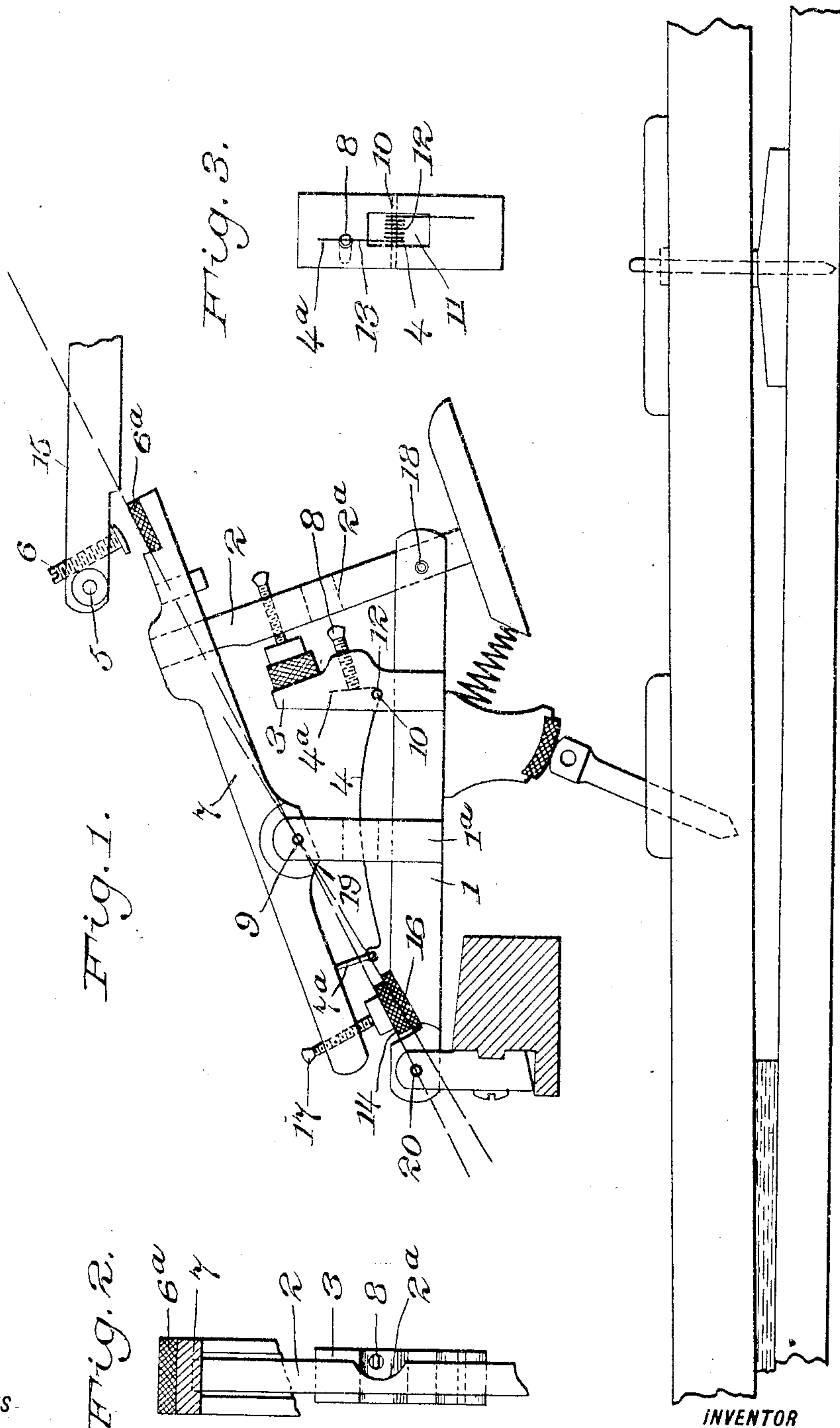


L. CHARPIAT.
 REPETITION ACTION FOR GRAND PIANOS.
 APPLICATION FILED NOV. 30, 1908.

959,716.

