

(No Model.)

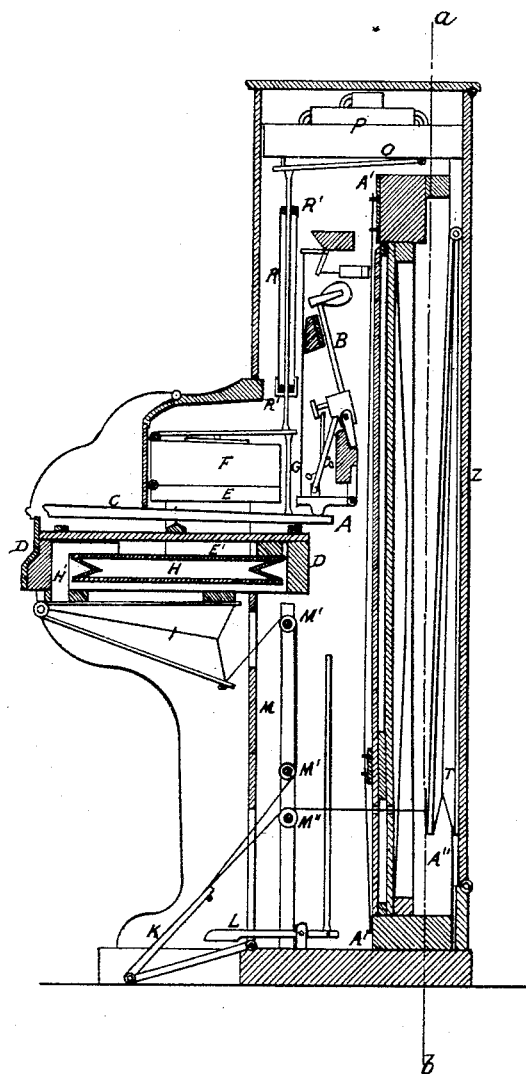
4 Sheets—Sheet 1.

C. F. CULLUM.  
COMBINED ORGAN AND PIANO.

No. 346,842.

Patented Aug. 3, 1886.

FIG. 1.



Witnesses.  
Alex Barkoff  
David S. Williams.

Inventor.  
Chas F. Cullum  
by his Attorneys:  
Howson & Sonp

(No Model.)

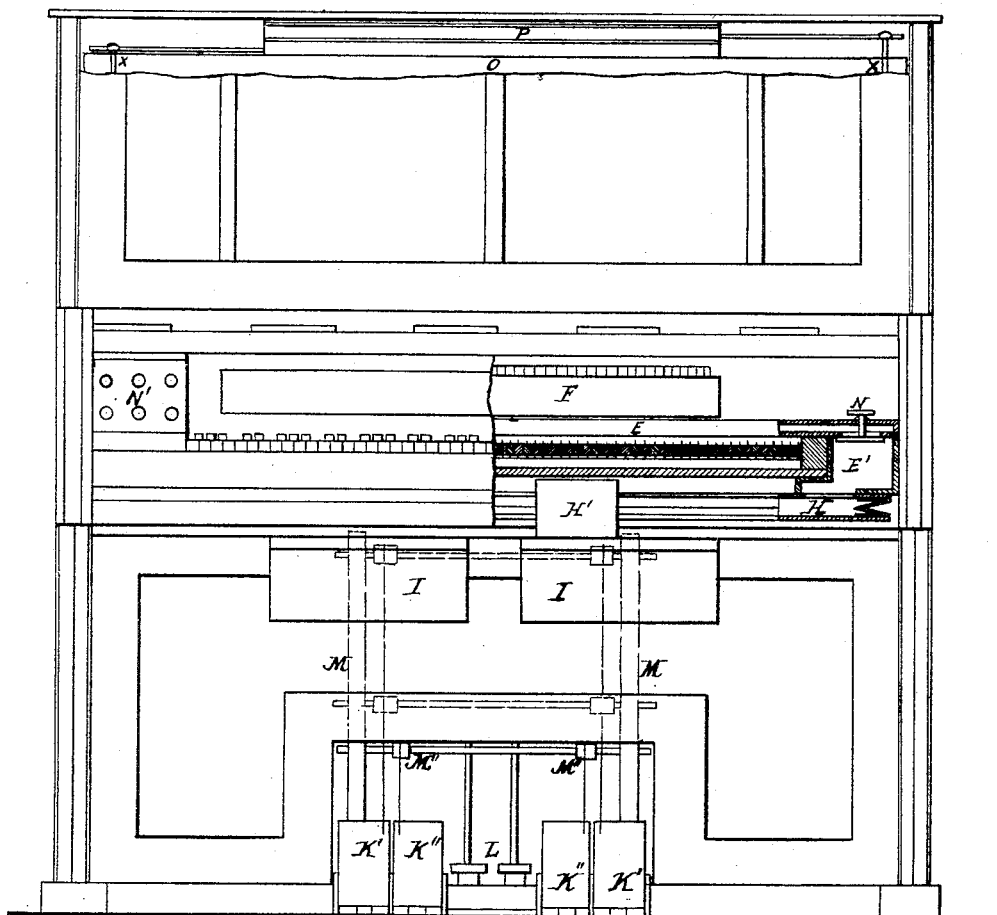
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C. F. CULLUM.  
COMBINED ORGAN AND PIANO.

