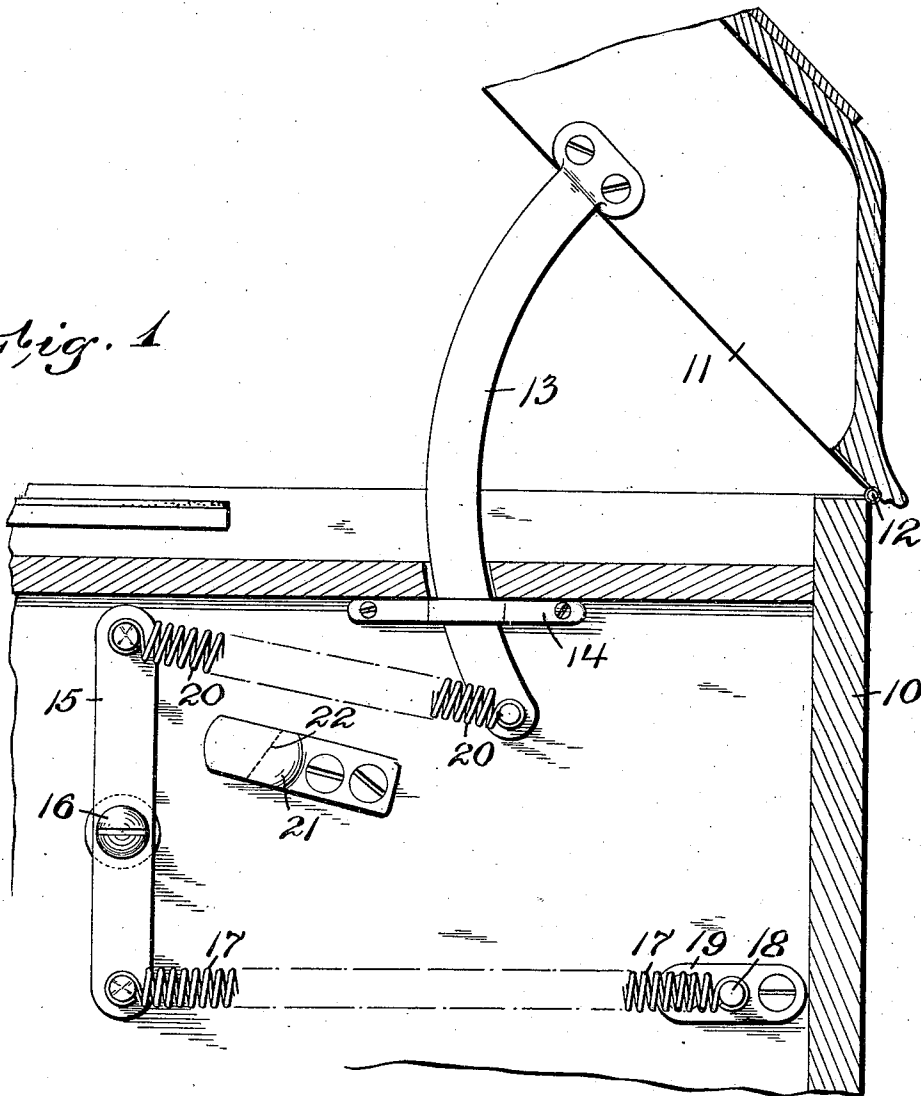


F. A. SPENCER.
 DEVICE FOR RAISING AND SUPPORTING COVERS.
 APPLICATION FILED DEC. 27, 1921.

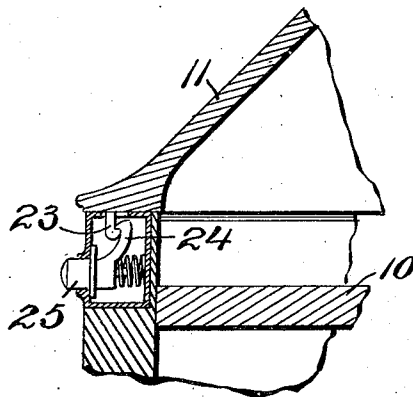
1,420,347.

Patented June 20, 1922.

Fig. 1



- Fig. 2



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DEVICE FOR RAISING AND SUPPORTING COVERS.

1,420,347.

Specification of Letters Patent. Patented June 20, 1922.

Application filed December 27, 1921. Serial No. 525,122.

To all whom it may concern:

Be it known that I, FRANK A. SPENCER, a citizen of the United States, and a resident of West Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Devices for Raising and Supporting Covers, of which the following is a specification.

This invention relates to an improved device for lifting and supporting in lifted position a cover on receptacles, and is particularly adapted for the covers of phonographs.

The invention is designed to provide a device of this kind in which the cover, when released in its closed position, will be raised without shock, the lifting mechanism being so arranged that the initial movement of the cover, which is the hardest to perform, gives way to a less pressure as the cover rises, so that it stops gently and without shock.

