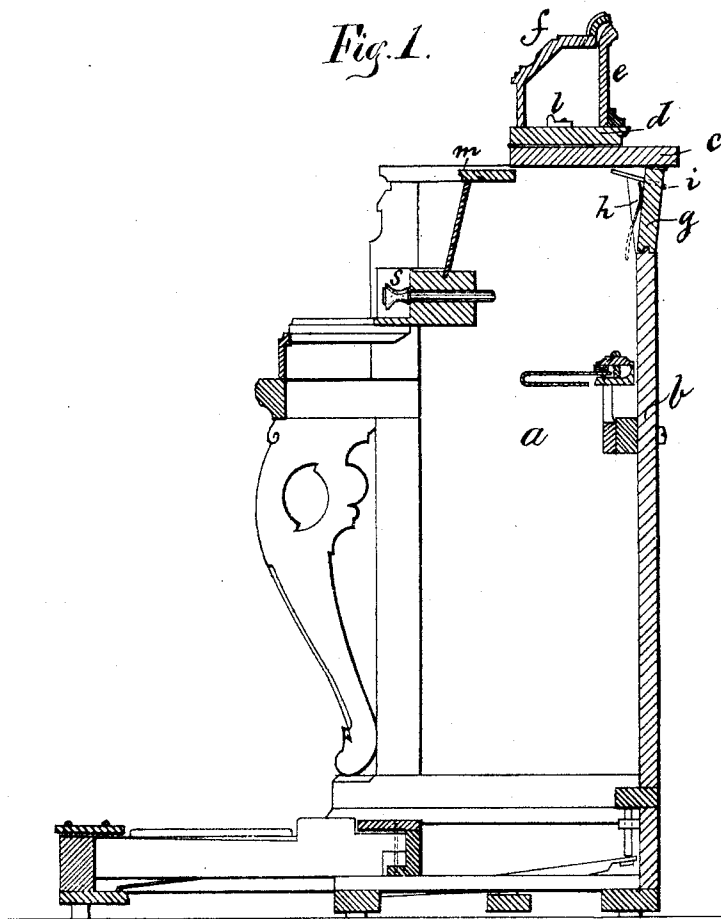


G. WOODS.
Reed-Organs.

No. 145,078.

Patented Dec. 2, 1873.



Witnesses.

Geo. E. Phelps.
Horace M. Sproat

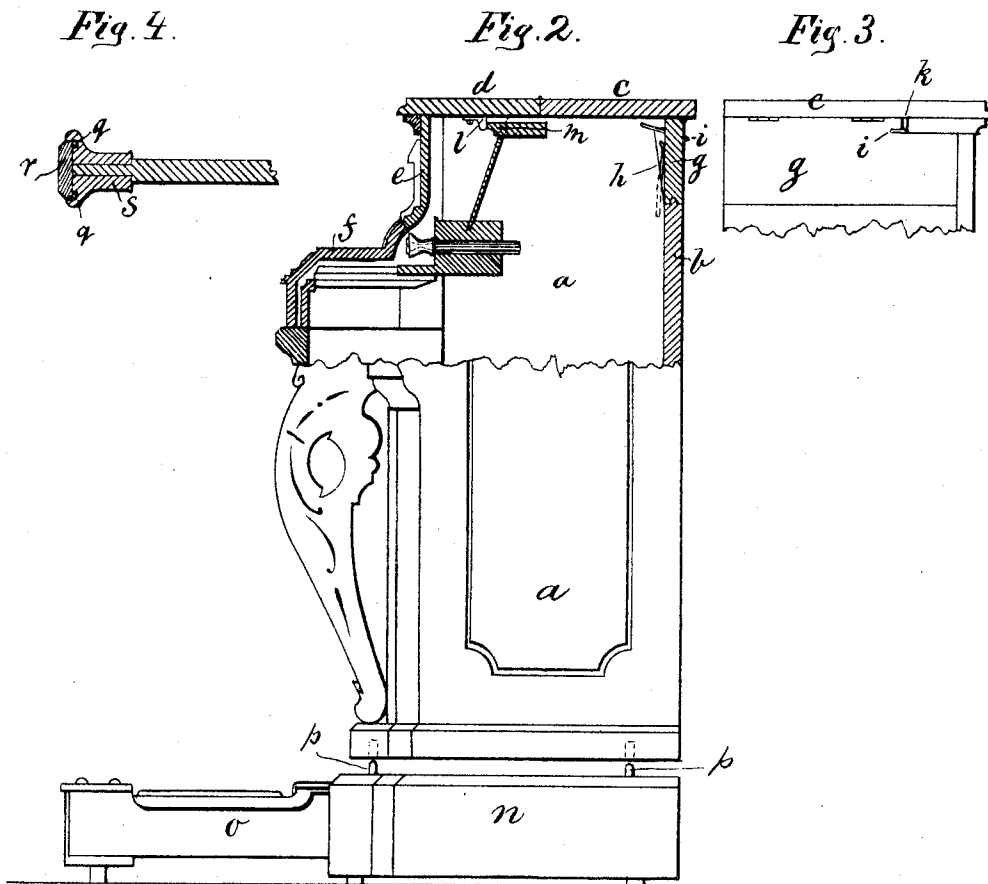
Inventor.

