No. 667,643. Patented Feb. 5, 1901.

C. A. AHLSTROM.

PIANO ACTION.

(Application filed Apr. 18, 1900.)

(No Model.)

Fig. 1.

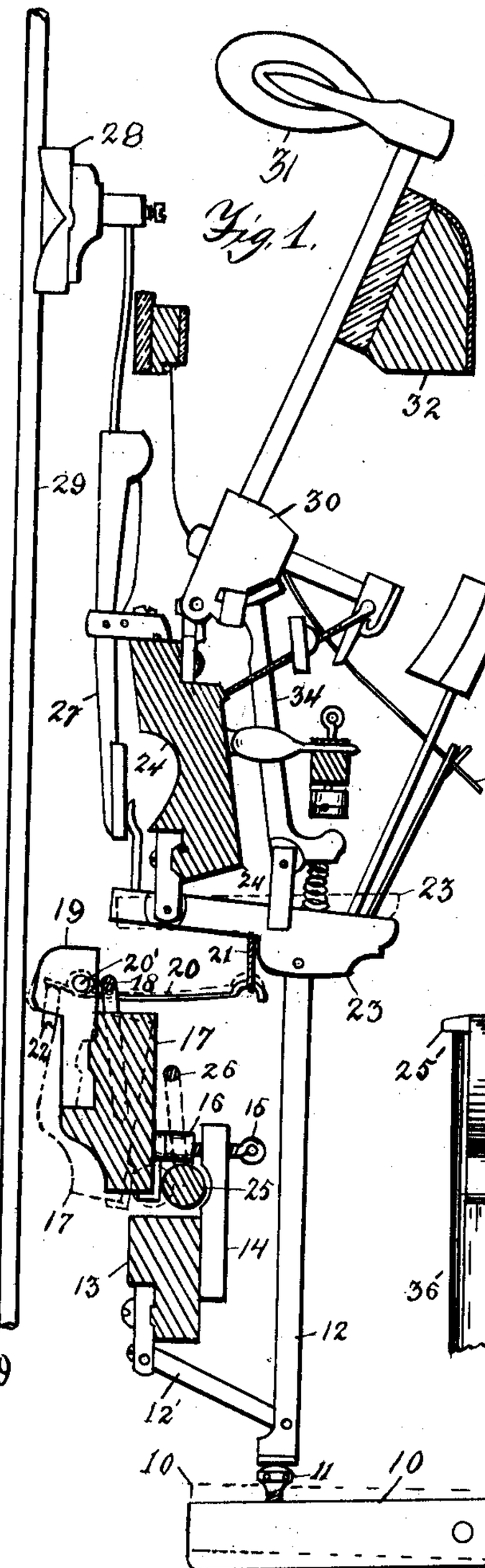


Fig. 3.

