

(No Model.)

A. RICHTER.

DAMPER DEVICE FOR MECHANICAL MUSICAL INSTRUMENTS.

No. 551,789.

Patented Dec. 24, 1895.

Fig. 1

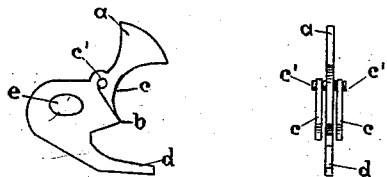


Fig. 2

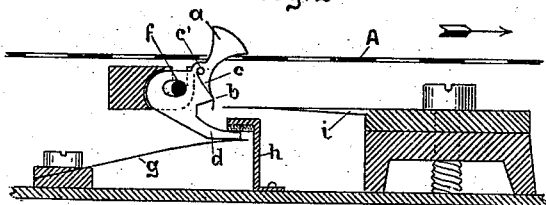


Fig. 3

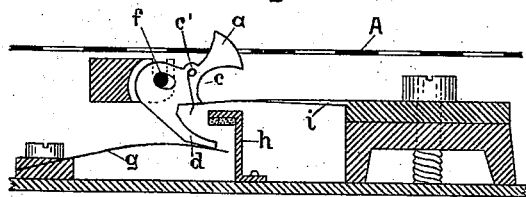


Fig. 4

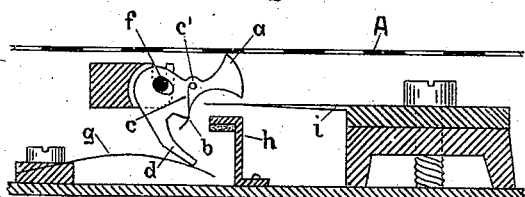
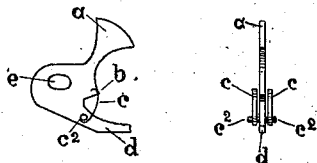


Fig. 5



Witnesses:  
L. M. Hackschlagel,  
J. C. Morse

Inventor  
Adolf Richter,  
By Briesen Knauth  
his Attorneys.

# UNITED STATES PATENT OFFICE.

ADOLF RICHTER, OF RUDOLSTADT, GERMANY.

## DAMPER DEVICE FOR MECHANICAL MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 551,789, dated December 24, 1895.

Application filed September 23, 1895. Serial No. 563,294. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLF RICHTER, a subject of the King of Bavaria, residing at Rudolstadt, in the Principality of Schwarzburg, Rudolstadt, Germany, have invented certain new and useful Improvements in Damper Devices for Mechanical Musical Instruments, of which the following is a specification.

The striking and damping devices for steel combs of mechanical musical instruments operated by means of perforated note-sheets, as hitherto employed, do not effect the damping properly, the same either operating noisily or effecting the damping too soon.

According to the present invention these disadvantages are obviated by attaching the dampers, which are arranged in the form of double or single springs, to the hammer direct and causing the same to come into operation at the moment when the hammer, which is loosely mounted on a fast shaft by means of a slot, is pulled forward by the note-sheet, by which movement the damper-springs will come into contact with the front end of the comb-tongue. By means of this arrangement the proper damping of the tone is effected immediately before the tongue is again struck, which is particularly advantageous in connection with the bass-notes, which vibrate for a long time.

In order to render the present specification more easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference refer to similar parts throughout the several views.

Figure 1 is a detail side and end elevation of the hammer and damping device; Fig. 2, a side elevation of the hammer previous to its striking a tongue; Fig. 3, a similar elevation with the hammer in the act of striking the tongue; Fig. 4, a similar elevation after the hammer has struck the tongue, and Fig. 5 a detail side and end elevation of a modified arrangement of the damping-springs.

As will be seen from Fig. 1, the hammer is provided with an upward projection *a* to contact with the note-sheet, a nose *b* to strike the tongue of the comb, damper-springs *c* and a stop *d* to limit the upward movement of the hammer, the whole device being loosely

mounted on a fast shaft *f* by means of a slot. As will be seen from the figure, the hammer will slide on the shaft by means of the slot, the upward throw and backward sliding movement being effected by means of a spring *g* bearing upwardly against the arm *d* of the hammer, which is limited in its upward movement by the said arm contacting with the ledge of a fixed angle-bar *h*.

The note-sheet which moves over the hammer device is provided with perforations, and as soon as a perforation passes over the upward projection *a* of the hammer this latter will be pressed upward through the said perforation and simultaneously slid backward on the shaft by means of the spring *g*, so as to allow the nose *b* to pass by the end of the tongue *i* without contacting with the same, the upward movement of the hammer continuing until the arm *d* contacts with the ledge of the angle-bar *h*, as shown at Fig. 2.

On the note-sheet continuing its forward movement the hammer will first be pulled forward on its shaft by means of its upward projection *a*, which now lies entirely in the perforation of the note-sheet, until the rear end of the slot contacts with the shaft, when the said hammer will commence to turn on the shaft and its nose *b* will strike the end of the tongue of the comb. While the hammer is being pulled forward the damping-springs *c* will contact with the end of the tongue and damp the same immediately before it is again struck by the nose. Thus the tongue can continue vibrating until the moment before it is again struck, which is of importance as regards the effect of the music.

Instead of attaching the springs *c*, as shown at Fig. 1, at *c'* to the hammer-sides, the same may be attached at *c''*, Fig. 5, on the lower arm of the hammer and extend upwardly. If very light combs are employed, the damper may consist of one spring only.

I claim as my invention—

A striking and damping device for the steel combs of mechanical musical instruments, consisting of a hammer, loosely mounted by means of a slot on a fast shaft, said hammer having an upward projection *a*, a striking nose *b*, an arm *d* to limit its upward movement

and damper device consisting of laterally at-  
tached springs adapted to contact with the end  
of the tongue on the forward movement of the  
hammer and means for keeping the said ham-  
5 mer in contact with the note sheet substan-  
tially as described.

In testimony whereof I have signed my

name to this specification in the presence of  
two subscribing witnesses.

ADOLF RICHTER.

Witnesses:

WM. HAUPT,  
WM. H. DAY.