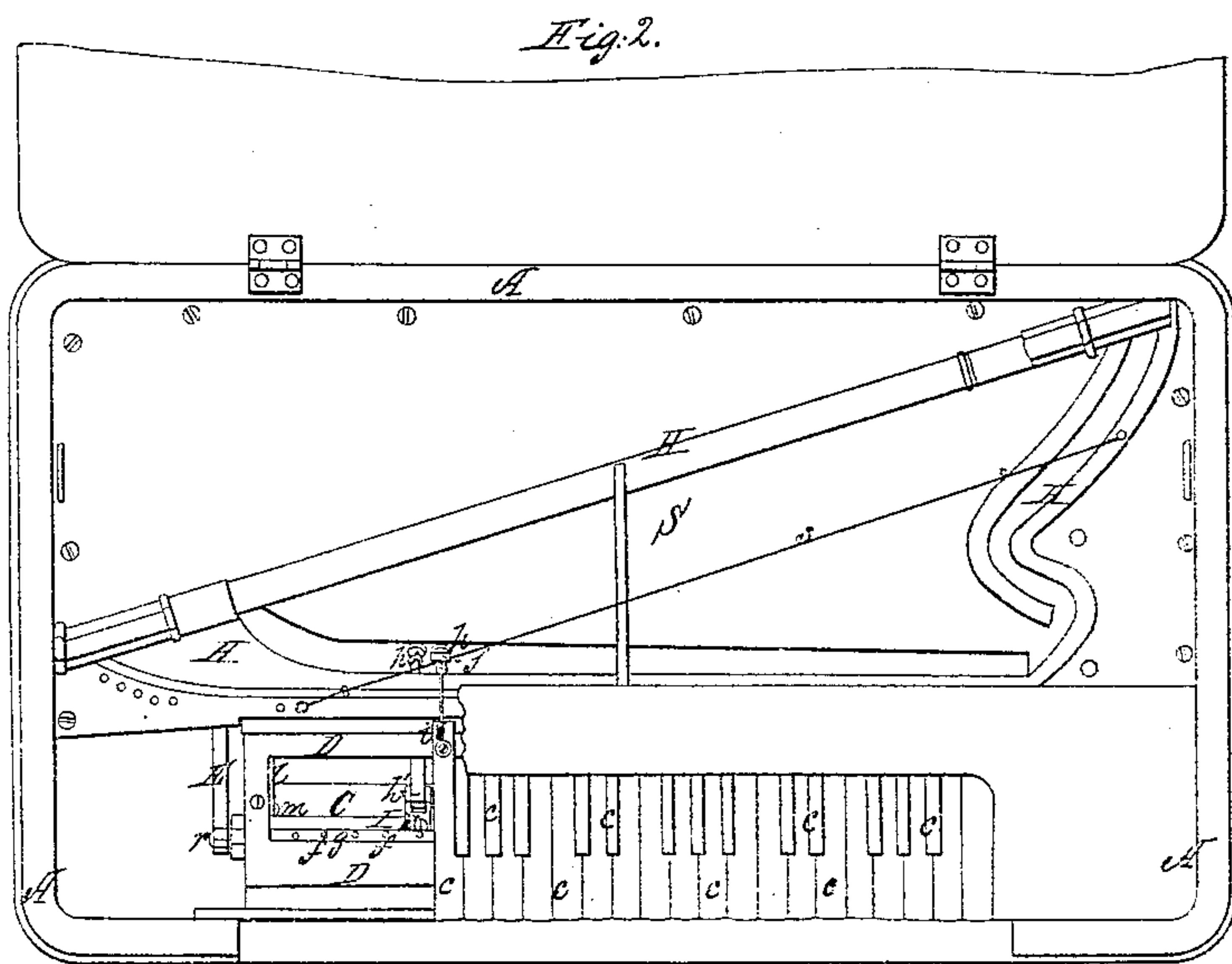