No. 346,842.

Patented Aug. 3, 1886.

FIG. 2.



Witnesses.  
Alex. Barkoff  
David S. Williams.

Inventor.  
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Howson Sharp

(No Model.)

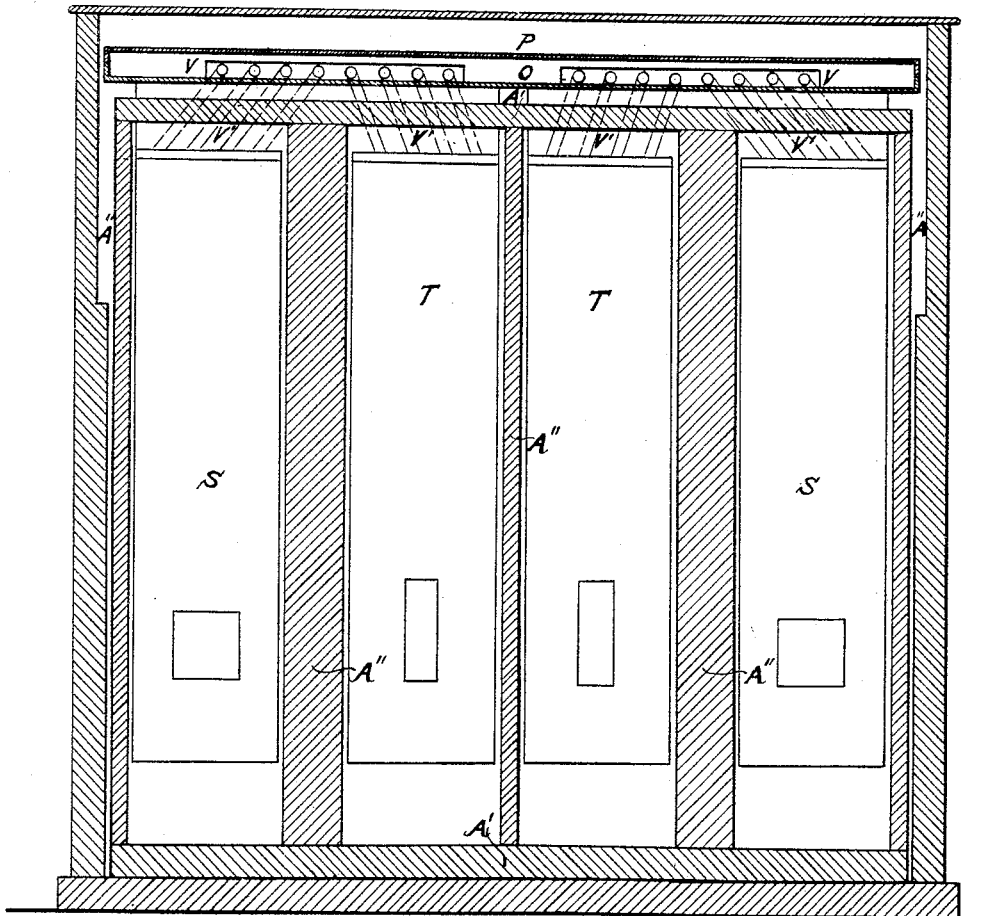
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C. F. CULLUM.  
COMBINED ORGAN AND PIANO.

No. 346,842.

Patented Aug. 3, 1886.

FIG. 3.



Witnesses.  
Alex. Barkoff.  
David S. Williams.

