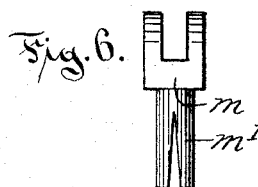
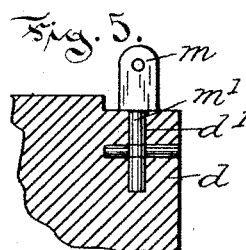
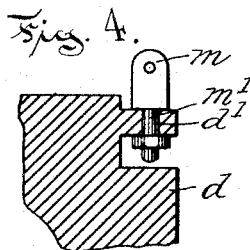
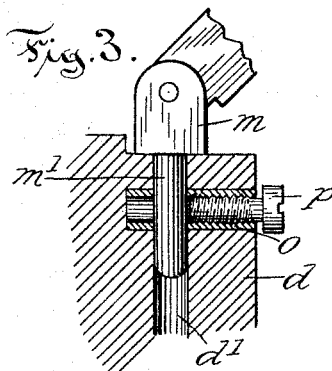
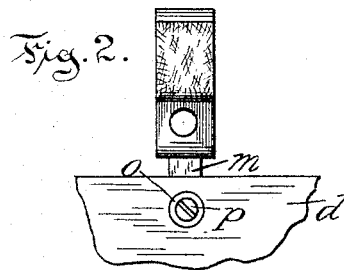
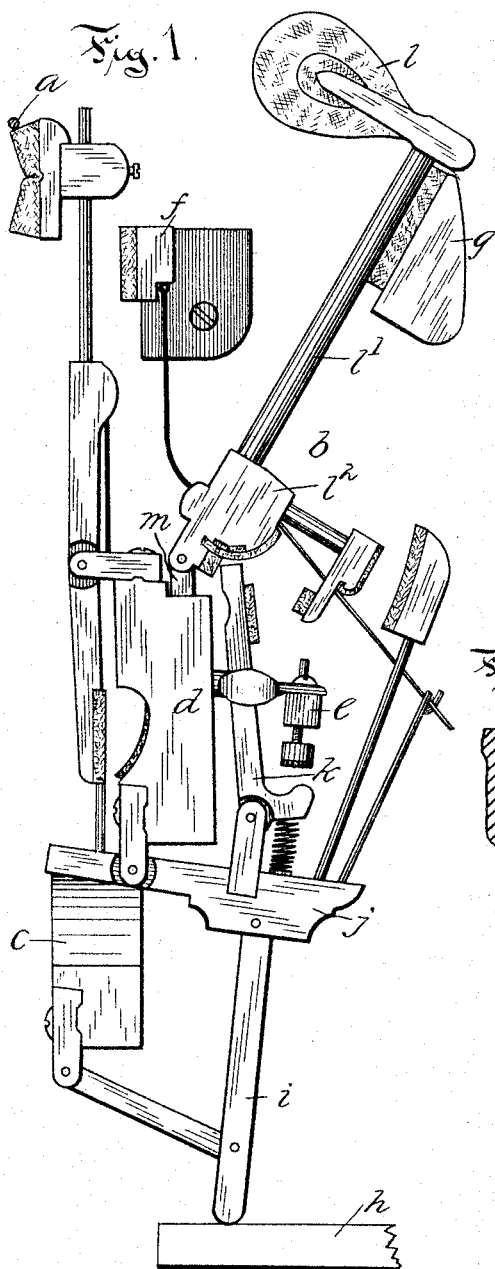


(No Model.)

H. P. CHAPMAN.  
FLANGE FOR PIANO ACTIONS.

No. 492,386.

Patented Feb. 28, 1893.



Witnesses:

Joseph Arthur Cantin.  
Arthur B. Jenkins.

Inventor:  
Henry P. Chapman,  
by Chas. L. Burdett

Attorney.

# UNITED STATES PATENT OFFICE.

HENRY P. CHAPMAN, OF IVORYTON, CONNECTICUT.

## FLANGE FOR PIANO-ACTIONS.

SPECIFICATION forming part of Letters Patent No. 492,386, dated February 28, 1893.

Application filed November 22, 1892. Serial No. 452,827. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY P. CHAPMAN, of Ivoryton, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Flanges for Piano-Actions, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to that part of a piano or like musical instrument in which the wires are operated mechanically that is usually called the action. In case of a piano there is an action appurtenant to each wire and a material part of the action is the hammer that is mounted on the hammer-rail.

The object of my invention is to provide an improved mount or flange that will enable the hammer to be readily adjusted in the correct plane with reference to the rail and the wire.

To this end my invention consists in the details of the several parts making up the adjustable mount or flange and in the combination of the several parts with the other elements of the action as more particularly hereinafter described and pointed out in the claims.

