J. W. Briggs, L. C. & J. S. Carner,

Harness Tool,

No. 658. Patented Mar. 26, 1838.

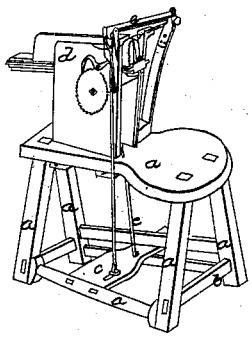

Fig 1.

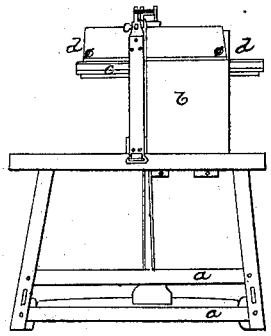

Fig 2.

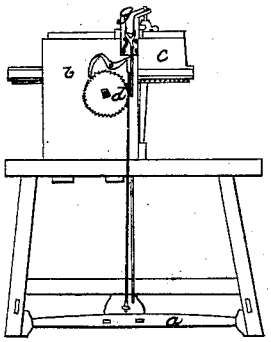

Fig 3.

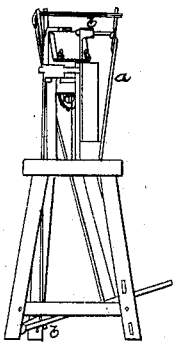

Fig 4.

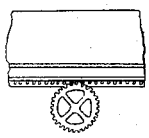

Fig 5.

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UNITED STATES PATENT OFFICE.

JOS. W. BRIGGS, L. C. CARNER, AND J. S. CARNER, OF PAINESVILLE, OHIO.

MACHINE FOR PRICKING LEATHER PREPARATORY TO STITCHING, FOR HARNESS AND COACH MAKERS, &c.

Specification of Letters Patent No. 658, dated March 26, 1838.

To all whom it may concern:

Be it known that we, JOSEPH W. BRIGGS, LUTHER C. CARNER, and JOHN S. CARNER, all of Painesville, Geauga county, Ohio, have invented a new and useful Stitching Machine for the Purpose of Stitching Harness, Thorough-Braces, &c.; and we hereby declare that the following is a full and exact description.

The nature of our invention consists in working the awl punching the holes and moving the leather with the action of the foot, and may be done with any degree of rapidity desired by the workman who uses it.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation.

We construct a bench two feet 8 inches long 8 inches wide at one end and 11 inches at the other, the widest end being fitted to answer as a seat for the workman. The bench is supported by four legs placed near the four corners two feet in length and standing at an angle so as to place them 17 inches apart at bottom. The bench is of plank 2 inches thick and the position of the bench and legs is seen in the annexed drawings Plate No. 1 *a a a a a a*, the legs are connected together by 2 girts one at each end, Plate 1, *b b*. On the right hand side (supporting the seat end of the bench toward you in which position it is always understood to be) there are two girts placed three inches apart the lower edge of the upper of which is 17 inches from the bottom of the bench, and in the legs on the left hand side is a roller which may have its ends let into the legs or into pieces of wood attached to the legs, and is placed so that the center of the roller is on a level with the upper edge of the lower girt in the opposite legs—the two girts are shown plate No. 2 Figure 1, *a a* and the roller Fig. 2, *a*. There is a foot piece one end of which is attached to the roller by two tenons—and is about 19 inches long and passes between the two girts—in this foot piece or treadle which may be of any requisite width and one inch thick. There are cut two mortises or gains to receive the lower ends of the working ends—one is placed ½ inch from the roller and is 3½ inches in length—the other 6½ inches from the roller and two inches long—the position of the foot piece and mortises is shown Plate 1, *c*. Attached to the bench are two upright jaws one 15 inches and the other 11 inches in height—from the top of the bench, each 14 inches wide and ⅞ inch thick. These jaws are elevated perpendicularly from the bench and firmly attached to it by tenons on the bottom of each passing through corresponding mortises in the bench and secured by keys or pins. The jaws are placed within about 5 inches of the narrow end of the bench and are placed angular the left hand jaw being at the back side set in 3¾ inches from the left side of the bench, and the front edge ¾ inch. The jaws are placed parallel and two inches apart with a piece of wood between them of that thickness inserted 8 inches from bench—through which screws pass to keep the jaws firmly in their place. On the inside of each of the jaws 9 inches from the bench is cut a horizontal groove or mortise 14 inches long ½ an inch wide and ⅜ of an inch deep to receive the carriage. The position of the jaws is shown in Plate 2 Figs. 1, and 2, *b b*. A sliding carriage is constructed of hard wood 2½ feet long consists of two jaws, left hand one 7 inches wide and ⅝ of an inch thick, right hand one is made of two pieces same thickness, the lower piece 3 inches and the upper piece 4 inches wide and attached together by two butts with screws so as to form a joint. The upper and outer edge of these jaws is rounded off in the form of common clamps—between these at the lower edge is put a strip of wood ¾ inch deep and ¾ inch in thickness, through which the lower portions of the jaws in the clamps are firmly fastened one to the other so as exactly to fit, and pass between the stationary jaws.

