

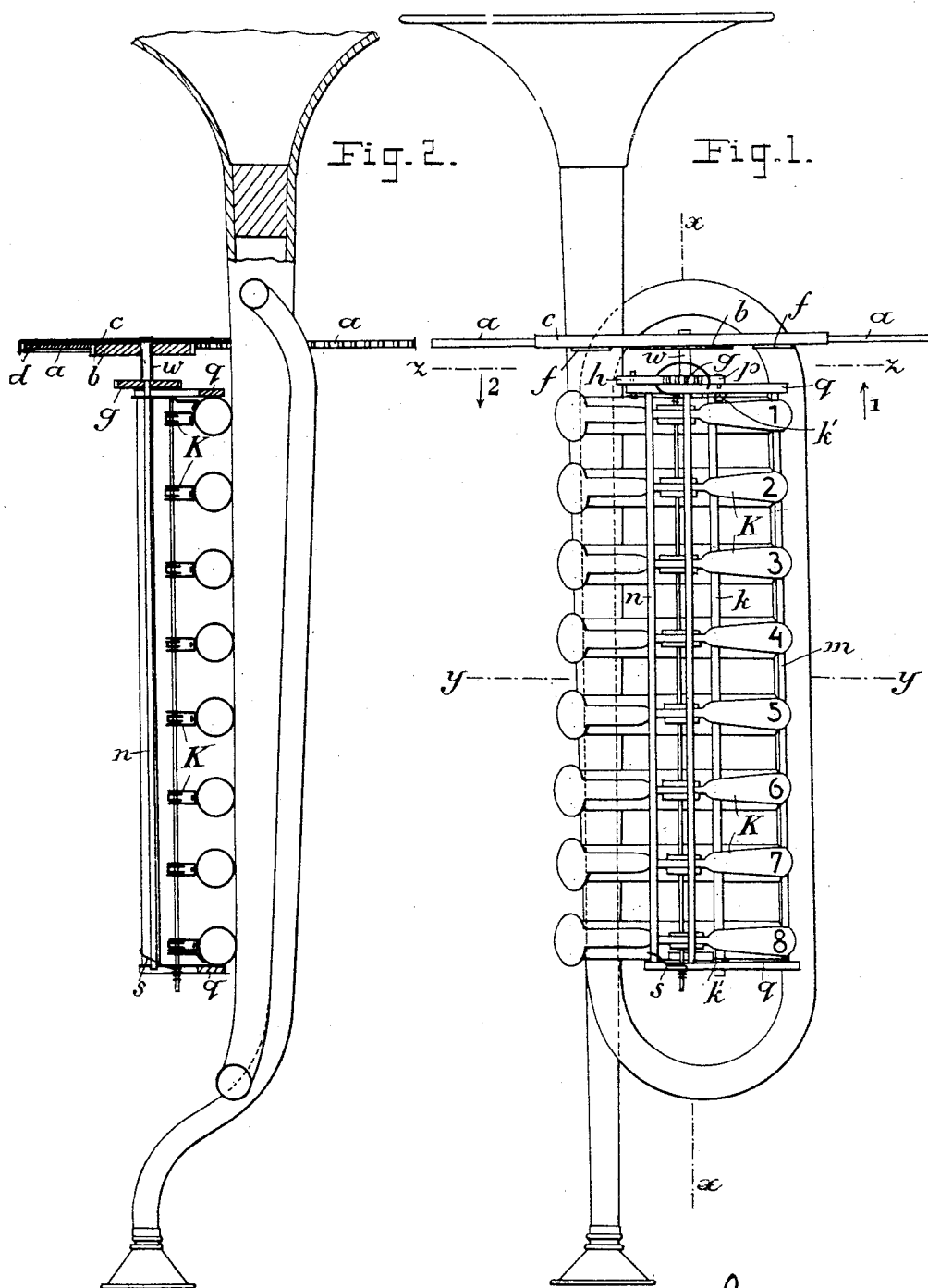
(No Model.)

3 Sheets—Sheet 1.

A. R. BREINL.
MUSICAL INSTRUMENT.

No. 511,500.

Patented Dec. 26, 1893.



Witnesses:
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Inventor:
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(No Model.)

3 Sheets—Sheet 2.

A. R. BREINL.
MUSICAL INSTRUMENT.

No. 511,500.

Patented Dec. 26, 1893.