Inventor.  
Chas F. Cullum  
by his Attorneys  
Howson & Co

(No Model.)

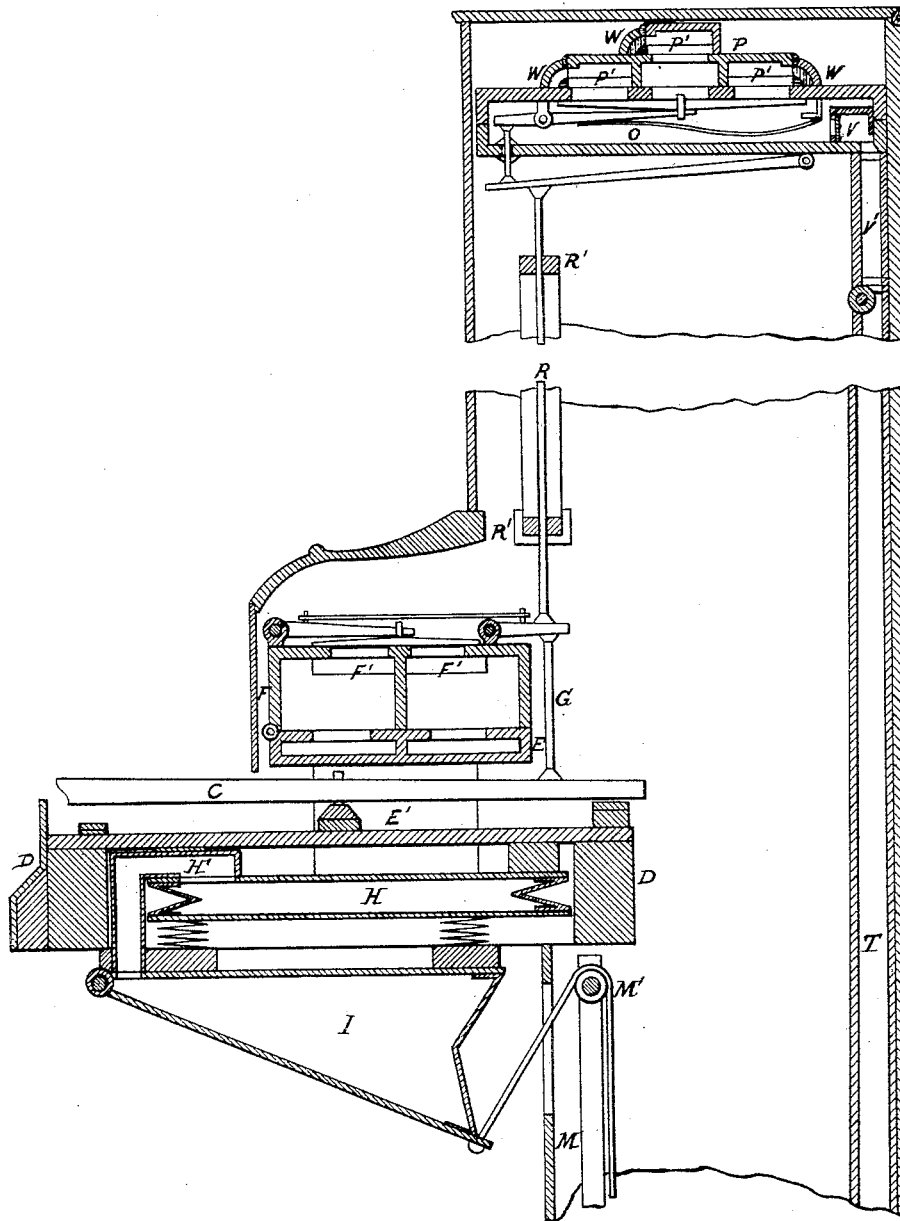
4 Sheets—Sheet 4.

G. F. CULLUM.  
COMBINED ORGAN AND PIANO.

No. 346,842.

Patented Aug. 3, 1886.

FIG. 4.



Witnesses:  
Alex. Barkoff  
David S. Williams.

Inventor:  
Chas F. Cullum  
by his Attorneys  
Howson & Sny

# UNITED STATES PATENT OFFICE.

CHARLES FREDERICK CULLUM, OF LONDON, ENGLAND.

## COMBINED ORGAN AND PIANO.

SPECIFICATION forming part of Letters Patent No. 346,842, dated August 3, 1886.

