

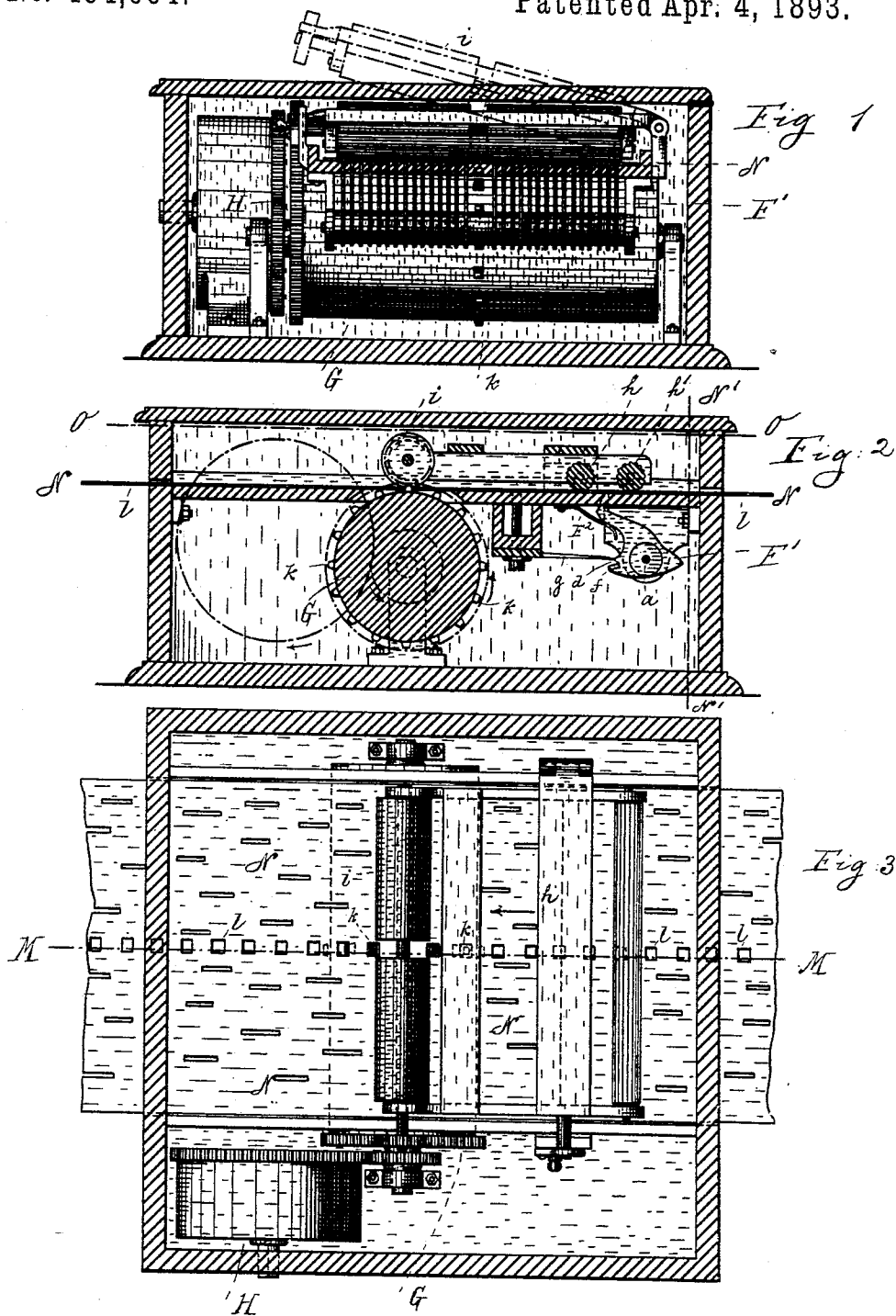
(No Model.)

2 Sheets—Sheet 1.

T. ZÖLLNER.
MECHANICAL MUSICAL INSTRUMENT.

No. 494,664.

Patented Apr. 4, 1893.