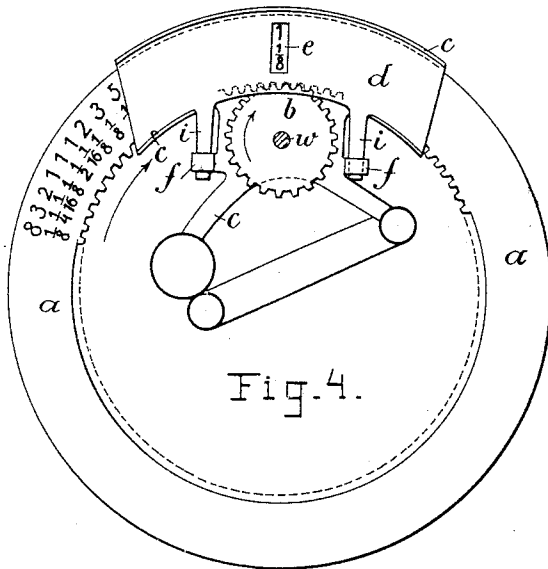


Fig. 4.

Fig. 5.

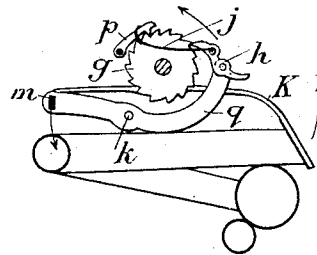


Fig. 6.

Fig. 3.

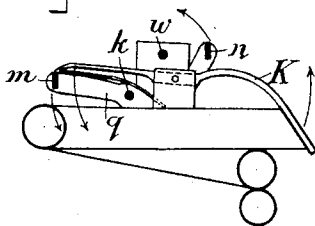
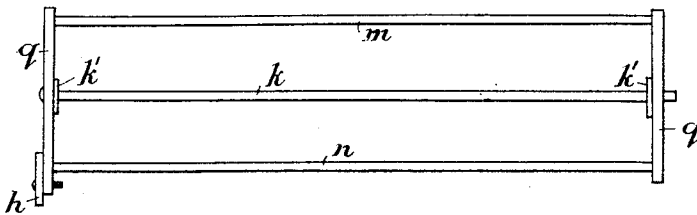
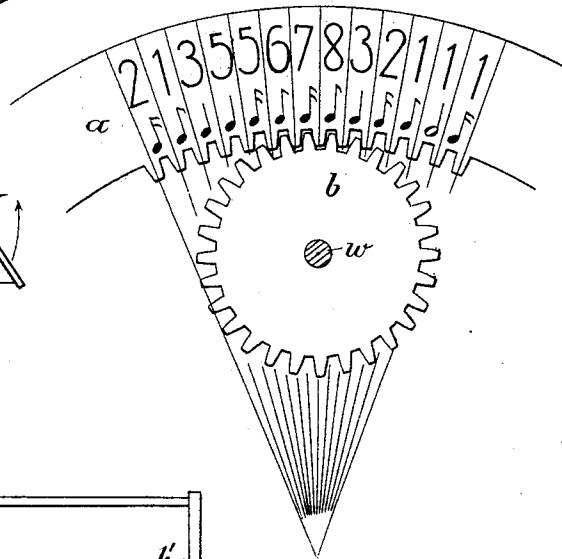


Fig. 7.



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Fig. 8.

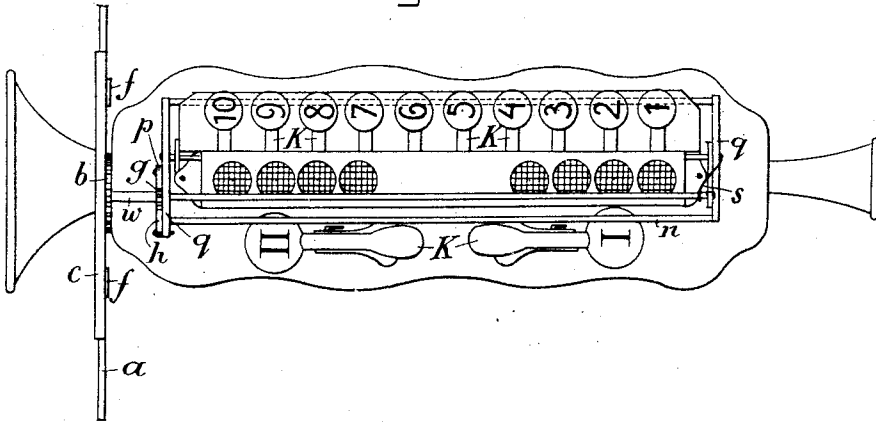


Fig. 9.

