G. W. Lemley,

Gage for Boring Machine.

No. 35,099. Patented Apr. 29, 1862.

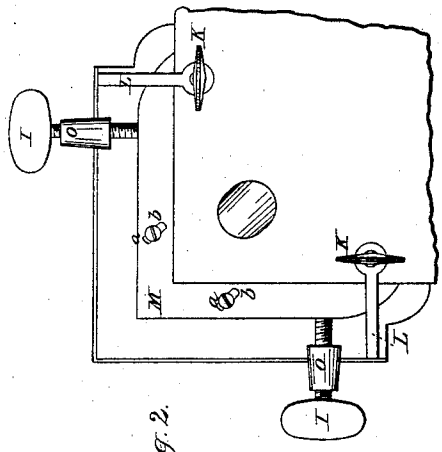


Fig. 2.

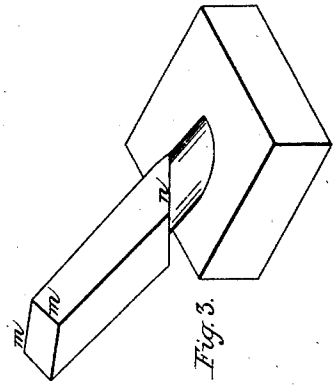


Fig. 3.

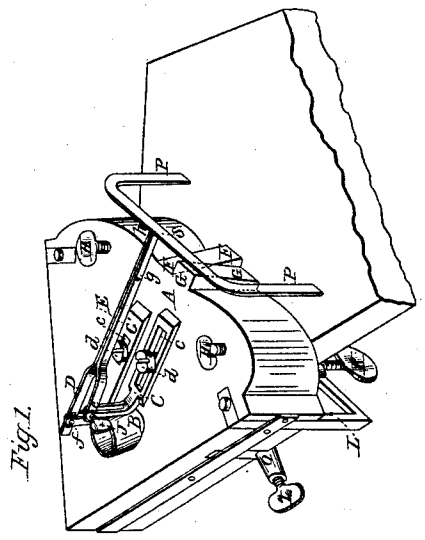


Fig. 1.

Witnesses.
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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

GEORGE W. LEMLEY, OF PAVILION, NEW YORK.

IMPROVEMENT IN MACHINES FOR BORING SEATS OF BUGGIES.

Specification forming part of Letters Patent No. **35,099**, dated April 29, 1862.

To all whom it may concern:

Be it known that I, GEORGE W. LEMLEY, of Pavilion, in the county of Genesee and State of New York, have invented a new and useful machine for boring the corner-holes in the seats of buggies, &c., at any desired angle, and for giving all the bevels requisite to lay out and fit the posts to the varying angles of the said corner-holes; and I do hereby declare that the following is a description thereof in terms which I now think sufficiently full, clear, and exact, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a bottom or under side view, and Fig. 3 a representation of the work performed by my machine.

The nature of my invention consists in the production of a machine by means of which the corner-holes in the seats of buggies and like articles may be bored at any desired angle or pitch and the posts laid out or made with the proper bevels, not only on their cross-sections, but also at the shoulders of the tenon at both ends of the posts.

My object is to supply a want long felt by carriage-makers in the absence of any organized machine by which these important ends could be attained with accuracy and facility.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I prepare a block or bed-piece, A, of the general form represented in the drawings, and bore through it a hole of the size of the hole to be bored in the corner of the seat at an angle of about forty-five degrees, which hole is lined with the metallic tube B. Attached to the under side of the said block or bed-piece by means of the set-screws *a a* is the "cornerer" M, which is adjusted to its proper position by means of the thumb-screws I I and slots *b b*. The clamps L L extend down under the block or bed-piece and the corner of the seat and confine the two together, these clamps being provided with thumb-screws K K for this purpose. The block A and the seat may lie parallel if the hole to be bored is of the same angle as the boring hole or tube B; but if it is to be of a greater angle then the block A and seat must be disposed at an angle with respect to each other greater or less, according to the angle of the hole to be bored. For this purpose the block A is provided with thumb-screws H H, which bear upon the upper surface of the seat and press the block A and seat apart at the front edge of the said block A, the corner of the seat still resting on the under surface of the block A and against the cornerer M.

Upon the upper surface of the block A are arranged the standards C C′, the feet of which are provided with adjusting mortises or slots *c c* and set-screws *d d*. Pivoted to the upper ends of the standards are the gages E D, which are pivoted to each other at the point *g*. The gage E is permanently attached to the guide S and at right angles therewith, while the gage D terminates at the point *h*.

