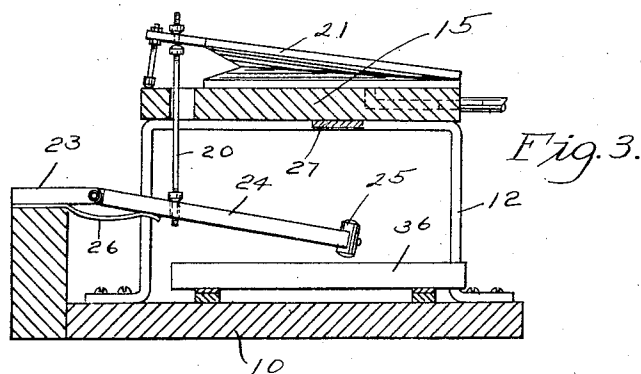
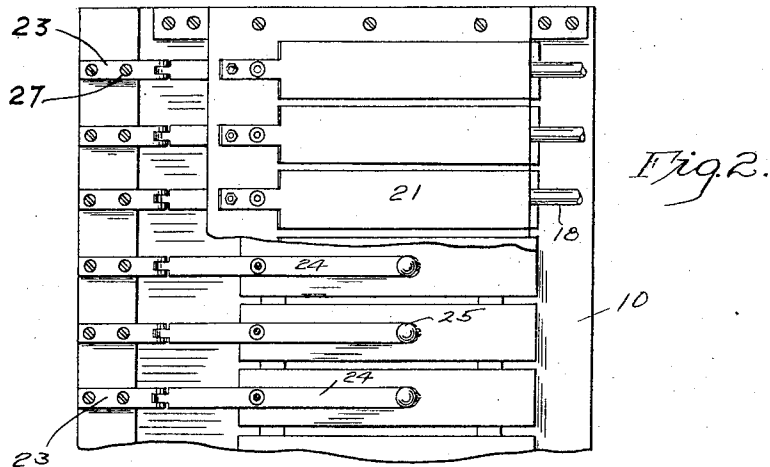
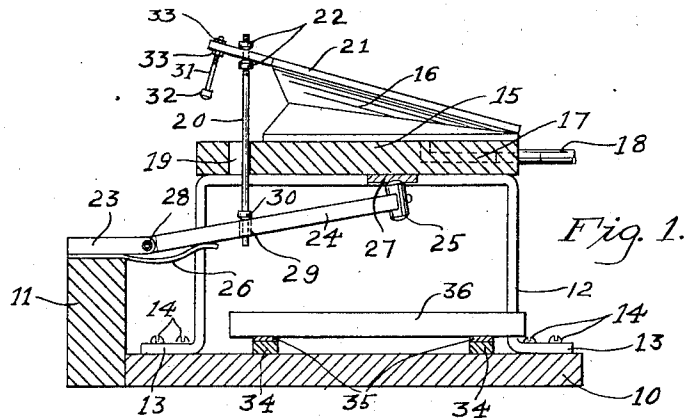


1,059,507.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.



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1,059,507.

