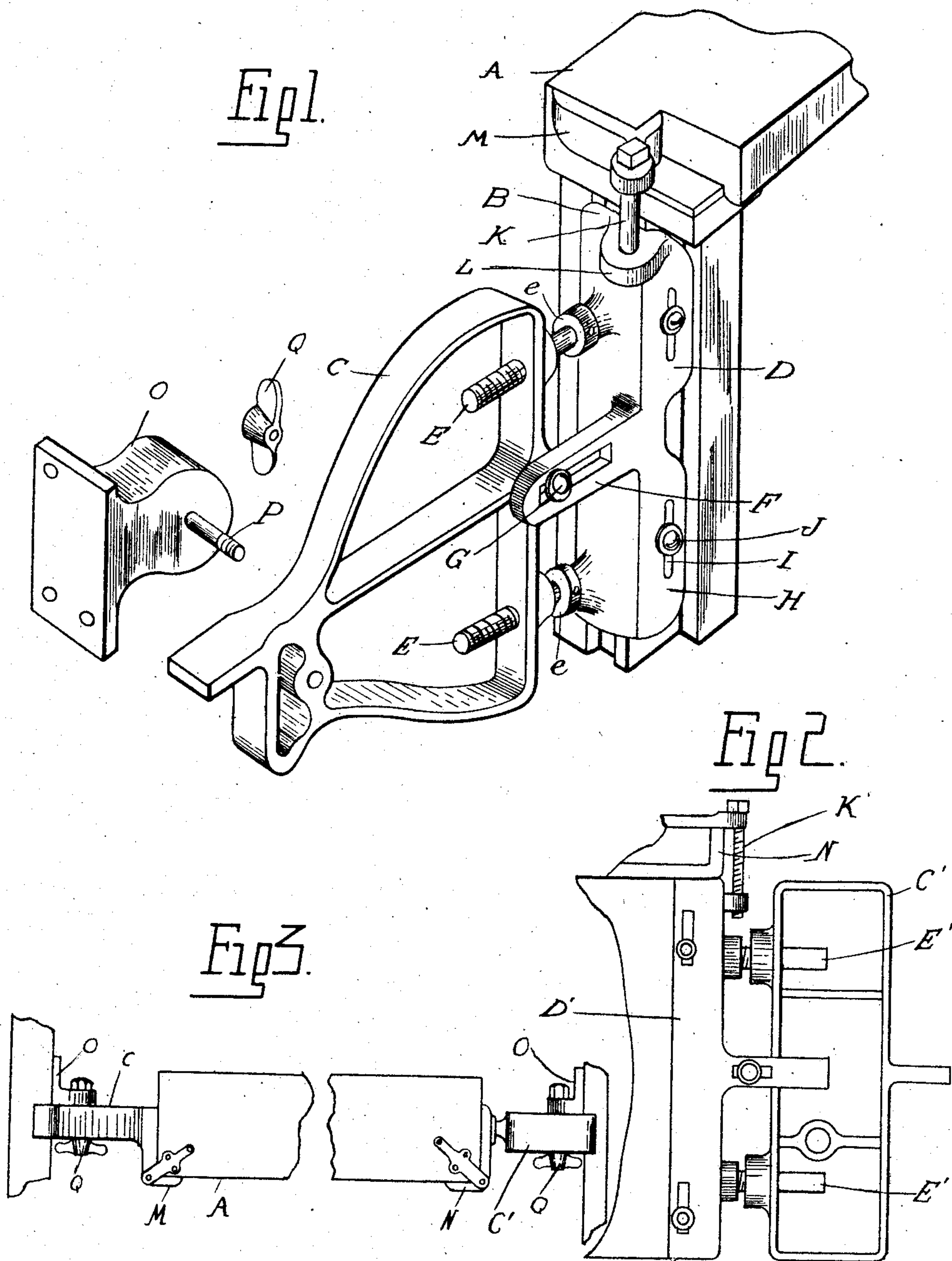


No. 883,252.

PATENTED MAR. 31, 1908.

E. A. STEEL.  
DETACHABLE AUTOMATIC ACTION FOR PIANOS.  
APPLICATION FILED SEPT. 21, 1907.



WITNESSES  
*J. R. Ford*  
*James P. Barry*

INVENTOR.  
EDWARD A. STEEL  
By *Whittemore Hubert Whittemore*  
*attys*



# UNITED STATES PATENT OFFICE.

EDWARD A. STEEL, OF DETROIT, MICHIGAN, ASSIGNOR TO THE FARRAND COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## DETACHABLE AUTOMATIC ACTION FOR PIANOS.

