(No Model.)

M. DANNHORN.

MUSICAL TOP.

No. 271,428. Patented Jan. 30, 1883.

Fig. 1.

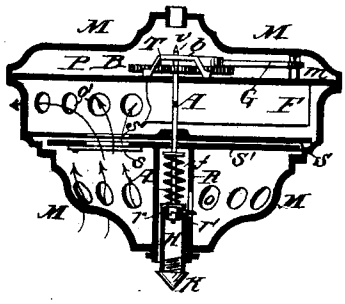


Fig. 4

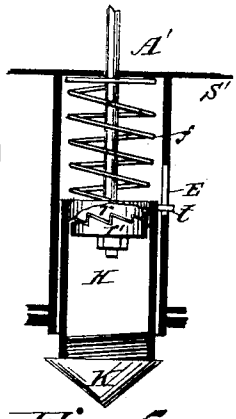


Fig. 6

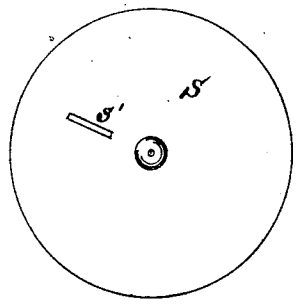


Fig. 2.

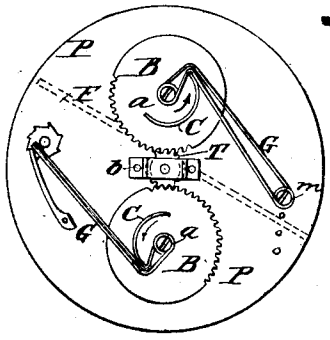


Fig. 5

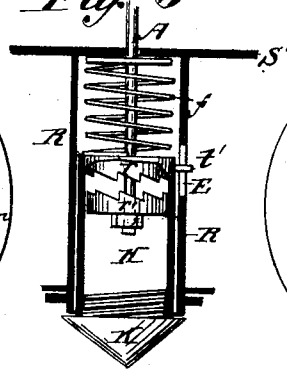


Fig. 2a.

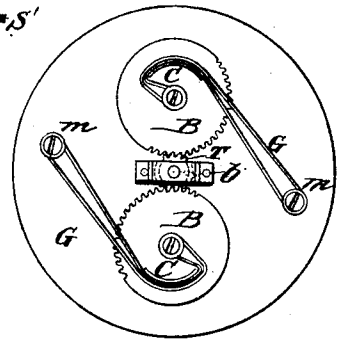


Fig. 7.

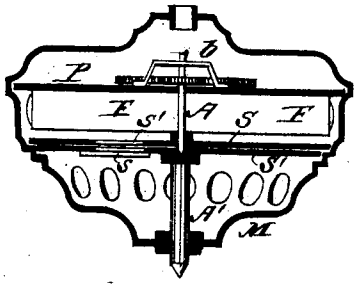


Fig. 3

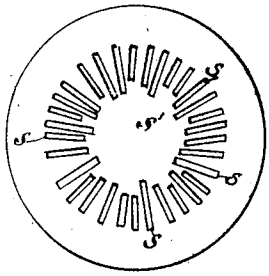


Fig. 10.

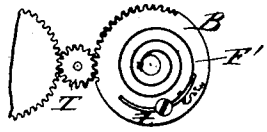


Fig. 9.

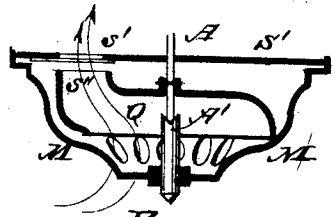
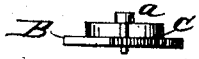


Fig. 8.



WITNESSES:

Francis McArdle.

C. Sedgwick

INVENTOR:

M. Dannhorn

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

MAX DANNHORN, OF NUREMBERG, BAVARIA, GERMANY.

MUSICAL TOP.

SPECIFICATION forming part of Letters Patent No. 271,428, dated January 30, 1883.

Application filed November 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, MAX DANNHORN, manufacturer, of Nuremberg, Bavaria, Germany, have invented new and useful Improvements in Tops Making Music, of which the following is a specification.

The object of this invention is to provide a musical top, in which, by the action of a current of air passing through the top, a melody is played on reeds in the same.

The invention consists in a musical top provided with a plate containing a series of reeds arranged in a circle, on which plate a second plate is adapted to revolve, which second plate is provided with a single slot, so that when the slotted plate revolves its slot will successively come over the several reeds, and will permit a current of air, which passes through the casing of the top from top to bottom to pass through the reeds, which are thus sounded successively.

The invention further consists in devices for winding up the top and holding it wound until the top begins to spin, when, by the unwinding of the top, the slotted plate is rotated, and whereby the slot is successively passed over the several reeds.

The invention also consists in certain parts and details of construction and combinations of the same, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional elevation of my improved musical top. Fig. 2 is a plan view, showing the top of the casing removed. Fig. 2ª is a like plan view, showing the positions of the springs and cog-wheels for operating the musical mechanism before the top is spun. Fig. 3 is a plan view of the reed-plates. Fig. 4 is a longitudinal sectional elevation of the lower part of the spindle and the casing in which it is contained, showing the two clutches engaged. Fig. 5 is a like sectional elevation, showing the clutches separated. Fig. 6 is a plan view of the slotted plate above the reed-plates. Fig. 7 is a cross-sectional elevation of a modification of my improved top. Fig. 8 is an edge view of one of the cog-wheels for rotating the pinion and main spindle. Fig. 9 is a cross-sectional elevation of a further modification of my improved musical top. Fig. 10 is a plan view, partly broken away, of the cog-wheels, showing a spiral spring instead of the bands.