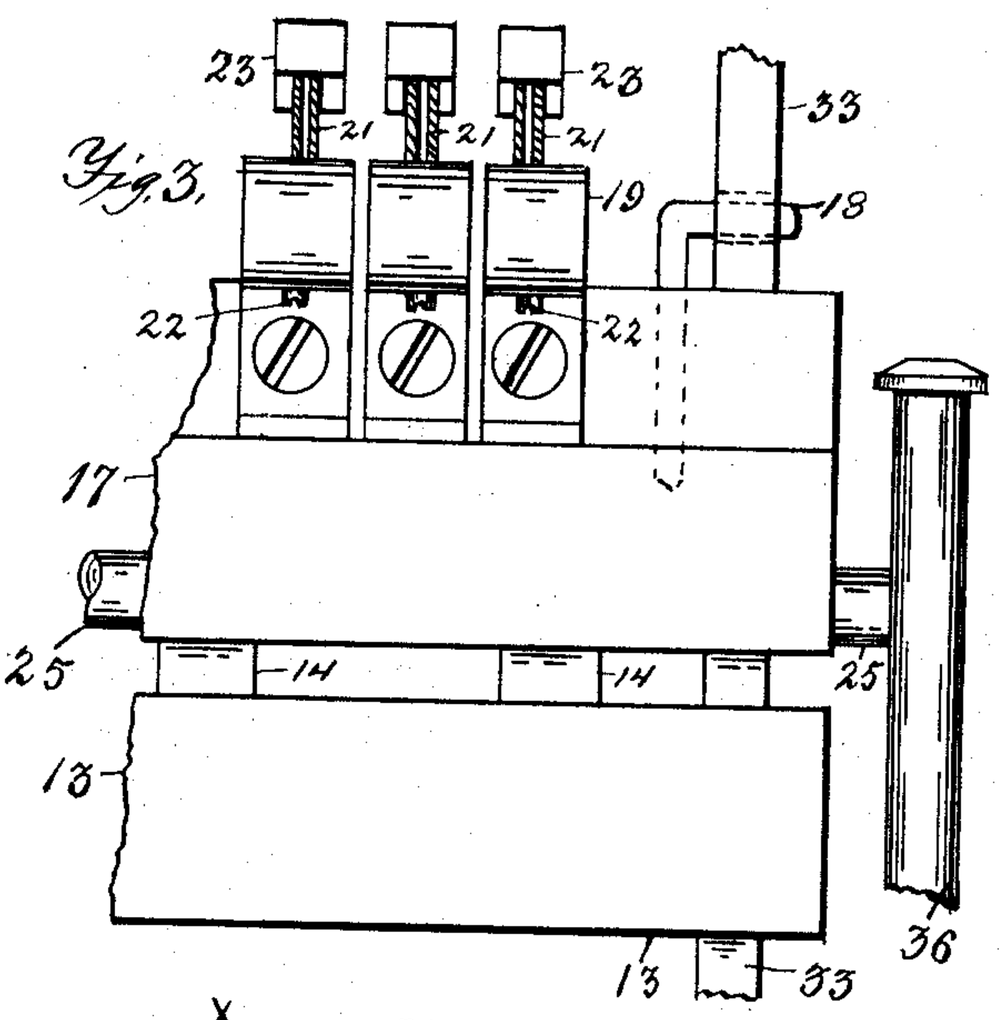
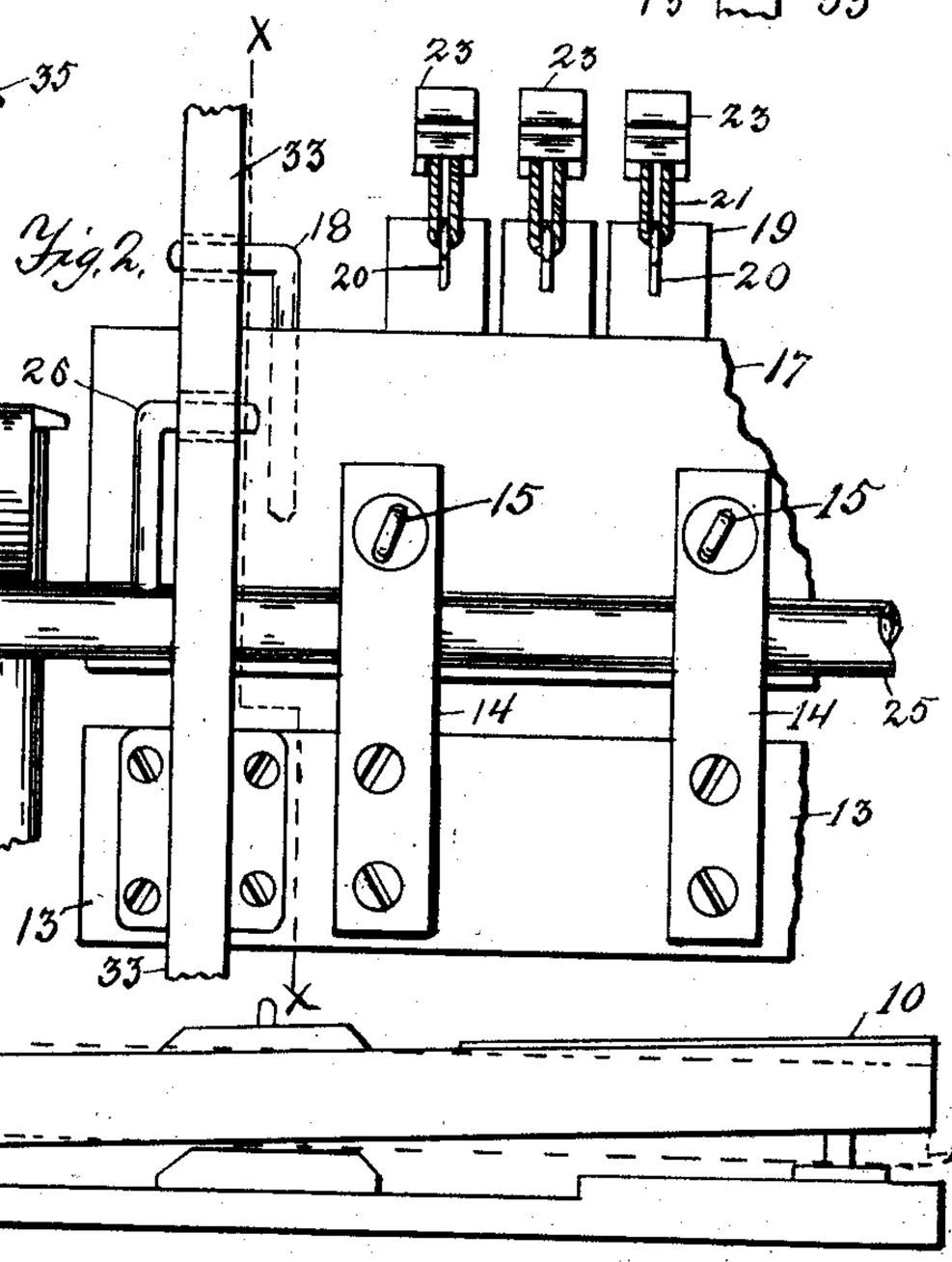


