

(No Model.)

A. NICKEL.
ACTION FOR UPRIGHT PIANOS.

No. 566,927.

Patented Sept. 1, 1896.

FIG. 1

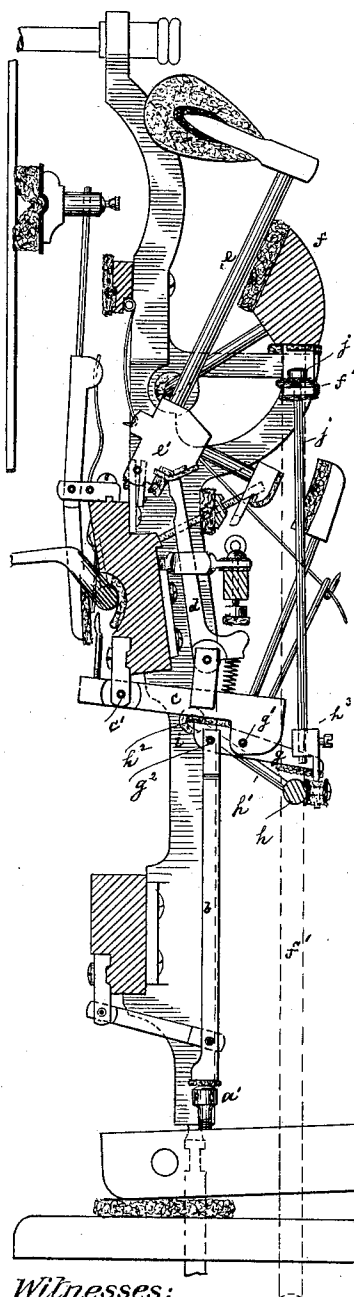


FIG. 4.

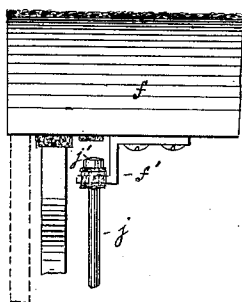


FIG. 3.

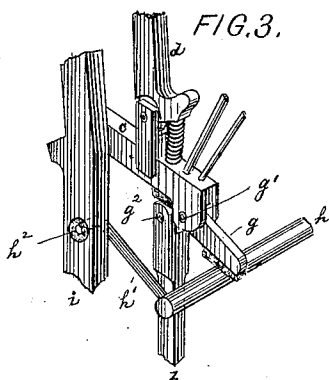
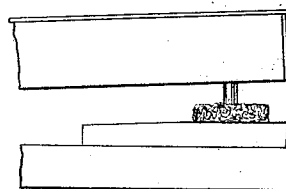
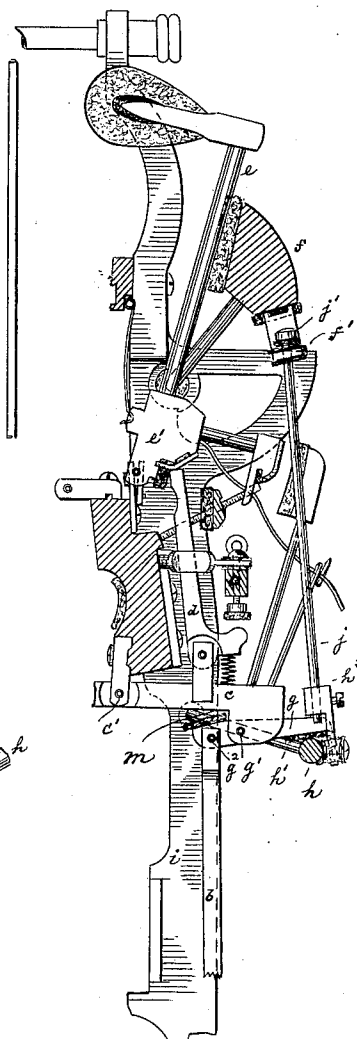


FIG. 2.



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ACTION FOR UPRIGHT PIANOS.

SPECIFICATION forming part of Letters Patent No. 566,927, dated September 1, 1896.

Application filed May 4, 1896. Serial No. 590,102. (No model.)

To all whom it may concern:

Be it known that I, ADAM NICKEL, of New York city, New York, have invented an Improved Action for Upright Pianos, of which the following is a specification.

This invention relates to various improvements in upright-piano actions so constructed that when the soft pedal is depressed to raise the hammer and diminish the length of the hammer-blow the reach of the transmitting mechanism intervening between the key and the hammer is increased, so as to prevent loose motion between any of the parts. In this way the full stroke of the key and a prompt response of the action to the touch while playing pianissimo is maintained.

In the accompanying drawings, Figure 1 is a side view of an upright-piano action embodying my improvement and showing the position of the parts when the soft pedal is raised. Fig. 2 is a similar view with the soft pedal depressed; Fig. 3, a perspective view of the lever *g* and its adjoining parts, and Fig. 4 a detail showing the connection between the hammer-rail *f* and hanger *j*.

