(No Model.)

L. KÜSTNER.

COMBINED HARMONIUM AND PIANO.

No. 308,415. Patented Nov. 25, 1884.

Fig. 1

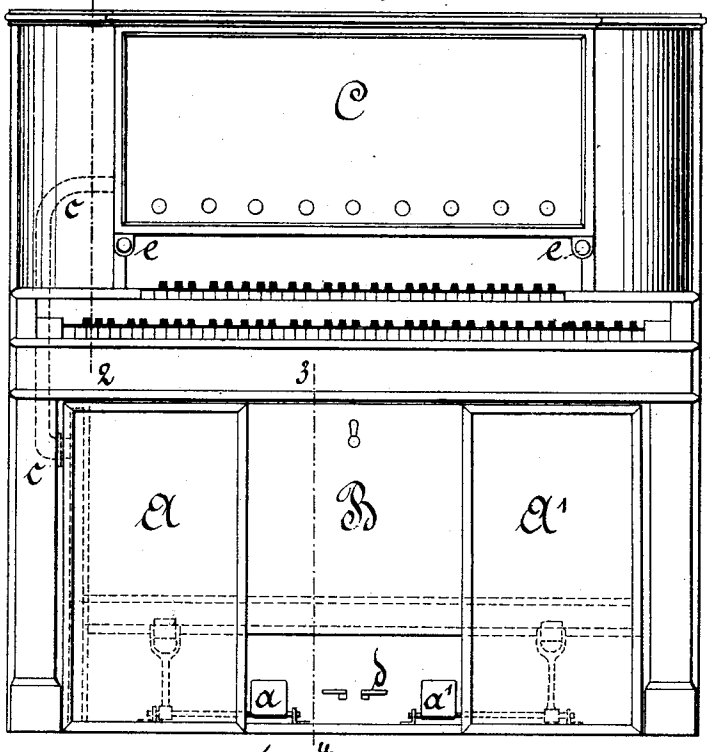


Fig. 2

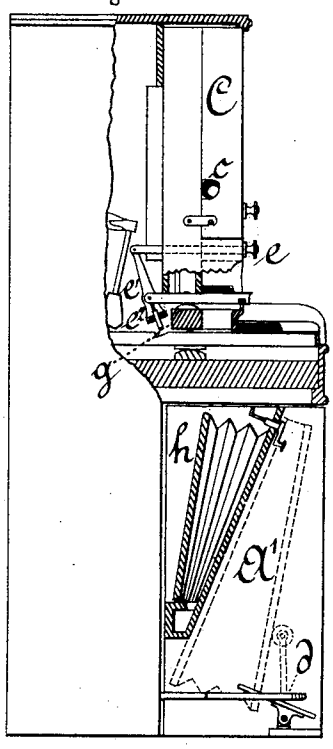


Fig. 3.

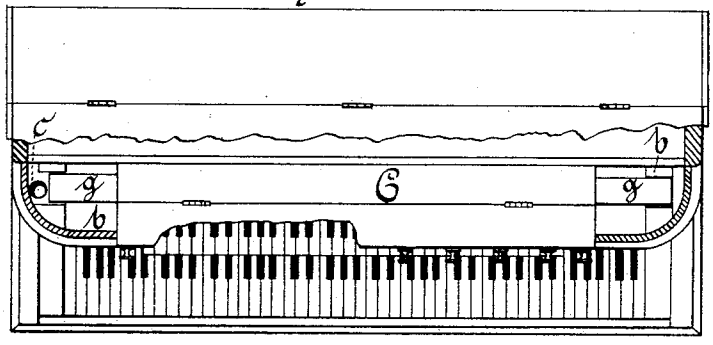


Fig. 7

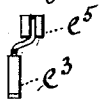


Fig. 8

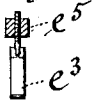


Fig. 4

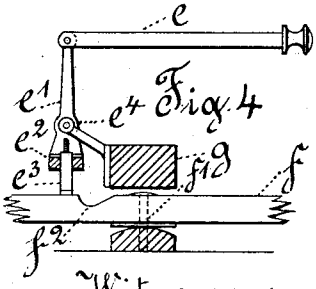


Fig. 5

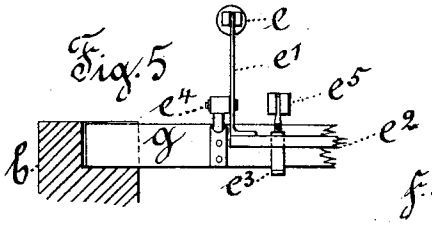
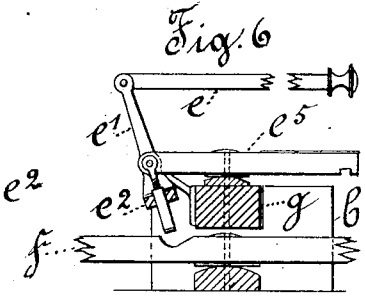


Fig. 6



Witnesses:
Wilhelm Koch
Charles R. Knox

Inventor:
Leonard Küstner
per Georg Ludwig
Attorney.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

LEONARD KÜSTNER, OF HAMBURG, GERMANY.

