

(No Model.)

O. H. ARNO.

ATTACHMENT FOR MECHANICAL MUSICAL INSTRUMENTS.

No. 266,411.

Patented Oct. 24, 1882.

Fig. 1.

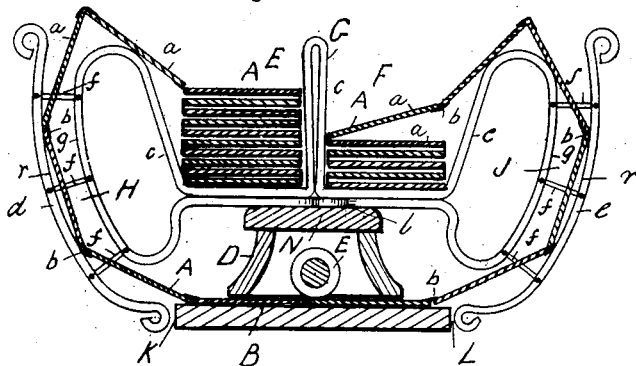


Fig. 2.

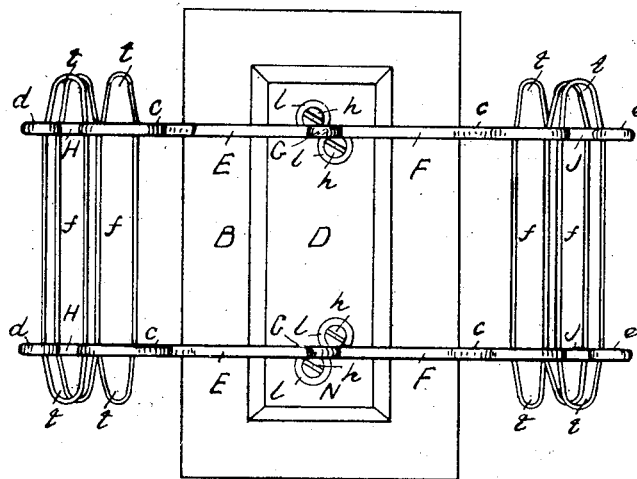


Fig. 4.

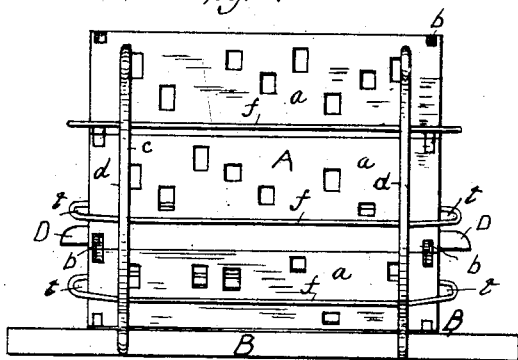
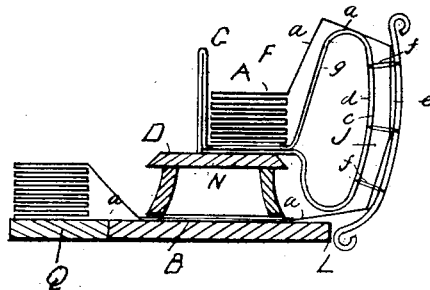


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## ATTACHMENT FOR MECHANICAL MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 266,411, dated October 24, 1882.

Application filed June 21, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER H. ARNO, of Wilmington, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Attachments for Mechanical Musical Instruments, of which the following is a full, clear, and exact description.

This invention relates to key-board attachments for musical instruments—such as piano-fortes, reed and pipe organs, &c.—and to mechanical musical instruments—such as the “orguINETTE” and “organina,” so called in the trade—and others which are arranged for the travel of a perforated music-sheet through them, and thus to secure, as such sheet so travels, an operation of the mechanism and sounding devices composing them in a manner to play or produce mechanically from the musical instruments the tune, air, chord, or other combination of sounds represented by the arrangement of the perforations in the music-sheet. These perforated music-sheets in some instances are adapted to fold forward and backward in layers or folds of equal length, and it is to the use of such perforated music-sheets in said attachments and musical instruments that this invention pertains.

