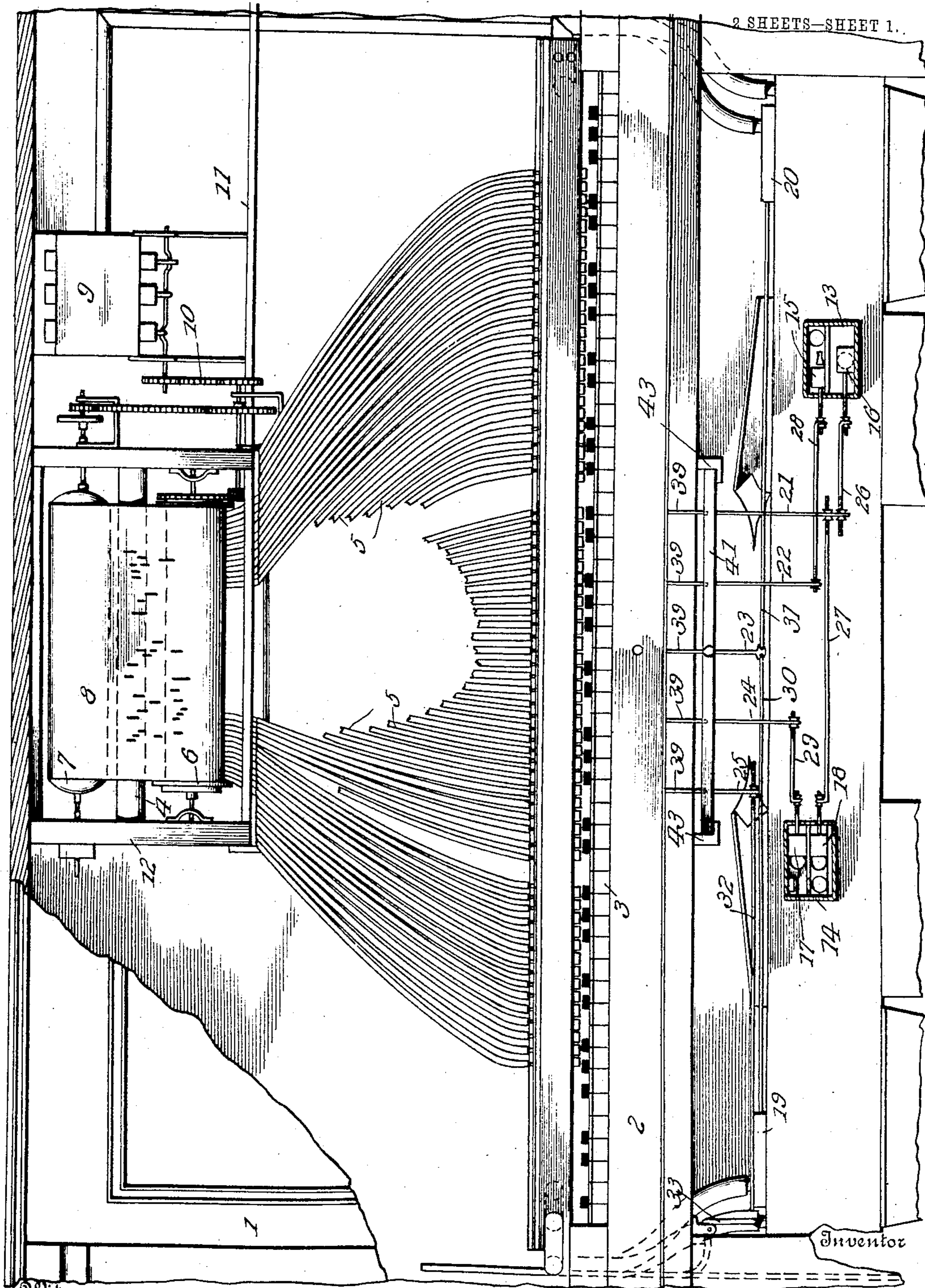


No. 841,205.

PATENTED JAN. 15, 1907.

F. W. WINTER.
PNEUMATIC MUSIC PLAYER.
APPLICATION FILED DEC. 28, 1905.



Witnesses

M. A. Bond.

R. R. Bond

Fig. 1.

