

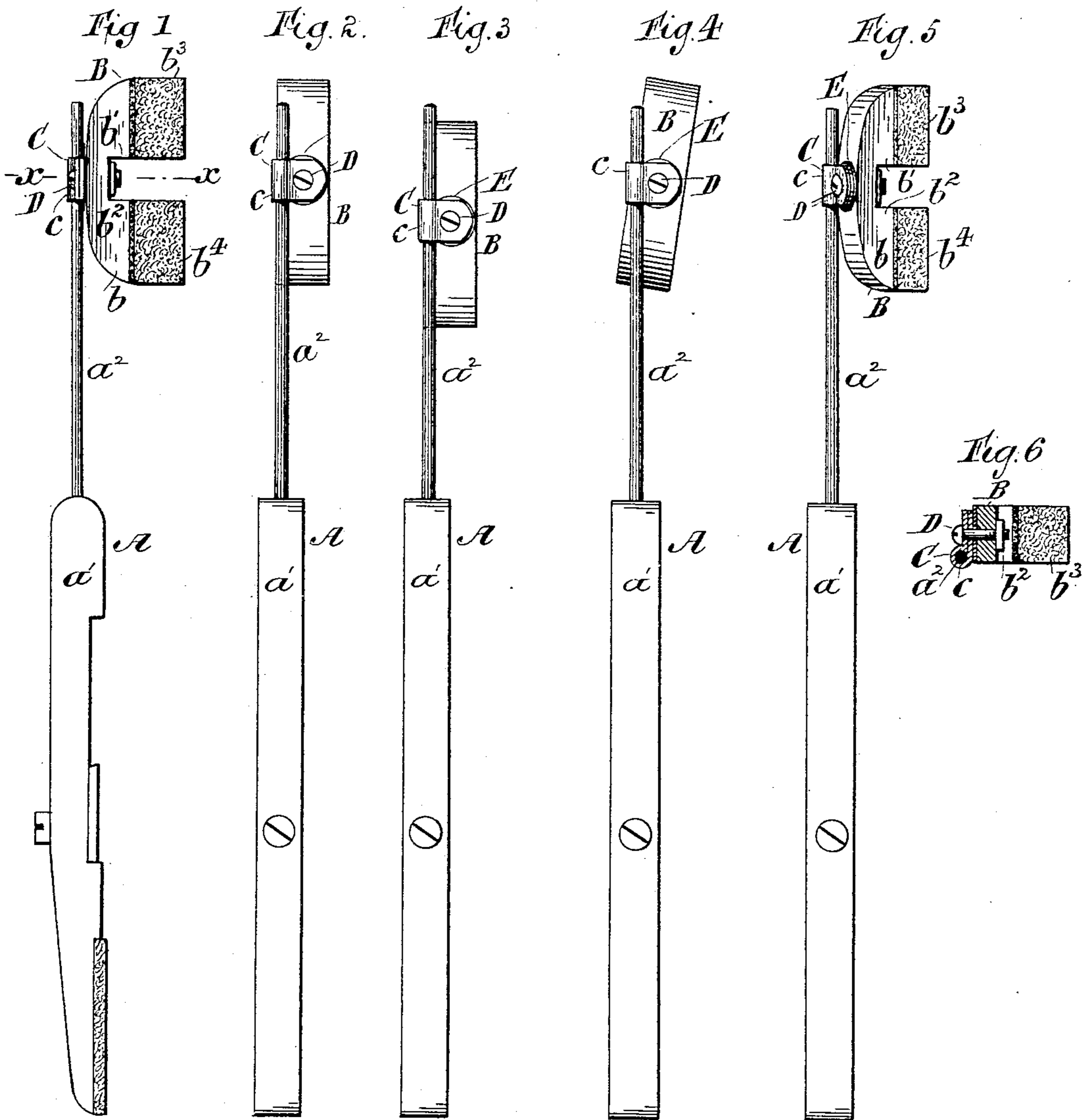
(No Model.)

H. KRANICH & J. BACH.

PIANO FORTE ACTION.

No. 397,239.

Patented Feb. 5, 1889.



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# UNITED STATES PATENT OFFICE.

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## PIANO-FORTE ACTION.

SPECIFICATION forming part of Letters Patent No. 397,239, dated February 5, 1889.

Application filed October 16, 1888. Serial No. 288,266. (No model.)

*To all whom it may concern:*

Be it known that we, HELLMUTH KRANICH and JACQUES BACH, of New York, in the county and State of New York, have invented  
5 a certain new and useful Improvement in Piano-Forte Actions, of which the following is a specification.

