3. The present invention relates to an improved sostenuto or sustaining device for pianos, and has for its object to provide such a device which is simple in construction, occupying a relatively small space, and of positive and noiseless operation.

Another object is to provide a damper lifter whereof the pivoted nose will be projected by a compression spring into position for engagement by the rocking sustain ing rod which will be inclosed and unex posed, thereby being longer lasting than tension spring means, and entirely protected from dust.

It is also an object to provide in such device, adjusting means which will permit correct alignment and perfect operation of such devices.

With these and other objects in view, my invention is shown in the accompanying drawings and will be hereinafter more fully described with reference thereto, and finally pointed out in the claims.

In the accompanying drawings: Figure 1 is a side elevation of my improved device showing the piano action with parts broken away. Figs. 2, 3 and 4 are similar views of the device showing different positions of movement. Fig. 5 is a vertical sectional view of the same, and Fig. 6 is a front view thereof.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, and more particularly to Fig. 1 thereof, a damper lever 10, is pivoted at 11, between the extension 12 of an individual support or flange 13, mounted upon a pivoted main support or rail 14, which extends forwardly at 15 beneath the lever 10, and is provided at its forward end with a felt pad 16 upon which the lever rests. The support 14 rests upon a post 17 and is adapted to be raised by a pedal-actuated member 18 when the "forte" pedal is depressed. A spring 19 provided at its end with a felt pad 20 presses upon the upper side of the lever 10, and weight plugs 14z are inserted in the lever in the usual manner.

A lifting member 21 is pivotally secured to the damper lever at 22, and is connected to the damper 23 which rests upon the string 24, by a damper rod 25 secured there to by a screw 26, and guided in its movement through a felt lined passage 27 of a guide board 28. The damper actuating end 29 of the key is disposed beneath the end of the damper lever, and upon striking the key, lifts the damper from the string, whereupon the key 30 strikes the string. The elements and actions above described are not new, and are shown and described in order to properly understand the workings and advantages of the present improvements which are embodied in the lifting member 21.

The damper lifter 21 has a recess or socket 31 and a tappet 32 is pivoted within said recess and provided with a forwardly projecting triangular portion or nose 33, which is preferably covered with a layer of felt 34. This tappet 32 has a beveled rear face 34 opposite said nose and the beveled portion of said tappet is provided with a bore 35. A compression spring 36 has its front portion disposed within said bore and its rear end resting against the felt backing 37 covering the rear face of said recess 31. This spring being located below the pivot of the tappet 32 and being normally under compression, operates to swing said tappet on its pivot and project its nose 33 outward or forward. The lifter 21 is provided above its pivot with a screw threaded hole and a regulating screw 38 is disposed therein. By adjusting this screw the inner end thereof may be made to project more or less beyond the back face of
the lifter 21 and the expansive action of the compression spring 36 normally holds the lower end of said lifter forward or outward and the inner end thereof rearward or inward, said projecting end of the adjusting screw being in contact with the back face of the recess 31 or with the felt lining thereof. The screw 38 thus serves as a stop to hold the tappet 32 in normal position. By means of these regulating screws the positions of the pivoted tappets 32 may be adjusted so that their several noses 39 may be established on an even line throughout the piano, whereby the action of the sustaining device is made uniform throughout the various keys, and greater accuracy of the piano action secured.

In front of the lifting member, there is provided a sustaining rod or bar 40, provided with a longitudinal flange 41, and which is adapted to be rocked on its bearings upon depression or release of the individual note sustaining pedal, the flange being moved from the downwardly inclined position shown in Fig. 1, to the horizontal sustaining position shown in Fig. 3. In the normal or unactuated position the flange is slightly spaced from the forward end of the nose, and in no way affects the playing.

When a note or chord is to be sustained without continued pressure on the keys, the sustaining pedal is depressed after striking the note or chord and before removing the fingers from the keys, whereupon the flange is brought beneath the nose, raising the same together with the damper slightly above the normal upper position, in this way permitting the other keys of the piano to be played during sustaining of the note or chord, without coming into contact with the raised flange. Fig. 3 clearly illustrates this action, the intermediate nose indicating the played but unsustained note, and the lower nose the unplayed note. If the sustaining flange is lowered during playing of a note, the same will noiselessly and easily pass the nose, swinging the same on its pivot, as shown in Fig. 4, without in any way affecting the playing of the note. To this purpose the spring 36 is practically a hair spring, being of sufficient strength to hold the nose in its proper outward position, but allowing depression of the nose with the slightest pressure thereon. The movement of the flange to its lower position is therefore practically without effect on the playing.

The present invention provides a lifting member entirely smooth and unbroken at three of its sides, the other and recessed side being provided with the projecting nose. The spring which projects said nose is a compression spring and is entirely inclosed within the recess thus formed in the lifter and the lodgment of dust or foreign matters which seriously reduce the efficiency of the piano is prevented. The adjustability of the noses with respect to each other permits that a perfectly even line throughout the piano be established, thereby resulting in a perfect and uniform playing action.

I have illustrated a preferred and satisfactory form of my invention, but it is obvious that changes may be made therein within the spirit and scope thereof, as defined in the appended claims.

I claim:

1. In a damper action for pianos, a damper lever, a damper and a damper lifter 80 provided with a recess, a tappet pivoted within said recess and provided with a projecting portion, a spring within said recess operative to project said portion, and a sostenuto rail adapted to be moved under said projecting portion for holding the damper in raised position when it has been raised by the key.

2. In a damper action for pianos, a damper lever, a damper and a damper lifter 80 provided with a recess, a tappet pivoted within said recess and provided with a projecting portion, a spring within said recess operative to project said portion, means for adjusting the degree of projection of the projecting portion, and a sostenuto rail adapted to be moved under said projecting portion to sustain the damper in raised position when it has been raised by the key.

3. In a damper action for pianos, a damper lever, a damper and a damper lifter 80 provided with a recess, a tappet pivoted within said recess and provided with a projecting portion, a spring within said recess operative to project said portion, and a sostenuto rail adapted to be moved under said projecting portion for regulating the degree of projection of said projecting portion, and a sostenuto rail adapted to be moved under said projecting portion to sustain the damper in raised position when it has been raised by the key.

4. In a damper action for pianos, a plurality of damper levers, a plurality of damper levers having pivoted tappets provided with projecting portions, means for regulating the degrees of projection of said projecting portions to establish alignment thereof, and a sostenuto rail adapted to be moved under said projecting portions to sustain the damper in raised position when they have been raised by the key.

5. In a damper action for pianos, a damper lever, a damper and a damper lifting and holding means disposed between said lever and said damper and comprising a
lifter, a pivoted tappet carried by said lifter and provided with a projecting portion, adjustable means for regulating the position of said pivoted projecting tappet, and a spring for holding said projecting portion in normal position.

In testimony, that I claim the foregoing

as my invention, I have signed my name in presence of two subscribing witnesses.

THEODORE E. STEINWAY.

Witnesses:
CHAS. MATTHEW,
MOE M. WEINBERG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."