE W. BROWN.

Witnesses:

N. C. LOMBARD,

J. HOUSTON STEVENSON.