W. J. HERSCHEDE AND C. COHAN.

HAMMER ARREST FOR CLOCK CHIMES.

APPLICATION FILED JULY 2, 1917.

1,323,390.

Patented Dec. 2, 1919.

Fig. 1.

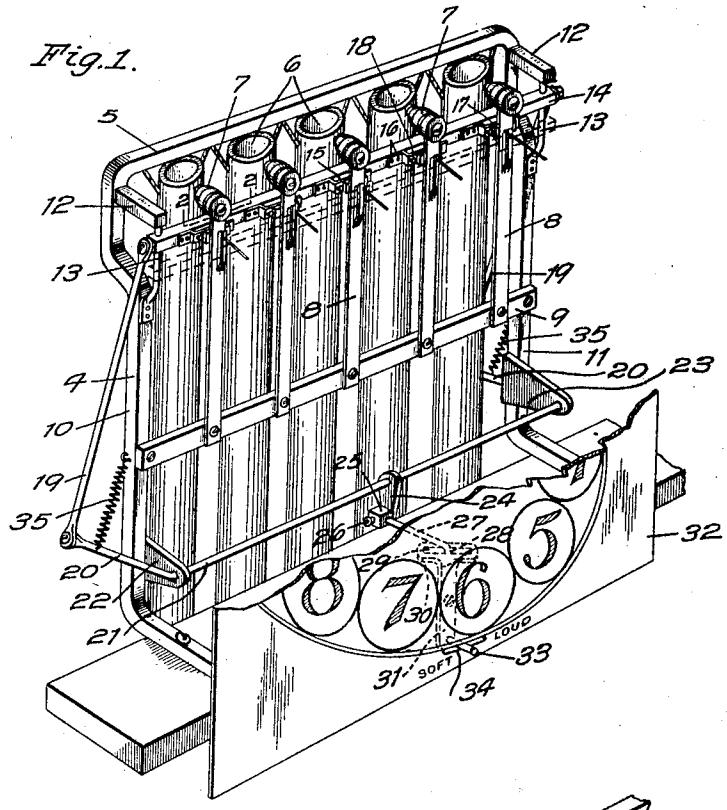


Fig. 2.

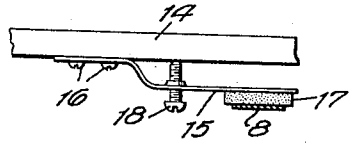
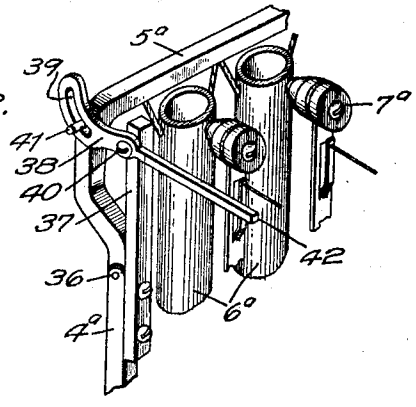


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER J. HERSCHEDE AND CHARLES COHAN, OF CINCINNATI, OHIO, ASSIGNORS TO THE HERSCHEDE HALL CLOCK COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

HAMMER-ARREST FOR CLOCK-CHIMES.

1,323,390. Specification of Letters Patent. Patented Dec. 2, 1919.

Application filed July 2, 1917. Serial No. 178,087.

To all whom it may concern:

Be it known that we, WALTER J. HERSCHEDE and CHARLES COHAN, citizens of the United States of America, and residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Hammer-Arrest for Clock-Chimes, of which the following is a specification.

An object of our invention is to produce an improved means for varying the volume of sound produced by the chimes of chime clocks employing the well known type of hammer which consists of a cushioned hammer head which is mounted upon a flexible spring to which the chime actuating mechanism is connected by strings.

A further object is to produce an improved sound volume-varying device for chime clocks, in which the intensity of blow given the chime is changed irrespective of the operative force expended to operate the chime striking hammers.

These and other objects are attained in the hammer arrest described in the following specification and illustrated in the accompanying drawing, in which;

Figure 1 is a fragmental perspective view of a chime rack, chime tubes, chime striking hammers, and a portion of a clock face, the clock works being removed, with the preferred form of our improved sound damper embodied therein.

Fig. 2 is a fragmental sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmental perspective view of a modified form of sound damper embodying our invention.

A tube-hanging rack 4 is shown in the drawing, the upper portion 5 of the rack being bent to the rear for the purpose of permitting of the suspension of a series of tubular bells 6 in proper positions to be struck by a series of hammers 7 which have their mounting springs or shanks 8 secured at their lower ends in the usual manner upon a transversely extending bar 9 secured to the side members 10 and 11 of the chime rack. Extending forwardly from each side of the upper portion 5 of the chime rack are lugs 12 in the forward ends of which are mounted the upper ends of rods 13 which are secured in any suitable manner at their lower ends to the side members 10 and 11 of the chime rack. Reciprocally mounted for vertical movement upon rods 13 is a transversely extending bar 14 which is located beneath the hammer heads 7 and between the chime tubes 6 and the hammer mounting springs or shanks 8. Located between each spring 8 and the bar 14 is a cushion spring 15 which is secured at one end to bar 14 by means of screws 16 and which is provided at its opposite end with a felt or other cushion 17 against which the coöperating spring 8 is adapted to engage. Spring 15, between cushion 17 and its attached end, is provided with an adjustment screw 18, the end of which engages bar 14 so that upon rotation of the screw the proper adjustment of the free end of the spring toward and from bar 14 is provided.