COMBINED HARMONIUM AND PIANO.

SPECIFICATION forming part of Letters Patent No. 308,415, dated November 25, 1884.

Application filed January 22, 1883. (No model.) Patented in Germany June 15, 1882, No. 20,837.

To all whom it may concern:

Be it known that I, LEONARD KÜSTNER, a resident of the city of Hamburg, in the Empire of Germany, have invented certain new and useful Improvements in Combined Harmoniums and Pianos, (for which I have obtained a patent in Germany, No. 20,837, bearing date June 15, 1882,) of which the following is a specification.

My invention relates to improvements in harmoniums which are so constructed that the same can be connected to any piano in such manner that the manuals or keyboards can be coupled to each other at will, or be employed separately, as shown in the accompanying drawings.

Figure 1 is a front view of the harmonium connected to a piano; Fig. 2, a vertical section through the same, on the lines 1 2 3 4; Fig. 3, a top view of the harmonium and piano as they appear after the removal of the piano-cover. Fig. 4 is a vertical section showing the piano-manual coupled to the harmonium-manual on the same plane and from the same end, as shown in Fig. 2. Fig. 5 represents a rear view of a part of the coupling mechanism and its connection with the rail *g*. Fig. 6 is a vertical section representing the coupling seen from the opposite end to that in Fig. 4, and showing the connection of the harmonium-key with the coupling, and showing, also, the coupling released. Figs. 7 and 8 are details.

Similar letters refer to similar parts throughout the several views.

The lower part of my said harmonium consists of the case or chest B with the laterally-projecting compartments A A′, in which two bellows are arranged, which said bellows are operated by means of the pedals *a a′*. Both bellows are in connection with the collecting or accumulator bellows or wind-chest *h*, which is arranged in the rear space of the said case B. This bellows or wind-chest *h* is expanded by the air fed to the same by the side bellows, *a a′*, and feeds the air so received through the tube or pipe *c* to the reeds arranged in the reed-chest C.

In order to be able to employ the forte-pedal of the piano in treading the harmonium-pedals, the same is provided with a projection, *d*, which can be operated by the heel of the player, whereas the pedal *a′* is operated by the front part of the foot. The manual or key-board of the harmonium is arranged above the manual or key-board of the piano and is coupled to the same in the following manner. The two stops *e* are connected to the levers *e′*, which carry the bar e^2 by means of their two arms located beneath their fulcrum e^1, which said bar extends from one side of the harmonium key-board to the other. This said bar e^2 is provided with perforations or holes in like number with the keys in the manual or key-board of the harmonium to receive suitable jacks or hoppers e^3, one of which runs through each perforation in the bar e^2. Each jack or hopper, e^3, is hinged to the rear arm of the harmonium key-lever e^5, Fig. 7, and connects the key of the harmonium manual or key-board to the corresponding key of the piano-forte key-board in such manner that as soon as a key of the piano-forte is pressed down the rear arm of the key-lever *f* to the rear of the fulcrum *f′* comes under the jack or hopper e^3 and raises the said hopper or jack e^3, and also the rear end of the corresponding lever, e^5, of the harmonium manual or key-board, so that the same effect is obtained as if the key to the harmonium-manual had been simultaneously depressed. If the harmonium-keys are to be uncoupled, the stop *e* (*id est*, either the right or left stop or both) is pressed back, so that the lever *e′* occupies the position shown in Figs. 2 and 7, and the jack or hopper e^3 is brought by means of the bar e^2 over the cavity recess or opening f^2 of the key-lever *f* of the piano-forte key-board.

In order to compensate for any difference in the distance of the two key-boards, the lower ends of the hoppers or jacks e^3 are connected to the upper ends by means of screws. These said screws can be either straight or cranked, Figs. 7 and 8, according to the position of the piano key-board levers in respect to those of the harmonium-manual located above the said piano-forte key-board. The case or chest B, with the compartments A A′, is simply pushed on the lower part of the piano, whereas the upper part of the harmonium rests with it, supporting rod or board *g* in two checks or guides, *b*, screwed to the sides of the frame-work of the piano.

Having now described my said invention

and the manner in which the same is to or may be carried into effect, what I claim as new and novel, and desire to secure by Letters Patent, is—

A combined harmonium and piano consisting of the piano, the reed-chest, bellows and reservoir arranged in the manner described, in combination with the two manuals, and the coupling device consisting of the stops e, levers e', rod e^2, and the jacks or hoppers e^3, substantially as described in the foregoing specification and shown in the accompanying drawings.

LEONARD KÜSTNER.

Witnesses:
WILHELM KOCH,
CHARLES R. HOYT.