The invention consists, first, in the combination, with a raceway and a folding music-sheet, of an attachment composed of a receptacle and a guideway having two sides connecting the receptacle with one end of said raceway; second, in the combination, with a raceway and a folding music-sheet, of an attachment composed of two receptacles and two guideways, each having two sides connecting said receptacles, respectively, with the forward and rear ends of the raceway; third, of an attachment substantially such as above described for said key-board attachments and said mechanical musical instruments, made in its several parts of wire, all substantially as hereinafter described; and, in addition, this invention embraces other features of construction of the attachment, which will fully appear in the description hereinafter given thereof.

In the accompanying plate of drawings, Figure 1 is a longitudinal vertical section of the raceway or table to a key-board attachment for keyed musical instruments, and of a perforated music-sheet, adapted to be folded for-

ward and backward, and a side elevation of the present improved attachment therefor. Fig. 2 is a plan view with the perforated music-sheet removed. Fig. 3 is a similar view to Fig. 1, but showing the attachment as having but one receptacle and guideway, and that at the rear end of the raceway; and Fig. 4 is a front view of Fig. 1.

In the drawings, A represents a perforated music-sheet adapted in any suitable manner to be folded forward and backward in folds or layers, one upon the other—as, for instance, by making it in sectional pieces *a* of equal length, connected together by flexible hinging-pieces *b*, attached alternately at the dividing-lines of the separate sections to opposite sides of the sheet.

B represents the raceway of a key-board attachment for musical instruments—such as piano-fortes, reed and pipe organs, &c.—constructed and arranged, as well known, for the travel of a perforated music-sheet through it, and to secure thereby the playing mechanically of the tune, &c., represented by the perforations of such sheet upon the keyed musical instrument to which the attachment is applied.

The key-board attachment forms no part of the present invention, and therefore it needs no particular description herein, except so far as may be necessary to make the present invention intelligible.

D is a casing carrying the transverse grooved feed-roller E for the music-sheet, and surmounting the raceway B.

The improved attachment of this invention, to be now described, is secured to the casing D. This attachment, as shown in Figs. 1 and 2, is composed of two adjoining horizontal receptacles, E and F, separated by a vertical partition, G, and all located above the casing D, and two guideways, H and J. The guideways H and J each lead from the upper portion of the receptacles E F—one, H, from the receptacle E and the other, J, from the receptacle F—and thence each passes in a curvilinear direction downward and terminates, the one, H, at the front end, K, and the other, J, at the rear end, L, of the raceway B, in relation to the travel of the perforated music-sheet over the raceway represented by the arrow in the drawings, Fig. 1. The receptacles E and F and guideways H and J are severally made

of parallel longitudinal wires *c d e*, three in number, and each and all running in the direction of the length and in two sets, one at each side of the raceway.

5 *f f* are a series of wires running across the raceway and connecting together the longitudinal wires at each side of the raceway. Each longitudinal wire *e* is similarly bent in its length, as shown, to make with both of said  
10 wires the two horizontal receptacles *E F* and their separating-partition *G*, and the inner walls, *g*, of their curving guideways *H J* leading from said receptacles to the opposite ends of the raceway, as described.

15 *h* are headed screws passing through the eyes *l* at each end of each wire *e*, and screwing into the top board, *N*, of the casing *D*, thus securing the said wires thereto and in parallel lines. Each longitudinal wire *d* and *e* makes  
20 the outer walls, *r*, of the guideways *H J*—the one, *d*, of the guideway *H* and the one, *e*, of the guideway *J*—and from end to end each wire is given a curving direction corresponding substantially to the curving direction of the inner wall, *g*. The cross-wires *f f*  
25 are attached to the longitudinal wires *c d e*, and run from side to side of the raceway, projecting beyond each side of the longitudinal wires in loops *t*.

