

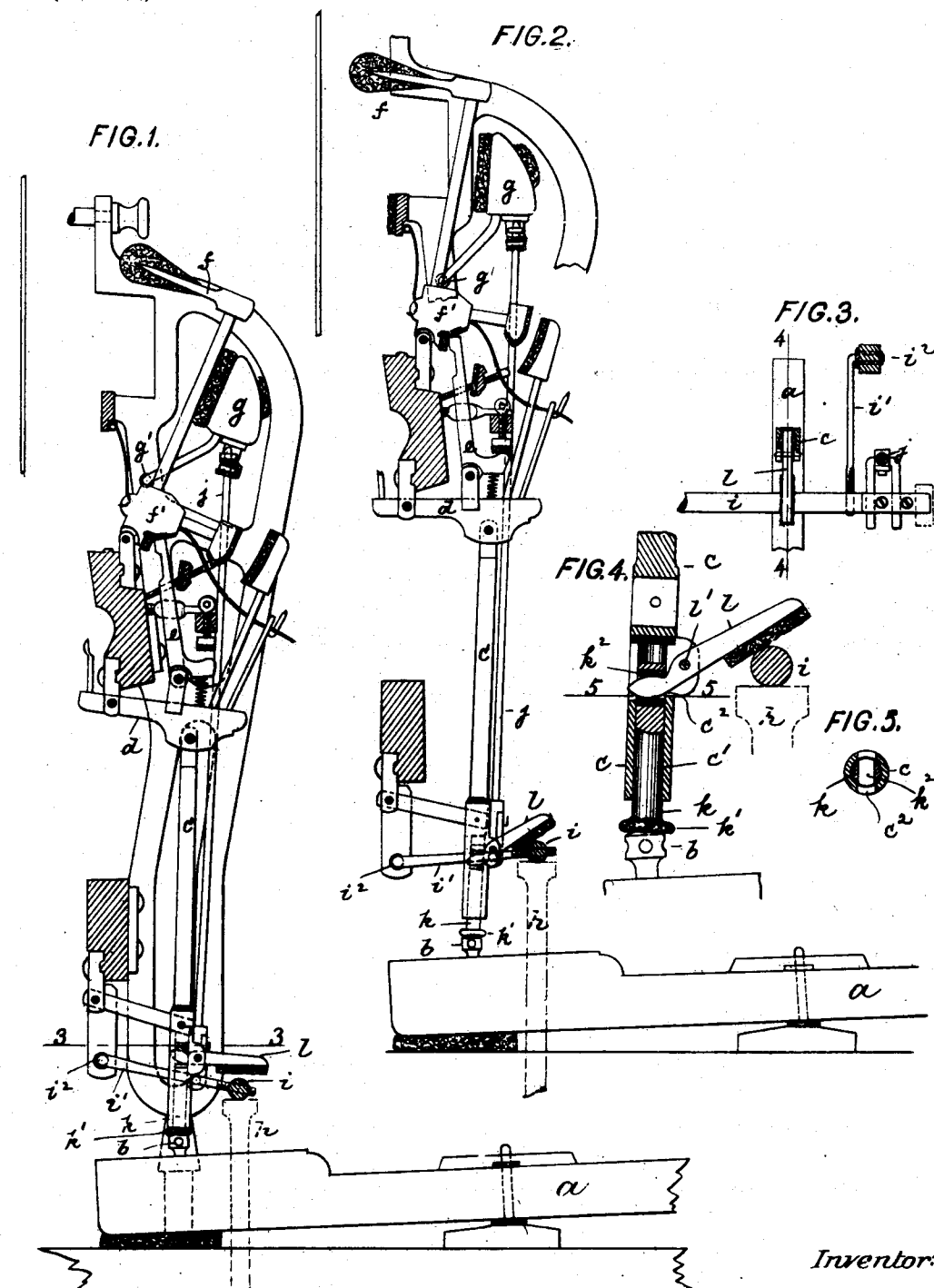
**No. 684,472.**

**Patented Oct. 15, 1901.**

**P. D. STRAUCH.**  
**ACTION FOR UPRIGHT PIANOS.**

(Application filed June 28, 1901.)

(No Model.)



Witnesses:  
John Becker.  
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# UNITED STATES PATENT OFFICE.

PETER D. STRAUCH, OF NEW YORK, N. Y.

## ACTION FOR UPRIGHT PIANOS.

SPECIFICATION forming part of Letters Patent No. 684,472, dated October 15, 1901.

Application filed June 28, 1901. Serial No. 66,338. (No model.)

To all whom it may concern:

Be it known that I, PETER D. STRAUCH, a citizen of the United States, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Actions for Upright Pianos, of which the following is a specification.

