

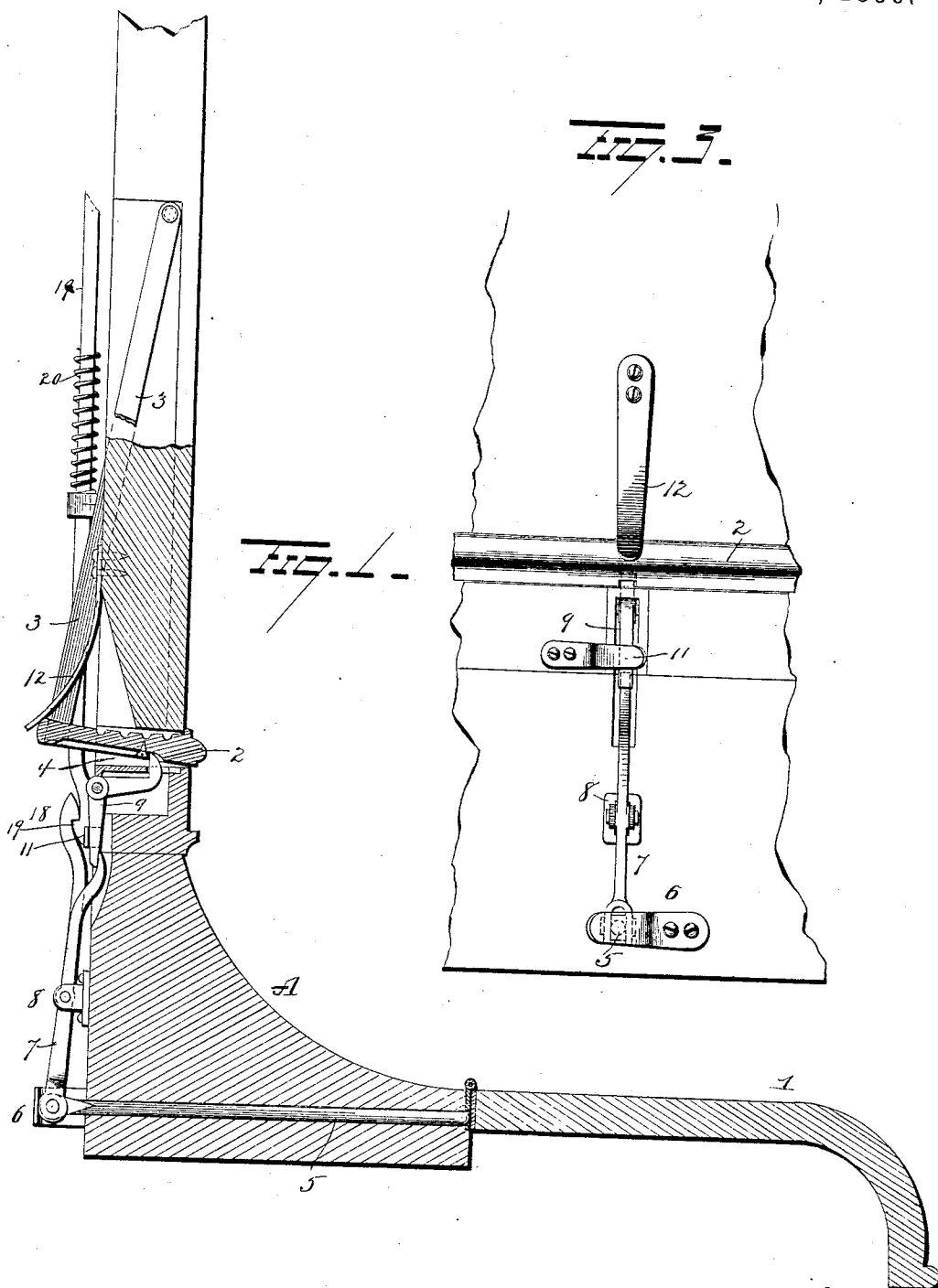
(No Model.)