The letter *a* represents the key of a piano-action. *b* is the thrust-rod, *c* the wippen, *d* the jack, and *e* the hammer, all as usual. *f* is the hammer-rail, which is adapted to be raised by the depression of the soft pedal (not shown) through the lifter *f'*. When this rail alone is raised, it will cause a space to be opened between the capstan *a'* and the thrust-rod *b* and a second space to be opened between the jack *d* and the hammer-butt *e'*. Thus the action will not respond promptly to the touch, and furthermore the key by being relieved at its rear end will be apt to drop somewhat in front, thus diminishing the length of the stroke. To overcome these objections, I provide the action with a pivoted member or lever *g*, operated in the manner hereinafter specified, and which is tilted when the pedal is depressed to increase, in effect, the length or reach of the parts intervening between the key and hammer-butt. The lever *g* is fulcrumed at *g'* to the wippen *c*, and its rear or free arm is connected by pivot *g²* to the thrust-rod *b*, the pivots *g'* *g²* being thus placed side by side. The forward end of the lever *g* is placed slightly above a longitudinal bar *h*, extending through the

piano, and pivoted to fixed supports *i* by means of the arms *h'*. The bar *h* is suspended from the hammer-rail *f* by means of a rod or hanger *j*, so as to be raised and lowered by the latter. The connection between rod *j* and bar *h* is shown to be effected by a clamp *h³*, while the connection between the rod *j* and rail *f* is shown to be effected by means of a perforated bracket *f'*, through which the headed upper end *j'* of bar *j* passes. When the rail *f* is raised, it will, by rod *j*, draw the bar *h* up with it, Fig. 2, and cause it to swing upon the pivots *h²* of arms *h'*. If the rail *f* is lowered, the headed end *j'* of rod *j* will become unsupported and thus the rod *j* and bar *h* will drop by their own weight as far as permitted by bracket *f'*, Fig. 1. As the bar *h* is suspended from the rail *f*, any adjustment of the latter will cause a corresponding adjustment of the former. Should the relative position between bar and rail require adjustment, this can readily be effected by the clamp *h³*, by which the length of the hanger *j* may be altered.

If the soft pedal is depressed for pianissimo playing, the rail *f* and bar *h* will be raised in the manner described, and the rail *f* will in turn swing the hammer upward into its half-stroke position, Fig. 2, thus increasing the distance between the hammer-butt and the capstan. The bar *h* in being raised will, however, simultaneously swing the lever *g* upon its fulcrum and cause its front end to be raised, and consequently its rear end to be lowered. In this way a space *m* is opened between the upper end of the thrust-rod *b* and the lower side of the wippen *c*, and the reach of the action is increased to an extent equal to the height of said space. By thus increasing the reach of the action the thrust-rod *b* will remain in positive contact with the capstan *a'*, and the jack will remain in positive contact with the hammer-butt, which is the object desired. When playing with the soft pedal depressed, the bar *h* will constitute the fulcrum for the lever *g*, while the thrust-rod *b* will be the power and the wippen *c* the weight. Thus during each stroke of the key the lever *g* will turn on the rod *h*, while the wippen *c* will be actuated by said lever to turn on its fulcrum *c'*. When the soft pedal is released and the rail *f* and bar *h* allowed to drop, Fig. 1,

the latter will be brought entirely out of action, the rear part of the lever *g* will be raised by the thrust-rod *b* and pressed against the wippen *c*, while its front part, being unsupported, will drop. Thus the normal position of the parts is restored, and, while playing, the lever *g* will not be actuated, but will constitute merely a connecting-piece between thrust-rod *b* and wippen *c*.

10 What I claim is—

1. In an upright-piano action, the combination, with a hammer, a movable hammer-rail, and a key, of a wippen, a vertical thrust-rod arranged to be raised by said key, and to raise 15 said wippen, a lever the rear end of which is arranged to be actuated by said thrust-rod, and a bar movable with the hammer-rail, forming when raised a fulcrum for the front end of the lever, said lever being so arranged that a 20 point intermediate of said fulcrum and thrust-rod will engage said wippen to raise the same when said lever is raised by said thrust-rod, substantially as described.

2. In an upright-piano action, the combination, with a hammer, a movable hammer-rail, and a key, of a wippen, a vertical thrust-rod 25 arranged to be raised by said key and to raise said wippen, a lever, the rear end of which is

arranged to be actuated by said thrust-rod, a bar movable with the hammer-rail, forming 30 when raised a fulcrum for the front end of the lever, said lever being so arranged that a point intermediate of said fulcrum and thrust-rod will engage said lever to raise the same when said lever is raised by said thrust-rod, and a 35 hanger connecting said rail with said bar, substantially as described.

3. In an upright-piano action, the combination, with a hammer, a movable hammer-rail, and a key, of a wippen, a vertical thrust-rod 40 arranged to be raised by said key and to raise said wippen, a lever, the rear end of which is arranged to be actuated by said thrust-rod, a bar movable with the hammer-rail, forming 45 when raised a fulcrum for the front end of the lever, said lever being so arranged that a point intermediate of said fulcrum and thrust-rod will engage said wippen to raise the same when said lever is raised by said thrust-rod, 50 a hanger depending from the hammer-rail, and a clamp for adjustably connecting said hanger to the bar, substantially as described.

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Witnesses:

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