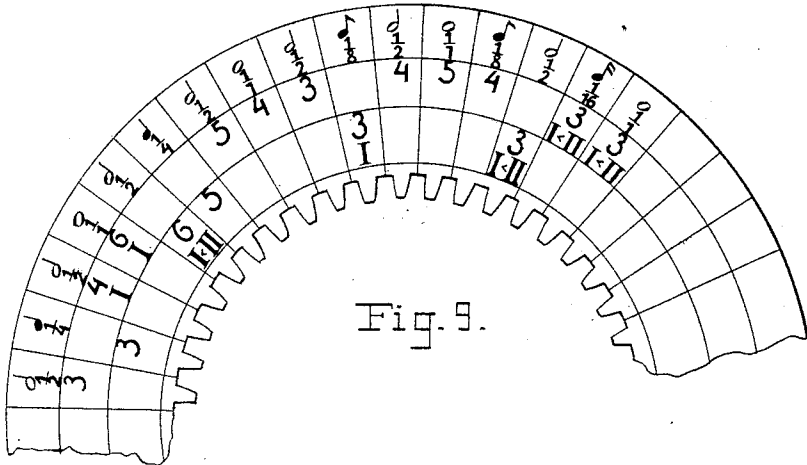
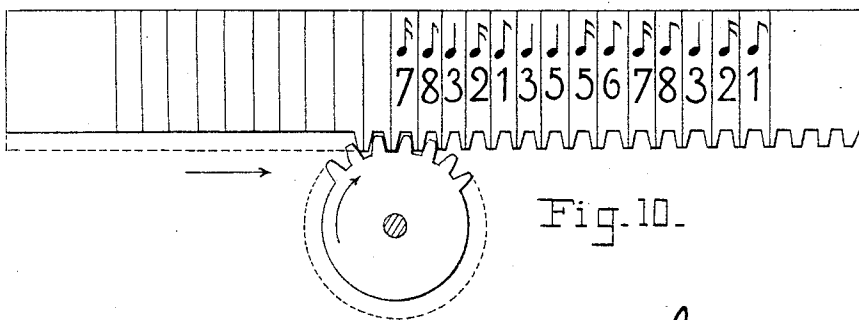


Fig. 10.



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UNITED STATES PATENT OFFICE.

ANTON RICHARD BREINL, OF GRASLITZ, AUSTRIA-HUNGARY.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 511,500, dated December 26, 1893.

Application filed September 25, 1893. Serial No. 486,388. (No model.)

To all whom it may concern:

Be it known that I, ANTON RICHARD BREINL, a subject of the Emperor of Austria-Hungary, residing at Graslitz, in the Kingdom of Bohemia, Austria-Hungary, have invented certain new and useful Improvements in Musical Instruments for Children, of which the following is a specification.

The object of this invention is a toy trumpet and similar key or stop instruments such as wood clarinets, flute-harmonicums, and the like which by means of the keys contained in the frame pieces can be played by children, not musically educated, in the following manner: A music sheet moving before the player's eyes advances after each depression of a key round or along a certain path and causes a figure to appear which indicates that the key marked with a similar figure is next to be depressed and so on. The mechanism of the toy-instrument itself is assumed as understood; what is new and requires description are the peculiar music sheets, their connection with the instruments and the mechanism by means of which they are moved forward by the depression of any one particular key.

Referring to the accompanying drawings which form a part of this specification: Figure 1 is a side elevation of a single-note wind instrument to which my invention is applied. Fig. 2 is a sectional elevation of the same, the section being taken in a plane indicated by the line X—X of Fig. 1. Fig. 3 is a sectional view of the instrument taken on the line Y—Y of Fig. 1. Fig. 4 is a sectional view thereof taken on the line Z—Z of Fig. 1, the view being in the direction of arrow 1. Fig. 5 is a section on the same line, Z—Z, the view being taken in the direction of arrow 2. Fig. 6 is an enlarged detail view of a section of the music sheet and its actuating wheel. Fig. 7 is a detail view of the revolving shaft and its attached frame which actuates said wheel. Fig. 8 is an elevation illustrating the application of the invention to a double note flute harmonicum. Fig. 9 is a face view in detail of a section of a form of sheet music applicable to such an instrument, and Fig. 10 is a similar view of a modified form of music sheet with its propelling wheel.

The music sheet as represented in the ac-

companying drawings is either a circular ring provided with internal teeth (Figs. 4, 6, and 9) or a rigid strip or band (Fig. 10) on which, in the intermediate spaces corresponding to the distances between the teeth, there are placed single figures, which indicate the keys corresponding to the notes of any particular tune that are to be depressed in succession; the value of each note being also indicated with each figure either by fractions (Fig. 4) or by a corresponding figure of the note itself (Figs. 6 and 10) or by both (Fig. 9).