34

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2 SHEETS—SHEET 2.

Fig. 2

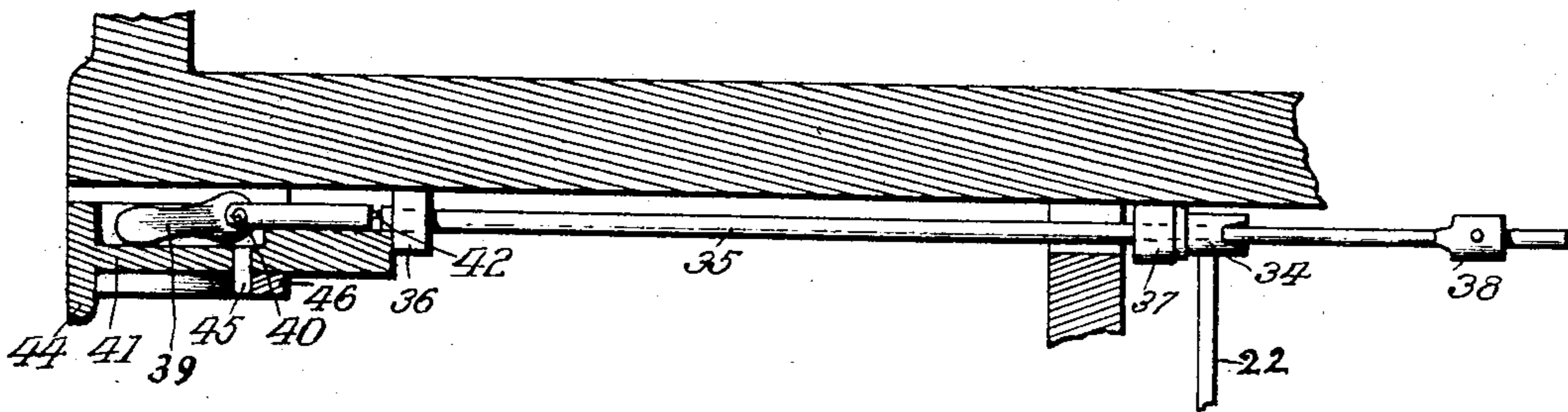


