

J. CARHART.
MELODEON.

No. 15,218.

Patented July 1, 1856.

Fig. 1

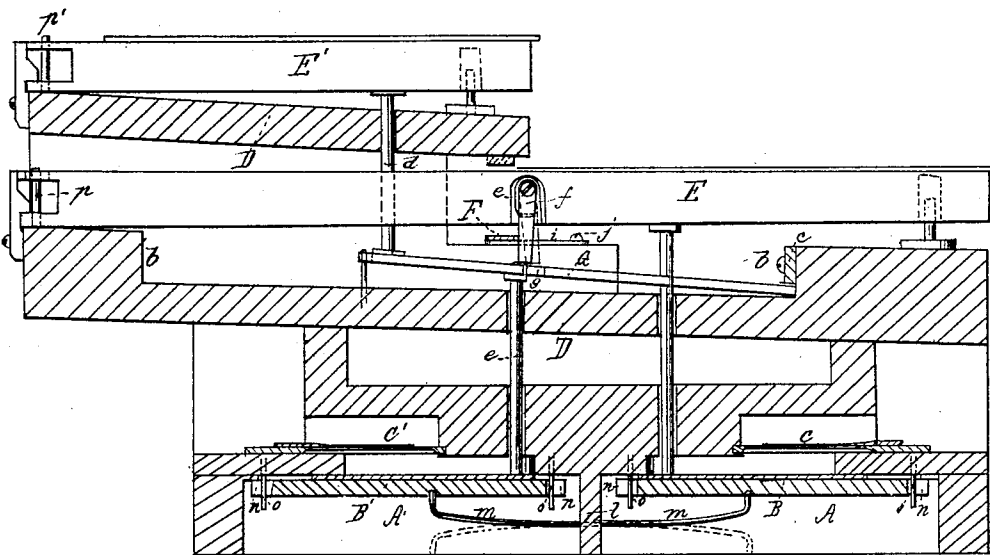
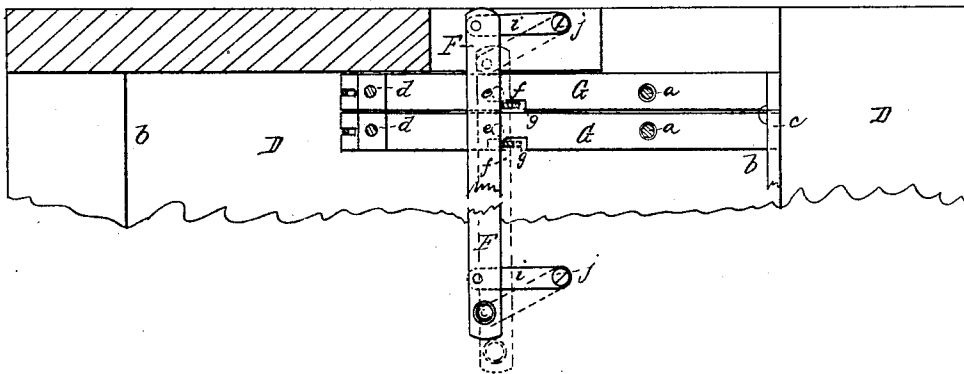


Fig. 2



UNITED STATES PATENT OFFICE.

JEREMIAH CARHART, OF NEW YORK, N. Y.

MELODEON.

Specification of Letters Patent No. 15,218, dated July 1, 1856.

To all whom it may concern:

Be it known that I, JEREMIAH CARHART, of the city, county, and State of New York, have invented a new and useful Improvement in Melodeons; and I 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 vertical sectional view of the upper part of the wind receiver and key boards of a melodeon, exhibiting my invention. Fig. 2 is a horizontal sectional view taken just below the lower keys.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to melodeons in which two single or double sets of reeds are employed with two sets of valves having mechanism in connection with them and two banks of keys which admit of one or both sets of reeds being played or both sets with one hand and one with the other, and my improvement consists in a novel construction of coupler and arrangement of it in a cavity in the side of the key for action or not as required with the intermediate lever which operates the one set of reeds, as will be hereinafter explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, A¹, are two separate chambers in the wind chest or receiver, arranged one behind the other.