George Woods.
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Fig. 6.

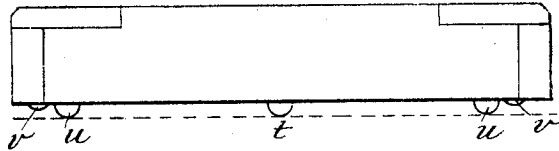


Fig. 5.

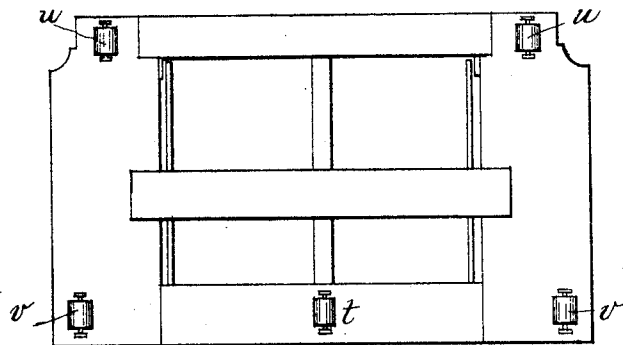


Fig. 7.

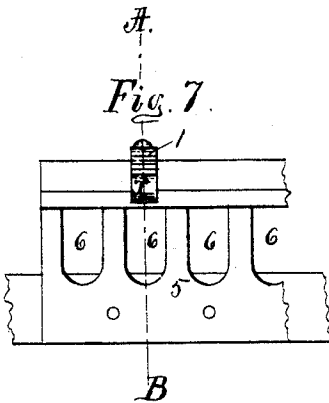


Fig. 8.

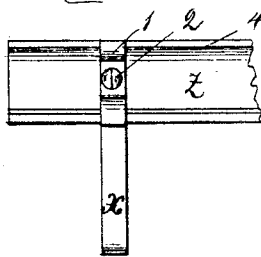
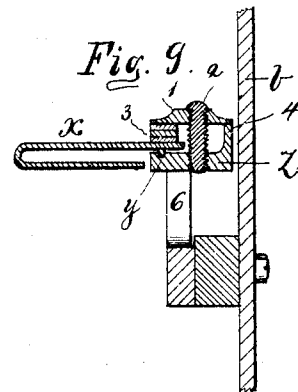


Fig. 9.



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UNITED STATES PATENT OFFICE.

GEORGE WOODS, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **145,078**, dated December 2, 1873; application filed October 17, 1873.

To all whom it may concern:

Be it known that I, GEORGE WOODS, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Musical Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in musical instruments; and consists in making the cover hinged at the rear to a movable and automatically-adjustable board, operated by means of springs or their equivalents, in such a manner as to force the cover to fit in its proper place on the case even if the said cover should happen to be expanded or contracted by changes in the atmosphere. My invention also consists in making the pedal-bass separate from the case proper, and connecting them together by means of dowels, or their equivalents, by which arrangement I am able to make a number of cases in advance of orders, and to use the case proper without the pedal-bass, if ordinary organs without pedal-action are required, and to attach the independent pedal-bass to the case proper if an organ with pedal-action is required.

