May 13, 1924. 1,493,566

E. S. RAUWORTH

HAMMER TAIL TRIMMER FOR PIANO ACTIONS

Filed June 25, 1923

Fig. 1.

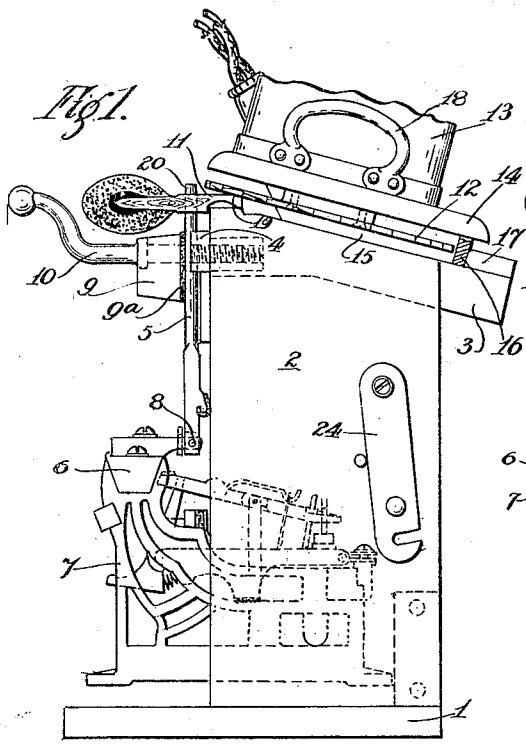



Fig. 3.

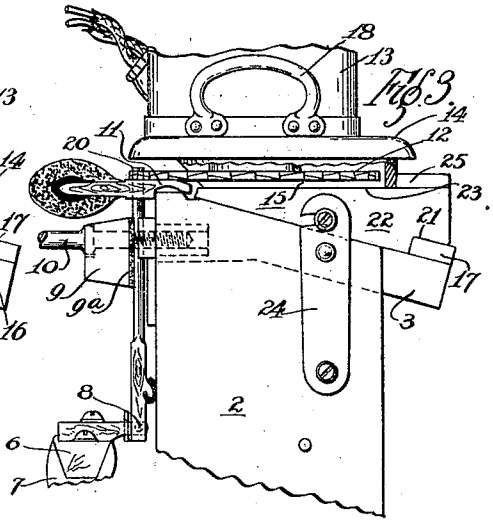



Fig. 2.

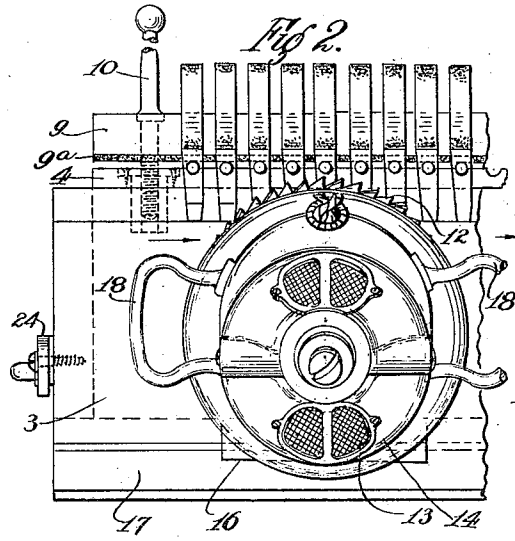
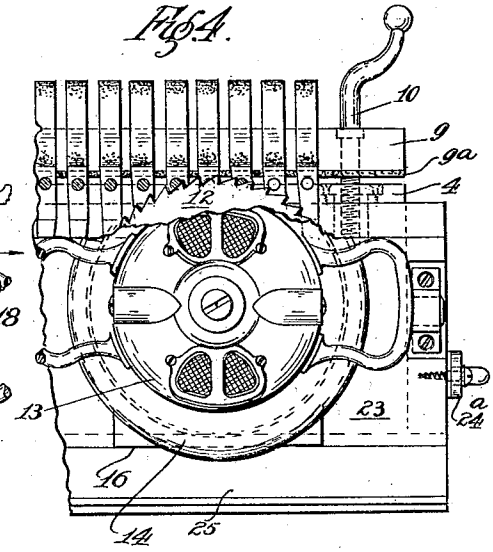



Fig. 4.




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Patented May 13, 1924. 1,493,566

# UNITED STATES PATENT OFFICE.

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## HAMMER-TAIL TRIMMER FOR PIANO ACTIONS.

Application filed June 25, 1923. Serial No. 647,452.

Be it known that I, EDWIN S. RAUWORTH, a citizen of the United States, residing at De Kalb, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Hammer-Tail Trimmers for Piano Actions, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to a machine for trimming certain parts of a piano action, notably the hammers, after they have been assembled in the action. It consists of certain combinations of features and elements herein shown and described as indicated by the claims.

In the drawings:—

Figure 1 is an end elevation of a machine embodying this invention adjusted for beveling the hammer-tails.

