(No Model.) 2 Sheets—Sheet 1.

J. MALLINSON.

PIANO FORTE ACTION.

No. 270,322. Patented Jan. 9, 1883.

FIG. 2

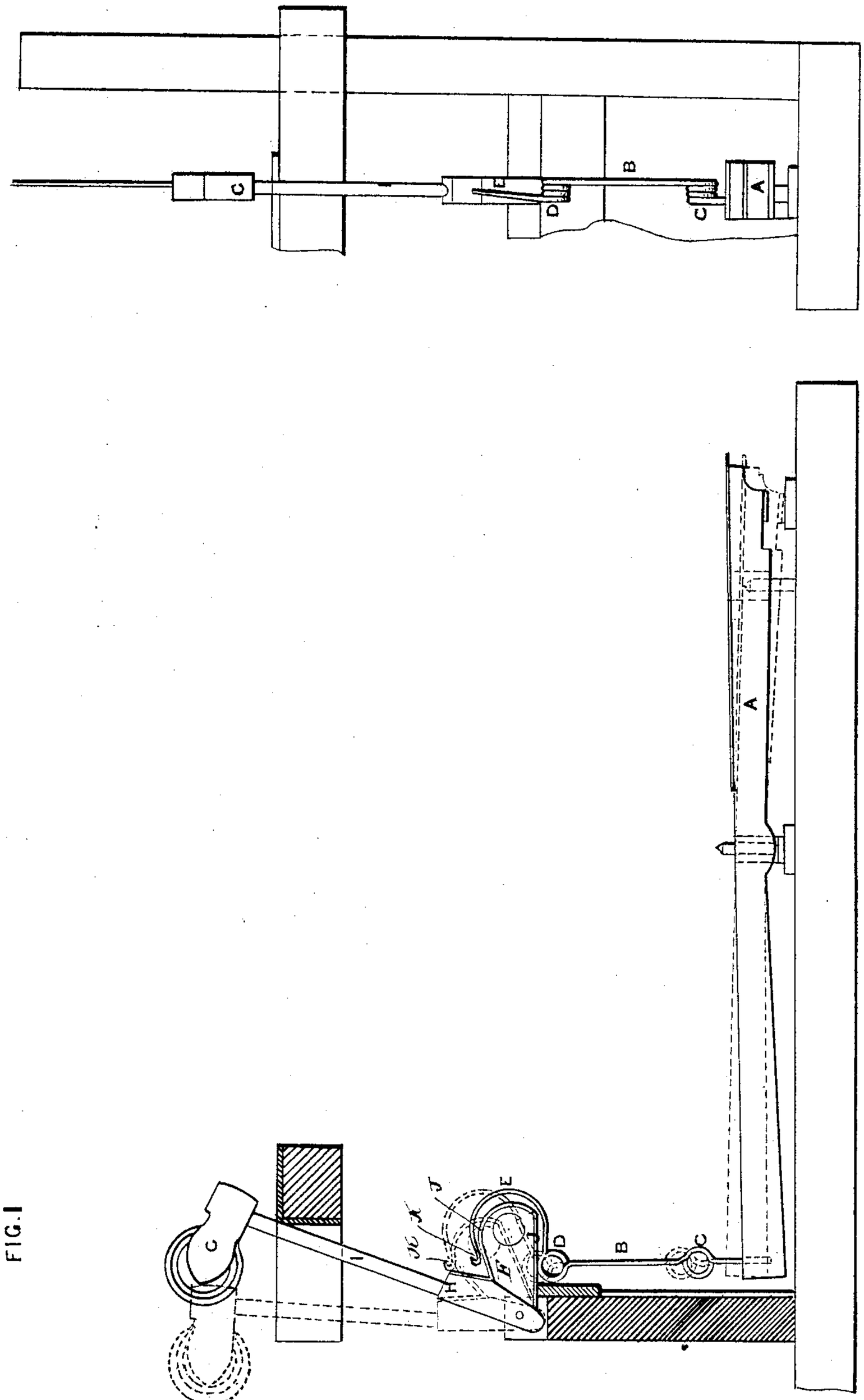

FIG. 1

WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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FIG 5