Patented May 31, 1910.



WITNESSES

M. G. Crawford
 N. A. Riegel

BY

Louis Charpiat
 A. Parker Smith
 His ATTORNEY

UNITED STATES PATENT OFFICE.

LOUIS CHARPIAT, OF NEW YORK, N. Y.

REPETITION-ACTION FOR GRAND PIANOS.

959,716.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed November 30, 1908. Serial No. 465,423.

To all whom it may concern:

Be it known that I, LOUIS CHARPIAT, a citizen of the Republic of France, and a resident of the borough of the Bronx, city, county, and State of New York, have invented certain new and useful Improvements in Repetition-Actions for Grand Pianos, of which the following is a specification.

My invention relates generally to piano actions and more specifically comprises certain modifications of and improvements on the construction shown in Letters Patent No. 904,308, granted to me November 17, 1908.

The best form of apparatus at present known to me embodying my invention is illustrated in the accompanying sheet of drawings in which:

Figure 1 is a side elevation of a portion of a piano action containing my invention. Fig. 2 is an end elevation with some parts shown in Fig. 1 broken away or omitted, and Fig. 3 is a detail elevation of the other face of the post in which the repetition spring is mounted.

Throughout the drawings, like reference figures indicate like parts.

1 is the jack carrying arm, 2 the jack, 3 a post on the jack-carrying arm on which the repetition spring is mounted.

5 is the pivot for the hammer butt (not shown) on the hammer-butt flange 15, which forms a part of the supporting frame of the action. The drop screw 6 is inserted in the hammer butt flange at an angle for the purpose of having its head or bearing surface parallel to the surface of the cushion 6^a on the repetition lever 7, when said cushion 40 makes its initial contact with said head.

8 is a tension screw mounted in post 3, extending through from the side opposite that in which repetition spring 4 is mounted, entering the slot 13 in which a bell crank arm 4^a of the spring 4 lies, and bearing on said bell crank arm. This repetition spring 4 has a coiled portion 12 wound around the pivot 10 and located in the chamber 11 formed in the post and serving as a bearing on the pivot. The screw 8 is placed nearer one edge of the post than the other to bring it in line with the bell crank arm 4^a and preferably is skewed slightly so as to bring its outer end or head still farther to one side so as to render it accessible around the jack 2. If desired, the jack may be cut away in

part, as shown at 2^a (Fig. 2) to further facilitate access.

Jack 2 is pivoted to the arm 1, at 18. Repetition lever 7 is pivoted at 9 in post 1^a on arm 1. The pivot 9 is located in a projection 19 from the under side of the repetition lever 7 and below the medial line of said lever in order to bring said pivot in a straight line passing through the pivot 20 of the jack carrying arm and the point of contact of the drop screw 6 and cushion 6^a and at the same time permit the repetition lever to be offset from said line sufficiently to permit it to carry the contact cushion 14 adj- justably mounted upon the screw 17 in its lower end. This contact cushion 14 coöperates with the contact cushion 16 on the upper side of the jack carrying arm 1, the contact surfaces of said cushions being in planes passing through the pivot 9 of the repetition lever. The remaining portions of the action including the foundation or frame therefor and the piano key are not shown or described herein, but correspond to the construction of these parts shown and described in my said Patent No. 904,308.

The faces of the cushion 6^a and that of the drop screw 6 are at the moment of initial contact each approximately coincident with a line or plane passing through the pivot of the repetition lever and the pivot of the jack carrying arm. The repetition spring is connected to the under side of the repetition lever by the silk thread 7^a or other connecting link.

