

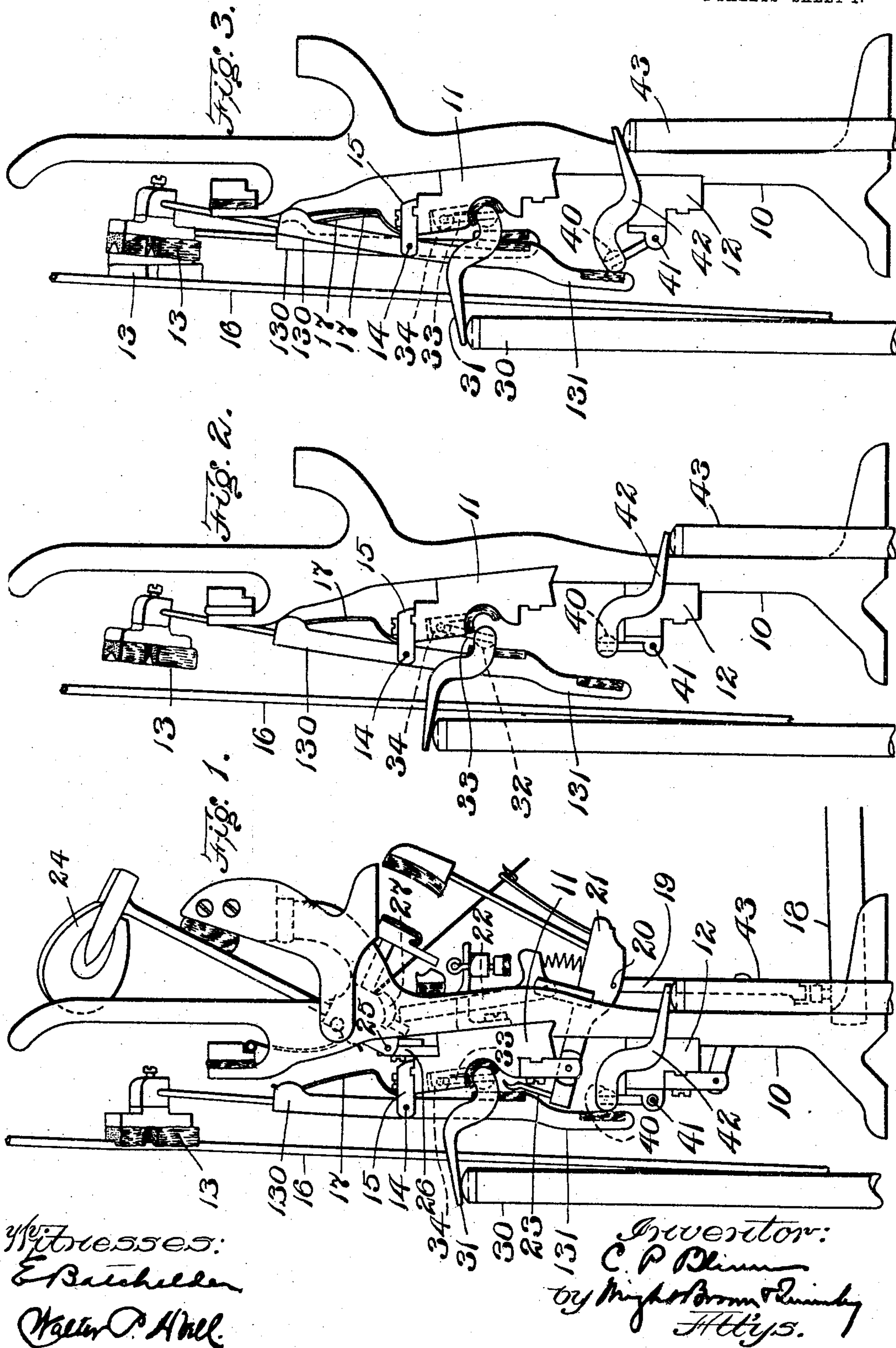
No. 767,100.

PATENTED AUG. 9, 1904.