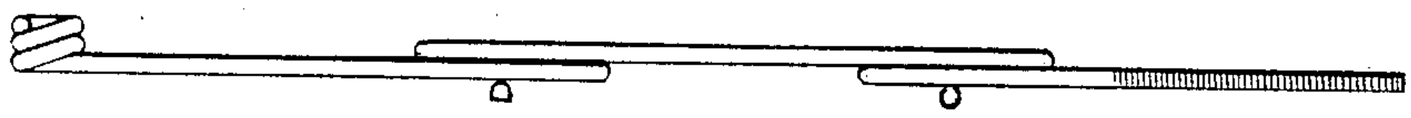


FIG 4

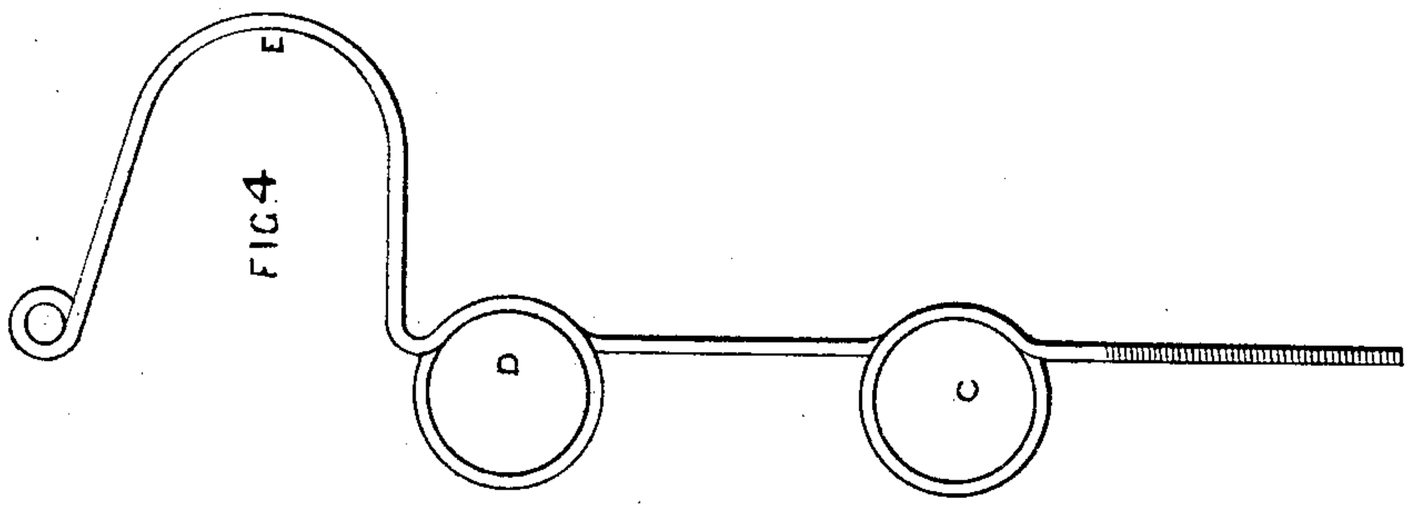
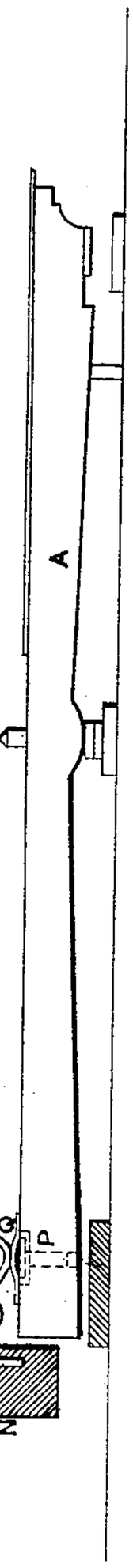


FIG 3



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

JOSEPH MALLINSON, OF SELBY, COUNTY OF YORK, ENGLAND.

PIANO-FORTE ACTION.

SPECIFICATION forming part of Letters Patent No. 270,322, dated January 9, 1883.

Application filed August 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MALLINSON, a subject of the Queen of Great Britain, residing at Selby, in the county of York, England, have invented certain new and useful Improvements in the Actions of Piano-Fortes, of which the following is a specification.

