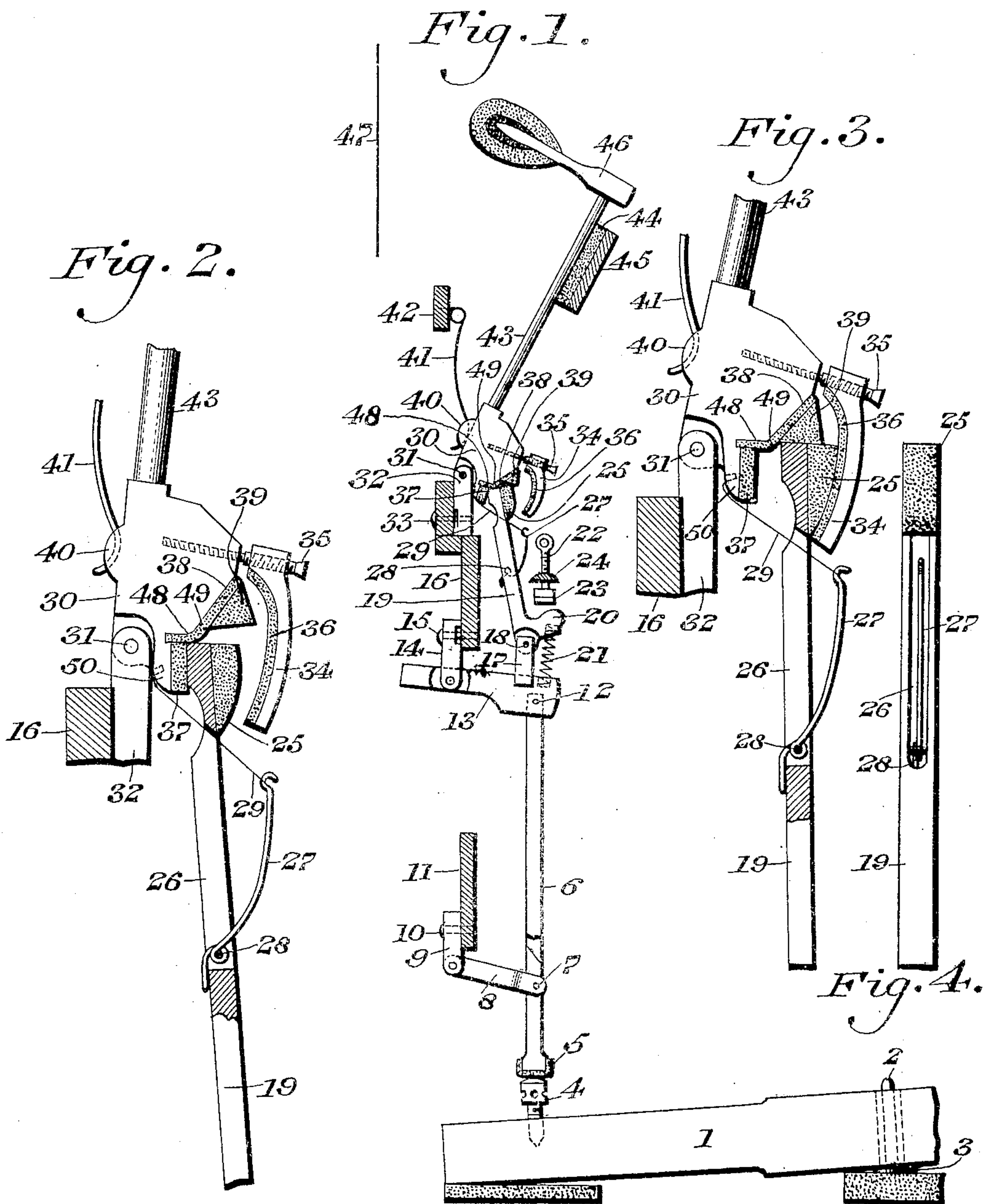


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PIANO ACTION FOR PIANOS.
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PIANO-ACTION FOR PIANOS.

No. 805,692.

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To all whom it may concern:

Be it known that I, EMIL WERNER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Piano-Action for Pianos, of which the following is a specification.

My invention consists of novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a side elevation of a hammer-butt and its adjuncts embodying my invention. Fig. 2 represents, on an enlarged scale, a hammer-butt and its adjuncts in the position the parts assume before the key is fully depressed. Fig. 3 represents, on an enlarged scale, a side elevation of the hammer-butt and its adjuncts, showing the position the parts assume when the key is fully depressed. Fig. 4 represents a front elevation of a portion of the fly in detached position.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the key of the action, which is connected with the keyboard by a pivot 2, between which keyboard and key is a punch 3.

4 designates a pilot or regulating screw adjustably fastened in the key 1 near its outer end and adapted to contact with the cushioned end 5 of the abstract 6, which latter is pivoted at 7 to the link 8, the said link being pivoted to a flange 9, which latter is secured by a screw 10 or other suitable connection to the rail 11. The end of the abstract 6 is pivoted at 12 to a whip 13, which latter is pivoted near its other end to a flange 14, secured, by means of a screw 15 or other suitable connection, to the action-rail 16.