On the outer side of each of the moving carriage is fastened a strip of hard wood, the length of the same ½ inch wide and ⅜ inch thick and 1½ inches from the lower edge so as to fit and move in the groove in the stationary jaws—in the center of the lower side of the carriage its whole length is cut a groove ½ inch wide and ⅜ inch deep in which is fastened a cast iron rack into which the cog wheel meshes and gives motion to the carriage—or the rack may be constructed by wires to correspond with the cogs in the wheel. The back and upon that is each end of the sliding clamps is chamfered down so that the length of the

clamps on top is 2 feet 1 inch. The position of the carriage or clamps is shown Plate 1 and Plate 2 Figs. 1 and 2 *c c*. There is a horizontal shaft passing between the two fixed jaws 5¾ inches from the bench and placed in the center horizontally of the jaws—this shaft is 1 inch in diameter when made of wood, and may be less if of iron. The ends of the shaft are received in boxes, bored in the jaws, and the end of the shaft passes through the left jaw to receive the cog wheel. On this shaft is placed a cog wheel of cast iron 4 inches in diameter with 48 cogs and revolves in the center between the jaws, and meshes into the rack on the carriage, Plate 2 Figs. 5 and 4. On the left end of the shaft and outside of and against the left stationary jaw is a brass cog wheel, which is fastened to the shaft by a screw and washer passing into the ends of the shaft. This wheel is 6 inches in diameter and has 8 notches or cogs to the inch which makes 12 stitches to the inch and the number may be increased or diminished in proportion to the fineness of the stitching required—Plate 2 Fig. 2—*a*. Above the cogwheel is attached to the outside of the left jaw an elbow being 5 inches in length and is fastened by a screw above the center of the shaft and just clear of the wheel, 2 inches from the end to which the hand is attached—this hand attached to the elbow is 3 inches long and is attached to it by a joint allowing perpendicular motion and the other end fits in and propels the wheel, the elbow and hand are of iron, to the other end of the elbow is attached an iron rod by a mortise joint which extends through the bench and is fastened to the foot piece in the mortise next to the roller Plate 2, Fig. 2—*c*. There is a third screw cut on the lower end of this rod and a nut is put on it—immediately above and below the foot piece, by which it may be made longer or shorter, and kept firm at its proper place in the mortise, Plate 2 Fig. 3, *f*. There is also a joint in the lower end of this rod above the screw so that the motion of the foot piece will not affect the position of the rod.

