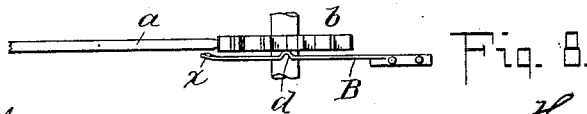
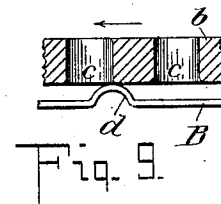
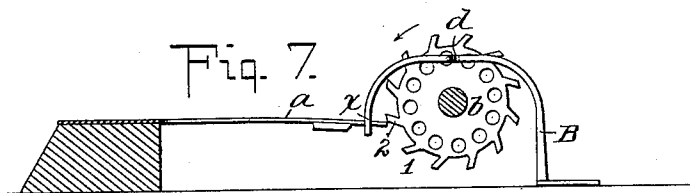
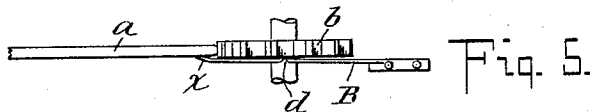
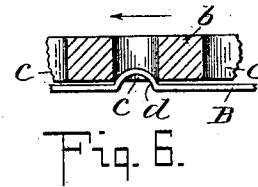
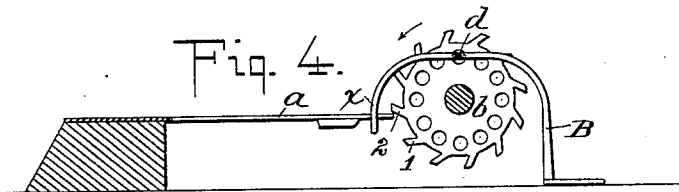
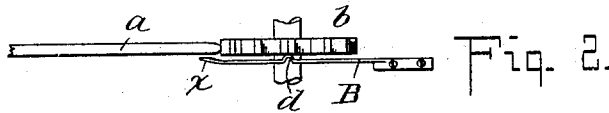
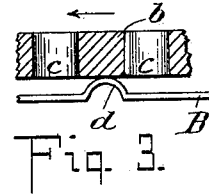
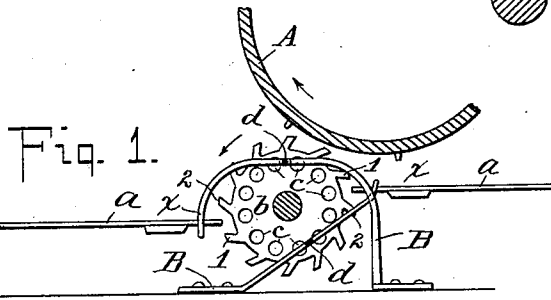
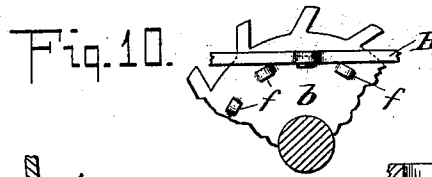
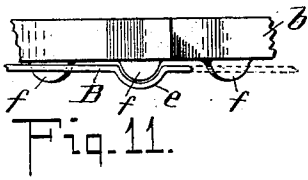


(No Model.)

H. LANGFELDER.
DAMPING DEVICE FOR MUSIC BOXES.

No. 521,289.

Patented June 12, 1894.



WITNESSES:

Prof. B. Shepherd,

Geo. C. Munn,

Fig. 12.

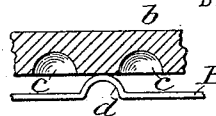


Fig. 8.

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DAMPING DEVICE FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 521,289, dated June 12, 1894.

Application filed February 2, 1894. Serial No. 498,836. (No model.)

To all whom it may concern:

Be it known that I, HENRY LANGFELDER, a resident of the city, county, and State of New York, have invented a new and useful Improvement in Damping Devices for Music-Boxes, of which the following is a full, clear, and exact description.

My invention relates to music-boxes wherein damping devices are employed to bear upon and damp the vibrating music tongues between the successive operations of the same.

The object of my invention is to produce a simple and effective damping device which can be constructed at little cost and with few parts, and said invention consists in the novel arrangement and combination of parts hereinafter described and claimed.