The metal case M is made of two or more pieces, and in the upper part of the said casing a metal plate, P, is rigidly connected with the said casing, while in the lower part of the casing a metal plate, S′, is also connected with the said casing, both plates being at right angles to the vertical longitudinal axis of the casing. The lower plate, S′, is provided with a number of reeds, *s*, which are arranged in a circle close to each other, and which can be arranged to play one or more tunes, according to the size of the top. The casing M is provided with a series of apertures, O′, between the top plate, P, and the reed-plate S′, and it is also provided with a series of apertures, O, between the bottom of the casing M and the reed-plate S′.

The main spindle A is journaled in a frame, *b*, which is secured on the top plate, P, which spindle is provided with a pinion, T, engaging with two cog-wheels, B B, journaled on the top plate, P. A short distance from the edge the said wheels B each have a rib, C, of from one-eighth to one-fourth of an inch in height. Elastic bands, G, are secured to the pivots of the wheels B and to pins *m*, a short distance from the same, which bands rest against an end and against the outer surface of the ribs C, whereby the said bands will be stretched, as shown in Fig. 2ª.

If desired, the elastic bands G may be replaced by a spiral spring, F′, as shown in Fig. 10, one end of which spring F′ is fastened to the spindle of the wheel B, and the other end is fastened to a pin, *t*, which may be shifted from right to left, or vice versa, and fixed by means of the screw s^3.

The main spindle A is provided at its lower end with a ratchet-clutch, *r*′, which engages with a similar clutch, *r*, attached on a circular casing or tube, H, which tube H and part of the spindle A are partly inclosed and surrounded by a tube, R, which is fastened to the reed-plate S′ in the lower part of the outer casing, M. In the said tube H a pin, *t*′, is secured,

which pin is adapted to move up and down in the vertical slot E in the tube R. A spiral spring, *f*, presses the casing or tube H outward and out of the outer tube until the clutches *r* and *r'* engage with each other. A plate, S, is fixed to the main spindle, which plate covers the openings *s* of the reed-plate S', and is provided with a slot, *s'*, as shown in Fig. 6, which, when the said plate turns round, passes over all of the reeds *s* in the reed-plate S' successively. The main spindle A terminates at its upper end in a squared part, *v*, to permit of winding the driving gear or mechanism which rotates the spindle by means of a key. By turning the spindle the wheels B B will be turned in the direction indicated by the arrows in Fig. 2, and thereby the elastic bands G are stretched. After the top has been wound up the clutches *r* and *r'* engage with each other, and thus prevent the unwinding of the said mechanism until required. When the said mechanism is wound and the top is caused to spin the spiral spring *f* is compressed and the ratchet-clutches *r* and *r'* separate and the main spindle A is rotated by the action of the elastic bands and the intermediate pinion, T. The plate S, provided with the slot *s'*, is thus rotated in the reverse direction of the spinning of the top. As the said slot passes over the reed *s* of the reed plate S' it causes each reed to be sounded, as a current of air is created by the rotation of the top, the said current entering through the apertures O at the lower part of the casing M and leaving by the upper apertures, O', of the casing. By this current of air each reed *s* is sounded as it comes under the slot *s'* of the plate S, and by the sounding of the several reeds at different periods a tune will be played. By means of a transverse strip, F, fastened beneath the plate P the force of the current of air is increased.

In the modification shown in Fig. 7 the main spindle is made of two parts, A and A', of which the under part, A', is secured to the lower part of the outer casing, and the upper part, A, is fixed in the upper end in the bearing *b* and the lower part in a recess made in the reed-plate S'. In another modification shown in Fig. 9 the main spindle is also made in two parts, A and A', the lower part, A', being fixed to the outer casing, M, while the upper part, A, is fixed in a bearing and its lower end in a socket in the lower part of the spindle. The upper part of the spindle then rotates on the lower part, and has attached to it a pear-shaped casing, Q. This latter is open at its lower part, and is made circular, but inclines upward to form a slot, s^2, the size of which corresponds to the reed-openings *s* in the reed-plate S'. By the motion of the top the air enters the openings in the pear-shaped casing Q and issues through the slot s^2, and each reed, as it comes over the said slot, is caused to sound. The construction of each modification is in other respects similar to that hereinbefore described, with the exception of the winding arrangement, which is dispensed with, for when the top is made to spin the inner winding-gear is wound by centrifugal force.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a musical top, the combination, with the spindle A, of the clutches *r* and *r'*, the spiral spring *f*, the tubes R and H, the pinion T, the cog-wheels B B, and the elastic band G, substantially as herein shown and described, and for the purpose set forth.

2. In a musical top, the combination, with the perforated casing M, of the plate P, the plate S, having the slot *s'*, and the plate S', provided with the reeds *s*, substantially as herein shown and described, and for the purpose set forth.

3. In a musical top, the combination, with the perforated casing M, of the spindle A, the plate P, the plate S, having the slot *s'*, the reed-plate S', containing the reeds *s*, and the transverse strip F, substantially as herein shown and described, and for the purpose set forth.

4. A musical top constructed with a reed-plate containing a series of reeds, and with an additional plate constructed with a slot, for successively permitting a current of air created in the top to pass through the reeds, thereby producing the sounds of the several reeds successively, substantially as herein shown and described, and for the purpose set forth.

5. A musical top constructed with a plate containing reeds, and with a plate provided with a slot, which plate having a slot is revolved, when the top is spun, by a spring mechanism, which is previously wound, substantially as herein shown and described, and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAX DANNHORN.

Witnesses:
JOH. A. I. SCHLIRF,
LEONHARD HÖSCH.