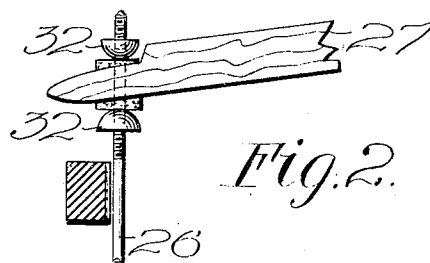
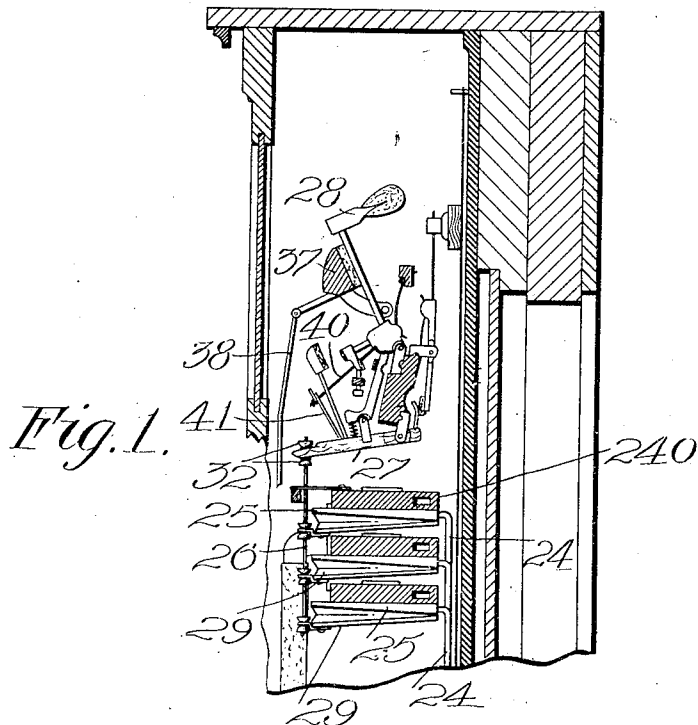


T. P. BROWN.
PIANO.
APPLICATION FILED MAR. 29, 1909.

1,019,127.

Patented Mar. 5, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE

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PIANO.

1,019,127.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THEODORE P. BROWN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Piano, of which the following is a specification.

This invention relates to pneumatic musical instruments.

13 The principal object of the invention is to provide a practicable means for regulating the strength of the blows of the hammers in such a way that when they are set so as not to give a blow of full extent or range, this of
15 itself will prevent the striking pneumatics being fully expanded so that the modulation will be due in part to this fact.

Further objects and advantages of the invention will appear hereinafter.

20 Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional transverse section of one embodiment of the invention, and Fig. 2 is a side view of the wippen.

25 In piano constructions so far as I am aware, when a movable hammer rail has been employed for modulating the striking effect of the hammers, the striking pneumatics, being loosely, that is, not positively,
30 connected with the hammers, would always be expanded and then collapsed to the same extent when a modulated blow was to be delivered as when one of full force was desired. This largely neutralizes the effect of
35 the ordinary modulating attachments, and this invention has for one of its objects the provision of means whereby the striking force of the striking pneumatics will be regulated by the regulation of the length of the
40 stroke of the hammers, thus producing a thoroughly effective modulating device. The striking pneumatics are directly connected with the wippens which operate the ham-
45 mers, in such a way that all motions of the hammers are positively transmitted to the movable leaves of the striking pneumatics so that when the hammers are held nearer the strings when ready to strike, the pneu-
50 matics will be partially incapacitated for causing the hammers to move with full striking effect.

The drawing shows the invention applied to a form of instrument in which tubes or channels 24 lead to secondary pneumatics
55 240 for controlling the striking pneumatics

25, each of which is connected by a vertical rod 26 directly with a wippen 27 which operates a hammer 28 in any usual or desired manner. The rods are connected by means of nuts 32 both above and below and are
60 connected with the movable leaves 29 of the striking pneumatics similarly by upper and lower nuts.

The hammers preferably are adjusted toward the strings to modulate the tone by
65 means of a pivoted hammer rest rail 37 adapted to be operated by mechanism 38 under the control of a lever (not shown). On account of the positive connection of the
70 rods 26 with the movable leaves of the pneumatics and with the wippens, and the adjustment of the action to prevent lost motion, the operation of the lever not only moves
75 the rest rail and hammers toward the strings to shorten the stroke, but this motion of the hammers pulls on the bridles 40, bridle wires 41, and wippens 27, and partially collapses
80 the striking pneumatics, which prevents their actuating the hammers with full striking effect. Therefore the effect of the striking
85 pneumatics will not be partly expended in neutralizing the effect of the adjustment of the hammer rest rail but both effects will cooperate to produce the desired result so
90 that the rest rail does not have to be moved so near the strings for any desired modulating effect and the pianissimo effects are clear
95 and distinct.

While I have illustrated and described a preferred embodiment of the invention, I
100 am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the
105 details of construction shown and described, but

What I do claim is:—

1. In a piano, the combination of striking pneumatics, hammers, a movable hammer
110 rest-rail, means for adjusting the rest-rail to decrease the length of stroke of the hammers, a positive connection between each hammer and its striking pneumatic, whereby the motion of the pneumatic is communi-
115 cated accurately to the hammer, and the motion of the hammer in either direction is communicated accurately and positively to the movable leaf of the striking pneumatic, so that the adjustment of the hammer rest- 119

rail will partially collapse the striking pneumatics to a corresponding degree, whereby the striking effect of the hammers will be reduced both by the position of the hammer rest-rail and by the condition of the pneumatics.

2. In a piano, the combination of striking pneumatics, hammers, a movable hammer rest-rail, means for adjusting the rest-rail to decrease the length of stroke of the hammers, and for manually controlling the collapsing of the striking pneumatic, and a positive connection between each hammer and its striking pneumatic, whereby the motion of the pneumatic is communicated accurately to the hammer, and the motion of the

hammer in either direction is communicated positively to the movable leaf of the striking pneumatic, so that the adjustment of the hammer rest-rail will partially collapse the striking pneumatics to a corresponding degree, whereby the striking effect of the hammers will be reduced both by the position of the hammer rest-rail and by the condition of the pneumatics.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

THEODORE P. BROWN.

Witnesses:

ALBERT E. FAY,
C. F. WESSON.