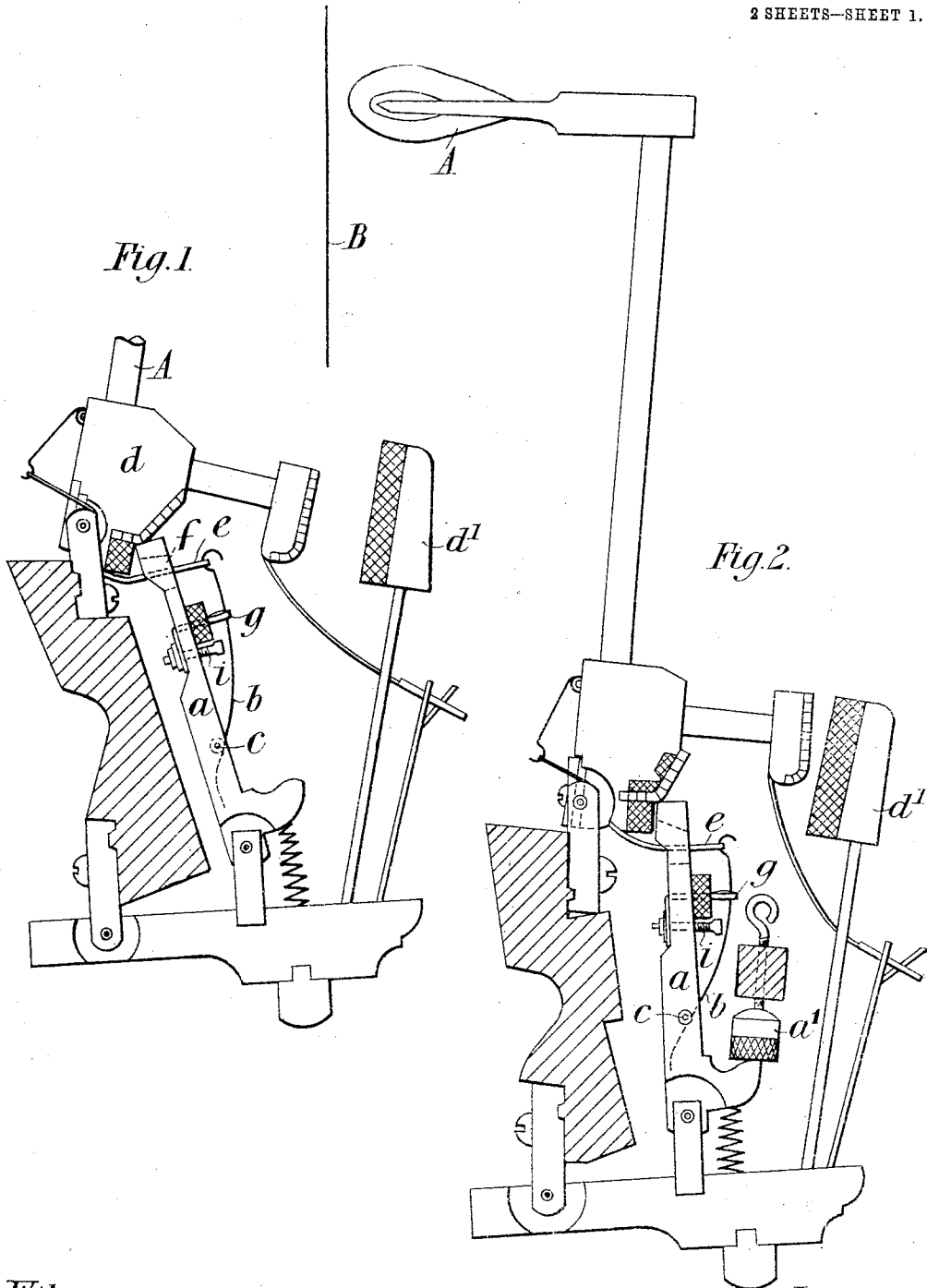


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 UPRIGHT PIANOFORTE ACTION.
 APPLICATION FILED MAR. 14, 1908.

945,113.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.



Witnesses
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UNITED STATES PATENT OFFICE

ROBERT STREICH, OF LONDON, ENGLAND, ASSIGNOR TO GUSTAV GADEBUSCH AND
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UPRIGHT-PIANOFORTE ACTION.

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Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, ROBERT STREICH, a subject of the German Emperor, residing at 139 Great Tichfield street, London, England, have invented new and useful Improvements in Upright-Pianoforte Actions, of which the following is a specification.

This invention relates to improvements in upright pianoforte actions, and has mainly for its object to enable a better repetition to be obtained than is possible with such actions as hitherto made.

