

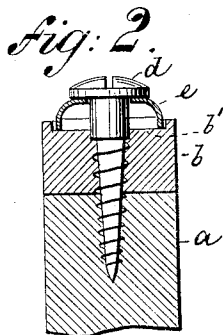
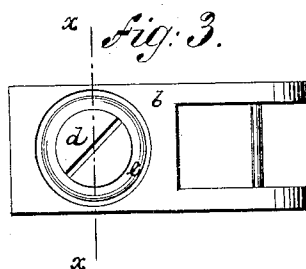
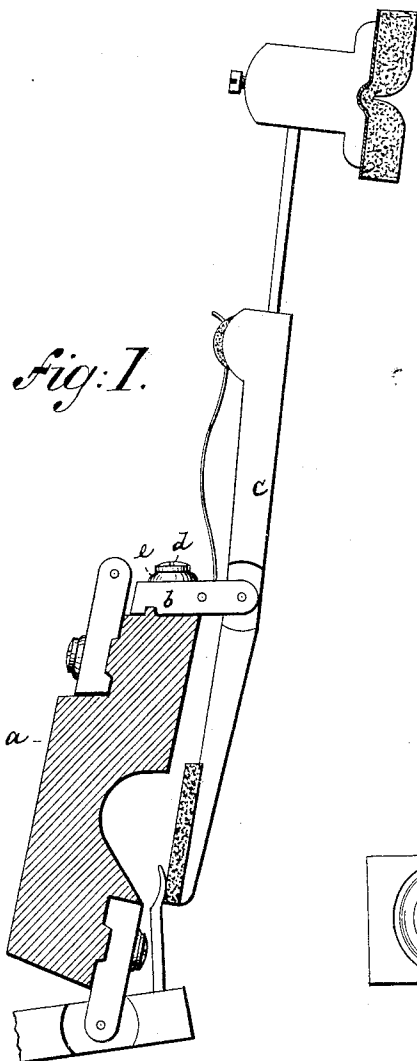
(No Model.)

A. P. ROTH.

FLANGE ATTACHMENT FOR PIANO ACTIONS.

No. 462,777.

Patented Nov. 10, 1891.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALFRED PAUL ROTH, OF NEW YORK, N. Y.

FLANGE ATTACHMENT FOR PIANO-ACTIONS.

SPECIFICATION forming part of Letters Patent No. 462,777, dated November 10, 1891.

Application filed July 28, 1891. Serial No. 401,096. (No model.)

To all whom it may concern:

Be it known that I, ALFRED PAUL ROTH, of the city of New York, New York, have invented an Improved Flange Attachment for Piano-Actions, of which the following is a specification.

This invention relates to an improved manner of attaching the flanges that connect the hammer-shank, the damper-lever, or other vibrating parts to the rails of the action.

The object of the invention is to prevent the expansion and contraction of the wood from affecting the stability of the connection between the flange and the rail. To this effect the flange is mortised and provided with a cup-shaped washer, all as more fully pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of my improved flange attachment, showing the same applied to the damper-flange. Fig. 2 is a section on line *xx*, Fig. 3; and Fig. 3, an enlarged top view of the flange.

The letter *a* represents a rail of a piano, and *b* is the forked flange that serves to pivotally attach the shank *c* of a damper or other swinging mechanism to the rail. In order to secure the flange *b* to the rail *a*, the flange is perforated for the admission of a screw *d*. The perforation is countersunk on top to form a socket or mortise *b'*. This socket receives

the lower edge of a cup-shaped upwardly-bulged spring-washer *e*. The washer is made of metal and is centrally perforated for the admission of the screw *d*, the head of which bears upon the surface of the washer and holds the latter to its seat. In this way it will be seen that there is provided a compensating connection between the flange *b* and the rail *a*. This connection will take up any shrinkage in either the flange or the rail and will prevent rattling when the instrument is played. Very often the wood in flanges swells through dampness, and when it dries out again it leaves a little looseness, which causes the rattling.

My improved connection will give when the wood swells, while when the wood dries up the connection will expand, thus holding at all times the flange firmly to its seat on the rail.

What I claim is—

In a piano-action, the combination of a perforated flange *b*, having mortise *b'*, with a cup-shaped upwardly-bulged spring-washer *e*, and with a screw *d* bearing upon such washer, substantially as specified.

ALFRED PAUL ROTH.

Witnesses:

FRANK B. TOWMAN,
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