

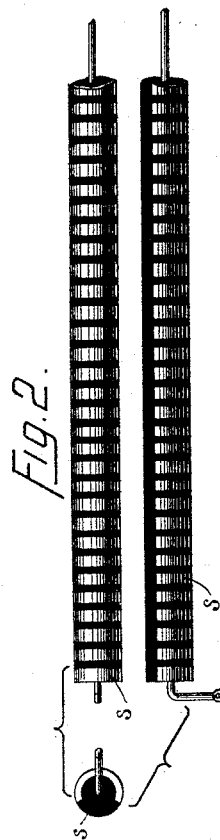
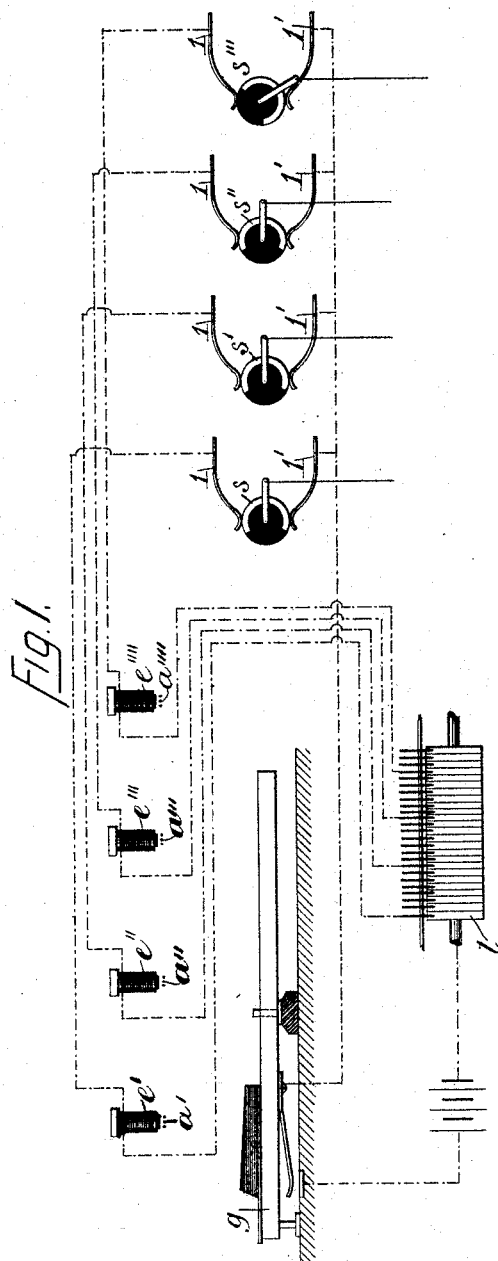
(No Model.)

P. E. SINGER.

KEYED MUSICAL INSTRUMENT ACTUATED BY ELECTRICITY.

No. 492,563.

Patented Feb. 28, 1893.



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KEYED MUSICAL INSTRUMENT ACTUATED BY ELECTRICITY.

SPECIFICATION forming part of Letters Patent No. 492,563, dated February 28, 1893.

Application filed June 17, 1892. Serial No. 437,053. (No model.)

To all whom it may concern:

Be it known that I, PARIS EUGENE SINGER, of 6 Victoria Road, Kensington, London, in the county of Middlesex, England, have invented
5 certain new and useful Improvements in Keyed Musical Instruments Actuated by Electro-Magnets, of which the following is a specification.

This invention relates to an improvement in
10 keyed musical instruments of the type for which I have applied for Letters Patent, such applications bearing respectively the Serial Nos. 436,907 and 436,908. In such instruments, the notes produced by the vibrating bodies
15 employed,—the strings, for example,—are initiated or prolonged by the action of the electro-magnets, which are put into circuit by the depression of their respective keys, and are thrown out of circuit on the release of
20 those keys, the action of the magnets upon the strings being controlled by rotating or vibrating commutators.

The object of the present invention is to introduce into my new instruments, facilities
25 for playing which are afforded to the organist, in respect of varying the quality of the sounds produced, or of combining those qualities, and the production of octaves and harmonics of the initial note, on the depression of one key,
30 instead of the depression of the several keys which correspond to the notes sounded.

In the accompanying drawings, Figure 1 shows, in diagram, the means for bringing
35 into circuit, at the pleasure of the player, four qualities of sounding bodies, corresponding to four stops of an organ.—In this figure, s , s^I , s^{II} , s^{III} are four switch rods, the construction of which is best shown at Fig. 2, their object being to throw into circuit the
40 magnets e^I , e^{II} , e^{III} , e^{IV} , of the several sets of sounding bodies, a^I , a^{II} , a^{III} , a^{IV} , to which the switch rods respectively belong.

The switch rods are made of wood or other non-conducting material, partially surrounded
45 by metallic bands,—one for each note of the instrument.—These bands are severally embraced by a pair of contact springs 1 $1'$, the springs 1 being connected with their respective magnets e^I , e^{II} , e^{III} , e^{IV} , and the springs
50 $1'$ with the key g .—The objects of these

switch rods, it will be understood, is, by introducing a third or additional break into the circuit (one break in the instrument, as originally designed, being at the key g , and the second at the commutator l), to bring into
55 circuit or throw out of circuit, at pleasure, the magnets of the several so-called stops or series of sounding bodies a^I , a^{II} , a^{III} , a^{IV} contained in the instrument. The switch rods will receive an axial motion from the player
60 (to throw the stops into or out of use) by any one of the well known devices employed by organ builders for the like purposes. From this illustration, it will be readily understood
65 how harmonics and octaves may be obtained by the introduction of switch rods that will couple up electrically the notes intended to be sounded by the depression of one key.—It will only be necessary to connect the switch
70 belonging to a note, say C, with the switch of its octave, so that when a current is established, it will divide, and go, not only to the magnet corresponding with the depressed key, but also to the magnet which sounds the octave above or below as the case may be.—
75 If all the keys of the instrument are thus brought into connection with the magnets which sound the octave above or the octave below, and two switch rods are provided for putting the keys into communication with
80 their lower or upper octaves, then the octave of any note within the compass of the instrument may be sounded by the depression of one key.—Similarly, if each note is electrically
85 connected with its octave above, and a switch is provided for throwing in the fifths, a corresponding result will be obtained.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, 90 I declare that what I claim is—

1. In a keyed musical instrument in which electro-magnets are used for setting or sustaining the sounding bodies in vibration, the combination therewith of two or more kinds
95 of sounding bodies for producing different qualities of sound (corresponding to stops in the organ), such sounding bodies being brought into relation with each other by axially-moving switches placed under the com- 100

mand of the player, and embraced by elastic contact pieces situate within the circuits of their respective electro-magnets, as set forth.

2. In a keyed musical instrument in which
5 electro-magnets are used for setting or sustaining the sounding bodies in vibration, the combination therewith of axially-moving switches, embraced by elastic contact pieces, situate within the circuits of their respective
10 electro-magnets, and electrically connected

with the circuits of the lower or upper octave, the fifth, or other harmonic division of the scale, as set forth, and serving to produce octaves or harmonics of the notes sounded by the depression of the keys of the manual.

PARIS E. SINGER.

Witnesses:

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