The object of this invention is to provide an action for piano-fortes of a more simple construction and one less liable to get out of order than those heretofore employed, and at a great reduction in the cost of manufacture. For this purpose, at the end of each key I secure a metal wire, which, at a given distance, is made with a circle or coil; or the wire is made with two, three, four, or more coils. The wire, after having formed the coil or coils, is brought up, and, at a given distance, formed with a circle or coil, or with coils, as hereinbefore described, and the wire, after having formed the coil or coils, is bent into a curve to fit over the hammer-butt. The coils give a springing action when motion is transferred from the key to the hammer, thus preventing blocking. The hammer-butt is fixed at a given angle to the bracket of the hammer stick or rod, and the under part of the hammer-butt rests on the top of the coil or coils formed on the top of the metal wire, so that when the key is struck the coil or coils lift up the hammer-butt and bring the end of the curved top wire in contact with the top of the hammer-butt, which holds the hammer in check, preventing any shake or false notes, and also preventing the action from getting out of order, and giving a perfect action to the hammer. For piano-fortes having sticker-actions, I employ similarly-constructed wires, having a coil or coils, which are secured in the key ends. The top coil or coils bears or bear against the under side of each lever or sticker of the action. In some cases I employ wires having coils which I do not fit into the keys. The bottom coil or coils rests or rest on the top of a regulating-screw, which is fitted in the end of the key, and the wire is secured in a rail which is fitted to the action. When a key is struck it causes the wire having the coils to lift, which lifts up the hammer-butt, causing the hammer to fall and strike the wire or wires of the piano-forte. At the same time the curved top end of the wire acts on the top of the hammer-butt, giving a check, which holds the hammer in position and prevents a false stroke. The wires having a coil or coils can be fitted to horizontal actions as well as to upright ones. By these means I construct actions of piano-fortes that are simple in construction, not liable to get out of order, and very cheap, and with a perfect repeating action.

In order to enable my invention to be better understood, I will proceed to describe the same by reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improvements fitted to a piano-forte; Fig. 2, a front view of the same. Fig. 3 represents a side elevation of my improvements having a regulating-screw fitted in the end of the key. Fig. 4 represents a side view of a metal wire having a single coil, and Fig. 5 is a front view of the same.

Similar letters of reference represent similar parts.

To each key A of a piano-forte I secure a metal wire, B, made with a coil or coils, C and D, Figs. 4 and 2. The coils having been formed, the wire is made with a curved end, E, which fits over the hammer-butt F. The coils allow a spring action when motion is transferred from the key A to the hammer G. The hammer-butt F is connected at a given angle to the bracket H, in which is secured the hammer-stick I of the hammer G; and the bottom part, J, of the hammer-butt F rests on the top of the coil or coils D, so that when a key, A, is struck the coil or coils D is or are lifted up, as shown by the dotted lines in Fig. 1, and the hammer-butt F is forced up, at the same time bringing the top part, K, of the curved end E in contact with the top L of the hammer-butt F, which holds the hammer G in check and prevents any shake or false note, besides giving a perfect action to the hammer G, and also preventing the action getting out of order. When a key, A, is struck it causes the wire B to lift, forcing up the hammer G, causing it to fall and strike the wire or wires M of the piano-forte, and at the same time the part K of the curved end E comes in contact

with the top of the hammer-butt, checking the hammer, and thus preventing a false stroke.

I may employ my wires B, secured in a rail, N, fitted in the inside of the piano-forte. The bottom part of each wire is made with one or two single coils, or with double or more coils, and also with a top single coil, or with several coils, also with a curved end, E, which acts in a similar manner to that hereinbefore described on the top of the hammer-butt F; but the hammer-butt in this case is made with a dropping-piece, O, and the hammer-stick I is secured in the top of the hammer-butt F.

The key A is fitted with a regulating-screw, P, over which is placed a piece of cloth or leather, Q, or other suitable material. On the piece of cloth or leather rests the coil or coils. The screw can be set and regulated so as to give the required lift to the wire B. When a key, A, is struck the screw P and cloth or leather Q lifts up the wire and actuates the hammer-butt in a manner similar to that hereinbefore described. On the top of the rail N, for each key and piano-forte wire or wires M, is secured a wire, R, having coils, and to which is fitted a damper, S. To the top coil is secured a band, T, joined on a hook, U, secured in the end O of the hammer-butt F. The band removes the damper S from the wire or wires M when a key is struck.

For piano-fortes having sticker-actions, I employ similarly-constructed wires, having coils, and which are secured in the key A of the piano-forte, and the top coil or coils bears or bear against the under side of each lever or sticker of the action.

The wires, having coils, may be fitted to horizontal actions as well as to upright ones.

Having now particularly described and ascertained the nature of the said invention, and in what manner the same is to be performed and carried out in practice, I would have it understood that I do not confine myself to the precise details shown and described, as they may be varied without departing from the peculiar character of the invention; but

What I claim is—

1. In a piano-forte action, the jacks or hoppers made of metal wires having coils and a curved end arranged to fit over and act on the hammer-butts, substantially in the manner shown and described.

2. In a piano-forte action, jacks or hoppers composed each of a single wire, the upper part or end of which is bent into a curve adapted to fit over and hold the hammer in check, and thus prevent shakes or false notes, substantially as shown and described.

JOSEPH MALLINSON.

Witnesses:

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SAMUEL A. DRACUP.