Witnesses:
Wm. Schulz
A. Jorglmann.

Inventor:
T. Zöllner
by his attorneys
Roesler & Briesen

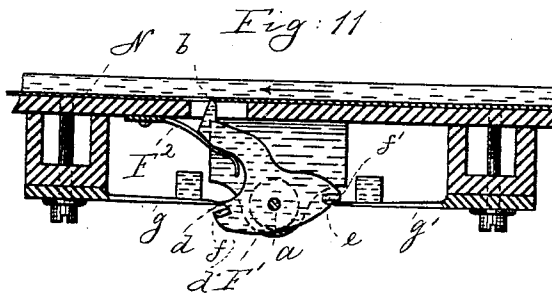
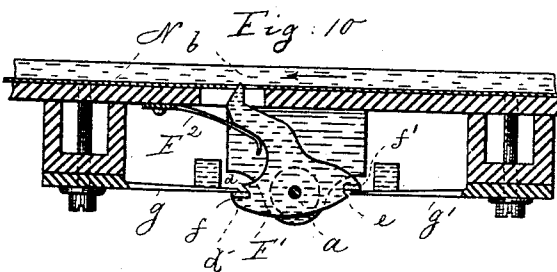
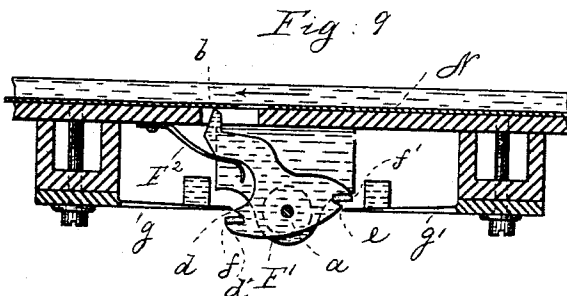
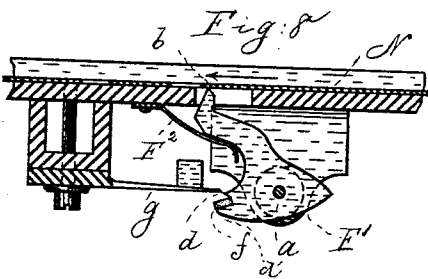
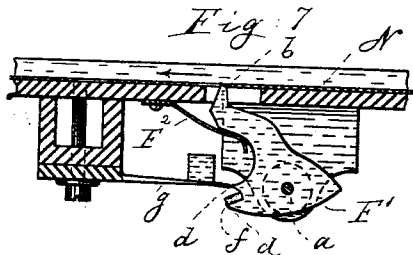
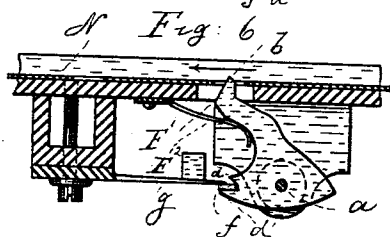
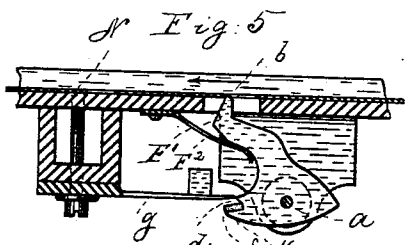
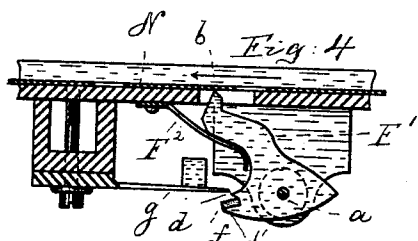
(No Model.)

2 Sheets—Sheet 2.

T. ZÖLLNER.
MECHANICAL MUSICAL INSTRUMENT.

No. 494,664.

Patented Apr. 4, 1893.



Witnesses:
Wm. Schulz.
A. Fonghman.

Inventor:
T. Zöllner
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Röder & Briesen

UNITED STATES PATENT OFFICE.