17 designates a flange secured to the whip 13 and having pivoted at its outer end 18 a fly 19, which latter has a lug 20 thereon, between which and the end of the whip 13 is interposed a spring 21.

22 designates a regulating-screw having a suitable cushioned head 23, the screw 22 engaging with the rail 24.

25 designates a fly-felt at the outer end of the fly 19.

26 designates a slot extending through the fly 19 and having a spring 27 pivoted near its lower end by means of a pin 28.

29 designates a suitable connection, in the present instance being shown as composed of a string secured at one end to the end of the spring 27 and at its other end to the hammer-butt 30, which latter is suitably pivoted at 31 to a flange 32, which latter is secured to the action-rail 16 by means of a screw or other suitable connection 33.

34 designates the back-check, which is adjustably secured to the hammer-butt by a screw 35, the portion of the screw engaging with a right-hand thread in the back-check having a right thread thereon, while the portion of the screw engaging with the hammer-butt is of smaller diameter and has a left thread both on the screw and in the butt, although it is evident that the right thread may be at the end of the screw and engaging with a similar thread in the butt and the left thread on the enlarged portion of the screw engaging with a similar thread in the back-check, if so desired.

36 designates a felt secured to the inner surface of the back-check 34.

37 designates a stop-felt secured at the lower end of the hammer-butt 30. 38 designates a strip of leather or other suitable material also secured to the butt.

39 designates a strip of felt or yielding material which is glued or otherwise suitably secured at its upper end to the strip 38.

40 designates a lug on the hammer-butt, having a groove therein in which one end of the spring 41 is adapted to be seated, the other end of the spring being secured to a rail 42.

43 designates the hammer-shank, which normally rests against the felt 44, secured to the hammer-rail 45, and 46 designates the hammer, which is adapted to contact with the spring 47.

48 designates the portion of the strip 38 against which the end of the fly normally contacts, and 49 designates the curved portion of said strip, over which the end of the fly passes when the said fly is drawn backward owing to the contact of the lug 20 with the cushion-head 23 of the regulating-screw 22.

The operation is as follows: Having the hammer-butt and its adjuncts in the position as seen in Fig. 1, the key is depressed, and the pilot 4, contacting with the felt 5 at the end of the abstract 6, will cause the fly 13 to be raised, which will raise the flange 17, secured

thereto, and also the fly 19, secured to said flange. The connection 29, secured to said fly by means of the spring 27, will act in conjunction with the end of the fly to raise the hammer-butt, and thus cause the hammer 46 to strike the spring 47; but as the fly 19 is being raised the lug 20 will contact with the cushioned head 23 of the regulating-screw 22 and will cause the end of the fly which at this time contacts with the strip 38 at the point 48 to be drawn backward. As the end of the fly 19 is drawn backward it will pass around the curve 49 of the strip 38 and allow the hammer to fall backward, the distance of this movement depending upon the distance from said curve 49 to the yielding cushion 39, against which latter the end of the fly will now contact, the fly-felt 25 thereon also contacting at its upper end with said cushion and its outer surface contacting with the back-check. It is evident that as the fly 19 is being raised the connection 29, which is secured to the butt 30 and passes through the fly 19 and under the stop-felt 37 and secured to the end of the spring 27, will assist in raising the butt, at the same time holding said fly in proper relation to said butt, so that a much better and quicker repetition is produced. The tension of the spring 27 may be varied as desired, and while in the present instance I have shown this spring as being pivoted at 28 in the slot 26 and its outer end as being bent over so as to contact with the inner surface of the fly 19 it is apparent that this spring may be secured in any other suitable manner without departing from the spirit of my invention.

By means of the right and left thread on the screw 35, the right thread engaging with a similar thread in the back-check 34 and the left thread, which is at the end of said screw, engaging with a corresponding thread in the

hammer-butt, the back-check can be very quickly and accurately adjusted. The back-check and the hammer-butt may also be adjusted by employing a screw having all of the threads running in the same direction, but having a greater number of threads per inch on one portion of the screw than there are threads per inch on the other portion, said threads being adapted to coact with corresponding threads in said back-check and said hammer-butt. It is apparent that the portion having the greater number of threads per inch may be on either the forward or rearward portion of said screw, in which case the coacting thread would be in either the hammer-butt or the back-check, as the case might require. This will give the same result as if I employ a right and left hand threaded screw.

It is evident that the length of the slot 26 in the fly 19 may be varied as desired, as also the length and the strength of the spring 27, which is secured therein.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

What I do claim as my invention, and desire to secure by Letters Patent, is—

In a piano-action, a hammer-butt having a thread therein, a back-check having a thread therethrough and a screw having a greater number of threads per inch on a portion thereof, adapted to engage corresponding threads in said hammer-butt and said back-check.

EMIL WERNER.

Witnesses:

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