3 Sheets—Sheet 1.

W. T. SMITH.
PIANO CASE.

No. 562,496.

Patented June 23, 1896.



Witnesses
E. J. Nottingham,
G. F. Downing.

Inventor
W. T. Smith
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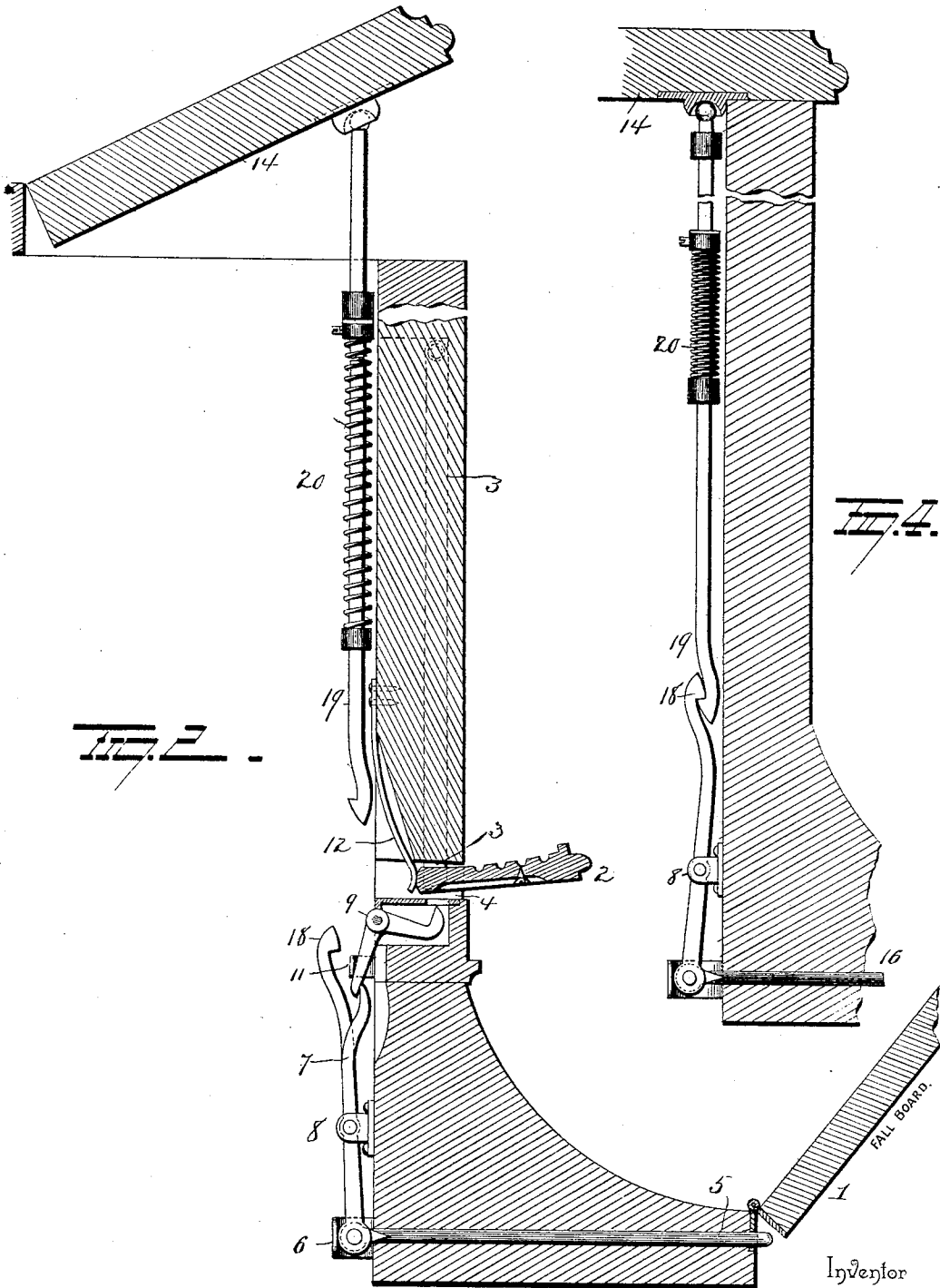
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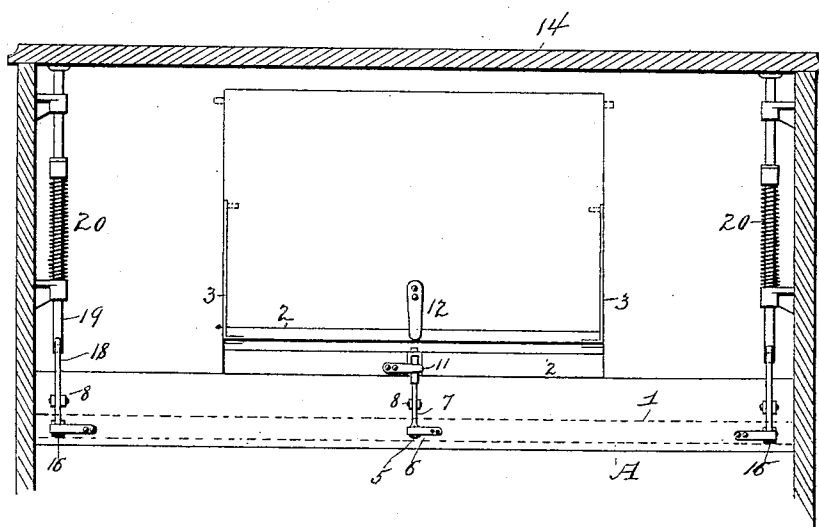
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UNITED STATES PATENT OFFICE.