THEODOR ZÖLLNER, OF LEIPSIK, GERMANY, ASSIGNOR TO THOST & RICHTER, OF SAME PLACE.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 494,664, dated April 4, 1893.

Application filed September 4, 1891. Serial No. 404,708. (No model.)

To all whom it may concern:

Be it known that I, THEODOR ZÖLLNER, of Leipsic-Gohlis, in the Kingdom of Saxony, Germany, have invented a new and useful
5 Improvement in Mechanical Musical Instruments, of which the following is a specification.

This invention relates to a mechanical musical instrument of the kind in which a set
10 of spring hammers is acted upon by a perforated music sheet to sound the tongues.

It consists in the various features of improvement more fully pointed out in the claims.

15 In the accompanying drawings: Figure 1 is a vertical transverse section of my improved mechanical musical instrument on line N', N', Fig. 2. Fig. 2 is a vertical longitudinal section on line M, M, Fig. 3; Fig. 3, a horizontal section on line O, O, Fig. 2. Figs.
20 4-8 are sectional elevations of the hammer, showing it in consecutive positions. Figs. 9-11 are corresponding views of a modification.

25 The letter N, represents the perforated music sheet which is drawn over the levers or hammers F', in suitable manner, to oscillate the same against the action of springs F². The sheet N, is held down by suitable rollers
30 h, h', i, and has a series of perforations l, which are arranged preferably in a central line from end to end. These perforations are engaged by the pins k, of a sprocket wheel G, driven either by hand or by clockwork H,
35 to feed the sheet over the box. If the instrument is very large, the sheet N, is provided with two lines of perforations, one near each edge, to be engaged by correspondingly arranged pins on the sprocket wheel. The
40 hammer F', turns on a fixed pivot a, and has an upper nose b, adapted to be engaged by the sheet N, and a lower nose d, adapted to engage the tongue g. Beneath the nose d, the hammer is notched and within the notch
45 and in close proximity to the nose, a damper f, is secured to the hammer upon an outwardly projecting lip d'. As the music sheet is fed over the hammer, in the direction of the arrow (Figs. 4-8) the spring F², will throw
50 the hammer upward as soon as the latter arrives under a perforation. As the hammer is thus thrown upward, the nose d, will strike

against the tongue g, but any vibration will be speedily checked by the damper f, that immediately follows the nose and prevents
55 the tongue from sounding.

Fig. 4 shows the position of the parts before a perforation has reached the hammer. In Fig. 5, a perforation has just been reached and the nose d, strikes the tongue, while in
60 Fig. 6, the damper f, checks the vibration of the tongue. During the further motion of the music sheet, the hammer will be depressed as soon as the perforation has been passed and the nose d, will strike the tongue (Fig. 7).
65 The further downward motion of the hammer, causes the nose d, to clear the tongue (Fig. 8) which is thus free to vibrate and sound. Thus it will be seen, that when the nose d, precedes the damper, the tongue will
70 not sound, but that when the damper precedes the nose, the tongue will sound.

In Figs. 9-11, the hammer F', is made double and adapted to act upon two tongues g, g'. These are arranged on opposite sides
75 of the hammer, as shown.

To vibrate the tongue g', the hammer is provided with the additional nose e, and the additional damper f', arranged reversely from the parts d, f. That is, while the damper f, is below the nose d, the nose e, is below the damper f'. This causes one of the tongues
80 to be sounded at each vibration of the hammer.

What I claim is—

85 1. The combination of hammer F' turning on a fixed fulcrum and having noses b, d, with a damper f, projecting beyond the nose d, and with a vibrating tongue g, substantially as specified.

90 2. The combination of notched hammer F' turning on a fixed fulcrum and having nose d and an outwardly projecting lip d' with a damper f, supported by said lip, and a vibrating tongue g, adapted to be engaged by the
95 nose and the damper, substantially as specified.

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

THEODOR ZÖLLNER.

Witnesses:

CARL BORNGRAEBER,
MAX MATTHÄI.