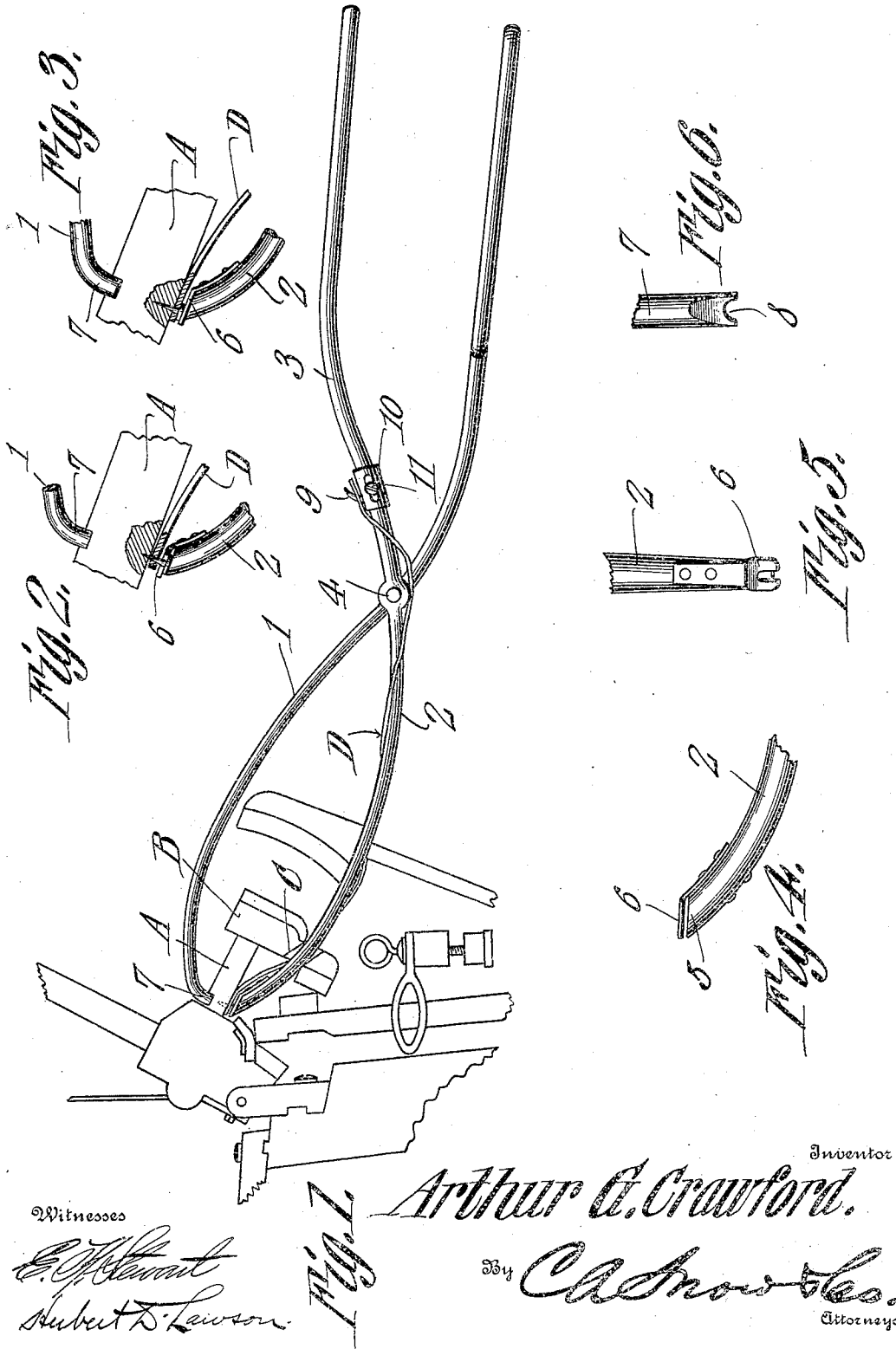


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 TOOL FOR APPLYING BRIDLES TO PIANO ACTIONS.
 APPLICATION FILED DEC. 28, 1908.

938,826.

Patented Nov. 2, 1909.



UNITED STATES PATENT OFFICE.

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TOOL FOR APPLYING BRIDLES TO PIANO-ACTIONS.

938,826.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed December 28, 1908. Serial No. 469,550.

To all whom it may concern:

Be it known that I, ARTHUR G. CRAWFORD, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Tool for Applying Bridles to Piano-Actions, of which the following is a specification.

This invention relates to tools for use by piano builders and repairers for the purpose of attaching bridle straps to the shanks of the back stops. In a number of piano actions the bridle straps are extended through openings within the back stops, and it has been found extremely difficult to insert these straps through the openings and to then attach them to the shanks of the back stops.