Check repeater actions as hitherto made in which the jack (or fly or hopper) is provided at its front with a spring that engages a loop which is attached to the hammer butt and passes through a slot in the jack near its upper end, possess the defect that the said spring tends to prevent the hammer falling back instantly after it strikes the strings if the key has been struck lightly.

Now, this invention has for its object to overcome this defect to which end adjustable means are provided for limiting the action of the said spring so that the hammer has a free release to the check or in other words falls back freely from the strings after the slightest blow, while, when the key is struck heavily so that the jack comes farther out and from under the shoulder of the butt and the hammer falls farther back toward the rest, the loop is again held taut by the spring. On releasing the key the jack is immediately returned to its normal position in the known manner. The invention also gives rise to further advantages since the spring may be a little stronger than heretofore thus insuring quicker action, and the touch is improved owing to the limitation of the action of the spring.

In carrying the invention into practice, the jack is provided with an adjustable loop or the equivalent which engages the spring below the hammer-butt loop and takes the strain of the spring off the said hammer-butt loop at the proper moment. This release loop, for example, may be in the form of a cord, one end of which is fixed to the jack and the other end of which is secured to an adjusting screw carried by the jack, or it may be made of a piece of wire bent to form an elongated eye, through which the spring extends, with a stem which projects through the jack and is screw-threaded and provided with adjusting nuts.

In the accompanying drawings:—Figure 1 is a sectional elevation of a part of a piano-action in the position of rest having my improvements applied thereto. Fig. 2 is a view similar to Fig. 1, but showing the action in the position in which the hammer has been raised toward the piano string. Fig. 3 is also a similar view to Fig. 1 but showing the parts in the position they assume after the hammer has struck a string and is in check, and Figs. 4 and 5 are a side view and a face view respectively illustrating a modification.

a is the jack, fly or hopper and *b* is the repetition-spring which is pivoted to the said fly *a* upon the center-pin *c*. *d* is the hammer-butt and *e* is the loop by means of which the repetition spring *b* is connected to the said hammer-butt *d*, *f* being the slot in the jack *a* through which the said loop *e* passes. *a'* is the set-off button and *d'* is the hammer-check. All these parts are of known construction.

g represents the loop which is provided in accordance with the invention for limiting the action of the spring *b*, the said loop being in the form of an eye one end of which is secured to the jack *a* while the other end passes through a hole in the said jack to the end of the regulating screw *i* to which it is fastened. By turning this screw *i* the loop *g* may be lengthened or shortened as desired.

The action operates as follows, that is to say, when the key is struck the hammer *A* is raised toward the string *B* and at the moment at which the said hammer *A* is about to strike the string the parts are in the position shown in Fig. 2, that is to say, the spring *b* is no longer acting upon the hammer-butt *d* as the loop *e* is hanging loose while the eye or loop *g* is tight against the spring, the action of which it consequently limits so that the hammer *A* is perfectly free from the influence of said spring. After the string has been struck, as the parts move to assume the position illustrated in Fig. 3 before the hammer has fallen back against the check *d'* the tension of the repetition spring will be again applied to the hammer butt. When the hammer has fallen back against the check the loop *g* is loose or free and the loop *e* is taut so that the repetition spring *b* is again in the operative position. As soon as the key is released and the hammer-butt *d* leaves the check *d'* the repe-

tition spring tends to lift the hammer A toward the string B in order to permit the jack *a* to slip back into position ready to give the next blow.

5 In Figs. 4 and 5 a construction is shown in which the limitation of the action of the repetition-spring is effected by means of a pad *j* which is fitted to the regulating screw *k* secured to the jack *a*. The repetition
10 spring *b* bears against the said pad *j* and to permit of its passing the screw *k* it is cranked as shown at *b'*.

It is to be understood that the limiting loop and pad are described and shown by
15 way of example only as it will be obvious that the limitation of the action of the repetition-spring *b* can be effected in other ways.

Having now particularly described and ascertained the nature of my said invention
20 and in what manner the same is to be performed, I declare that what I claim is:—

1. In upright pianoforte actions of the kind described, the combination with a ham-

mer butt and a jack, of a repetition-spring secured to said jack, a connection between 25 the repetition spring and the hammer-butt and means for relieving the hammer-butt of the tension of the repetition-spring during part of the hammer stroke.

2. In upright pianoforte actions of the 30 kind described, the combination with a hammer-butt and a jack, of a repetition spring secured to said jack, a flexible connection between the free end of the repetition spring and the hammer butt and means for relieving 35 the hammer butt from the tension of said spring when the hammer is in contact with its string and for re-applying the tension of the spring to the hammer butt before the hammer has reached its position against 40 the check.

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