No. 883,252.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed September 21, 1907. Serial No. 393,874.

*To all whom it may concern:*

Be it known that I, EDWARD A. STEEL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Detachable Automatic Actions for Pianos, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to automatic pianos, and consists in the novel construction of the detachable automatic action, with more particular reference to the means employed for adjusting said action to the hammer action of the instrument.

In the construction of automatic pianos, it is necessary to so arrange the automatic action that access may be obtained to the piano action whenever necessary for tuning or repair. The most convenient position for the location of the automatic action is above the keyboard and in front of the hammer action of the piano, but when thus located access can only be obtained to the piano action proper by first removing the automatic action. As this automatic action must be delicately adjusted in relation to the piano action, it is difficult to remove and replace it without disturbing the adjustment.

In the present construction, I have provided means of attachment for the automatic action which will permit of its adjustment to the piano action after attachment to the case, and which will permit of removal and replacement as often as desired without disturbing this adjustment.

In the drawings—Figure 1 is a perspective view of one end of the action, illustrating the attaching and adjusting means therefor; Fig. 2 is an elevation of the opposite end of the action; and Fig. 3 is a diagrammatic plan view of the action, as mounted in the piano case.

A is the action frame, which may be of any suitable construction, and upon which the usual parts of the action are mounted. At one end of this frame is secured a bracket B, comprising two members C and D, the latter being directly attached to the action. These members are laterally adjustable in relation to each other preferably by providing screw threaded studs E engaging the member C and swiveled in the member D are collars upon the studs E providing means for rotating the studs to adjust the members C and D. The members are further connected by the slotted

arm F on the member D, which is secured by the bolt G to the member C. The attachment between the member D and the action frame is such as to permit a relatively vertical adjustment. As shown, the member D is in the form of an angle bar, having one flange H slotted at I and secured to the frame A by screws J passing through said slots. K is a screw threaded shank, engaging a correspondingly threaded apertured lug L on the member D, and having a swiveled engagement with a bracket M fixedly attached to the frame A. Thus, by adjusting the threaded shanks E and K, the action frame may be adjusted either laterally or vertically in relation to the bracket member C. On the opposite end of the action frame is arranged a corresponding bracket N, having a stud K' corresponding to the stud K, and having an angle member D' corresponding to the member D. In place of the threaded shanks E, the member D' is provided with plain shanks E', which slidably engage bearings in the cooperating bracket member C'. The brackets C C' are attached to the opposite sides of the piano case by means of permanently attached brackets O on the case, and having laterally extending studs P, which engage apertures in the brackets. Q are thumb screws for clamping the brackets on the studs P.

With the construction as described, in first mounting the action in the case it is only necessary in securing the brackets O to position them in relation to the vertical plane of the hammer action. The brackets C and C' may then be secured to the studs P on said brackets O, after which the studs E E' and K K' may be adjusted to raise or lower the action and to adjust it otherwise. This would permit of accurately adjusting the pneumatic action to the hammer action and when adjusted, by tightening the screws J and G, the parts will be held permanently in this relation. Whenever it is desired to remove the action, it is only necessary to loosen the thumb nuts Q and disengage the brackets C C' from the studs P.

What I claim as my invention is:

1. In an automatic piano, the combination with a case and the piano action therein, of an automatic action, a detachable mounting for said automatic action within said case, and means on said mounting for adjusting said automatic action while attached to said case in relation to the piano action.



2. In an automatic piano, the combination with a case and a piano action therein, of an automatic action, supporting end brackets for said automatic action detachably secured to said case, and means of adjustment  
5 between said action and brackets, for the purpose described.

3. In an automatic piano, the combination with an automatic action, of an adjustable mounting therefor comprising members  
10 permanently attached to the opposite sides of the piano case, brackets detachably clamped to said members, and connections between said brackets and said action permitting of  
15 vertical and longitudinal adjustment of the latter.

4. In an automatic piano, the combination with an automatic action, of an adjustable mounting therefor comprising a bracket  
20 formed of two members, one of said members being secured to the action, a screw threaded stud connecting said members for adjusting

the one in relation to the other longitudinally of the action, and means for adjusting said action member vertically in relation to  
25 the action.

5. In an automatic piano, the combination with an automatic action, of an adjustable mounting therefor comprising a bracket  
30 formed of two members longitudinally adjustable in relation to each other, a threaded shank for adjusting said members, a piano case a bracket secured to the piano case to which one of said members is clamped, means for securing the other member to the  
35 action, and a threaded shank for adjusting the action in relation to said member.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD A. STEEL.

Witnesses:

NELLIE KINSELLA,  
JAMES P. BARRY.