WILLIAM T. SMITH, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE WM. KNABE & CO. MANUFACTURING COMPANY, OF SAME PLACE.

PIANO-CASE.

SPECIFICATION forming part of Letters Patent No. 562,496, dated June 23, 1896.

Application filed January 25, 1896. Serial No. 576,855. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. SMITH, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Piano-Cases; 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.

My invention relates to an improvement in piano-cases, and more particularly to an improvement in the desks and fall-boards of pianos, the object being to provide simple mechanism for operating these parts; and it consists in certain novel features of construction and combination of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view through the piano, showing the several parts in their normal position. Fig. 2 is a similar view showing the desk extended and the fall-board raised. Fig. 3 is a view in rear elevation. Fig. 4 is a view showing the mechanism for raising the lid at the top of the piano, and Fig. 5 is a vertical section looking forward from the rear of the instrument.

A represents the frame or case of the piano. To the forward edge of this frame or case the fall-board 1 is hinged in the usual manner.

The numeral 2 indicates the desk. This is secured on the lower ends of the links or rods 3 3, which latter are hinged at their upper ends to the upper end of the piano, so that the desk swings in and out, through the opening 4 in the front of the piano, in the arc of a circle whose center is, of course, the hinged point of the links or rods 3 3.

The mechanism for controlling the desk, for disengaging and throwing it out, will now be described. A slide-rod 5 passes horizontally through the frame or case, with which it has sliding connection. A spring 6 bears forwardly upon the rear end of this rod, holding it normally forward, and its forward end normally protrudes a short distance beyond the forward edge of the frame or case where it is adapted to be struck by the rear or hinged edge of the fall-board, when the latter is lowered, and be forced inward or rearward. A

trip-lever 7 is fulcrumed on the rear face of the frame or case at 8, and its lower end is loosely connected with the rod 5, by the action of which it is operated. A latch 9, pivoted at 10, is in position at its lower end to be struck by this trip-lever, whereby to rock it and cause its disengagement from the desk when the fall-board is raised, and the latch 9 is tripped or swung out of its normal position. A spring 11 normally tends to raise the latch 9 and does raise it when the counteracting influence of the trip-lever 7 upon it is removed.