The feet P P of the guide S always rest upon the sills of the seat, no matter what the angle of the holes to be bored may be, and if the seat and block A be parallel, so also will be the upper edges of the gages D E; but in the same degree that the seat and block A depart from this parallelism so do also the upper edges of these gages, owing to the fact that they have no common center of motion. Inclined planes F F and G G are formed on the front edge of the block A, the one being the reverse of the other, as represented.

The manner in which this machine is to be used is as follows: The corner of the seat is confined to the under side of the block A by means of the clamps L L, the adjustable cornerer M determining the exact position of the corner-hole, and the thumb-screws H H the angle of the said hole. The guide S is then brought down, so that its feet P P shall rest on the sills of the seat, in which position it is secured, so that the seat may be removed and replaced, if necessary, before the work is completed, by means of the thumb-screw J. The hole is then bored through the tube B, after which the operator places the stock of his bevel on the upper edge of the gage E and adjusts the blade thereof to the inclined plane G G. This is followed by a similar application of the bevel to the gage D and inclined plane F F. The first of these operations with the bevel determines the bevel of the post for that particular hole in

its cross-section, as represented at *m m*, Fig. 3; the second, the bevel of the shoulders of the tenons at the top and bottom of the posts, as seen at *n* in the same figure.

It will be observed that the standards C and C′ do not occupy like positions on the block A, or, in other words, that the standard C′ is farther from the inclined plane F F than the standard C is from the inclined plane G G. The reason of this will now be explained. By raising the front edge of the block A, or by separating at that point the seat from the block A by means of the thumb-screws H H, the machine is being altered so that it will set the post at a greater angle. The bevels of the posts must necessarily be changed to correspond, both to get their shape and the miters at the ends of the posts; hence the gages D E are so arranged that when block A lies flat on the sills of the seat and are used to fit a post in that position their upper edges lie parallel with each other, giving, as before stated, the correct bevels to fit the post to the hole bored in that position; but as soon as block A is raised, or the said block and the seat are separated at the front edge of the block A by means of thumb-screws H H, there are then three different angles—one at tube B, another at F F, and a third at G G, which do not alter correspondingly. The angle at F F gains upon the angle at tube B. The angle G G also gains upon that at tube B, but not so much; hence it is that standard C′ must be set at a point where it will drop enough in raising the forward edge of block A from the seat to lose what the angle at the point F F gains upon the angle at point B. There is but one point where the standards C C′ can be placed on block A to give the bevels required to a post at any angle, and that depends upon the angle of tube B, and also upon the point that the rivet *g* holds in the gages D E—that is, to get the bevel given on gage D and inclined planes F F standard C and gage E are represented like standard C′ and gage D, differing only in that gage E acts independently of the pivot *g* passing through it. Thus it will be seen that if the pivot *g* were moved a little either way from where it now is the standard C′ would necessarily be required to be moved to a different point. This could be done and the machine would work correctly; but the standards C and C′ cannot be confined to any one point, as this depends entirely upon the angle of the tube B as regards gage E. As respects the gage D the position of its standard C′ depends partly upon the pitch or angle of tube B and partly upon the point at which the pivot *g* is inserted.

Having thus described my machine and the manner in which it operates, what I claim as new, and desire to secure by Letters Patent, is—

1. A machine for boring the corner-holes in buggy-seats and articles of a like nature, consisting of a combination of proper means for regulating and determining the point where and the angle at which the said holes are to be bored, substantially as described.

2. A machine which possesses the capacity of regulating and determining the place and angle of the corner-holes, as well as proper means for determining the bevel of the posts in their cross-section for that angle, substantially as set forth.

3. A machine which possesses the capacity of regulating and determining the place and angle of the corner-holes, as well as proper means for determining the bevel or miter of the shoulders of the tenons on the posts for that angle, as described.

4. A machine comprising proper means for laying out or determining all the bevels of the posts of carriage-seats, &c., to fit them to any desired angle of corner or post holes, as set forth.

5. A machine consisting of a combination of proper means to bore the corner or post holes of a carriage-seat, &c., at any desired angle, and to determine or indicate the bevel of the posts in their cross-section, and the bevel or miter of the shoulders of the tenons thereon for that particular angle of corner or post hole, as specified.

GEORGE W. LEMLEY.

Witnesses:

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