Application filed February 2, 1886. Serial No. 190,568. (No model.) Patented in England April 23, 1885, No. 5,043; in France December 5, 1885, No. 172,743, and in Canada April 30, 1886, No. 23,958.

*To all whom it may concern:*

Be it known that I, CHARLES FREDERICK CULLUM, a subject of the Queen of Great Britain and Ireland, and a resident of London, England, have invented an Improved Method of Combining a Piano-Forte with a Harmonium and with an American Organ, (for which I have obtained British Patent No. 5,043, dated April 23, 1885, French Patent No. 172,743, dated December 5, 1885; and Canadian Patent No. 23,958, dated April 30, 1886,) of which the following is a specification.

The object of my invention is to combine a piano-forte with a harmonium and with an American organ in such a manner that, as may be desired, either the piano-forte can be played alone, or either the harmonium or the American organ can be played with or without the piano-forte, or all three instruments can be played simultaneously, and I effect this object without increasing in any great degree the piano-forte casing that contains the other one instrument, or the other two instruments, in addition to its own proper mechanism and apparatus, while at the same time all the various and several parts of these instruments are very accessible and can easily and quickly be exposed for tuning or fitting or other purposes.

In the drawings I have shown a harmonium and an American organ combined with an ordinary upright piano-forte.

Figure 1 is a side elevation, partly in section, of this combined instrument. Fig. 2 is a front elevation of the same, also partly in section. Fig. 3 is a view of the back of the same, taken at *a b* in Fig. 1. Fig. 4 is a transverse vertical section of part of the same, showing an elevation of one note of the harmonium and of the American organ on an enlarged scale.

A is the ordinary upright piano-forte, the action B whereof may be of any usual or convenient type or kind.

To combine a harmonium with this piano-forte I proceed as follows: Immediately above the keys C of the piano-forte A, which are mounted, as usual, on the key-frame D, is the usual harmonium valve-board, E, which ex-

tends entirely across the piano-forte A, and is supported from the key-frame D or by the cheeks of the casing or otherwise, and on the valve-board E is centrally placed the usual reed-pan, F, containing the usual series of reeds, F', and the pallet of each reed or of each set of corresponding reeds is actuated by a wire or rod, G, connected with the corresponding key, C, through any usual apparatus, that shown being very convenient. The reservoir H is placed immediately below and works inside of the key-frame D, and the feeders I are placed closely below the reservoir H, being supported from the key-frame D or by the casing or otherwise. The pedals K are placed near the bottom of the piano-forte casing on each side of the piano-forte pedals L, and a frame, M, is arranged preferably behind the front panel of the casing over the rollers M', on which the usual cords pass by means of which the feeders I are actuated by the pedals K. The air from the feeders I passes through the trunks H' into the reservoir H, and thence through the passages E' at each extremity of the key-frame D, near the cheeks of the piano-forte casing, into the valve-board E, and thence again in the usual manner into the reed-pan F, and the passages F' are or may be governed by valves N, which may be actuated by the usual draw-stops, N', or otherwise. Thus all the parts of this harmonium are very accessible, and when the name-board of the piano-forte, if any, is removed the reed-pan can easily be turned forward on its hinges to expose the reeds for tuning or otherwise, and the harmonium adds very little, if at all, to the usual size of the piano-forte casing, as is desired.

To combine an American organ with this piano-forte or with the aforesaid combined instrument, I proceed as follows: Immediately above the back A' of the piano-forte is the usual bellows-board, O, secured on the back Z of the piano-forte casing, and on the bellows-board O is placed the usual cavity-board, P, fitted centrally with the usual series of reeds, P', and the pallet of each reed or of each set of corresponding reeds is actuated by a wire or rod, R, passing down in front of the piano-