Fig. 3

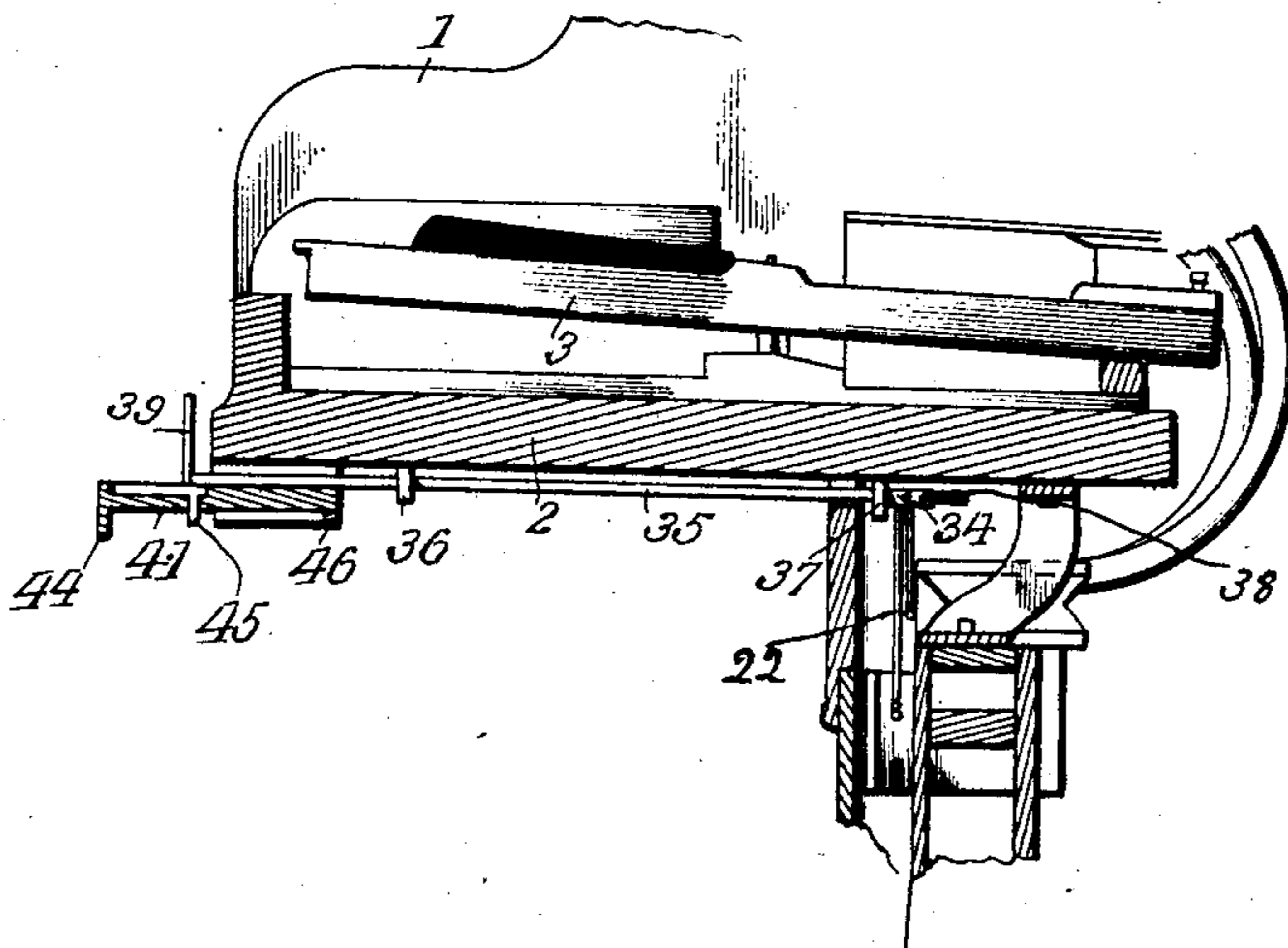
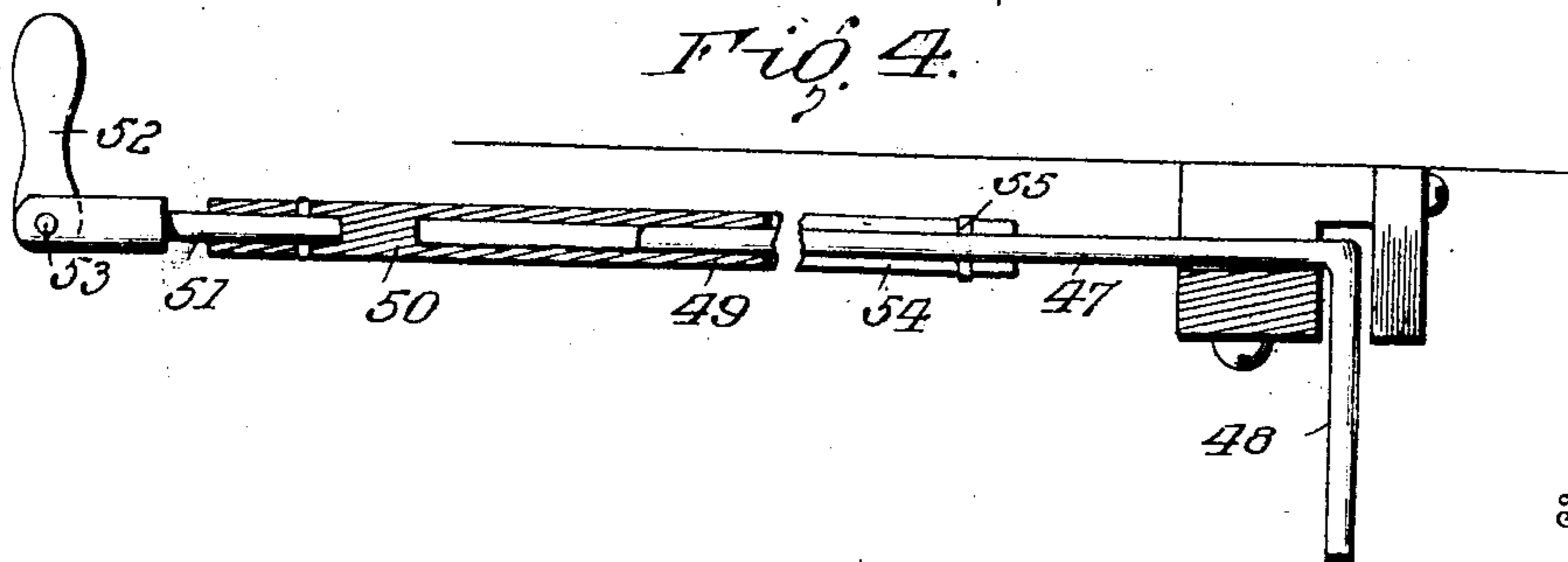