The object of this improvement is to produce a simple, light, inexpensive, and withal  
10 effective means for securing a damper-head to the lever. We will describe a means for this purpose embodying our improvement, and then point out the novel features in the claims.

15 In the accompanying drawings, Figure 1 is a side view of a damper-lever embodying our improvement. Fig. 2 is a back view of the same. Fig. 3 is a back view showing a damper-head adjusted downwardly upon the damper-  
20 lever. Fig. 4 is a back view showing the damper-head as oscillated or twisted relatively to the damper-lever out of line with the damper-lever. Fig. 5 is a back view showing the damper-head as turned or rotated  
25 around the damper-lever. Fig. 6 is a transverse section taken at the plane of the dotted line  $x x$ , Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

30 A designates the damper-lever. It may be made in any desired manner. It is here shown as consisting of a wooden portion,  $a'$ , and a wire portion,  $a^2$ , extending therefrom.

B designates the damper-head. It may be  
35 of any desired form; but it is here shown as consisting of a block of wood,  $b$ , convexed longitudinally on the back and transversely grooved on the front, so as to be divided into bifurcate portions  $b' b^2$ . These bifurcate portions  
40 are shown as having felt  $b^3 b^4$  on the front.

C designates a clip, here shown as consisting of a strip of metal having rounded ends, and bent between the ends so as to form a  
45 cylindric portion,  $c$ , and two end portions extending at a close proximity with each other, but which will normally be separated a slight distance. The cylindric portion is adapted to fit the wire  $a^2$  of the damper-lever. A screw,  
50 D, extends through the end portions of the clip, through the block of the damper-head

opposite the groove therein, and engages with a nut which is fitted in said groove. The nut fits so snugly in the groove that it is unable to turn therein. Obviously a nut otherwise ar-  
55 ranged or a suitable screw-thread otherwise provided in the head of the damper would serve the same purpose of engaging the screw. We have shown a washer, E, of felt or analogous material, arranged between the clip C and  
60 the block of the damper-head. This means for connecting the damper-head with the damper-lever is exceedingly simple, and although it may be operated very readily and easily it is remarkably cheap. It affords provision for  
65 numerous adjustments, which we have illustrated. By loosening the screw, so that the clip will relax its grip upon the wire of the damper-lever, the clip, and with it the  
70 damper-head, may be slid lengthwise of the wire, either upwardly or downwardly. When adjusted to the desired position, the screw may be inserted farther into the damper-head or its nut to tighten the grip of the clip upon  
75 the wire of the damper-lever, and also to cause the clip to bear with more force against the damper-head or the washer intermediate of it and the damper-head. This adjustment may  
80 be easily understood by comparing Fig. 2 with Fig. 3.

It may be desirable in some cases to oscillate the damper-head on an axis coinciding with the center of the screw, as illustrated in Fig. 4. This may be done by simply withdrawing the screw slightly to relax the pressure  
85 of the clip against the damper-head. Then the damper-head may be oscillated, and subsequently it may be secured by inserting the screw again.

Another possible adjustment is illustrated  
90 in Fig. 5. This adjustment consists in turning or rotating the head bodily around the wire of the damper-lever. To effect this adjustment, the screw is withdrawn sufficiently to allow the clip to relax its grip upon the  
95 wire of the damper-lever. When the clip relaxes its hold, the head may be rotated. Afterward the screw may be farther inserted to tighten the clip again and secure the head.

What we claim as our invention, and desire  
100 to secure by Letters Patent, is—

1. The combination, with a damper-lever

and damper-head, of a clip secured to the damper-head and adapted to be adjusted lengthwise of the damper-lever, substantially as specified.

5 2. The combination, with a damper-lever and damper-head, of a clip consisting of a strip of metal bent between the ends in a cylindrical form and having the ends lapped, substantially as specified.

10 3. The combination, with a damper-lever and damper-head, of a clip consisting of a strip of metal bent between the ends in a cylindrical form and having the ends lapped, and a screw passing through the lapped ends  
15 and entering the head, substantially as specified.

4. The combination, with a damper-lever and damper-head, of a screw passing through

an extension from the damper-lever into the damper-head, and constructed to permit the  
20 oscillation of the head relatively to the damper-lever upon the axial line of said screw, substantially as specified.

5. A damper-lever having a cylindrical portion or wire, a clip having a cylindrical portion fitting the cylindrical portion of the lever, a damper-head, and a screw for tightening the clip upon the damper-lever, all being  
25 so combined that the clip and the damper-head may be rotated around the damper-lever, substantially as specified. 30

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