In operation the action swings about the pivot 20 in the supporting frame, the repetition lever being in the position shown in Fig. 1, with the contact cushions 14 and 16 held one upon the other by the repetition spring 4. When the cushion 6^a makes its initial contact with the drop screw 6, the repetition lever begins to turn slightly upon pivot 9 which pivot also has a continuous bodily movement around pivot 20 as a center during the repetition of the note. This turning action of course separates the contact cushions 14 and 16 and flexes the repetition spring 4. When the pressure upon the piano key is released and the action falls back into its position of rest, the contact cushions 14 and 16 again come together.

While I have specified certain pivots and bearing surfaces to be in line or in certain planes and the best results will be obtained by locating them with mathematical exact-

ness in this manner, it is evident of course that the substantial benefits of my invention can still be secured with only slight variations from such mathematically correct position, and such slightly modified constructions as would secure practically all of these advantages I should regard as within the scope of my invention.

Having, therefore, described my invention, I claim:

1. A piano-action comprising the combination of a pivoted jack-carrying arm, a repetition-lever pivoted thereon having a plane-faced cushion on its upper end, and a drop screw having a small head set in the flange of the action for coöperating with said cushion, the engaging surfaces of the drop-screw and cushion being at, and before, the moment of initial contact between these parts, approximately in a plane which passes through the pivot of said arm.

2. A piano action comprising the combination of a pivoted jack-carrying arm, a repetition-lever pivoted thereon and having a plane-faced cushion on its upper end, and a drop screw having a small slightly convex head set in the hammer butt flange of the action for coöperating with said cushion, the said drop screw being at right angles to a plane passing through the pivot of the jack-carrying arm and tangent to the surface of the head of the screw.

3. A piano action comprising the combination of a jack-carrying arm, a repetition lever pivoted thereon, and coöperating cushions having plane faces and located on the lever and arm at the point of contact between said lever and arm, the faces of said cushions lying approximately in a plane passing through the pivot of the lever.

4. A piano action comprising the combination of a jack-carrying arm, a repetition lever pivoted thereon, and coöperating cushions having plane faces and located on the lever and arm at the point of contact between said lever and arm, the faces of said cushions lying approximately in a plane passing through the pivot of the lever, and said pivot being located below the medial line of the lever.

5. A piano action comprising the combination of a jack carrying arm, a repetition lever pivoted thereon, and coöperating cushions having plane faces and located on the lever and arm at the point of contact between said lever and arm, the faces of said

cushions lying approximately in a plane passing through the pivot of the lever, and said pivot being located in a projection from the under side of the lever.

6. A piano action comprising the combination of a hammer butt flange provided with a suitable drop screw, a jack carrying arm provided with a cushion on its upper side, and a repetition lever pivoted on the jack carrying arm and provided with a plane-faced cushion on its under side at its lower end for contact with that on the jack carrying arm, and one on its upper side at its upper end for contact with the drop screw, the pivot of said lever being located at the intersection of two planes approximately coincident with the respective faces of the two cushions on the repetition lever.

7. A piano action comprising the combination of a hammer butt flange provided with a suitable drop screw, a jack carrying arm provided with a cushion on its upper side, and a repetition lever pivoted on the jack carrying arm and provided with a plane-faced cushion on its under side at its lower end for contact with that on the jack carrying arm, and one on its upper side at its upper end for contact with the drop screw, the pivot of said lever being located at the intersection of two planes approximately coincident with the respective faces of the two cushions on the repetition lever and below the medial line of the lever.

8. A piano action comprising the combination of a hammer butt flange provided with a suitable drop screw, a jack carrying arm provided with a cushion on its upper side, and a repetition lever pivoted on the jack carrying arm and provided with a plane-faced cushion on its under side at its lower end for contact with that on the jack carrying arm, and one on its upper side at its upper end for contact with the drop screw, the pivot of said lever being located at the intersection of two planes approximately coincident with the respective faces of the two cushions on the repetition lever and in a projection from the under side of said lever.

Signed at New York, N. Y., this 28th day of November, 1908.

LOUIS CHARPIAT.

Witnesses:

A. PARKER SMITH,
M. G. CRAWFORD.