

No. 845,720.

PATENTED FEB. 26, 1907.

E. J. SIMPKINS.
UPRIGHT PIANO ACTION.
APPLICATION FILED AUG. 29, 1906.

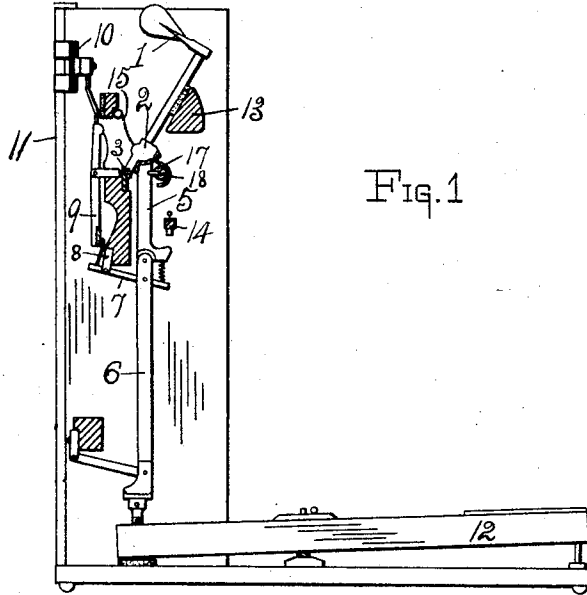


FIG. 1

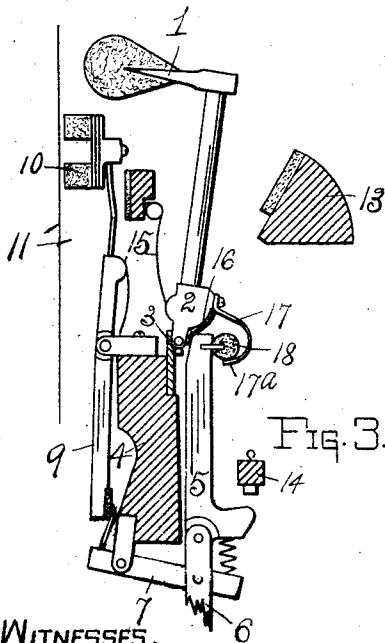


FIG. 3.

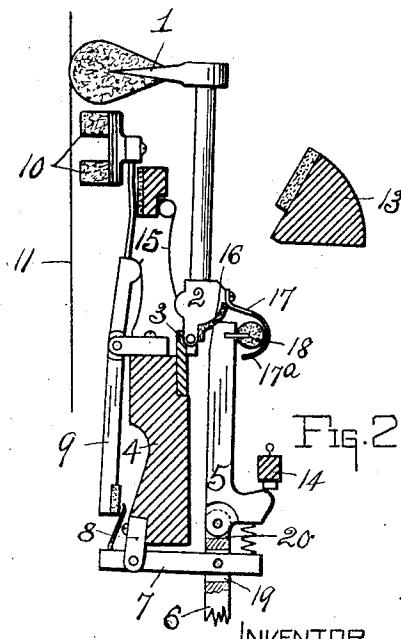


FIG. 2.

WITNESSES.
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ERNEST J. SIMPKINS, OF TOLEDO, OHIO.

UPRIGHT-PIANO ACTION.

No. 845,720.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed August 29, 1906. Serial No. 332,431.

To all whom it may concern:

Be it known that I, ERNEST J. SIMPKINS, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Upright-Piano Actions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to upright-piano actions; and it has for its object to simplify and improve upon the construction of the back-check, whereby it combines, in conjunction with the jack, both the function of a back-check and that of the usual bridle-strap or other separate means for effecting a positive quickened return action of the hammer upon the release of the key after the hammer has delivered its blow. It is also the object of my improved back-check to provide a quickened action, whereby a single note may be repeated with greater rapidity and accuracy than heretofore possible with actions of this nature.

A further object of my invention is to improve upon the manner of connecting the lifting-rod and jack, whereby the action is cheapened and simplified and a direct thrust delivered to the jack from the key.

The operation, construction, and arrangement of the parts of the invention are fully described in the following specification and shown in the accompanying drawings, in which—

Figure 1 is an elevation of the action embodying my invention with the various rails shown in cross-section and operative parts in normal position, and Figs. 2 and 3 are similar views with the parts shown in different instantaneous positions.