2 SHEETS—SHEET 2.

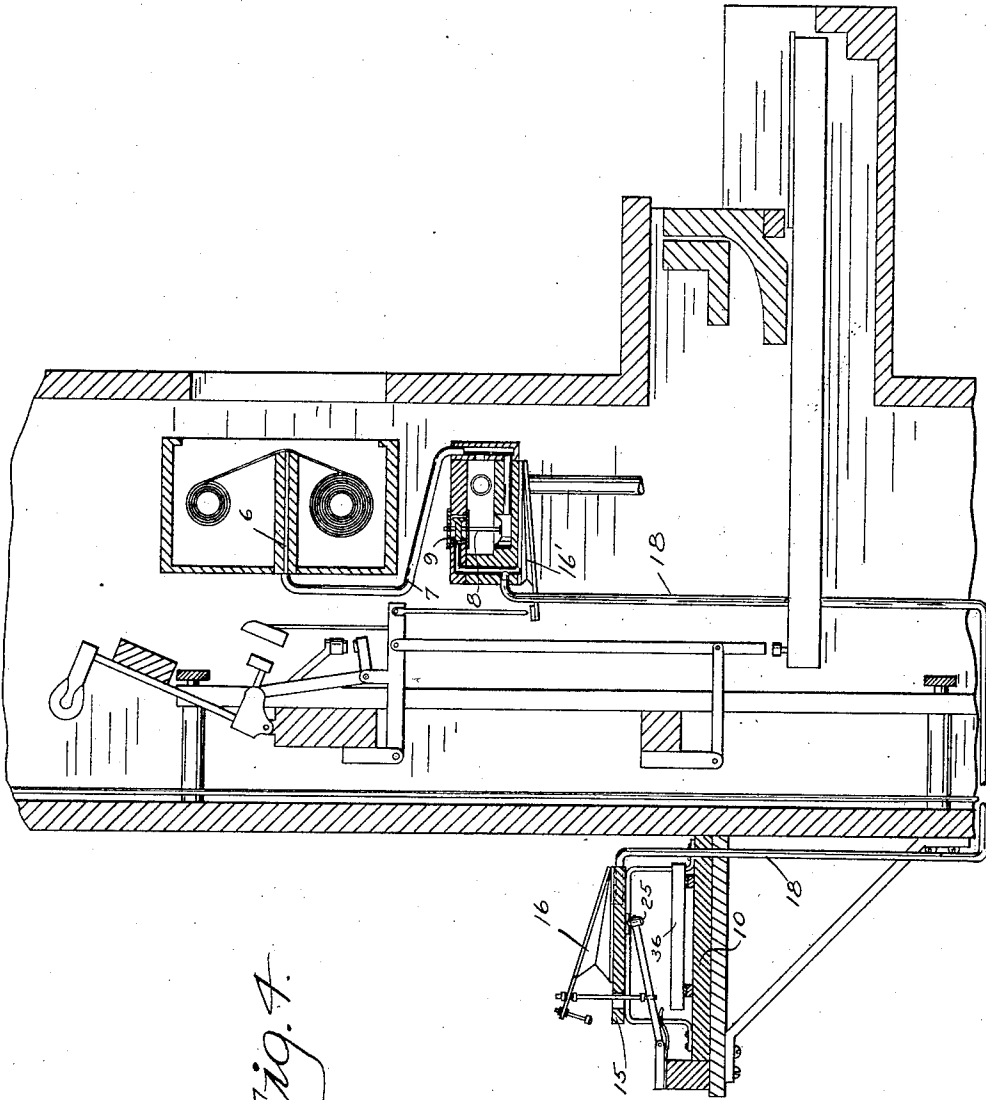


Fig. 4.

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UNITED STATES PATENT OFFICE.

BURT R. VAN VALKENBURG, OF OAKLAND, CALIFORNIA.

HAMMER-ACTION FOR PLAYER MUSICAL INSTRUMENTS.

1,059,507.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed December 4, 1911. Serial No. 663,882.

To all whom it may concern:

Be it known that I, BURT R. VAN VALKENBURG, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Hammer-Actions for Player Musical Instruments, of which the following is a specification.

10 This invention relates to musical instruments and has special reference to a musical instrument of the type used to represent the chimes and the like, the instrument including such devices as xylophones, metal-
15 lophones, and other like instruments where a bar, tube, or bell is arranged for impact with a hammer to produce the required musical note.

20 The principal object of the invention is to provide an instrument of this character adapted for use with the pneumatics common in player pianos, and of improved construction so that the hammer will not remain in contact with the article upon which
25 it strikes after impact thereon, thus enabling the bar or the like to vibrate freely out of contact with the hammer after being set in vibration by the blow.

30 With the above and other objects in view, the invention consists of certain novel details of construction, and combinations and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

35 In the accompanying drawings like characters of reference indicate like parts in the several views, and: Figure 1 is a transverse section through an instrument of this type. Fig. 2 is a partial plan view of such an instrument. Fig. 3 is a similar transverse section showing the position assumed by the hammer after striking the article adapted for
40 the production of sound. Fig. 4 is a view in elevation of a portion of a player piano with an instrument of this type attached.