Referring to the drawings:—Figure 1 is a sectional view at right angles to the hammer rail showing the action in elevation. Fig. 2 is a detail front view of a part of the action including the adjustable flange or mount. Fig. 3 is a detail view in cross section through the hammer rail and the mount or flange showing construction. Fig. 4 is a detail view on enlarged scale showing a modified form of adjustable flange or mount. Fig. 5 is a detail view on enlarged scale showing another modified form of the mount. Fig. 6 is a detail front view of the latter form of flange or mount.

In the accompanying drawings the letter *a* denotes a wire of a piano or like musical instrument and *b* the action that includes the mechanical device for striking the wire to produce a musical sound. The fixed parts of this action are the sticker rail *c*, the hammer-rail *d*, the regulator rail *e*, the spring-rail *f* and the rest *g*. The inner end of a key *h* underlies the sticker *i* so that when the front end of the key is depressed the sticker is elevated and the whip *j* lifted in such manner

as to impart through the intermediate fly *k* a swinging movement to the hammer *l*. This hammer is mounted on the stem *l'* which is secured to the butt *l''* the latter being pivotally secured to a flange or mount *m*.

My invention particularly relates to that part of the action that immediately supports the hammer, that is the rail *d* and flange or mount *m*, the latter being made adjustable in such manner as to enable the path of movement of the hammer, that is usually in a plane at substantially right angles to the rail, to be accurately and readily adjustable with reference to the rail. The several parts making up the action are usually assembled by one or more workmen and the final work of adjustment of the hammer in the proper plane of travel is then attended to. The object of the adjustment is to cause the hammers appurtenant to the respective keys to all travel in planes set at the same angles with reference to the rail or in parallel planes so that whatever the distance between the hammers may be when they are at a point of rest substantially the same distance will be preserved between the hammers in their travel.

In a common form of mount the flange is fitted against the front side of the rail and secured thereto by a screw that passes through the flange and into the rail. In such forms of mount the adjustment of the plane of movement or travel of the hammer with reference to the rail is obtained by inserting a thin shim (as a small piece of paper) behind that edge of the flange that will set it at the proper angle to throw the travel of the hammer into the proper plane. This is a crude method of effecting the adjustment and my within improvement overcomes all of the several objections to such devices.

In the preferred form of my improvement the rail *d* has a socket *d'* into which the shank *m'* of the mount or flange *m* fits. This shank passes through the walls of a bushing *o* that is made in the flange at right angles to the shank socket and having an opening through the metallic bushing to enable the shank of the mount, that is preferably also of metal, to pass through it. A clamp screw *p* is fitted into a threaded socket in the bushing in such manner that the inner end of the screw will thrust

against the side of the shank when the latter is in place in the socket. The upper end of the mount is either forked so as to receive the tongue on the hammer butt to which it is secured by means of a pivot or pin, or the end of the flange or mount may pass between the ears or flanges that are formed on the lower end of the butt, a pivot being used as before to connect the two parts. A hammer butt provided with such a flange or mount is easily secured to the hammer-rail by inserting the shank of the mount in the socket described and then turning the screw to clamp the parts just as soon as the travel of the hammer has been adjusted in the proper plane. This form of mount not only possesses the advantage of easy and perfect adjustment but also enables the hammer to be removed from the rail very readily whenever it may be desired to do so for the purpose of repairing or renewing any part of the hammer or its immediately connected parts.

In Fig. 4 a modified form of the adjustable mount is shown in which a shank extends through an opening in a flange that projects from the hammer-rail and has a nut adapted to be secured to the threaded part of the shank on the underneath part of the flange thus enabling the mount to be firmly bound or clamped as soon as the hammer has been arranged to travel in the proper plane.

In Fig. 5 another modified form of the adjustable mount is shown and in this form the shank has a hole bored through it through which a pin of untempered wire may be driven

and this will allow the necessarily slight twist needed to adjust the hammer in the proper plane of travel to be given to the shank after the device has been attached to the rail. A like method of adjustment may be pursued with the mount having a slitted shank that is shown in Fig. 6 of the drawings.

I claim as my invention—

1. In a piano action in combination with the hammer-rail the butt pivoted to a flange or mount and the adjustable flange whereby the plane of travel of the hammer may be adjusted with reference to the rail, all substantially as described.

2. In a piano action in combination with the hammer-rail and the hammer operating parts, a hammer attached to the rail and the mount or flange comprising a head piece with a shank adapted to fit a socket in the rail, the perforated bushing extending into the rail transversely of the shank socket, perforated for the passage of the shank and supporting a clamp screw, all substantially as described.

3. In a piano action in combination with the rail the hammer pivotally connected to the rail and the hammer operating mechanism as described, a flange or mount adjustably secured in a socket in the rail and means for securing the flange all substantially as described.

HENRY P. CHAPMAN.

Witnesses:

JAMES PHELPS,  
JAMES L. PHELPS.