On the right hand side of the stationary jaws at the front side of the jaw at the angle with the bench is fastened a block 2 inches square to the outer side of this block is attached a steel spring 18 inches long 2 inches wide and $\frac{3}{16}$ of an inch thick the spring is let into the bench at the bottom and fastened to the block by 2 screws, and may be all in one piece in which case 1½ inches of the upper end of the spring is made ½ inch square with a mortise in the lower end of the square part, and a gain on the upper end and outer side to receive a leather strap, or this square part may be attached to the spring as in Plate 2 Fig. 3—*a*. There is a cylinder 1½ inches long and 1 inch in diameter outside with a shank extending at right angles and 6 inches more or less long, 1¼ inches wide and one-half inch thick at top and ¼ inch at bottom, in this shank is cut two perpendicular mortises one inch long and it is fastened to the front edge of the right jaw by screws passing through the mortise so that it may be raised up or down. There is a horizontal hole bored through the cylinder ⅜ inch in diameter through which the piston rod passes, Plate 2, Fig. 3, *b*—in the mortise in the upper part of the spring is a small connecting rod ¾ of an inch long which is fastened at one end of the mortise by a thumb screw, and at the other end is connected by a joint fastened also by a thumb screw to the piston rod. The piston rod is 4 inches long and ⅜ of an inch in diameter and has in one end a socket to receive the shank end of the awl, and there is also upon this end of the rod a head about half an inch long to prevent its being drawn by the spring through the cylinder, and a thumb screw passes through the head to hold the awl, and the other end is connected with a short rod attached to the spring, on the left hand stationary jaw at the top and front edge corresponding to the situation of the spring on the other side, is attached by screws a piece of iron 6 inches long 2 inches wide ½ inch thick at top, in the top of this is cut a mortise or gain 1¼ inches long and 1 inch deep, this iron extends as high as the spring on the other side, and in the mortise is placed a friction wheel ¾ inch in diameter and 1¼ inches long over which the strap passes. Plate 2 Fig. 2 *g*, a leather strap 1¼ inches wide is attached at one end to the upper end of the spring and passes over the friction wheel and is connected to another iron rod passing through the left jaw and bench and is attached at the other end to the mortise in the foot piece farther from the roller and confined by a nut on the lower end of the rod the position of this strap and last rod is shown Plate 1 *e e*, in the right hand side of the upper part of the carriage jaws, and near the joint are iron bolts passing through that and firmly fastened in the other jaw an equal distance from each other, with a thread screw on the outer end of each is placed a thumb nut by means of which the leather requiring to be stitched is firmly held in its place, Plate 2 Fig. 1 *d d*. The inside of these jaws are lined with sheet iron at the top and iron straps are fastened to the outside for the nut of the screws to work against. On the iron in which the friction wheel is placed and directly under it on the inside is fastened by a screw a block of wood 2 inches long and 1½ inches square and fitted to the carriage so that the inner side of the block is flush with the inside of the left jaw

of the carriage. The use of this is to support the leather when the awl stitches it and a hole is made in the block against the awl to allow it free passage there is also a channel at the bottom of this block which prevents the stitches from closing up when made by the awl in the leather Plate 1 represents the machine entire. Plate 2, Fig. 1 is a right hand side view. Fig. 2 a left hand side view. Fig. 3 an end view of the machine. Fig. 4 is an enlarged view of a side of the carriage and Fig. 5 is an enlarged end view of the carriage. By the action of the foot in pressing down the foot piece the awl is driven through the leather to be stitched by the action of the rod attached to the leather strap and at the same time the other rod moves the elbow and lifts the end of the hand up one or more notches of the cog wheel as desired when the force is taken from the foot piece, the spring brings it up against the upper girt draws the awl back and by the motion of the rod and then throws the carriage forward if the end of the rod is at the end of the mortise in the foot piece next to the roller it moves the cog wheel one notch, if at the other end of the mortise two notches making in the one case 12 and in the other 6 stitches to the inch, the machine may be made larger or smaller at pleasure. This size is suitable for the finest, coarsest and heaviest stitching required in harness making. For heavy thorough braces to coaches, the machine should be larger and stronger.

What we claim as our invention and desire to secure by Letters Patent is—

The method of pricking the holes by means of a sliding awl operating in manner substantially as above described and the method of working and regulating the motion of the sliding clamps in combination as above described.

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