Fig. 2.

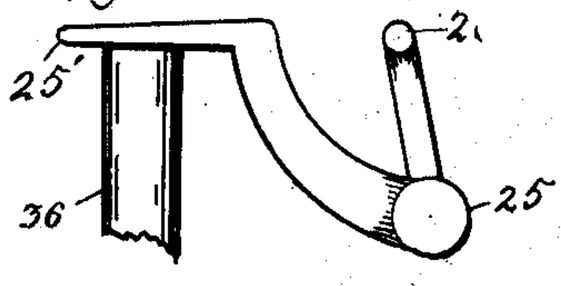


WITNESSES:

F. E. Armitage

N. E. Thomas

Fig 4



INVENTOR

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CHARLES A. AHLSTROM, OF JAMESTOWN, NEW YORK.

PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 667,643, dated February 5, 1901.

Application filed April 18, 1900. Serial No. 13,308. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. AHLSTROM, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented a new and useful Piano-Action, of which the following is a specification.

My invention relates to improvements in upright-piano actions; and the objects of my improvement are, first, to greatly increase the repeating qualities of the action by the attachment of a special repetition-spring to the lower side of the wippen; second, to control the touch by means of an adjustable spring-rail on which said repetition-spring is mounted, the adjustment of the spring-rail giving a light or heavy resistance to the touch, as desired by different players or for practice-work. I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a piano-key and the action therefor, with the rails and regulating-rod in section and without the metal action-bracket and showing my improvement at line X X in Fig. 2. Fig. 2 is a front elevation of a short section of one end of my adjustable spring-rail, the set-block with regulating-screw on the extension-rail, and the hooks with which I hang the adjustable spring-rail and regulating-rod on the metal action-brackets. Fig. 3 is a rear view or the parts shown in Fig. 2. Fig. 4 is a detail of the end of regulating-rod, showing the connecting-rod to pedal broken off.

Similar numerals refer to similar parts in the several views.

10 is the piano-key.

11 is the capstan-screw.

12 is the upright extension, and 12′ the guide.

13 is the extension-rail, which is shown in Fig. 2 attached to the metal action-bracket 33 to support the same.