B, is a set of valves in the top of the front chamber A, communicating with a set of reeds C, and B¹ is another set of valves in the rear chamber A¹, communicating with another set of reeds C¹. The two sets of valves are both on the same level and so are the two sets of reeds. D, is a key board supporting the lower bank of keys E, which work on pins *p*, and D¹, is a key board above the keys E, supporting the upper bank of keys E¹, which work on pins *p*¹. The lower keys E are long and the upper ones E¹, are short. The lower keys E operate upon the front set of valves B, by means of push down pins *a*, in a manner substantially like the operation of the keys of a melodeon with a single set of valves. The upper keys E¹ operate on the rear set of valves through the agency of intermediate levers G, which are placed below the lower keys in a recess *b*,

made in the lower key board D. These intermediate levers G, have their fulcra at their front extremities under a strip of wood *c* which is secured to the front of the recess *b*, and are acted upon by the keys E¹, through push down pins *d*, near their rear extremities, transmitting the action of the keys to the rear set of valves B¹, through push down pins *e*. The pins *d*, have to pass through holes in the lower keys, and the push down pins *a* have to pass through holes in the levers G. Each of the lower keys E, is furnished with a coupler *f*, consisting of a small piece of wood suspended on a pivot within a recess on one side by which it is capable, when depressed in playing, of depressing the corresponding lever G, and thereby opening the rear valve B¹, corresponding with its own valve B, thus allowing both sets of valves to be operated by the set of keys E, but notches *g*, are made in the levers G, for the couplers to fall into as the keys E, are depressed, when it is desired to use the two sets of keys independently. The couplers are caused to fall into the notches when desired, by means of an uncoupling bar, which consists of a light metal rod F, extending the whole length of the instrument in rear of the couplers, and attached at its ends to two arms *i*, *i*¹, see Fig. 2, working on fixed pivots *j*, *j*¹; the said bar, when drawn longitudinally in one direction moving forward from the position shown in bold outline to that shown in dotted outline and throwing all the couplers at once over the notches so that when the upper keys are depressed, the levers G will not be acted upon. When the uncoupling bar is moved back again, the couplers are thrown back from over the notches *g*, by means of small springs *h*, with which they are severally furnished, and the front keys then operate on both sets of valves.

The above arrangement of keys, couplers and notched intermediate levers, when the couplers are thrown out of operation, admits of either set of reeds being played with both hands operating on one set of keys or one set with one hand and one with the other; or, when the couplers are in operation, it allows the two sets of reeds to be played, with both hands operating on the front set of keys or the two sets with one hand and the back set only with the other hand. These results are obtained without materially increasing the depth of the case

or the size of the instrument in any direction.

In arranging the two sets of valves as described, in the two wind chambers A, A', it has been a matter of some difficulty to apply the springs in such a manner as to be free from some objection partly owing to the thinness of the partition, *l*, between the chambers, which precludes the possibility of attaching separate springs of the ordinary kind in the usual way. This difficulty I remedy by making a double spring *m* of a single piece of wire to serve for two corresponding valves of each set. This spring is in the form of a bow and is fitted to pass easily through a small hole made through the partition *l*, and after being passed through the hole its ends are turned up to enter small holes in the bottoms of the valves. The spring thus applied, serves to close each valve when opened separately or both when opened together. It works without any dragging motion or friction on the valves, as its points move parallel with the points of the valves on which they press. It also admits of the ready removal of either or both valves for repair which can be effected by simply springing down its points from their holes in the valves and turning the spring halfway round in the hole in the partition *l* to throw its points downward as shown in dotted outline in Fig. 2. This leaves room to take out the valves and leaves them entirely detached and ready to fall out or be removed, as they are made without hinges and only held in place by the spring which, when in action, not only holds the valves up to their places, but prevents them moving longitudinally, all else that is necessary to keep the valve in place being notches *n, n*, in their ends to receive fixed pins *o, o*, which prevent any lateral movement. A spring of this kind is applicable in all melo-

deons where two sets of valves are arranged in line with each other, to open at their adjacent ends like the valves B, B'.

The drawing shows two single sets of reeds but two double sets may be used without any material change in the arrangement of any part of the mechanism.

Now it will be observed that the arrangement and action of the coupler (*f*) as here described is both simpler and superior to other arrangements of the coupler for action on or not as required the intermediate lever to produce somewhat similar results, inasmuch as not only is the general action of the coupler *f* simpler, its gear with and disconnection from the lever *g* more rapid and direct in relation to the reed it influences, but space is materially economized and, while admitting of a good and sufficient length of coupler *f* being used, it enables the upper bank of keys to be placed as little above the lower ones as possible (which is a material consideration when the one hand is used to perform on both banks) by reason of the arrangement of the coupler *f* in a cavity in the side of the key which cavity also serves for the spring *k* that throws back the coupler.

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

1. The coupler *f* arranged in a cavity of the key and operating essentially as and for the purposes described.

2. The double springs *m*, constructed and applied substantially as herein described to act, each on a valve of each set, so that by turning it, the two valves may be liberated and capable of removal.

J. CARHART.

Witnesses:

WM. TUSCH,
JAMES F. BUCKLEY.