The invention is illustrated in the accompanying drawing, in which Figure 1 is a section of a portion of a phonograph case with the raising and supporting device shown in elevation, and Figure 2 is a sectional view showing a means for holding the cover down.

In the drawing 10 indicates the frame of the receptacle, such as a phonograph case, and 11 is the lid which is hinged, as at 12, so that it is raised toward the vertical when the casing 10 is opened. Suitable means, such as a rod 13, is fastened to the cover and preferably projects down inside the casing so that its inner end is out of sight, and in the form shown the rod 13 is held in alignment by a suitable guide 14.

There are two springs used in the device, one of the springs, which is the more active in supporting the cover and which I will call the supporting spring, being supplemented by the initial movement of the cover by a spring I will call, for the purpose of identification, the raising spring.

One mechanism for permitting such springs to function is shown in the drawing, in which the lever 15 is pivoted intermediate of its ends, as at 16, so that it has a rocking motion. To one end of the lever is secured the supporting spring 17, which is fastened at one end to one end of the lever, and at the other end is fastened to a fixed element, such as the stud 18 on the plate 19 which is secured to the side of the casing.

The raising spring 20 is secured at one end to the end of the rod 13, and at the other end is secured to the end of the lever

that is opposite the end to which the spring 17 is secured.

A suitable stop, such as the plate 21 which has a shoulder 22 in the path of movement of the lever 15, acts to limit the movement of the lever in one direction. To bring about the best results I find that the spring 20 should be made considerably shorter than the spring 17.

The lid is normally held down by a suitable catch, and in Figure 2 I show one form of catch which includes the tooth 23 fastened to the lid, and a spring-actuated latch 24 which can be released by pushing in on the push button 25. When the lid is swung down to its closed position and is held by the catch, any desired form of catch, of course, being adapted for this purpose, the form shown in Figure 2 being simply illustrated for the purpose of showing one form of catch, the raising device is put under a tension.

To bring about this tension on the spring it will be evident that as the rod 13 is pushed down by the lid it swings the lever 15 so that the spring 17 is stretched, but only a slight degree of tension is placed on the spring 20 until the lever 15 engages the stop 22. This halts the extension of the spring 17 and stops one end of the spring 20, that is, the end that is attached to the lever 15. This engagement of the lever 15 with the stop takes place before the lid is shut.

The further movement of the lid causes an increased tension on the spring 20, and in the case of a heavy lid a strong tension is applied to the spring 20 until the lid is down to its closed position. The spring 20, being shorter, is stiffer than the spring 17, assuming that they are the same gage spring.

When the lid is to be opened, the catch is released, and while both springs at once become active in raising the lid, the spring 20, due to its being stretched more than the spring 17, since the lever 15 abuts on the stop 22, pulls on the rod 13 and starts the lid upward. As the spring 20 loses its strength, due to its being shortened, it acts simply as a bar or connection between the lever 15 and the rod 13, and the weaker spring 17 now operates to swing the lever 15, the spring 20 and the rod 13, with a much more gentle pressure, to the raised position indicated in Figure 1. The movement of the lid is thus merged from a fairly vigor-

ous start to a gentle stop as the spring 17 assumes its normal supporting position.

This connection between the spring 17 and the rod 13, which includes the spring 20, is easily assembled and economically made, and is substantially noiseless.

I claim:

1. A device for raising and supporting a cover comprising a rod adapted to be attached to a cover, a spring for supporting the cover when raised, a connection between the spring and the rod, said connection including a second spring for initiating the raising of the cover, and a stop for limiting the movement of the connection so that the second spring is under increased tension when the cover is down.

2. A device for raising and supporting a cover comprising a rod attached to a cover, and a raising and supporting means including two springs, one of said springs being stronger than the other and disposed so as to be under increased tension only when the cover is down.

3. A device for raising and supporting a cover comprising a rod attached to a cover, a pivoted lever, a spring connecting one end of the lever to a fixed element, a second spring connecting the other end of the lever to the rod, and means for limiting the movement of the lever in one direction.

4. A device for raising and supporting a cover comprising a rod attached to a cover, a pivoted lever, a spring connecting one end of the lever to a fixed element, a second spring connecting the other end of the lever to the rod, means for limiting the movement of the lever in one direction, said second spring being under a tension in excess of its supporting position when the lever is so limited.

5. A device for raising and supporting a cover comprising a supporting spring, a second spring for initiating the upward movement of a cover, a connection between said second spring and the cover, and means for stopping that end of the second spring which is not attached to the cover.

6. A device for raising and supporting a cover comprising a rod adapted for attachment to a cover, a lever swinging intermediate its ends, a supporting spring secured to one end of the lever and to a fixed element, a raising spring secured to the other end of the lever and to the rod, and a stop for the lever so that the raising spring is under a tension in excess of that of the supporting spring when the cover is down.

In testimony that I claim the foregoing, I have hereto set my hand, this 24th day of December, 1921.

F. A. SPENCER.