This invention relates to an action for upright pianos which is so constructed that the reach of the action will be increased upon the depression of the soft pedal in such a peculiar manner that the transmission of power will be maintained from the key to the hammer in the same axial line, so that the depth of the key-stroke always remains constant.

In the accompanying drawings, Figure 1 is a side view of an upright-piano action embodying my invention and showing the normal position of the parts. Fig. 2 is a similar view with the soft pedal depressed. Fig. 3 is a horizontal section on line 3 3, Fig. 1, looking downward; Fig. 4, an enlarged longitudinal section through the lower part of the abstract on line 4 4, Fig. 3; and Fig. 5, a cross-section on line 5 5, Fig. 4.

The letter *a* represents the key of the piano-action, *b* the capstan, *c* the abstract, *d* the wippen, *e* the jack, and *f* the hammer, all as usual. The hammer-rail *g*, swinging on fulcrums *g'*, is adapted to be raised by the depression of the soft pedal (not shown) so as to move the hammer nearer to the string and decrease correspondingly the length of its stroke. The raising of the hammer-rail *g* is effected from the soft pedal through a lifter *h*, that raises a horizontal rod *i*, which extends in front of the entire action and is supported by the arms *i'*, pivoted at *i''*. The rod *i* in turn by lifter *j* raises the hammer-rail *g*. When the hammer is raised upon the depression of the soft pedal, its butt *f'* is swung up and away from the jack, thus forming an objectionable gap that greatly interferes with the prompt response of the action to the key. It is the object of my invention to prevent this gap by increasing the reach of the action upon the depression of the soft pedal in such a manner that the force of the blow is transmitted in the same axial line and that thus the depth of the key-stroke remains at all times uniform.

In carrying my invention into effect I pro-

vide the abstract *c* at its lower end with a vertically-movable pin or extension *k*, Fig. 4, the cushioned head *k'* of which is supported upon the capstan *b*. This pin is preferably received within a tubular socket *c'* of the abstract and when depressed to project out of the socket increases the length of the abstract in an exact axial direction. Near its upper end the pin *k* is provided with a transverse slot *k''*, that receives the rear arm of a two-armed lever *l*, pivoted to the abstract at *l'*. This rear arm of lever *l* enters the slot *k''* through a slot *c''* of abstract *c*, while the front arm of the lever is arranged slightly above the horizontal rod *i*. When the action is in its normal position—i. e., with the soft pedal raised—the pin *k* is telescoped by the abstract, Fig. 1, and the length of the latter is therefore not increased. When the soft pedal is depressed, the bar *i* in raising hammer-rail *g* will simultaneously swing the front arm of the lever *l* upward, Figs. 2 and 4, and consequently the rear arm of such lever downward. This rear arm will by depressing the pin *k* cause the same to be projected out of or below the abstract *c* in exact proportion to the upward movement of the hammer-rail. Thus the length of the abstract is automatically extended and the reach of the action correspondingly increased in the manner desired to prevent the objectionable gap or dead movement. The drawings show the pin *k* as being telescoped by the lower end of the abstract *c*, which is the preferred construction. It is obvious, however, that the downward prolongation of the abstract may also be effected by causing the pin to move along the side of the same.

It will be seen that by my invention the length of the abstract is automatically increased or diminished in an axial direction, the transmission of power from the key to the hammer-butt taking place in the same line whether the pedal is depressed or released. This I consider of importance, because by maintaining a uniform transmission of power the depth of the key-stroke remains unchanged in both positions of the pedal.

What I claim is—

1. In a upright-piano action, the combination of an abstract with a pin adapted to be projected below the same, and with means

for depressing said pin upon the depression of the soft pedal, substantially as specified.

2. In an upright-piano action, the combination of an abstract with a pin adapted to be projected below the same, a lever engaging the pin, and means for tilting said lever upon the depression of the soft pedal, substantially as specified.

3. In an upright-piano action, the combination of an abstract with a pin movable in the same axial direction, and with means for projecting said pin below the abstract upon a depression of the soft pedal, substantially as specified.

4. In an upright-piano action, the combination of a slotted abstract with a pin telescoped by the abstract, a lever entering the abstract and engaging the pin, and means for project-

ing said pin below the abstract upon a depression of the soft pedal, substantially as specified.

5. In an upright-piano action, the combination of an abstract with a pin adapted to be projected below the same, a lever engaging the pin, a pivotally-supported transverse rod adapted to engage the lever, and means for raising said rod upon the depression of the soft pedal, substantially as specified.

Signed by me at New York city, county and State of New York, this 27th day of June, 1901.

PETER D. STRAUCH.

Witnesses:

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