Formerly cases for organs having pedal-actions had to be made different from cases for organs without pedal-action; whereas I am now able to make both kinds of organ-cases alike, thus saving considerable time and expense in the manufacture of cases.

My invention also consists in improvements on the handles for the stops, having an annular groove made in said handles, into which the superfluous glue or cement is forced when the ivory front is secured thereto. The ivory washer in front of each handle projects a little in advance of said handle, whereby a more durable and convenient handle is produced. My invention also relates to the employment of a fifth caster on the under side of the base of the organ-case. The said fifth caster is placed in the rear of the case, and opposite the wind-pedals, for the purpose of steadying the instrument when the pedals are worked, and pre-

vent it from rocking if placed on an uneven floor. The two front casters, as well as the fifth one, are of the same height below the base, but the two rear casters on each side of the fifth one do not project as much below the base as the three others above named, by which arrangement the instrument will always be resting on three casters, and may be resting on four or five if the unevenness of the floor so allows. As three points can always be made to touch any uneven surface, it will be seen that my instrument, provided with a fifth caster, arranged as described, will always be steady on any uneven floor. Lastly, my invention relates to improvements in the construction and attachment of the sounding hooks or forks to the metallic rail, and in the construction of the supporting part of the said rail. The shank of the hook or fork is provided with a projecting lip, that is made to rest in a corresponding groove made in the metallic rail.

Each sounding-hook is held to the rail independent of the other hooks by means of a metallic clamp and set-screw, one for each sounding-hook. The supporting part of the metallic rail is provided with a number of perforations in part or the whole length of said rail, for the purpose of increasing the durability and elasticity of the tones.

In the drawings, Figure 1 represents a cross-section of my invention, in which the cover is shown folded up. Fig. 2 represents a sectional elevation of the same, with the cover shown folded down. Fig. 3 represents a partial rear view of the case. Fig. 4 represents a longitudinal section of my improved handle for the stops. Fig. 5 represents a bottom view or ground plan of an organ-case, showing the arrangement of the casters. Fig. 6 represents a rear view of the base. Fig. 7 represents a front elevation of the metallic rail to which the sounding-hooks are secured. Fig. 8 represents a ground plan of the aforesaid rail and one sounding-hook, and Fig. 9 represents a cross-section on the line A B. (Shown in Fig. 7.)

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a represents an organ-case, and *b* represents the back thereof. *c* is the rear part of the cover, and *d* is the front part thereof. The

rear end of the cover *c* is generally hinged to the upper end of the back *b*, which is very objectionable, as the covers *c* and *d* are very liable to expand and contract by changes in the atmosphere to which they are exposed, whereby the hinged covers *e f*, that protect the keyboard, cannot be made to fit closely to the case, which is very frequently the objection to ordinary piano and organ covers. To obviate this difficulty I hinge the rear end of the board *c* to the upper end of a movable board, *g*, the lower end of which is hinged to, or made to move on, the upper end of the stationary back *b*, as shown in Figs. 1 and 2. A spring, *h*, or its equivalent, is secured to the case *a*, and presses against the inside of the movable board *g*. To prevent the spring *h* from forcing the board *g* and the covers *c d* too far back, I employ a hooked wire, *i*, or its equivalent, attached to the case *a*, and projecting, on the back of the board *g*, through a slot-hole, *k*, made in the said board, as shown in Fig. 3.

If I wish to remove the whole of the covers for repairs, or otherwise, I simply raise the hook *i* out from the slot *k*, when the covers can easily be detached from the case.

A guide, *l*, is secured to the under side of the cover *d*, as shown in Fig. 2, and is forced, by the action of the spring *h*, against the stationary music-rest *m*. The covers are made to fit closely in their respective places on the case *a*, when the guide *l* bears against the music-stand *m*, and the force of the spring *h* arranges the covers automatically in that position when the instrument is closed.

n represents the pedal-bass as required for organs provided with a pedal-action, *o*. I make the pedal-bass *n* as an independent piece from the case *a*, as fully shown in Fig. 2, and I attach the pedal-bass *n* to the case *a* by means of dowels *p p*, or their equivalents. The object of this arrangement is to be able to use the same kind of cases for organs with and without pedal-action; and, if a pedal-action organ is required, I have only to attach the independent pedal-bass *n*. Another advantage is that I can pack my improved pedal-action organ-case in a smaller space than could be done with the ordinary cases in which the pedal-bass is made in one piece with the case proper.