45 In the construction of this instrument a base board 10 is provided at one longitudinal end whereof is an upstanding strip 11. At each end of the base board 10 is an inverted U-shaped frame 12 having feet 13
50 extending outward and secured to the base board by means of suitable screws 14. Mounted on the frame 12 is a board 15 whereon is mounted a series of pneumatic bellows 16 each of which communicates
55 through a passage 17 with a suitable pipe 18

leading to a controlling mechanism so that air may be exhausted from the respective pneumatic. A form of this controlling mechanism, is shown in Fig. 4, in which the pneumatic 16 co-acts with the pneumatic 16'. Adjacent one edge of this board is a series of openings 19, each being positioned centrally with reference to the breadth of the respective pneumatic, and through these openings depend rods 20 which have their upper ends held in suitable openings in the top boards 21 of the pneumatics, the rods being adjusted in said openings by means of the nuts 22 screwed on the upper ends thereof. On the upper edge of the board 11 and centrally alined with the respective pneumatics is a series of hinge plates 23 whereeto are hinged shanks 24 of strikers provided with hammer heads 25. Beneath each of the plates 23 is secured a spring 26 which is held in position by the screws 27 which hold the plates 23 to the board 11 and the free end of each spring bears on the underside of a respective shank 24 so that the shank is normally kept in the raised position indicated in Fig. 1, the hammer head having its upper end bearing against a strip of felt or the like, as indicated at 27. These shanks 24 are held to the hinged members 23 by pivot pins 28. The rod 20 has its lower end extending through a suitable opening 29 in the respective shank 24, and above the shank there is provided a nut 30 so that the handle may be adjusted with respect to the rod 20. The lower end of the rod 20 moves freely in the opening 29 so that the shank 24 may have motion downward from the nut 30 but will be prevented from moving up along the rod past said nut. At the free end of each of the top boards 21 of the bellows 16 is a short rod 31 having a head 32 on its lower end which is preferably of some soft material to prevent noise and this rod is provided with nuts 23 on each side of the respective board 21 so that the rod may be adjusted with reference to the board. The head 32 is arranged to strike on the top of the board 15 near its edge, thus acting as a stop to limit the movement of the board 21 in one direction.

Extending longitudinally of the board 10 are strips 34 whereon are secured strips of felt or other like soft material as indicated at 35 and in the present instance a number of bars 35 are shown resting on these strips the lengths of the bars being graduated or their

size varying to produce the different notes which it is desired to use in the production of the imitation of chimes, or the like.

In the operation of the device when air is admitted through any opening in the tracker board 6, the valve 9 is raised in the usual manner. This allows air to be exhausted from pneumatic 16' and the corresponding tube 18. This deflates the pneumatic 16 which closes rapidly and forces the hammer 25 down against the action of the spring 26. As the stop 2 contacts with the board 15 the movement of the rod 20 downwardly ceases and this is arranged to take place in a position approximately that shown in Fig. 3, the inertia of movement of the hammer 25 carrying the hammer still farther downward until the same contacts with the respective member 36 which it is desired to strike. As soon as the hammer strikes this board and sets the same in vibration the hammer will rebound, and the spring 26 will again assume the position shown in Fig. 3 and leave the struck member 36 to vibrate freely without interference by the hammer. When the pneumatic is again inflated the parts all assume the position shown in Fig. 1, the spring 26 causing the hammer to rise.

Having thus described the invention, what is claimed as new, is:—

1. A device of the character described comprising a base board, a vertical strip extending along one edge of said base board, supports carried by said base board, a bellows carried by said support, a rod adjustably connected with the removable member of said bellows and passing through an opening formed in the stationary member of said bellows, a stop rod adjustably secured adjacent the free end of the removable member of said bellows for limiting its downward movement, a hinge plate secured to said vertical strip, a hammer having its shank pivot-

ally connected with said hinge plate, a resilient strip secured at one end of said vertical strip and having its free end engaging the shank of said hammer for normally holding the same in a raised position, the inner end of said first mentioned rod passing through an opening formed in the shank of said hammer and being provided with a collar engaging the upper edge of the shank, and means carried by said base board and adapted to be struck by said hammer upon said bellows being deflated.

2. In a device of the character described, a base board, a bellows supported above said base board, a hammer pivotally connected with said base board and having its shank provided with a vertical opening, a rod passing through an opening formed in the stationary member of said bellows and having its threaded upper end passing through the movable member of said bellows, nuts threaded upon the upper end of said rod above and below the movable member for holding said rod in an adjusted position, the lower end of said rod passing through an opening formed in the shank of said hammer, a collar formed upon the lower end portion of said rod for moving said hammer with said rod, resilient means for normally holding said hammer in a raised position, a stop rod for limiting the contraction of said bellows adjustably connected with the free end portion of the movable member of said bellows, and means carried by said base board and adapted to be struck by said hammer.

In testimony whereof I affix my signature in presence of two witnesses.

BURT R. VAN VALKENBURG.

Witnesses:

JOSEPH WEYNACHT,
J. Y. HOFFMAN.