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERICK W. WINTER, OF NEW YORK, N. Y.

PNEUMATIC MUSIC-PLAYER.

No. 841,205.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed December 28, 1905. Serial No. 293,656.

To all whom it may concern:

Be it known that I, FREDERICK W. WINTER, a citizen of the United States of America, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Pneumatic Music-Players, of which the following is a specification.

This invention relates to certain new and useful improvements in pneumatic players; and it has for its objects, among others, to provide a player that can be placed in and be made a part of any piano of the upright type without altering the size or design or outward appearance of the piano.

The primary object of the present invention is to provide means for actuating the levers employed in the operation of the player, which levers are disposed beneath the key-bed, and the actuating means are so constructed and disposed beneath said key-bed that no alteration of the key-bed is necessary. The said actuating means are normally hidden beneath the key-bed and adapted to be pulled out when desired for use.

The invention is capable of embodiment in a variety of forms, some of which are herein illustrated.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention in its preferred form is clearly illustrated in the accompanying drawings, which with the numerals of reference marked thereon form a part of this specification, and in which—

Figure 1 is a front elevation of an upright piano containing a player embodying my present improvement with the case and lower part of the piano broken away. Fig. 2 is an enlarged sectional detail with parts in elevation, showing one of the sliding rods, its pivoted member, and the clutch device. Fig. 3 is a sectional detail showing one of the keys of the piano and the operating-rod and the drawer cooperating therewith in its distended position and the pivoted member disposed vertically. Fig. 4 is a detail, partly in section and partly in elevation, showing a modification of the construction seen in Fig. 2.

Like numerals of reference indicate like parts throughout the several views.

1 designates the outer case of an upright

piano of well-known or any approved construction. 2 is the key-bed, 3 the keyboard, all as usual.

The parts of the player not forming directly a part of the present invention do not need description herein. I have chosen to show only such parts as are directly correlated with the elements forming the subject-matter herein claimed, and such parts will be referred to only as briefly as will be necessary to a proper understanding of the construction and operation of the parts constituting the present invention.

4 is a tracker-board; 5, a series of tubes communicating with the air-passages therein; 7, a music-roll; 6, a take-up roll; 8, a perforated sheet of music unwinding from the roll 7 upon the roll 6, and vice versa.

9 is a pneumatic motor with driving mechanism 10 of any approved nature. The motor is located at one side and supported upon suitable framework 11, while the tracker-board, music-rolls, and sheet are supported centrally in the upper part of the piano-case upon the light framework 12. All of these parts may be of any well-known or approved form of construction and operating in a well-known way.

It is not deemed necessary to enter into a detailed description of the exhaust-chests, the exhausting-feeders, or the storage-bellows, or the pneumatics, or any of the other elements of the player, except to state that 13 is a valve-box upon one side and 14 the valve-box upon the other side.

15 and 16 are valves within the valve-box 13, said valves being adapted to control the openings indicated, while 17 and 18 are valves mounted to slide in the box 14 and adapted to control the openings communicating with said box, as sufficiently illustrated in Fig. 1.

19 and 20 are valve-boxes at opposite sides of the player, and in said boxes are slide-valves for the purpose of controlling openings leading from said boxes.