forte action B, and connected with the corresponding key, C, or with the corresponding lever or rod G of the harmonium, through any usual apparatus, that shown being very convenient. The whole series of rods R are preferably mounted in a frame, R', so that they can easily be removed when required, for which purpose also these rods R, as also the rods G aforesaid, are preferably not secured to, but are only in contact with, the corresponding parts of the apparatus with which they work, as shown in the drawings. The usual reservoirs, S, and exhaust-bellows T, are secured on the back Z of the casing, and are so formed and situated as to work in and between the bracings A" of the back of the piano-forte. Each of the pedals K is preferably divided vertically into two parts, and one part, K', thereof actuates the feeder I, as aforesaid, and the other part, K'', actuates the exhaust-bellows T by means of a cord, which passes over the roller M" on the frame M, and then through the sounding-board of the piano-forte, as shown in Fig. 1. Suitable passages are made between the bellows-board O, the reservoirs S, and the exhaust-bellows T, which passages are governed by any required valves, and these passages may lead direct from the reservoirs S to the exhaust-bellows T, across and behind the bracings A"; but this might necessitate the widening of the piano-forte casing, and when it is not desirable so to do I may proceed as follows, and as is shown in the drawings: Suitable valve-boxes, V, are formed inside the bellows-board O, from which the passages V' communicate separately with the reservoirs S, and the exhaust-bellows T and the apertures in the boxes V, that open into the bellows-board O, are fitted with the required valves. The mutes W, if any, are connected by the rods X with the draw-stops N', or may otherwise be actuated. Thus all the parts of this American organ are very accessible, and the top of the piano-forte casing can be opened and the mutes, if any, be turned back to allow the reeds to be drawn out for tuning or otherwise, and the back of the piano-forte casing that carries this organ can easily be turned backward on its hinges, when desired, and the American organ also adds very little to the usual size of the piano-forte casing, as is desired. The whole series of rods R, when mounted in a frame, R', as aforesaid, can also easily be removed, and the piano-forte wires can then be tuned when the shank of the tuning-hammer is a little longer than is usual, or when the back Z with the American organ is turned backward on its hinges an ordinary tuning-hammer can be used. The pedals K are preferably so fitted that they can be folded up against the front panel of the piano-forte casing, or may form part of the same when so folded up, as is shown in Figs. 1 and 2 of the drawings. Thus either or both of the supplementary instruments can be played at the same time as

the piano-forte by placing the feet on one or both of the divided pedals on each side and working them in the usual manner and by drawing out the required stops or otherwise actuating the desired valves or mutes, if any, and any usual apparatus can also be fitted to prevent the piano-forte hammers from striking the wires or from producing sounds thereby, so that only the harmonium or the American organ, or both, may be heard.

I have thus described and have shown in the drawings what I consider a very suitable method of performing this my invention and very convenient details of construction and arrangement of the several parts thereof; but I do not limit myself thereto, for the same may be varied as may be expedient or desirable in each particular case. For instance, I can mount one or more supplementary row or rows of keys above or below the keys of the piano-forte in the usual manner and play the harmonium and the American organ thereby, and the corresponding or other keys in each key-board may be coupled in any convenient manner. The valves and mutes can also be dispensed with when there is only one row of reeds in the harmonium and in the American organ. The pedals can also be dispensed with, and the feeders and the exhaust-bellows can be actuated by any outside lever or levers in the usual manner. The harmonium and the American organ-reeds can also be caused to sound by any suitable mechanism, and the reed-pan and cavity-board, the valve-board and bellows-board, the valves, mutes, reservoirs, and feeders and bellows thereof, and the connecting-passages, parts, and appliances of the same can be made and formed as may be desirable in each particular case.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of a piano-forte, the reservoirs and feeders of a harmonium below the keys and the valve-board and reed-pan above the keys, with the reservoirs and bellows of an organ in the back of the piano behind the sounding-board, and the bellows-board, cavity-boards, and reeds of the organ in the top of the piano, all substantially as described.

2. The combination of the harmonium having feeders and reeds with the organ having bellows and operating-pedals K' K'' for the bellows, and feeders arranged side by side for joint or separate manipulation by the player, substantially as set forth.

3. The combination of a piano-forte and the harmonium-reservoir H within the key-frame D, feeders I, supported horizontally immediately below the key-frame, pedals K', and connecting-cords with the valve-board E, and reed-pan F, having reeds F', immediately above the keys of the piano-forte, the connecting-passages, trunks E' and H', and rods G, to operate the pallets of the reeds, as set forth.

4. The combination of a piano-forte and organ-exhaust bellows T and reservoirs S, ar-

ranged vertically inside the back Z between  
the bracings A", the operative pedals K", and  
cords, with the bellows-board O, and cavity-  
board P, having reeds P', arranged horizon-  
5 tally within the top of the piano-forte, and  
rods R, to operate the pallets of the reeds, as  
set forth.

In testimony whereof I have signed my name  
to this specification in the presence of two sub-  
scribing witnesses.

CHARLES FREDERICK CULLUM.

Witnesses:

JAMES HART,  
EDMUND STANHOPE SNEWIN.