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PIANO ACTION PLANGE SCREW AND PLATE HOLDER

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To all whom it may concern:

Be it known that I, William B. Ellsworth, a citizen of the United States, residing at Hudson, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Piano-Action-Flange Screws and Plate Holders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tools intended to assist in securing different parts in place by means of screws, the device being intended primarily to hold the screws of piano action flanges while they are being driven or removed and to hold the clips or butt plates which are instrumental in pivotally mounting the piano hammers, permitting them to be easily attached.

The object of the invention is to provide an extremely simple and inexpensive, yet a highly efficient and reliable tool which will permit the above operations to be easily performed without danger of dropping the screws or butt plates and without any danger of injuring any parts of the piano action, it being of course understood however that the tool may if desired be used for purposes other than assembling or repairing pianos.

With the foregoing in view, the invention resides in the novel subject matter herein-after described and claimed, the description being supplemented by the accompanying drawing.

Figure 1 is a side elevation of my invention showing its application for holding the screw of a piano action flange.

Figure 2 is a view similar to Fig. 1 but illustrating the use of the tool for holding a butt plate.

Figure 3 is an edge elevation of the tool partly in longitudinal section.

Figure 4 is an enlarged side elevation of the tool holding a butt plate.

Figure 5 is an edge elevation of the parts shown in Fig. 4.

Figure 6 is a transverse sectional view on line 6—6 of Fig. 5.

Figure 7 is an edge view showing the manner in which a screw is held by the tool.

Figure 8 is a side elevation of the parts shown in Fig. 7.

Figures 9 and 10 are transverse sectional views on lines 9—9 and 10—10 of Fig. 7.

In the drawing above briefly described, the numerals 1 designate a pair of tweezer arms whose rear ends may be integrally connected as indicated at 2 or may be connected with each other in any other suitable manner. The arms 1 have an inherent tendency to spread from each other as shown in Fig. 3 and for the purpose of bringing said arms together to grip an object between their front ends, I provide any suitable means such as a slide 3 operating in slots 4 in said arms. Both arms are preferably formed of flat spring metal and after an object has been initially gripped between them, it will be seen that forward movement of the slide to a greater extent, will place the arms under tension to tightly hold such object.

The front ends of the arms 1 are provided with laterally extending fingers at substantially right angles thereto, said fingers being disposed in parallel relation with each other and having their inner sides formed with opposed notches 6 (Figs. 6, 9 and 10) to receive the shank of a screw, for instance a flange screw such as that indicated at 7.

The portions of the arms 1 adjacent the fingers 5, are formed with notches 8 to receive and guide the head of the screw and it will be seen from Figs. 7 and 8, that the work-engaging side of this head is intended to then contact with the rear edges of the fingers.

Throughout their lengths, the inner sides of the fingers 5 are cut away from their front edges to points spaced in advance of their rear edges, thus providing a pair of thinned jaws 9 for gripping small objects such as a butt plate 10. This formation also provides a pair of shoulders 11 at the rear portions of the jaws 9, against which the articles being held, may bear.

The tool is of particular advantage in repairing piano actions. Whenever a flange screw is to be removed, it is first loosened by a screw driver and is then gripped by the fingers 5, in the manner detailed in Figs. 1, 7 and 8. Then, when the screw is further turned by the screw driver, it may be entirely removed and held in the tool so that there is no danger of dropping it into the action. The tool is also of equal advantage when driving the screws.
The thinned jaws 9 are well adapted for gripping and holding a clip or butt plate (see Figs. 2, 4, 5 and 6) and holding it while its screw is being driven. Also, when a butt plate is to be removed, it may be easily handled with the invention without danger of loss.

Excellent results have been obtained from the details disclosed, which are therefore preferably followed, but it is to be understood that within the scope of the invention as claimed, minor changes may be made and attention may further be directed to the fact that the tool may be used for numerous purposes other than those herein set forth.

I claim:

A screw and plate holder comprising arms movable towards and away from each other and having at their ends flat plate gripping jaws extending transversely from the arms, the arms being recessed at their junction with the jaws to provide seats for snugly receiving the head of a headed fastener and preventing movement thereof longitudinally of the arms, and flanges extending inwardly from the sides of said jaws in opposed relation to limit movement of a plate in one direction, the flanges being recessed to provide opposed seats for receiving the shank of the headed fastener and firmly gripping the shank between the jaws.

In testimony whereof I have hereunto affixed my signature.

WILLIAM B. ELLSWORTH.