To all whom it may concern:

Be it known that I, Emanuel Peterson, a citizen of the United States, residing at Wakefield, county of Middlesex, and State of Massachusetts, have invented an Improvement in Sostenuto Attachments for Pianos, of which the following description, in connection with the accompanying drawing, is a specification, like numerals on the drawing representing like parts.

This invention has for its object to provide a novel sostenuto attachment for pianos which is simple in construction and effective in operation.

The features wherein my invention resides will be more fully hereinafter described, and then the novel features thereof will be pointed out in the appended claims.

Referring now to the drawings wherein I have shown one embodiment of my invention, Figure 1 is a sectional fragmentary view showing my improved sostenuto attachment as applied to an upright piano, said figure showing the hammer and its associated parts and the damper and its associated parts in their normal position; Fig. 2 is a view similar to Fig. 1 showing the hammer in engagement with the strings and the damper raised therefrom; Fig. 3 is a similar view showing the way in which my improved sostenuto attachment acts to hold the dampers off from the strings whenever it is desired to sustain a tone; Fig. 4 is a view showing a sostenuto pedal and one way of connecting it to the sostenuto rail; Figs. 5 and 6 are detail views showing a modified form of sostenuto rail.

The parts which are old and form no part of my present invention are the wippen 3, the jack 4, the hammer butt 5, the hammer shank 6, the hammer 7, the sticker 8 for operating the wippen, the damper 9, the damper lever 10 which carries the damper, and the finger 11 carried by the wippen and acting against the lower end of the damper lever for withdrawing it from the string 12 whenever the wippen is rocked to actuate the hammer. These parts are such as are usually found in pianos and form no part of my present invention, and as their construction and operation are well known, further description thereof will not be necessary except to say that when the key is operated thereby raising the sticker 8 and rocking the wippen 3 into the position shown in Fig. 2, thereby to throw the hammer against the string, the finger 11 will engage the lower end of the damper lever 10 and will withdraw the damper from the strings, all as shown in Fig. 2.

My improved sostenuto attachment comprises a plurality of followers, one for each of the damper levers, which followers are normally held in engagement with the damper levers, so that said followers will move whenever the damper levers are operated, and a sostenuto rail adapted to lock the followers from return movement thereby preventing the dampers from returning to their initial position against the strings.

In the embodiment of the invention herein shown these followers are illustrated at 13, and each comprises a finger or lever centrally pivoted at 14 to an arm 15 extending from a rail 16. Each follower is actuated by a suitable spring 17 which tends to throw the upper end thereof toward the lever and which maintains the upper end against the finger 19 depending from the corresponding damper lever. It will be understood, of course, that there is one such follower for each damper lever. The spring 17 is of less tension than the spring 20 which returns the damper lever to its initial position so that when the parts are in normal condition, as shown in Fig. 1, the spring 20 will overcome the spring 17 thus permitting the damper to rest against the string 12.

When any hammer is operated, however, the corresponding damper lever is thrown backwardly, as shown in Fig. 2, and as the finger 19 moves away from the rail 16, the spring 17 will throw the follower into the position shown in Fig. 2, and maintain the follower in engagement with the finger 19.

11 designates a sostenuto rail which extends beneath all of the followers and is provided with the flange 22 which is adapted to engage the followers. This sostenuto rail is mounted so that it can be moved vertically, and it may conveniently be pivoted to the rail 16. For this purpose I have shown it as supported by arms 23 which are in turn pivoted to the rail 16 at 24. The sostenuto rail can be operated in any suitable way, but will be preferably operated by a sostenuto pedal 25.

The operation of the device will be apparent from the above description, but may be briefly stated as follows: If it is desired to sustain any given note or chord, said note or chord will first be struck and then before
the fingers are lifted from the keys the sostenuto rail will be raised into the position shown in Fig. 3. As the note is struck, the hammer is thrown into the position shown in Fig. 2 and the hammer, damper lever and follower are thrown into the position shown in Fig. 2. If when the follower is in this position the sostenuto rail is elevated to bring the flange 22 into engagement with the lower end thereof, said follower will be locked from backward movement and will prevent the damper from returning into contact with the string so long as the sostenuto rail is elevated.

If the sostenuto rail were elevated by direct pressure on a pedal, it might occur that the person operating the treadle would apply so great an upward lift to the sostenuto rail as to injure the followers. To prevent this I have provided a pedal mechanism wherein the upward pressure of the sostenuto rail is secured by a spring or its equivalent and is independent from the amount of pressure applied to the pedal 25. I accomplish this herein by arranging a lever 26, centrally pivoted at 27, so that one end of the lever overlies the rear end of the pedal 25, and by providing another lever 28 centrally pivoted at 29, one end of which overlies the end of the lever 25 and the other end of which is connected by a connection 30 with the sostenuto rail or an arm 31 extending therefrom. The lever 28 is acted on by a spring 32 which tends normally to elevate the sostenuto rail, and the lever 25 is acted on by another spring 33 which acts against the spring 32 and which tends to elevate that end of the lever 25 which engages the lever 28, and to depress that end which is engaged by the pedal 25. When the pedal 25 is depressed the spring 33 will be depressed and the resistance of said spring 33 will be removed from the lever 25. The spring 32 can then come into play to elevate the sostenuto rail and accomplish the desired object. This spring 32 can be so adjusted that under no circumstances will it injure or apply too great a pressure to the followers.

In Figs. 5 and 6 I have shown another embodiment of my invention wherein the sostenuto rail 21 is provided with a plurality of resilient fingers 41, one for each of the followers. These fingers are so disposed that when any follower is thrown into the position shown in Fig. 2 and the sostenuto rail is elevated by means of a pedal, the finger corresponding to said follower will engage the latter and lock it from movement, and will thus prevent the corresponding damper from returning into engagement with the string. The advantage of this construction is that the spring fingers 41 will act as a means to prevent too great a pressure from being applied to the followers.

These two embodiments of the invention will be sufficient to disclose the principle thereof.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a piano, the combination with piano strings, damper levers therefor, and means to actuate the levers independently, of a movable follower adapted to engage each lever and to move in unison therewith, and means common to all the followers to lock those followers from movement which are in a position corresponding to the inoperative position of the damper levers.

2. In a piano, the combination with a piano string, a hammer therefor, a damper lever, and means to actuate the hammer and damper lever simultaneously, of a spring-pressed follower constantly in engagement with the damper lever, and a movable sostenuto rail to engage the follower and lock the latter from movement.

3. In a piano, the combination with a piano string and a damper lever therefor, of a pivotally-mounted follower, a spring to maintain said follower in engagement with the damper lever, and a movable sostenuto rail adapted when raised to engage the follower and lock it from movement.

4. In a piano, the combination with a string and a damper lever therefor, of a pivotally-mounted follower, a spring to maintain said follower in engagement with the damper lever, and a movable sostenuto rail adapted when raised to engage the follower and lock it from movement.

5. In a piano, the combination with damper levers, of a sostenuto rail to hold the damper levers in inoperative position, and a spring for operating the sostenuto rail.

6. In a piano, the combination with damper levers, of a sostenuto rail to hold the damper levers in inoperative position, a spring for operating the sostenuto rail, a second spring stronger than the first to counteract normally the action of the first, and a pedal to render the strong spring inactive.

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

EMANUEL PETERSON.

Witnesses:
BERTHA F. HEUSER,
THOMAS J. DRUMMOND.