14 is the set-block, duplicates of which are attached to the extension-rail at suitable distances across the piano. Through the upper end of block 14 is inserted regulating-screw 15, having button 16 on one end for rail 17 to rest against. Rail 17 hangs on hooks 18 on each of the metal action-brackets across the piano, which method of attachment allows the rail to swing, as shown in dotted outline in Fig. 1.

19 is the spring-flange, which is fastened on rail 17 by screw, as shown in Fig. 3. One end of repetition-spring 20 is inserted in flange 19 and bears on center-pin 20′, so that the strength of spring 20 can be increased and regulated by set-screws 22. The other end of spring 20 is held by the flexible cord loop or bridle 21, which is attached to the under side of the wippen 23.

25 is the swinging regulating-rod, which is hung upon the metal brackets 33 across the piano by hooks 26, as shown in Fig. 2, and having broad end 25′ for connecting to pedal-rod 36.

The remainder of the action is made as usual.

24 is the main rail; 27, the damper-lever; 28, the damper-head; 29, the string; 30, the hammer knuckle or butt; 31, the hammer; 32, the hammer-rail; 33, the metal action-bracket; 34, the jack, and 35 the bridle for butt 30.

The bearing of my attachment on the piano-action is as follows: When the finger of the player presses the key down, raising the wippen, as shown in dotted outline, flexible bridle 21 engages repetition-spring 20, and the instant the finger releases the key the action of spring 20 will force the wippen downward, allowing jack 34 to drop back into its proper position under hammer-butt 30 for another blow on the key, thus enabling the player to repeat the blow of the hammer against the string in much shorter time than when my repetition-spring is not employed.

The mounting of the repetition-springs upon an adjustable or swinging rail can be utilized for special practicing purposes in order to increase the muscular power of the player or for increasing the resistance in the touch to suit the pleasure of the player by swinging rail 17 out, as shown in dotted outline, thus greatly increasing the downward resistance of spring 20. This swinging or adjusting of rail 17 for permanent adjustment is accomplished by means of regulating-screws 15 in set-blocks 14, which blocks are placed at suitable distances across the piano. It is sometimes desirable to use the increased tension of spring 20, and consequent stronger

repeating effect, for a short time only, and this temporary swinging of rail 17 is accomplished by means of rod 25 and the usual trapwork to pedal from the broad end 25′. The foot-pressure on the pedal raises end 25′ and swings rod 25 and rail 17 back, as shown in dotted outline in Fig. 1, thus giving a pressure on spring 20, which can be applied and released at the pleasure of the player.

I claim as new—

1. The combination with an upright-piano action of repetition-springs attached to the under side of the wippens by flexible loops, a rail having separate flanges mounted thereon for said springs, a spring-regulating screw mounted in each flange, each of said springs mounted in a flange by encircling the center-pin in the flange and extending to the rear of said pin to receive said regulating-screw, substantially as shown.

2. In a piano-action, the combination with the wippens of repetition-springs attached thereto by flexible loops, an adjustable swing-rail on which said springs are mounted, suitable means for adjusting said rail, as shown and for the purpose specified.

3. The combination with a piano-action of a repetition-spring attached to the wippen by a flexible bridle, a swinging rail on which said spring is mounted, an extension-rail having set-blocks thereon and a regulating-screw for said spring-rail, as shown and for the purpose specified.

4. The combination with a piano-action of repetition-springs attached to the wippens, an adjustable rail having flanges thereon, said springs mounted in said flanges and having regulating-screws therefor, a swing-rod connected to a pedal for temporary adjustment of said rail, substantially as shown and described.

5. The combination with the piano-action of a rail hung on the action-brackets, flanges mounted on said rail having repetition-springs mounted thereon, set-screws for regulating said springs in said flanges, said springs attached to the under side of the wippens, an extension-rail having set-blocks thereon and regulating-screws for said swing-rail, a swing-rod and means for operating the same, substantially as shown and described and for the purpose specified.

In testimony whereof I have subscribed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. AHLSTROM.

In presence of—
MILO HARRIS,
N. E. THOMAS.