

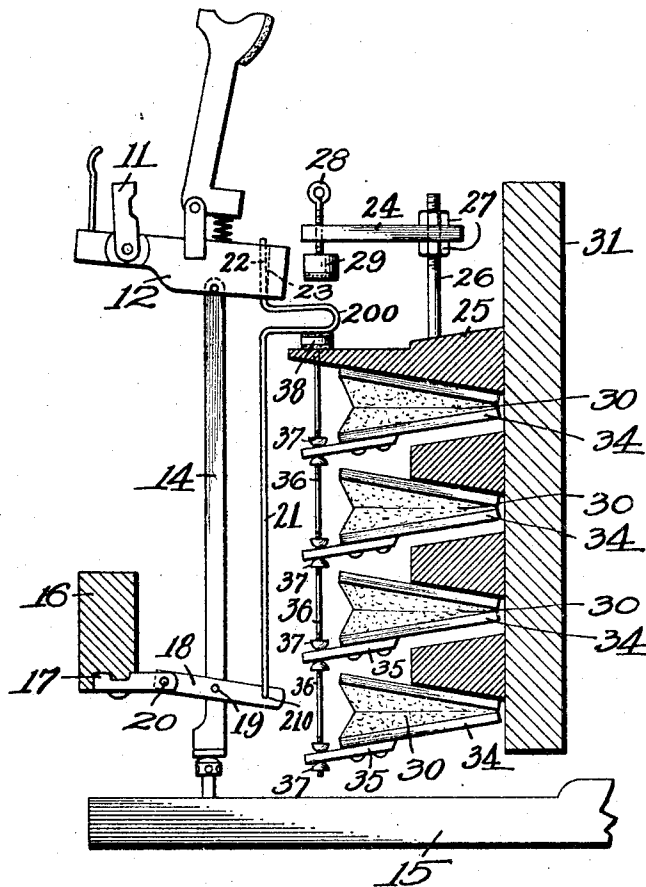
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1,564,870

F. G. LYNDE

MANUALLY OR MECHANICALLY OPERATED PIANO

Original Filed Oct. 27, 1919



Witness
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UNITED STATES PATENT OFFICE.

FRANK G. LYNDE, OF NEWARK, NEW JERSEY, ASSIGNOR TO AUTO PNEUMATIC ACTION COMPANY, A CORPORATION OF NEW YORK.

MANUALLY OR MECHANICALLY OPERATED PIANO.

Application filed October 27, 1919, Serial No. 333,574. Renewed October 3, 1925.

To all whom it may concern:

Be it known that I, FRANK G. LYNDE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented new and useful Manually or Mechanically Operated Pianos, of which the following is a specification.

The object of this invention is to provide a new and improved manually or mechanically operated piano.

To this end the invention consists of the device hereinafter described and illustrated in the accompanying sheet of drawings, in which the figure is a cross-sectional elevation showing sufficient of the mechanism to illustrate my invention.

Pianos are made to play mechanically by arranging a pneumatic mechanism over the keys and in front of the piano actions, to engage therewith which mechanism consists of a series of pneumatics called into operation by a perforated note sheet traveling over an apertured tracker-bar. An instrument of this character is known as a player piano.

In providing an instrument of this character it is necessary to leave the piano actions so that the piano can be played by hand by fingering the keys, and so that the installation of the extra mechanism will not interfere with the touch. This has been accomplished by having strikers operated by pneumatics engage directly under the wippens of the piano actions which are extended for this purpose or engage with abutments secured to abstracts of the piano actions. This latter mechanism has sometimes been undesirable because it will irregularly weight the abstracts, and because the application of the power of the pneumatics to the abstracts is apt to break the same as they are usually made out of thin or light pieces of wood.

The particular object of my invention is to provide a device in which it is not necessary to extend the wippens and in which it is not necessary to attach the piano abstracts and to provide a device which will attain the advantage of leaving the piano actions free to operate independently of the pneumatic mechanism.

To this end the invention consists in arranging rods between the links and wippens of the piano actions, which rods have projections preferably formed by loops in the same below the wippens under which the strikers operated by the pneumatics engage.

The invention also consists of certain improved details of construction hereinafter described.

The invention in a certain sense is an improvement or modification of United States Letters Patent No. 1,266,965, united piano action, granted to me, May 21, 1918.

Referring to the drawing, 11 designates the supporting rail of the piano action, to which are pivoted the wippens 12. Extending downwardly from the wippens are the piano abstracts 14 which are engaged by the keys 15.

16 designates a supporting rail which has ears 17.

18 designates the links which are pivoted to the abstracts 14 at 19, and which links are pivoted to the ears 17 at 20.

Between each link 18 and wippen 12 is arranged a rod 21. Each rod is pivoted at its lower end at 210 to a link 18, and its upper end 22 extends loosely through a hole 23 in a wippen. Each rod has a bend or loop 200 as shown, with which bends the strikers operated by the pneumatics engage as hereinafter described.

A board or rail 24 is supported from a guide-board 25 by means of rods 26 having nuts 27—27 threaded thereon. Threaded into this board 24 are screws 28 which have heads 29 set in position so that the loops 200 of the rods 21 can engage the same.

30 designates a series of pneumatic actions secured to a base or channel bar 31. Each of the pneumatics has a movable lower board 34 extending from which is a flap or wing 35.

Extending up from each wing is a striker 36 which is held to its wing by nuts 37—37. Each striker is fitted to slide in the guide board 25 and is provided with a head 38 on its upper end. These heads preferably have felt above and below the same. These heads are the parts which engage the loops 200.

With this arrangement when the piano is played manually by operating the keys the rods 21 will lift with the abstracts 14, and the pneumatic mechanism will not interfere with the touch of the piano.

As the rods 21 are the same for all the piano actions there will be no difference in the touch of different keys.

When the device is operated pneumatically the heads 38 of the strikers will engage the bends 200 of the rods 21 and the piano actions will be operated in that manner.

The heads 29 will limit the upward movement of the strikers.

The bends 200 thus form an accurate means by which the impulses of the pneumatics are applied to the piano actions.

The details and arrangements herein shown and described can be varied by a skilled mechanic without departing from the scope of my invention as expressed in the claim.

Having thus fully described my invention what I claim and desire to secure by Letters Patent is:—

In a manually or mechanically operated

piano, the combination of the piano action, rods pivoted to the links thereof and having their ends loosely extending through holes in the wippens, projections formed by loops in said rods below the wippens of the piano action, a series of pneumatics, strikers extending upwardly from said pneumatics, a guide board in which said strikers are fitted to slide, and heads on the upper ends of said strikers set in position to engage the loops on the rods.

In testimony whereof I have hereunto affixed my signature.

FRANK G. LYNDE.