30 The music-sheet in its folded condition is placed in the receptacle *E*, and thence it is conducted through the guideway *H* and entered into the front end, *K*, of the raceway *B*, and as it escapes therefrom at the rear end, *L*,  
35 it is passed through the guideway *J* and entered into the receptacle *F*. The music-sheet thus being placed by its then continued feed over the raceway, it is drawn from the receptacle *E*, fold after fold, through the guideway *H*,  
40 over the raceway *B*, thence through the guideway *J*, into the receptacle *F*, folding itself forward and backward therein, as from time to time each of its folds enters into the same. As the folding music-sheet passes from one receptacle, *E*, to the raceway *B*, and from thence to  
45 the other receptacle, *F*, its separate sections are first unfolded in the receptacle *E*, one after the other, and then guarded and guided and kept in position by the outer and inner  
50 walls, *g r*, of the guideways, and finally folded one after the other in the receptacle *F*, the whole acting together in the most perfect manner to secure the proper passage of the music-sheet to and from the raceway *B*, and its final  
55 deposit and fold in the receptacle *F*, to be again used. The side projecting loops, *t*, protect the music-sheet against lateral displacement, and also its edges against accidental injury.

60 The attachment, as has been particularly described, has two receptacles, *E F*, for the folded music-sheet—one, *E*, to receive it folded, to be taken therefrom over the raceway *B*, and the other, *F*, to receive and secure its folding after having passed over the raceway. It is plain,  
65 however, that the operation of the attachment as to its receptacle and guideway at each end of the raceway is independent of the opera-

tion of the receptacle and guideway at the other end thereof, and consequently either of the receptacles and its guideways may be used  
70 without the other.

Fig. 3 illustrates the attachment as having only one receptacle and guideway—to wit, those at the rear end of the raceway and shows the music-sheet as placed upon a suitable support, *Q*, to pass from it to the front end  
75 of the raceway.

Although this improved attachment has been described as made of wires, it obviously may be made of other material—such, for instance, as wooden bars or rails—and, if so desired, closed on all its sides and ends; but making it of wires is preferable for obvious reasons.

The two receptacles *E F* and their arrangement adjoining each other obviously are advantageous, for the reason that the music-sheet, after having been passed over the raceway *B* and folded in the receptacle *F*, can be again placed in position for use by simply turning  
90 it over into the other receptacle, *E*.

Although the attachment constituting the present invention has been herein particularly described and shown in connection with the raceway of a key-board attachment for keyed  
95 musical instruments, it is plain it is equally applicable to mechanical musical instruments such as the "orguINETTE" or "organina," so called, and others using a perforated music-sheet.

The attachment, constructed as particularly described and shown, is complete in itself, and by a simple fastening such as shown it is secured in its position relative to the raceway  
100 *B*, and made ready for operation with ease and readiness and dispatch.

The receptacles *E F* and guideways *H J* may be of various shapes and locations, in lieu of those particularly described and shown; and, again, other means and modes of fastening  
110 the attachment in position may be used; but it is plain the shapes and locations of the receptacles and of the guideways and the mode of fastening the attachment in position which have been described and shown are most simple, efficient, and practical.

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

1. The combination, with the raceway *B* and  
120 with a folding music-sheet *A*, of an attachment composed of a receptacle and a guideway having two sides connecting the receptacle with one end of said raceway, substantially as described, for the purpose specified.

2. The combination, with the raceway *B* and with a folding music-sheet, *A*, of an attachment composed of two receptacles, *E F*, and of two guideways, *H J*, each having two sides connecting said receptacles, respectively, with  
130 the forward and rear ends of said raceway, substantially as described, for the purpose specified.

3. The combination, with the raceway *B*, of

an attachment composed of a receptacle or receptacles, E F, and of a guide way or ways, H J, connecting said receptacle or receptacles with said raceway, and all made of wire, substantially as and for the purpose described.

4. The combination, with the raceway B, of an attachment composed of a receptacle or receptacles, E F, and guide way or ways H J, connecting said receptacles with said raceway, and provided with side guide-loops, t, substantially as and for the purposes described.

5. An attachment for the raceway B, con-

sisting of a receptacle or receptacles, E F, and a guide way or ways, H J, all complete in itself, and adapted to be fastened in position in relation to said raceway, substantially as described, for the purposes specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OLIVER H. ARNO.

Witnesses:

EDWIN W. BROWN,  
W. S. BELLOWS.