Figure 2 is a top plan view with parts broken away showing the machine as adjusted in Figure 1.

Figure 3 is a partial end elevation showing the machine arranged for trimming the ends of the hammer arms or shanks.

Figure 4 is a top plan view of the arrangement of Figure 3 with parts broken away.

This machine consists essentially of a holding rack adapted to support a piano action with the hammers in position to be worked upon and a movable or portable power-driven circular saw for performing the work. In addition to supporting the piano action the rack or base provides means for guiding the movement of the saw. Referring first to Figure 1, the device comprises a base, 1, with an upright, 2, at each end and a longitudinally extending track or bed formed by a board, 3, which is inclined to the horizontal. Adjacent one edge of the bed, 3, a notched rail, 4, extends from end to end of the rack, its notches being spaced to receive the round shanks or arms, 5, of the hammers of a piano action. In Figure 1 the rail 6, to which the hammers are attached and the action-supporting bracket, 7, appear suspended by the fulcrum pins, 8, of the hammers as the latter are held in position against the notched rail, 4. For so holding them a clamping rail, 9, is tightened against the hammers by means of crank-handled clamp screws, 10. Preferably the rail, 9, is shod with felt at $9^a$, to avoid marring or meshing the hammer arms, 5.

When the action is thus supported the tail portions, 11, of the hammers overhang the edge of the bed, 3, extending at an angle to the general plane of said bed. A circular saw, 12, is mounted on the shaft of an electric motor portably arranged in a casing, 13, and said casing is provided with a base, 14, having a depending guard flange, 15, which surrounds about three-fourths of the periphery of the saw, 12. At the open side of the guard, 15, the saw is exposed toward the hammer-tails, 11, and the opposite side of said guard is formed with a straight edge, 16, for lodgment and guidance against a guide rail, 17, upstanding from the lower edge of the bed, 3. When the hammers have been clamped in position as shown in Figure 1, the portable saw is placed on the bed, 3, at one end and with the saw, 12, in motion the casing, 13, is moved slowly along the bed by means of its handles, 18, the operator being careful to keep the straight edge, 16, of the guard flange against the guide rail, 17. As a result a slight bevel is cut at 19 on the tail portion, 11, of each hammer.

In assembling the piano action the arms or shanks, 5, of the hammers are made with a little excess length which projects through the hammers at 20 and should be trimmed off flush with the hammer surface. This operation is accomplished while the action is clamped in the position shown in Figure 1 by placing on the bed, 3, a supplemental bed, 23, having triangular blocks or supports, 22, which compensate for the inclination of the bed, 3, and bring the supplemental bed substantially to a horizontal plane so as to support the saw, 12, with its lower surface as shown in Figure 3. The blocks, 22, are notched at 21 to engage and rest against the guide rail, 17, and the supplemental bed is held in place by hooks, 24, swung up from the ends, 22, of the main frame. The bed, 23, is provided with a guide rail, 25, against which the straight edge, 16, of the saw guard is held as the saw is moved along the bed for cutting off the projections, 20, as indicated in Figure 4.

When these two operations have been completed the action is readily released by removing the clamp screws, 10, and another action is placed in the frame for similar treatment.

I claim:

1. A machine for trimming the hammers

of a piano action comprising clamping means for securing the hammers in a row, a bed extending adjacent the tail portions of said hammers, a portable saw device having a casing adapted to rest on the bed and support the saw blade in a plane parallel thereto, and a guide rail on the bed extending substantially parallel to the row of hammers for engaging a part of the saw casing to guide the saw along the bed.

2. In the combination defined in claim 1, said saw casing including a guard flange partially encompassing the saw but exposing its cutting edge toward the hammers, said guard at the opposite side of the saw having a straight portion to engage the guide rail.

3. In the combination defined in claim 1, the bed being inclined with respect to the hammers for causing the saw to cut a bevel on their tail portions.

4. In the combination defined in claim 1, the bed being inclined with respect to the hammers, and a supplemental bed adapted to be secured adjacent the hammers and to support the saw in a different plane for operation upon another portion of said hammers while they remain clamped in their original position.

5. In the combination defined in claim 1, the bed being inclined with respect to the hammers for securing a beveling cut on their tail portions, and a supplemental bed having inclined supports adapted to rest upon the main bed and provided with a guide rail for controlling the movement of the saw in a plane for trimming off the projecting ends of the hammer shanks.

6. In combination with a multiple-notched clamp to engage the hammer shanks of an assembled piano action, a rotary saw movable bodily adjacent such clamp, and guiding means for holding the saw in operative relation to certain portions of the hammers.

7. In the combination defined in claim 6, upright supports for said clamp at each end thereof, beyond the ends of the action, arranged to permit said action to be suspended between the uprights by means of the hammer pivots.

8. The method of trimming the hammers of a piano action which consists in clamping the shanks of all the hammers of an action in alignment after their assembly in the action, and then guiding a rotary cutter in a plane intersecting the portions of the hammers to be trimmed.

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