The valves 15 and 16 and 17 and 18, as well as the valves in the boxes 19 and 20, are actuated by suitable levers, as is also the so-called "forte-pedal," or, more properly speaking, the damper-controller. These levers, of which there are five, are seen clearly in Fig. 1, wherein they are designated by numerals 21, 22, 23, 24, and 25, of which levers 21, 22,

23, and 24 are adapted to actuate the above-mentioned valves, while the lever 25 actuates, through suitable connections, the damper-controller. The lever 21 is connected with the valve 16 by rod or link 26 and with the valve 18 by means of the rod or link 27. The lever 22 is connected, by rod or link 28, with the valve 15, while the lever 24 connects, by rod or link connection 29, with the valve 17. The center lever 23 connects, by means of rods or links 30 and 31, with the valves of the boxes 19 and 20, respectively. The lever 25 connects with the forte-pedal or damper-controller, above mentioned, by means of a rod or link 32, a bell-crank lever 33, and other suitable linkage. (Not shown.) These several levers are arranged vertically under the key-bed inside the piano-case, and are provided at their upper ends each with a clutch-member 34, as seen clearly in Fig. 2, and through which clutch member is mounted to slide freely a longitudinally slidable rock-shaft 35, loosely fitted within the said clutch member, as seen clearly in Fig. 2. Each lever is thus suspended from its respective rock-shaft, which latter extends transversely of the key-bed, across the under side thereof, and is journaled in hangers or pendent brackets 36 and 37, as seen clearly in Fig. 2, and in which said rock-shaft is mounted to freely slide. Each rock-shaft has near its rear end a fixed clutch member 38, (shown clearly in Fig. 2,) which is adapted to engage the before-mentioned clutch member 34 when drawn forward and after such engagement to oscillate the thereto-connected lever upon the shaft being rocked. A handle 39 is attached to the outer end of each rock-shaft 35 to provide a convenient means of rocking it, the connection between said handle and shaft being a pivotal one, as seen at 40, so that when the instrument is about to be used the several rock-shafts can be pulled outward, as seen in Fig. 3, and their respective handles made to stand vertically at right angles to the length of the shaft, as indicated in Fig. 3, just in front of the key-bed, and when the instrument is not in use the handles may be turned down in line with their respective rock-shafts and pushed back with them under the key-bed, as indicated in Fig. 2. It will be understood that when thus pushed back the clutch member 38 is moved away from and out of engagement with the clutch member 34, as seen in Fig. 2. For further convenience a drawer 41 is provided, to the rear end of which the outer ends of the rock-shafts are loosely held by any suitable means, as straps or clamps 42, and within which drawer the handles may rest when in their recumbent positions, as seen in Fig. 2. This drawer fits in angular supports or guide-bars 43, secured to the under side of the key-bed at its forward end, and as it slides in or out, as the case may be, operates to move the

rock-shafts, their handles, and the clutch members 38 simultaneously in the same direction. The drawer may be provided with a suitable depending portion, as 44, (seen in Fig. 2,) by which it may be pulled out or pushed in. In some cases I may provide the drawer with a depending pin or the like 45, adapted to engage a suitable stop 46 to limit the inward movement of the drawer and stop it, when pushed in, at a point where its outer face will be in vertical alinement with the outer face of the key-bed, as seen in Fig. 2. In Fig. 1 the drawer is represented as pulled out and the handles 39 all standing in their vertical positions ready for operation.

In Fig. 4 I have shown a modification of the construction illustrated in Fig. 2, but designed for bringing about the same result in substantially the same manner. In this view 47 is the rock-shaft, and 48 the depending lever. In this form, however, the rock-shaft and lever are integral or rigid with each other, and the forward end of the shaft is received within a tubular portion 49 of the sliding member 50, to the forward end of which is connected the member 51, to which the handle 52 is pivoted at 53. The rock-shaft 47 in this instance is the equivalent of the rock-shaft 35 in Fig. 2, and, although not shown, a drawer similar to that shown in Fig. 2 is to be employed in connection therewith for the same purpose. The inner end of the tubular part 49 is provided with a longitudinal slit 54, while the rock-shaft is provided with a pin 55, sliding in said slot. By this means, while the rock-shaft is at all times capable of being rocked by manipulation of the handle 52, the member 50 can be slid in and out in the same manner as can be the rock-shaft 35, above described in connection with Fig. 2. The operation of this form will be apparent. As the drawer is pulled forward all of the members 50 will be pulled forward therewith, and when in proper position the handles 52 may be turned vertically and the rock-shafts actuated as may be desired.

