



# UNITED STATES PATENT OFFICE

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## IMPROVEMENT IN PIANO-ACTIONS.

Specification forming part of Letters Patent No. **210,638**, dated December 10, 1878; application filed April 23, 1878; patented in England, November 28, 1877.

*To all whom it may concern:*

Be it known that we, JEAN SCHWANDER and JOSEPH HERRBURGER, both of Paris, in the Republic of France, piano-forte makers, have invented certain Improvements in the Mechanism of Piano-Fortes, of which the following is a specification:

Our improvements in the mechanism of piano-fortes consist in the means of insuring a perfect repetition, and the said improvements are represented in the annexed drawings, in which—

Figure 1 shows a side view of the mechanism as applied to one piano-string, the others being similar. Fig. 2 is a view of the same mechanism with a modification of the method of regulation.

A is the hammer, butt, or nut, oscillating, as usual, on an axis, the upper part of the hammer not being shown in the drawings. A' is a prolongation of the hammer butt or nut. C is the escapement; D, the check. X is the escapement-button, and C'' the regulating screw or pin, mounted on the support S'', carried by the tail of the check D.

When the key has raised the escapement C and caused the hammer to move as usual, the relative position of the prolongation A' of the hammer butt or nut of the check D and of the button X is such that the hammer can recommence to strike, however small may be the play of the key which remains, whereby a perfect repetition is thus insured.

The pieces X and C'' screw into their supports, and as the knobs or rings at their ends are easy to get at, the regulation of the mechanism can be effected without removing any of the parts.

Fig. 2 shows the same system, in which the check and mode of regulation alone are different. In this arrangement we have placed the tail of the check at X, through which we pass a screw, which can be easily turned by hand or otherwise. An escapement-button, C'', placed screw-wise or friction-wise in any suitable support, and easily turned by hand, serves to limit at will the play of the tail N of the escapement C.

Having thus described our invention, and the manner of performing the same, what we claim is—

1. The escapement C, in combination with the check D, these parts being made and applied as shown and described, and provided with the regulating-pieces X and C''.

2. In combination with the prolongation A' of the hammer-butt A, the check D and the pivoted escapement C, the check D being pivoted on said escapement, substantially as shown and described.

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Witnesses:

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