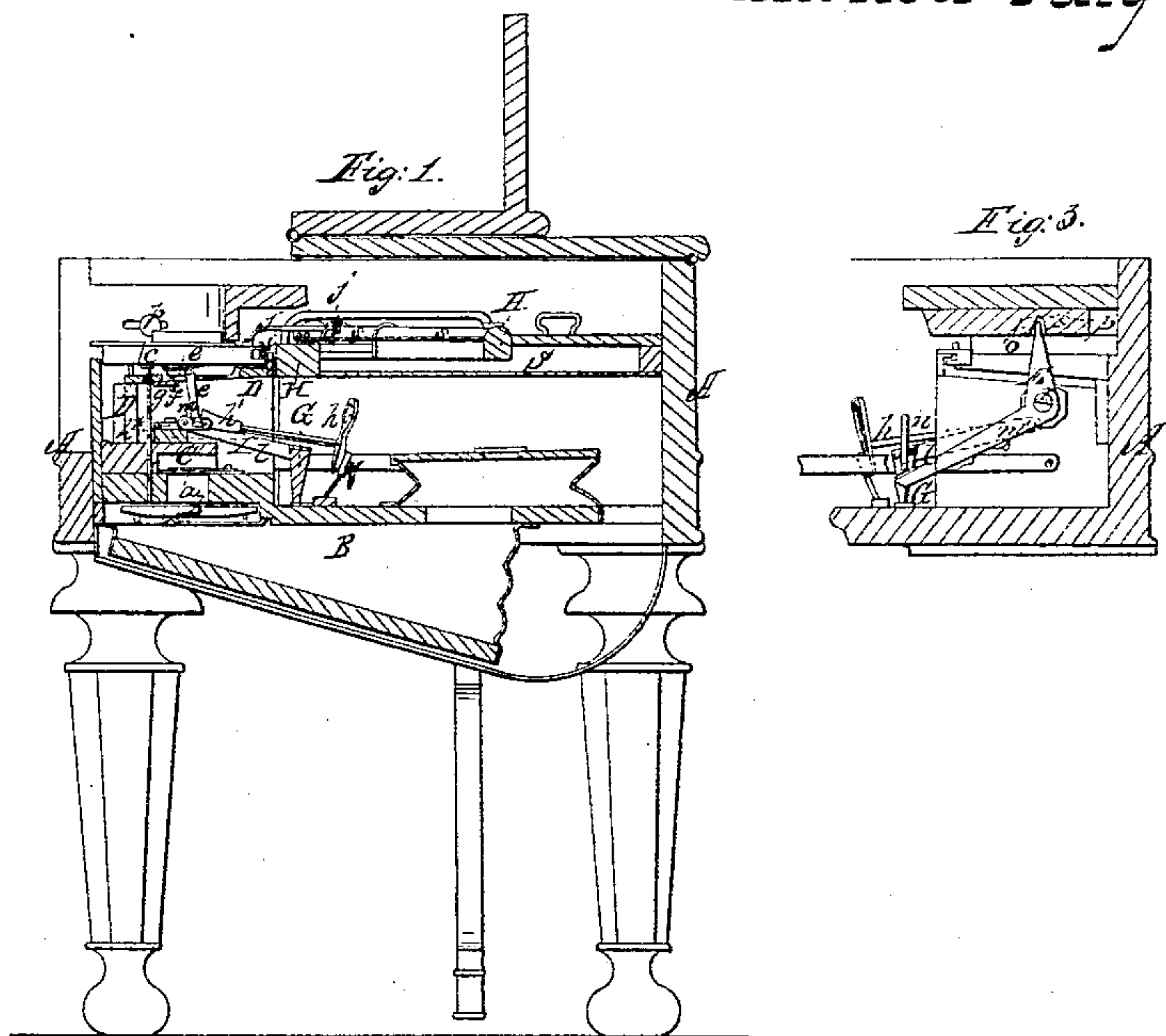