From the above it will be evident that I have devised a simple and efficient construction and arrangement of parts for accomplishing the end sought, and one in which no cutting or other alteration of the key-bed is necessary, and also one in which the pivoted handles and the rock-shafts are normally beneath the key-bed and hidden from view, and while the structural embodiments of my invention as herein disclosed are what I at the present time consider the preferable ones it is evident that changes, variations and modifications may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. I therefore do not wish to be restricted to the details of construction, proportions of parts, &c., as hereinbefore disclosed, but reserve the right to

make such changes, variations, and modifications as come properly within the scope of the protection prayed.

What I claim as new is—

5 1. In a piano-player, a lever, a slidable rock-shaft movable independent thereof and having a pivoted operating member, slidable means for concealing said operating member movable therewith, and means for connect-
10 ing said shaft and lever whereby the latter is actuated as the shaft is rocked.

2. In a piano-player, a lever, a slidably-mounted rock-shaft having an operating member, means for connecting the two for
15 joint operation, and slidable means operatively connected with the rock-shaft and constructed to conceal its operating member.

3. In a piano-player, a lever, a slidably-mounted rock-shaft for operating the same, a
20 pivoted member on said rock-shaft, and means for concealing said pivoted member when the rock-shaft is pushed in.

4. In a piano-player, a lever, a slidably-mounted rock-shaft for actuating the same,
25 an actuating member pivoted to said rock-shaft, and slidable means for moving said rock-shaft and for concealing its pivoted member.

5. In a piano-player, a lever, a slidably-mounted rock-shaft for actuating the same,
30 an actuating member pivoted to said rock-shaft, slidable means for moving said rock-shaft and for concealing its pivoted member and a stop for said slidable means.

35 6. A piano-player comprising a valve, a lever therefor, and slidable lever-operating means embodying a pivoted operating member, and a sliding concealing member therefor and slidable therewith.

40 7. A piano-player comprising a valve, a lever for the same, a slidable rock-shaft, means for suspending said lever from said rock-shaft and for clutching it therewith, means for sliding the shaft in and out and rocking it and
45 slidable means movable with the last-named means and normally receiving the same.

8. A piano-player comprising a plurality of valves and levers therefor, slidable rock-

shafts journaled in parallel lines, means for operatively connecting each lever with one
50 rock-shaft, and a sliding drawer to slide the rock-shafts in and out simultaneously.

9. In a piano-player, tempo and expression devices, means for effecting the operation of
55 said tempo and expression devices adapted to be moved inward when not in use, and slidable concealing means movable with and carrying the first-mentioned means.

10. In a piano-player, tempo and expression devices, slidably-mounted means for op-
60 erating said tempo and expression devices, and pivotally-mounted actuating devices carried by said means, and concealing means for said actuating devices, said means being
65 mounted for reciprocation.

11. In a piano-player, tempo and expression devices, slidably-mounted means for op-
70 erating said tempo and expression devices, pivotally-mounted actuating devices carried by said means and a receptacle movable with and receiving said pivoted means.

12. In a piano-player, a lever, a rock-shaft slidably mounted in said lever, clutch mech-
75 anism between said rock-shaft and lever, an operating member for said rock-shaft pivotally connected therewith, and means for normally concealing said member.

13. In a piano-player, a lever, a slidably-mounted rock-shaft, an operating member
80 for said rock-shaft pivotally connected therewith, and means for normally concealing said member, said concealing means being movable with and receiving the operating member.

14. In a piano-player, tempo and expres-
85 sion devices, means for effecting the operation thereof mounted for movement in a horizontal plane, and slidably-mounted means movably connected therewith and receiving
90 the same.

Signed by me at New York city this 27th day of December, 1905.

FREDERICK W. WINTER.

Witnesses:

QUINTIN LEE,
A. NUSS.