My improved handle *s* for the stops is provided with a recess, in the bottom of which is made an annular groove, *q*, the object of which is to provide a space below the ivory plate *r*, in which the superfluous glue or cement is pressed, thus making a closer and neater joint around the ivory *r* than could be made if the glue had to be forced out all round the ivory, as heretofore has been done. The ivory *r* projects a little in advance of the handle *s*, by which arrangement I am able to produce a neater and better looking handle, as compared with the ordinary handles, where the ivory is even with the end of the handle.

The fifth caster *t* is shown in Figs. 5 and 6. *u u* represent the ordinary casters in the for-

ward end of the case, and *v v* represent the casters in the rear of the case. The fifth caster *t* is placed in the rear end of the case, between the casters *v v*, and opposite the place where the wind-pedals are operated. The casters *t u u* project equally below the base, but the casters *v v* I do not let project quite as far below the base as the casters *t u u*, so that, if the floor on which the instrument rests is uneven, said instrument will be supported firmly on the three casters *t u u* only, thereby preventing the rocking of the instrument during the operation of the pedals, which is a great annoyance on the ordinary arrangement of four casters of equal height.

If the floor is more or less uneven the instrument may rest also on one or both of the corner casters *v v*, in addition to the casters *t u u*; but in all circumstances I obtain a steady support for the instrument on the three casters *t u u*. This arrangement of the casters is a very important improvement, as every floor in a building is more or less uneven, and it has heretofore been difficult to prevent an instrument of this kind from rocking when it is played upon.

My improved sounding-hook *x* is provided on its shank with a projecting lip, *y*, that may be made in one piece with the hook, or soldered or secured thereto, as may be convenient. The lip *y* on the hook *x* rests in a suitable groove made in the metallic rail *z*, as shown in Fig. 9. Each sounding-hook *x* is secured to the rail *z* by means of an independent clamp, 1, and set-screw 2. The set-screw 2 passes through a hole made in the clamp 1, and is screwed into the metallic rail *z*. Between the forward end of the clamp 1 and the sounding-hook *x* is placed a suitable elastic material, 3, as shown. The rear end of the said clamp 1 rests on a projecting flange, 4, forming part of the metallic rail *z*, as represented in Fig. 9. By this arrangement each hook is held firmly to the rail, and it can be placed in position, removed, or adjusted independent of the other sounding-hooks. The lower part of the metallic rail *z* is made as a perforated flange, 5, provided with a number of perforations, 6 6 6, by which construction I am able to obtain greater durability and elasticity of the tones than if a solid rail had been used. The perforated flange 5 is secured to the sounding-board *V* by means of screws or bolts, in the usual manner. The flange 5 may be perforated to its whole extent, or may only be partially perforated in particular places, as I may find requisite under different circumstances.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. An adjustable board, *g*, to which the cover *c* is hinged, in combination with the spring *h*, or its equivalent, as and for the purpose set forth.

2. In combination with the covers *c d*, guide *l*, and rest *m*, the adjustable board *g*, hinged to the cover *c*, and the spring *h* and hook *i*, or

their equivalents, as herein shown, and for the purpose set forth.

3. The handle *s* for the stops, provided with an annular groove, *q*, and projecting washer *r*, as and for the purpose set forth.

4. An organ-case, *a*, in combination with a separate or independent pedal-bass, *n*, secured to the case *a* by means of the dowels *p p*, or their equivalents, as herein set forth and described.

5. The caster *t*, of equal height with the casters *u u*, in combination with the less-projecting casters *v v*, for the purpose set forth and described.

6. A sounding-hook, *x*, for musical instruments, provided with a projecting lip, *y*, for

the purpose of attaching the hook to a metallic rail, as herein set forth.

7. The hook *x*, rail *z*, clamp 1, and screw 2, one of each for each sounding-hook, when constructed and arranged as and for the purpose set forth.

8. The metallic rail *z*, made with a perforated flange, 5 6 6 6, wholly or in parts, in the manner and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of September, 1873.

GEORGE WOODS.

Witnesses:

ALBAN ANDRÉN,

GEORGE E. PHELPS.