Sprague & Burditt

Piano Attachment

N^o 17,755.

Patented July 7, 1857.



UNITED STATES PATENT OFFICE.

D. L. SPRAGUE, OF TOWNSEND, AND RILEY BURDITT, OF BRATTLEBORO, VERMONT.

MELODEON ATTACHMENT.

Specification of Letters Patent No. 17,755, dated July 7, 1857.

To all whom it may concern:

Be it known that we, D. L. SPRAGUE, of Townsend, in the county of Windham and State of Vermont, and RILEY BURDITT, of Brattleboro, in the same county and State, have invented a new and useful Improvement in Melodeons; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse vertical section of a melodeon with our improvements. Fig. 2 is a plan of the same, open, and with part of the keyboard removed. Fig. 3 is an end view of the playing action seen looking in the opposite direction to Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to the employment in a melodeon of a "harp attachment," that is to say, a series of strings substantially like those of a harp, played by a series of hammers operated by the same keys by which the reeds are played, so that a reed and a string are played simultaneously.

It consists in the construction of the striking action for playing the "harp attachment," and the mode of combining the said action with the keys by which the reeds are played.

To enable others to make and use our invention, we will proceed to describe its construction and operation.

A is the case of the instrument.

B is the bellows, which is of the "suction" kind.

C is the reed board.

D is the key frame.

A is one of the reeds; *b*, the corresponding valve; *c*, *c*, the keys; and *d* the push-down pin for opening the valve *b* when the corresponding key is depressed.

All the operating parts above specified are arranged in the manner common to melodeons with the "suction" bellows, as is shown in Fig. 1, but the case is made deeper and the keyboard elevated higher above the reed board in order to admit the harp attachment and the striking action thereof under the keys.

H is a harp-like frame of iron, carrying the strings *s*, *s*, and having arranged below it a sounding board S; said frame, strings, and

sounding board constituting the harp attachment. The harp frame H is arranged with its strings in a manner precisely the reverse of the strings of a square pianoforte—that is to say, with the longer strings behind the shorter ones, and the opening in the sounding board, through which the hammers work is in the front thereof, immediately behind the keyboard instead of at the back. The harp frame and sounding board are attached to each other so as to be placed in and taken out of the instrument together. The strings are single and are intended to correspond in number with the reeds, and to be severally tuned in unison therewith.

I is the hammer rail, from which all the hammers *h* are suspended, secured on the top of the reed board. The hammers are severally attached (by pins passing through their butts *h'*) to small blocks *h**, screwed to the rail I; each hammer being arranged between a reed and its respective key, as shown in Fig. 1. The operation of each hammer is effected through the agency of a jack *e*, that is attached to the bottom of the key *c*, that stands above it, just in rear of the push-down pin, as shown in Fig. 1; said jack being like that used in what is known as the "French action" of pianofortes, but inverted, and acting in a notch in the upper side of the hammer butt, in rear of its center of motion, that is to say, on the opposite side thereof to the hammer head, so that the hammer may be raised to strike upward against the spring by the depression of the jack with the key.

f are the regulating screws by which the escape of the jacks from the notches in the hammer butts is caused and regulated, screwed into a small rail *g*, attached to the front part of the key frame.

The above construction and arrangement of the hammer and jack enables the ordinary melodeon keys to be used for playing the harp attachment without any alteration or extension rearward, beyond their centers of motion at *i*.

The dampers *j*, for the strings, are attached to the keys and extend rearward therefrom in such a manner that when the keys are not depressed they rest upon the strings, but when a key is depressed the attached damper constituting one arm of a lever of the first order, of which the key forms the other arm, is of course raised up from the string and re-

mains so till the key is allowed to rise when it descends upon the string and stops its vibration.

G is a bar extending under the whole of the
 5 hammers, and attached at its ends to two
 arms *l*, which are capable of swinging upward and downward on pins *m*, secured in the end supports of the key frame. In one end
 10 of the bar there is a stud *n*, see Fig. 3, which
 rests upon the lower arm of an elbow lever *E*,
 which works on a fixed fulcrum *r*, and the extremity of whose upper arm enters a notch in
 15 a horizontal slide *o*, which works through one
 of the cheek blocks with a knob *p*, protruding
 therefrom. When the knob *p* and slide *o* are
 pushed backward, as is shown in Figs. 1 and
 3, the lever *E* occupies such a position that
 20 the bar *G*, rests on the top of the bellows, or
 on some suitable resting place below the position
 of the hammers as the latter rest on
 their checks *q*, so as not to interfere with the
 motion of the hammers. But if it is not desired
 to play the harp attachment by drawing forward
 25 the knob *p* and slide *o* by hand,
 the lower arm of the elbow lever *E* is elevated
 and by its action on the stud *n*, lifts the bar
G, and with it all the hammers till the latter
 touch the strings, in which position of course
 the latter are inoperative, as the hammers

and shoulders of their butts on which the
 30 jacks *e* operate are out of the reach of the
 latter.

What we claim as our invention and desire
 to secure by Letters Patent, is—

1. The hammers *h* of the "harp attachment," arranged between the keys and reeds
 35 of the melodeon, and combined substantially as described with the inverted jacks *e*
 attached to the bottom of the keys, whereby
 the ordinary keys of the melodeon are made
 40 to serve without any extension to play the
 "harp attachment."

2. The attachment of the string-dampers *j*
 of the "harp attachment," to the melodeon
 keys in a manner to operate substantially as
 45 described.

3. The employment of a bar *G* extending
 below the whole of the hammers and operating
 substantially as described to move all
 the hammers simultaneously to such a position
 50 that the jacks are inoperative upon
 them.

D. L. SPRAGUE.
 RILEY BURDITT.

Witnesses:

L. W. PAGE,
 H. P. GREEN.