C. P. BLINN.  
PIANO DAMPER ACTION.  
APPLICATION FILED JAN. 9, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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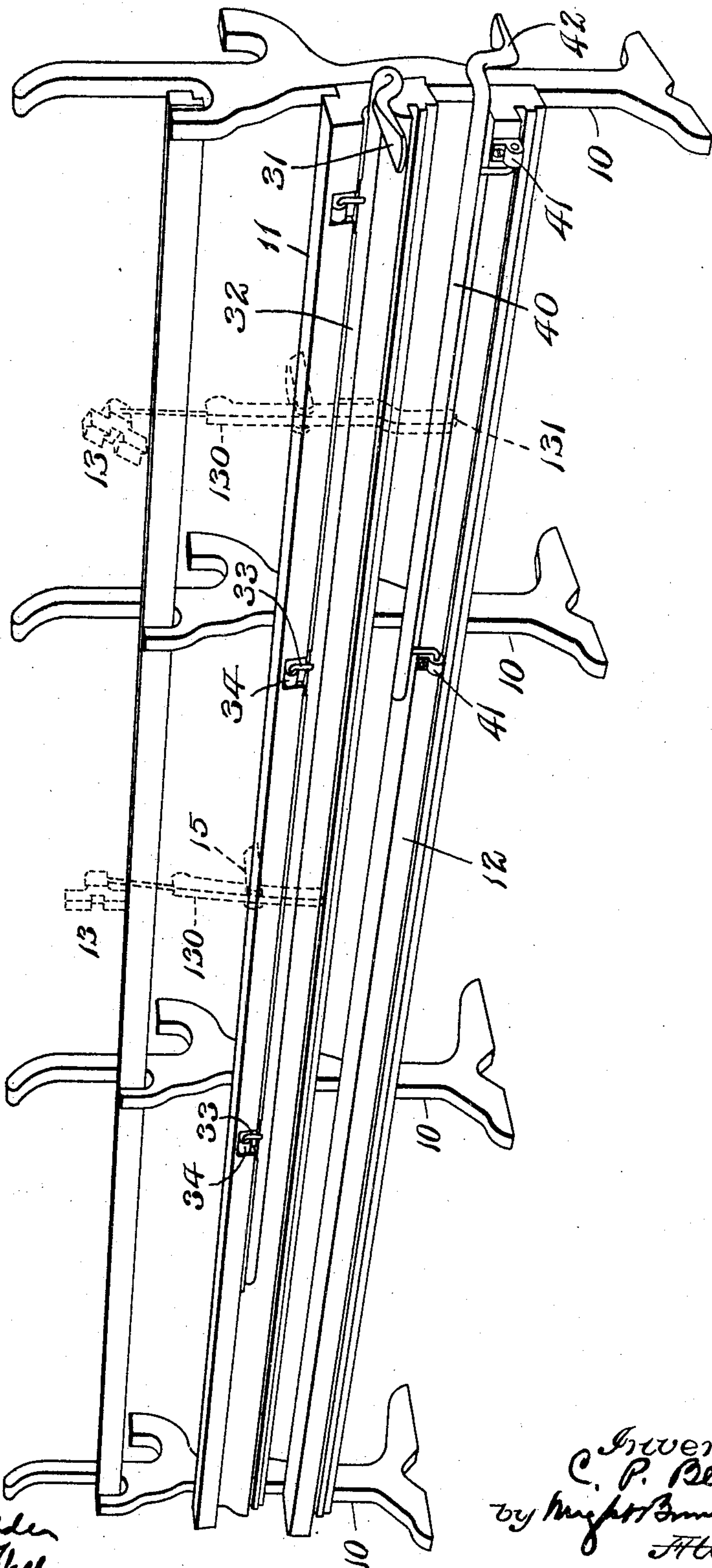


Fig. 4.

Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHARLES P. BLINN, OF BOSTON, MASSACHUSETTS.

## PIANO DAMPER-ACTION.

SPECIFICATION forming part of Letters Patent No. 767,100, dated August 9, 1904.

Application filed January 9, 1904. Serial No. 188,271. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES P. BLINN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Piano Damper-Actions, of which the following is a specification.

This invention relates to pianoforte-actions, especially to that part of the action operated by the loud or damper pedal. An upright piano-action usually has a rail or rod which is connected with the damper-pedal and when actuated by the latter is caused to hold the dampers out of contact with the wires or strings after the releasing of the keys. In some movements a single elongated rod is employed adapted to lift or displace all the dampers simultaneously. Other movements have a divided rod or two rod-sections, one of which coöperates with the bass and the other with the treble dampers, the two sections being operated from opposite ends of the action. The arrangement of the sections is such that the inner end of the bass section overlaps the inner end of the treble section, so that while the bass section of the divided rod can be moved independently of the other to displace only the bass dampers the treble section of said rod cannot be operated independently. This division of the rod in the middle impairs the effectiveness and rigidity of the rod when all the dampers are to be displaced, because the springs which hold the dampers against their respective wires are always stronger in the bass section than in the treble section, and consequently the greatest resistance is at the weakest part of the lifting-rod.

The principal object of this invention is to divide the series of dampers into groups and to control each group independently of the other or others and still enable all the dampers to be displaced simultaneously.

A secondary object of the invention is to so organize the damper-actuating mechanism that the greatest resistance to the lifting-rods will be at the strongest or most rigid parts of said rods.

On the accompanying drawings the damper mechanism is shown as divided into two groups. The invention, however, is not limited to this precise arrangement, but is based

on means for independently controlling groups of dampers in addition to controlling all the dampers collectively.

Of the drawings, Figure 1 shows in end elevation a pianoforte-action embodying my invention in normal condition or the condition which prevails when the loud pedals are released. Fig. 2 shows in end elevation the damper-actuating mechanism in the condition which prevails when the loud pedal is depressed. Fig. 3 shows the damper-actuating mechanism in the condition which prevails when the bass pedal is depressed. Fig. 4 shows in perspective the arrangement of the lifting-rods as mounted on the action-supporting frame.