The desk is furnished with a transverse groove on its lower surface, in which the upper end of the latch enters and some means, such as the head of a round-headed screw, projects into this groove in position to be engaged by the latch when the desk is pushed in, the latch being rounded or beveled at its forward edge for this purpose. A spring 12 back of the desk bears forward upon the latter and throws it outward when released by the latch, as indicated in Fig. 2. The operation of this part of my improvement is as follows: The parts are normally in the position shown in Fig. 1. We will suppose it is desired to raise the fall-board. This is lifted as usual. Rod 5 slides forward, carrying the lower end of trip-lever 7 with it. This movement causes the upper end of trip-lever 7 to strike latch 9 and lower its upper end from its engagement with the desk. Immediately upon this release spring 12 acts to throw the desk 2 out, as shown in Fig. 2. To return the parts to the position shown in Fig. 1, the fall-board 1 is first lowered. This pushes rod and the lower end of trip-lever 7 back and the upper end of lever 7 forward, permitting latch 9 to rise into the groove in the under face of the desk. Thereupon it remains only to push the desk in and the latch locks it, as shown in Fig. 1. So to open the desk or cause it to be projected, the single act of lifting the fall-board is sufficient, and to return it the fall-board is first lowered and then the desk is pushed back.

I have also devised mechanism for raising the lid 14 at the top of the instrument as a result of the act of raising the fall-board. This may be accomplished by the use of mech-

anism in many respects similar to that already described. For example, I preferably employ two additional slide-rods 16 16, one on either side of rod 5, which operate the same way and are forced backward by the fall-board. A trip-lever 17 is connected with these rods 16 16, as in the preceding construction, the only difference being that these trip-levers are furnished with a hook 18 at the upper end. Vertically-sliding rods 19 19, just inside the ends of the case, also have hook-shaped lower ends adapted to be engaged by the hooked ends of the trip-levers when the rods 19 19 are depressed and the fall-board is down. Moderately-stiff spiral springs 20 20 force these rods 19 19 upward when they are released, and these rods engage the lower face of the lid 14 and raise it. Thus when this attachment is used the act of raising the fall-board suffices not only to release the desk and permit it to move outward, but also to release the lid and permit it to rise, and, as with the desk which merely has to be pushed in after the fall-board shall have been lowered, it only remains to push the lid down to close and lock it, and the locking of the fall-board locks these several parts.

The simplicity of the operation of the several parts will be readily appreciated. Simultaneously with the lifting of the fall-board the desk is projected and the lid is raised. Then to close the piano the fall-board is first lowered and locked, if desired. Then the desk is pushed in and the lid is lowered, or vice versa.

It is evident that slight changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. In a piano, the combination with a movable desk, of a fall-board, and trip mechanism

set in operation by the fall-board to release the desk, substantially as set forth.

2. In a piano, the combination with a movable desk and a hinged lid, of a fall-board and trip mechanisms set in operation by the fall-board to release the desk and lid, substantially as set forth.

3. In a piano, the combination with a movable desk, and means for locking it, of a fall-board and trip mechanism operated by the fall-board for releasing the desk, and means for throwing the desk outward upon being released, substantially as set forth.

4. In a piano, the combination with a movable desk a hinged lid, and means for locking the desk and the lid, of a fall-board, and trip mechanisms operated by the fall-board for releasing the desk and lid, and means for simultaneously throwing the desk forward and the lid upward, upon the raising of the fall-board, substantially as set forth.

5. The combination with a spring-actuated movable desk, a latch, a spring-actuated slide-rod, and a fall-board adapted to move this rod, of a trip-lever connected with the rod for disengaging the latch from the desk, substantially as set forth.

6. The combination with a spring-actuated desk and a pivoted latch located in position to engage the desk, of a spring-actuated slide-rod, a trip-lever operated by this rod and a fall-board adapted to slide the rod to trip the latch, substantially as set forth.

7. The combination with a hinged lid, and spring-actuated sliding rods for raising the latter, of a fall-board, and a trip mechanism, operated by the fall-board to release the sliding rods whereby they raise the lid, substantially as set forth.

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

WILLIAM T. SMITH.

Witnesses:

PETER J. CAMPBELL,
WM. H. JONES.