Reciprocation of bar 14 between the limits shown in full and dotted lines in Fig. 1, is accomplished by means of the following mechanism. Pivotally connected at the ends of bar 14 are a pair of links 19 which are connected at their lower ends with the rearwardly extending arms 20 of a transversely extending rock shaft 21 which is journaled in brackets 22 and 23 extending from side members 10 and 11 of chime rack 4. At a point between brackets 22 and 23 a depending arm 24 is secured to rock shaft 21. This arm carries a block 25 which is pivotally mounted at its lower end and which is provided with an adjustment screw 26 in which the rearwardly extending end of a rod 27 is reciprocally mounted and adapted to be held in adjusted positions by means of the screw, the forward end 28 of rod 27 being downturned for engagement with a slot 29 formed in the enlarged end 30 of a pivotally mounted lever 31 secured to the back of the clock face 32 and provided with an operating pin 33 which extends through a slot 34 formed in the face. Secured to arms 20 and to side members 10 and 11 of rack 4, are springs 35 which are provided for equalizing the weight of bar 14 and connecting links 19. It will be seen that the end 30 of lever 31, is bent into such a position that one end of slot 29 extends rearwardly with relation to the opposite end of slot 29. Because of this, pin 33 when moved from one end of slot 34 to the opposite end thereof, will cause end 28 of rod 27 to move to the front or to the rear and thus cause rod 29 and arm 24 to operate rock shaft 21 and through the connecting links 19 to raise or lower bar 14.

By adjusting screws 18 so that the springs 15 are in position to hold the ends of hammers 7 at the desired distances from chime tubes 6, the intensity of sound given by the chimes, when the hammers strike them, may be increased or decreased. By moving pin 33 to that end of the slot 34 indicated by the word "Soft," bar 14 is raised to or beyond the position disclosed in full lines in Fig. 1. This shortens the free length of the shanks and causes the cushioned ends thereof to strike the tubes gently. By moving pin 33 to the opposite end of slot 34, indicated by the word "Loud," bar 14 is dropped to the dotted line position disclosed in Fig. 1. This lengthens the free length of the shanks and allows the hammers to strike the tubes with blows of greater intensity. Thus the sound produced when the bar has been dropped to the dotted line position, is louder than when in the full line position. By locating pin 33 in any position intermediate the ends of slot 34, any desired intensity of sound may be produced, and in any desired position of bar 14, the ends of hammers 7 will remain in their properly adjusted distances from device 6, and in any position of bar 14 cushions 17 will operate to prevent clicking noises occasioned by the engagement of springs 8 with springs 15 during the operation of the chiming mechanism.

In the modified form of our invention disclosed in Fig. 3, the entire upper portion 5^a of chime rack 4^a, is pivotally mounted at points 36 in the opposite side members of the rack, so that the tubes 6^a extending from portion 5^a, may be moved bodily toward or from hammers 7^a. For the purpose of moving the upper portion 5^a and of retaining it in its adjusted positions, we have provided an upright 37 which is secured to each of the side members of the rack and which is provided with a pivotally mounted lever 38, the rearward portion of which is provided with a slot 39 which is eccentric to the pivot 40 of lever 38 and which is engaged by the pin 41 secured in the sides and at the top of upper portion 5^a of the rack. A forwardly extending handle portion 42 is provided on each lever 38 for operation thereof. By moving lever 38 to any desired position, tubes 6^a will be moved to properly adjusted positions with relation to hammers 7^a. However, in this modified form of our invention the separate adjustment of each hammer head toward and from its coöperating chime tube, is not possible.

Having thus described our invention, what we claim is:

1. In combination, a series of sounding devices, a series of hammers, a series of spring shanks for mounting the hammers, a hammer arrest comprising a bar, a series of contact devices mounted upon the bar, and means adapted to move the bar relatively to the heads of the hammers.

2. In combination, a tubular bell, a hammer, a spring shank mounting the hammer, a hammer arrest comprising a cushion located between the hammer shank and the bell, and means to adjust the position of the cushion longitudinally of the shank to vary the distance between the cushion and the hammer.

3. In combination, bells, hammers, spring shanks for the hammers, a hammer arrest consisting of a bar reciprocally mounted to move longitudinally of the shanks, cushions mounted on the bar between it and the shanks and normally engaged by the shanks when in operation, and means to move the bar longitudinally of the shanks to vary the distance between the cushions and the hammers.

4. In combination, clock tubes, spring shanks substantially parallel to the tubes, hammers upon said shanks, a hammer arrest consisting of a bar located between the tubes and shanks, and cushions on the bar respectively in the paths of the shanks, means for varying the positions of the cushions to adjust the distance of the hammers from the sounding elements, and means connected with the bar and accessible for manual operation to adjust the position of the bar to bring the cushions at greater or less distances from the hammers.

In testimony whereof we have hereunto subscribed our names this 30th day of June, 1917.

WALTER J. HERSCHEDE.
CHARLES COHAN.

Witnesses:
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