The music sheet is fixed in the following manner: Its toothed edge engages with the outer toothed edge of a toothed wheel *b* (Figs. 4, 6 and 10) advancing by one tooth on the depression of a key. The sheet being thus held in a case *C* (Figs. 1, 2 and 4) fixed on the body of the instrument, is covered in such a manner by a cover plate *d* provided with a slot *e* that only one figure at a time is visible through the slot, viz., that which indicates the key to be depressed which is itself provided with a corresponding figure. The cover *d* is fixed by means of two lugs or projections *i, i* in the guide pieces of the case *E*. (The music sheets partly figured in the drawings contain a portion of "The Last Rose of Summer" the well-known song from Flotow's "Martha.")

The mechanism for the forward movement of the music sheet is arranged in the following manner: On the short spindle *w* (see Fig. 1 which is a view of the whole instrument) are placed on the one side the toothed wheel *b* mentioned above for the placing in position of the music sheet, and on the other side a small ratchet wheel *g*, in which engages a small pawl *h* (see also Fig. 5) which is constantly pressed against the wheel by a small spring *j*. This pawl *h* is fixed on a frame capable of oscillating round an axis *k* (see also Fig. 7) which is so arranged that one of its longitudinal bars *m* lies exactly below all the keys *k* whereby on depression of any one key this bar is also depressed. In consequence of this and because the two cross bars *q* which join bars *m* and *n* (see Figs. 3 and 5) are curved the other bar *n* (which besides lies at a higher level) is raised and with it the pawl *h* which is attached to it, which in its turn causes the ratchet wheel *g* to move one tooth in the di-

rection of arrow in Fig. 5 carrying forward the toothed wheel *b* and the music sheet *a* attached thereto, so that the next figure makes its appearance in the notch *e*. At the same time a second pawl *p* fixes the particular position at any time, of the ratchet wheel.

In order that after the release of a key the frame shall return to its original position, a spiral spring *s* (see also Fig. 2) is wound round the oscillating axis and applies itself by its free end against the bar *n* which lies at a higher level. The oscillating axis *k* of the frame is supported upon two small brackets *k'*, *k'* (Figs. 1 and 7) fixed on the body of the instrument.

If instruments with double notes, such as those in which each key supplies two different notes are to be played, viz., one on blowing into the instrument and the other on drawing breath, the whole arrangement of the instrument is the same, except that the music sheet must contain an additional column.

In Fig. 8, in which the lettering is the same as in Fig. 1, I represents a double-noted flute-harmonicum with ten keys each giving two notes (violin notes 1—10), I and II being the keys of the bass-notes.

The music sheet (Fig. 9) shows in the first column the time or value of the note, in the second column the notes that are formed on depression of the corresponding keys, on blowing into the instrument, in the third column those given out in drawing in breath.

Although this invention has been described as particularly applicable for instruments for children, it can be applied to the ordinary wind musical instruments.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In combination with a musical instrument having suitable keys, music sheets marked at equal intervals with characters corresponding to said keys and having teeth with mechanism for actuating the same from said keys, substantially as set forth.

2. In a musical instrument having suitable

keys, a music sheet consisting of a band or strip marked at equal intervals with suitable characters corresponding to those on the keys and having suitable teeth, a toothed propelling wheel adapted to engage said teeth and mechanism for actuating said wheel and adapted to be actuated by the keys of said instrument, substantially as set forth.

3. In a musical instrument having suitable keys, the combination of the music sheet *a* having suitable teeth, toothed wheel *b* engaging the teeth of said sheet, oscillating shaft *k*, its attached frame comprising the bar *m* common to all of said keys and the ratchet *h* and a ratchet wheel *g* connected with said propelling wheel *b* and adapted to be actuated by said ratchet *h*, substantially as set forth.

4. In combination with a musical instrument having suitable keys, the music sheet *a* suitably toothed, the toothed propelling wheel *b* adapted to be engaged therewith, the oscillating shaft *k* having return spring *s* and curved arm or arms *q* attached thereto and bar *m* common to said keys, the ratchet *h* and ratchet wheel *g* connected to said wheel *b*, all arranged and adapted to operate, substantially as set forth.

5. In combination with a musical instrument, music sheet *a* having suitable means for propelling it and a cover plate *d* for the same provided with a slot *e* arranged to expose the character of said music sheet, substantially as set forth.

6. In combination with a musical instrument, a music sheet, a case *c* wherein the same is mounted, a cover plate *d* for said sheet having slot *e* and having lugs *i*, said case *c* having guide pieces *f* for receiving said lugs, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ANTON RICHARD BREINL.

Witnesses:

JOSEF VORTREL,
FERDINAND FIALO.