The same reference characters indicate the same parts in all the figures.

The uprights 10 of the action-frame are shown as supporting the main or flange rail 11, the bottom rail 12, and the usual parts of the action. The usual felt damper 13 is attached to the upper end of a damper-lever 130, which is pivoted at 14 to an ear 15, secured to the main rail 11. Said damper is normally held in vibration-checking contact with the wire or string 16 by a spring 17. The rear end of the usual operating-key 18 bears against the lower end of the usual extension 19. The upper end of said extension is connected at 20 to the jack-lever 21, on which is mounted the jack 22, and to the rear end of which is affixed the damper-lifting pin 23. The hammer 24 is pivoted at 25 to a fixture 26, secured to the main rail 11. A depression of the forward end of the key 18 raises the extension 19 to rock the lever 21. The lever 21 in turn rocks or lifts the damper 13 from the accompanying wire or string 16, at the same time lifting the jack 22 against the butt 27 of the hammer 24, thus causing the hammer to strike the wire. The present invention is embodied in the means hereinafter described for controlling the dampers independently of the hammer-actuating mechanism above described.

In Fig. 1 is shown the upper portion of a pedal-rod 30, which is adapted to be raised by the depression of a damper-pedal. (Not shown.) Said rod bears against the under side



of a rocker-arm 31 on one end of the principal damper-lifting rod 32. As hereinbefore stated, the springs 17, which press the dampers 13 against the wires 16, are made stronger for the bass dampers than for the treble dampers. This is because the vibrations of the bass wires are stronger than those of the treble wires. For this reason the arm 31 is located, preferably, at the bass end of the lifting-rod 32, so that the torsional movement of said rod will be less than if said arm were at the other end. Said lifting-rod is provided with hangers 33, which are adapted to swing in bosses 34, secured to the main rail 11. This lifting-rod extends across as many actions as have dampers, and when the pedal-rod 30 is raised to the position shown in Fig. 2 said lifting-rod is caused to swing outwardly or against the lower ends of the damper-levers 130, thus retracting or displacing all the felt dampers 13 from the wires 16.

40 represents a supplementary damper-lifting rod, which is hinged at 41 to the bottom rail 12 and is adapted to engage extended portions 131, which are provided for as many dampers as it is desired to lift independently of the others. Said lifting-rod 40 extends across as many damper-levers as have extended portions and is provided with a rocker-arm 42, against the under side of which bears a pedal-rod 43. The rocker-arm 42, like the rocker-arm 31, is preferably located at the lower or bass end of the action-supporting frame. When the pedal-rod 43 is raised, as shown in Fig. 3, the dampers which have the extended portions are displaced, leaving all the other dampers in engagement with their respective wires. It is evident that by this construction the damper mechanisms can be grouped in any way desired, and while all dampers may be simultaneously controlled by a single pedal one or more groups of dampers may be individually controlled by additional pedals, of which one is provided for each independent group of dampers.

With a pianoforte constructed as above described the operator is enabled to sustain those notes which are under independent control, while at the same time he may continue playing notes which are not sustained after the corresponding keys have been released.

I claim—

1. A piano-action having damper-levers arranged in sections, the levers in one section differing in size from the levers in other sec-

tions, means for simultaneously displacing all the damper-levers, and independent means for displacing only a section of the series of levers, said latter means operating on the section operated thereby at a point distinct from that at which the former means operates.

2. A piano-action having damper-levers arranged in sections, the levers in one section differing in size from the levers in other sections, a plurality of damper-displacing rods located in different planes relatively to the levers, and means for operating said rods independently, one of said rods coöperating with the entire series of damper-levers, while another rod coöperates only with one of said sections of levers, the section-displacing rod operating at a point distinct from that at which the series-displacing rod.

3. A piano-action having damper-levers arranged in sections, the levers in one section differing in size from the levers in other sections, a damper-displacing rod extending the entire length of the series of damper-levers, a shorter displacing-rod arranged to coöperate only with the section of levers at the bass end of the series, and means for operating said rods independently, the damper-levers at the bass end of the series being formed to coöperate with both rods.

4. A piano-action having damper-levers arranged in sections, the levers in each section differing in length from levers of other sections, a relatively short damper-displacing rod arranged to act only on the levers of greater length, means for operating said rod, and independent means for operating the other levers.

5. A piano-action having damper-levers arranged in sections, the levers in each section differing in length from levers of other sections, the section at the bass end of the series being of greatest length, a relatively short damper-displacing rod arranged to act only on the said levers of greater length, a damper-displacing rod arranged to act on all the levers of the series, said rods being relatively arranged to permit the short rod to coöperate only with the levers of greater length, and means for independently operating said rods.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES P. BLINN.

Witnesses:

C. F. BROWN,

E. BATCHELDER.