The object of the present invention is to provide a simple form of tool whereby a bridle strap can be quickly inserted through the opening in the back stop and readily fastened to the shank of the back stop without danger of injuring any parts of the action.

Another object is to provide a tool of this character having means whereby the bridle strap may be attached at both ends thereto, one of the attaching means being removable for the purpose of fastening the bridle to the shank of the back stop.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a side elevation of a portion of a piano action, showing the position of the tool relative thereto while the bridle strap is being secured in place. Fig. 2 is an enlarged side elevation of the jaws of the tool and showing the position of the tack and bridle strap during the first stage of the fastening operation. Fig. 3 is a view similar to Fig. 2 and showing the relative positions of the parts immediately prior to the removal of the tool and after the tack has been forced to its greatest extent into the shank of the back stop. Fig. 4 is an enlarged side elevation of the tack-holding jaw of the tool. Fig. 5 is an end view thereof. Fig. 6 is an end view of the other jaw of the tool.

Referring to the figures by characters of reference 1 and 2 designate oppositely bowed arms, each of which is provided with a

shank 3 constituting a handle, the two arms being pivotally connected as at 4, so that when the handles are drawn together the free ends of arms 1 and 2 will also move toward each other. The free end of the arm 2 is beveled as indicated at 5 to form a flat jaw and extending over and parallel with the end is a forked spring 6, one end of which is secured to the inner or concave face of arm 2. The forked portion of the spring is spaced a sufficient distance from the jaw 5 to permit the insertion of a tack-head between said face and the spring, the spring being designed however to bear yieldingly upon the tack-head with sufficient force to prevent accidental displacement of the tack with relation to the jaw. The free end of the other arm 1 is extended at an angle therefrom as indicated at 7 to constitute the other jaw of the tool, the end of this end portion 7 being recessed as at 8 to fit snugly upon the rounded shank A of the back stop B of a piano action. As shown in Fig. 1 this back stop has an opening C extending there-through, this opening being provided in a number of forms of piano actions so as to permit the bridle strap D to pass through the back stop, the ends of the bridle strap being attached to the shank A of the back stop and to the bridle wire (not shown).

Heretofore considerable difficulty has been experienced in properly attaching a bridle strap without the necessity of removing parts of the piano action. Such tools as have been devised for this purpose have been objectionable, because they do not equally distribute the pressure upon the part to which the strap is to be fastened, and, as a result, said part often becomes broken. Moreover, it has been difficult, with tools such as heretofore devised, to properly insert the bridle strap through the opening in the back stop.

In using the present device a tack is placed with its head between the jaw 5 and the forked spring 6, the point of the tack extending beyond the spring as clearly indicated in Figs. 1, 2 and 3. One end of the bridle strap D is then hooked on to the point of the tack and said strap is extended longitudinally of the arm 2, its other end being attached to the tool by placing it in engagement with a prong 9 outstanding from the shank 3 of the arm 2. After this strap has thus been fastened to the tool the arm 2 is inserted through the opening C in the back stop B and the point of the tack brought into

the desired position relative to the shank of the back stop. The shanks 3 of the tool are then drawn together so as to force the jaws 5 and 8 against opposite portions of the shank A. Said shank will be properly centered within the jaw 8 while the jaw 5 will push the tack into the shank A. By pulling backwardly on the tool the forked portion of the spring 6 can be withdrawn from engagement with the tack, and by resetting the tool and forcing the jaws toward each other the tack can be pressed a greater distance into the shank A so as to thus securely fasten one end of the bridle strap to the shank.

It will be noted that the two jaws press against diametrically opposed portions of the shank A and said shank is not therefore subjected to any twisting strain, and danger of breaking it is therefore eliminated. It will also be noted that the arm 3 can be held stationary relative to the back stop B and there is no danger of said stop being cracked or being broken off of the shank A.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention. For example, the prong 9 may be mounted upon a sleeve 10 adjustably mounted on the arm 2. This is desirable because the length of the bridle

strap varies in different makes of pianos. The sleeve 10 may be held in adjusted position in any preferred manner, as by means of a screw 11 extending through a longitudinal slot within the sleeve.

What is claimed is:

1. A tool of the class described comprising pivotally connected members having oppositely disposed jaws, means upon one of the jaws for engaging a bridle strap fastener and bridle strap engaging means adjustably mounted upon one of the members at a point remote from the jaws.

2. A tool of the class described comprising pivotally connected members having oppositely disposed jaws, means upon one of the jaws for detachably holding a bridle strap fastener thereon, the other jaw having a recessed working face, a sleeve adjustably mounted upon one of the members, means for holding the sleeve in adjusted position, and means outstanding from the sleeve for engaging one end of a bridle strap.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ARTHUR G. CRAWFORD.

Witnesses:

J. A. BRECKENRIDGE,
ROBERT L. WALLACE.