Referring to the drawings, 1 designates the hammer, which has its butt 2 pivoted in the usual manner to the flange 3, carried by the action-rail 4; 5, the jack; 6, the lifting-rod, which has its upper end in pivotal connection with both the jack and the lever 7, which latter is carried by the flange 8 on the action-rail; 9, the damper-lever carrying the damper 10 for coaction with the string 11; 12, the key; 13, the hammer-rest rail; 14, the jack-regulating rail, and 15 the usual hammer-

spring. The hammer-butt 2 is provided, as at 16, with a rounded padded surface with which the upper end of the jack 5 is adapted to have a slight sliding contact as it is operated to effect a blow of the hammer on its string.

To the side of the hammer-butt in opposition to the string and above the rounded surface 16 thereof is fixed the back-check 17, which is made of flat metal or wire. This back-check 17 extends outwardly from the side of the hammer-butt, to which it is attached on a slightly-declining plane, thence describes a downwardly-extending rounded return-bend and terminates in a reëntrant lip 17^a to form an outwardly-bowed or substantially U-shaped member with which the padded projection or boss 18, carried at the outer side of the jack 5 adjacent its upper end, coacts. The concavity of the back-check is preferably made slightly larger than the size of the projection 18 to permit said projection to escape contact with the lower lip 17^a and upper suspending portion of the back-check when in central engagement with such concavity, as shown in Fig. 2. On a release of the key the lowering movement of the jack causes the projection 18 thereon to coact with the lip or lower inwardly-turned portion 17^a of the back-check, as is illustrated in Fig. 3, and to actuate or enliven the return movement of the hammer, thus rendering a rapid and positive repetition action possible. As the hammer falls back upon the hammer-rest rail the upper inclined portion or body of the back-check has sliding contact with the projection or boss 18 on the jack and forces the upper end of the latter to its normal position under the hammer-butt, as shown in Fig. 1, thus effecting a positive return of the jack to its at-rest position. With this construction of back-check the use of the usual bridle-strap or the notch and tenon on the hammer-butt and jack for effecting a return of the hammer to its normal position upon the release of the key is obviated, thus simplifying and cheapening the construction of the action and enhancing its commercial value. It is also found in actual practice that with my improved back-check the usual hammer-spring 15 and the spring interposed between the end of the jack 5 and lever 7 may be eliminated without in the least effecting the rapidity or efficiency of the action.

The improved connection between the

lifting-rod 6 and jack 5 is formed by providing a mortise 19 transversely of the lifting-rod adjacent its upper end within which the lever 7 is pivoted and bifurcating the upper end of such rod, as at 20, to receive a portion of the lower end of the jack which is pivoted therein, as shown in Fig. 2. This manner of connecting the lifting-rod to the jack and lever not only simplifies and cheapens the construction of the action, but also causes a direct upward thrust to be exerted on the jack when the key is depressed. It also enables the lever 7 to be made lighter in its construction than is the case where the end of the lifting-rod is pivoted to the lever and the lever in turn provided with a flange to which the jack is fulcrumed, as is customarily the case.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an upright-piano action, the combination with the hammer-butt and jack, of a metal back-check substantially U-shaped which comprises a single piece one end of which is secured to and extends outwardly from the side of the butt in opposition to the associated string, thence describes a downwardly-extending rounded return-bend which terminates in a reentrant lip stopping short of contact with the side of the jack, and a projection on the side of the jack adapted to engage the bowed or rounded downwardly-extending portion of the back-check when

the key is depressed whereby during such depression to normally retain the hammer in one position relative to its string, and to coact with the lip portion thereof when the key is released whereby to cause a return of the hammer to its normal at-rest position.

2. In an upright-piano action, the combination with the hammer-butt, and the jack having a padded projection or boss on one side thereof, of a single-piece metal back-check which is secured and extends outwardly in a slightly-declining plane from the side of the hammer-butt opposed to the associated string, thence describes a rounded return-bend which partially encircles said boss and coacts therewith when acting as a back-check for the jack, and terminates in a reentrant lip with which the boss coacts when the key is released and assists in returning the hammer to its normal position, said outwardly-extending portion of the check presenting an inclined face to the upper surface of the boss on the jack whereby to have sliding contact therewith and force the jack to normal position when the hammer returns to its normal position after striking a string.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

ERNEST J. SIMPKINS.

Witnesses:

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