In the drawings,—Figure 1 is a side view of sufficient number of parts of a music-box to illustrate my invention; showing a double arrangement of music tongues and dampers. Fig. 2 is a top view of the same with some of the parts removed, showing the damper out of contact with the music tongue. Fig. 3 is an enlarged detail top view partly in section, showing the position of the cam of the damper when the parts are in the position represented in Figs. 1 and 2. Figs. 4 and 5 are side and top views respectively of my improved damping device, showing the damper bearing on the music tongue to damp the same. Fig. 6 is an enlarged detail top view partly in section, showing the position of the cam of the damper when the parts are in the position represented in Figs. 4 and 5. Figs. 7 and 8 are side and top views respectively of my improved damping device showing the parts in position just before the music tongue is vibrated. Fig. 9 is an enlarged detail view showing the position of the cam when the parts are in the position represented in Figs. 7 and 8. Figs. 10 and 11 represent modified forms of my improved damping arrangement. Fig. 12 is a detail top view, partly in section, of a modified form of star-wheel.

In the several figures of the drawings wherein like letters and numerals indicate like parts, *a* represents a music tongue of which there may be a single arrangement, as shown in Figs. 2 to 8, or a double arrangement, as illustrated in Fig. 1. The tongue or tongues *a*

are operated by teeth 1, 2 of a star-wheel *b*, which star-wheel is operated by the teeth on a cylinder *A* or otherwise. The star-wheels *b* are each provided with apertures or indentations *c* within the line of the teeth thereof for purposes which will be hereinafter referred to.

The damper *B* is preferably made of a single piece of spring metal struck up into the desired form. This damper has an extended arm *x* which is adapted to bear against the music-tongue and is provided on one face thereof with a cam *d* adapted to enter the apertures or indentations *c* on the star-wheel when they register therewith, as shown in Fig. 6; the spring of the body portion of the damper tending to force the cam in the aperture and the extended arm *x* against the music-tongue to damp the same. By this arrangement practically oppositely extending cam faces on the star-wheel and damper are obtained. The indentations *c* are so located in the star-wheel that they allow of the damping of the music-tongues between the various operations, that is to say, after the tongue has been vibrated by one tooth of the star-wheel and before it is vibrated by the next.

The operation of my improved damping device is as follows: Figs. 1 and 2 show the parts in the position they assume just after the music-tongue or tongues have been vibrated by the tooth or teeth 1 of the star-wheel; the cam on the damper being then in the position shown in Fig. 3, retains the damper off the music-tongue. A further rotation of the star-wheel in the direction of the arrows will cause the cam *d* to register with the next indentation and be forced therein, thus causing the extended arm *x* of the damper to bear against the vibrating tongue *a*, as illustrated in Fig. 5, and damp the same; the next tooth 2 of the star-wheel not yet having reached contact with the music-tongue. A still further rotation of the star-wheel causes the tooth 2 thereof to bear against the tongue and the cam to be forced to the elevated position shown in Figs. 8 and 9, thus causing the damper to be forced out of contact with the music-tongue for the next vibration by the tooth 2 of the star-wheel, and so on, the damper each time operating between the vibrations of the tongues.

While the construction above described is

preferred, it is obvious that instead of making the cam upon the damper and the indentations in the star-wheel, an indentation *e* may be made in the damper *B* and cams *f* placed upon the star-wheel *b* as shown in Figs. 10 and 11; it being merely necessary that oppositely extending cam faces be formed on the star-wheel and damper inside of the line of teeth of the star wheel.

10 Having described my invention, what I claim is—

1. In a damping device for music-boxes, the combination of a music-tongue, suitably operated star-wheel for actuating the same, a damper for said music-tongue, and oppositely extending cam faces on the side of said star-wheel and the damper inside of the line of teeth on the star wheel, substantially as and for the purposes set forth.

2. In a damping device for music-boxes, the combination of a music-tongue, suitably operated star-wheel provided with indentations in the side thereof, a damper having a cam thereon and adapted to be operated by the indented side of the star-wheel, the indentations in the star-wheel and the cam on the damper being located inside of the line of the teeth on the star wheel substantially as and for the purposes specified.

3. A star-wheel for music-boxes provided with cam - operating apertures extending through the same inside of the line of the teeth of said wheel, substantially as and for the purposes specified.

HENRY LANGFELDER.

Witnesses:

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