Sheet 1-2 Sheets.

R. H Green,

Reed Organ,

No. 7,113, Patented Feb. 19, 1850.

Fig. 2.

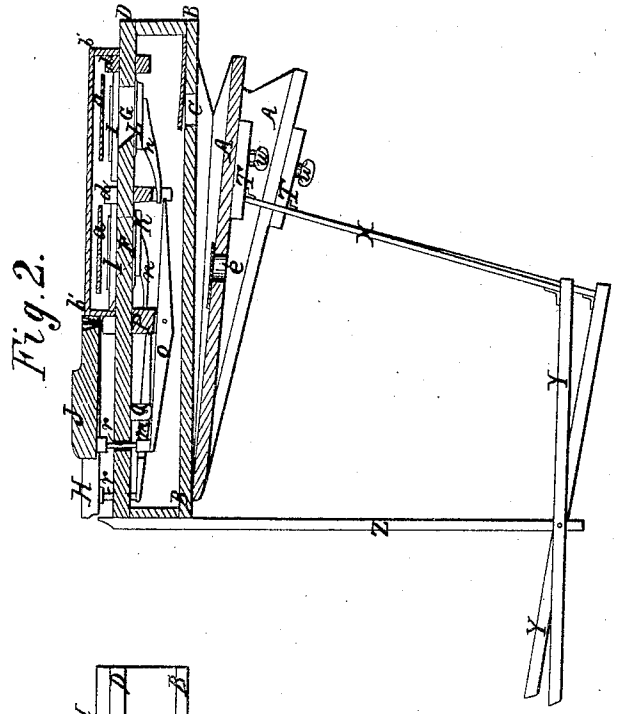
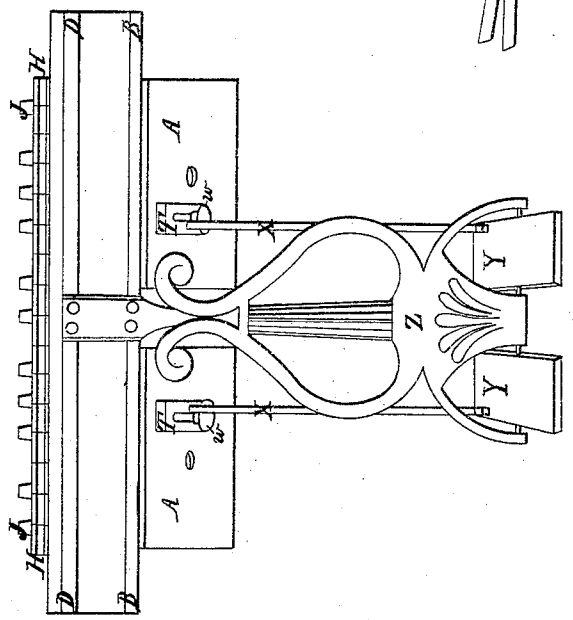


Fig. 1.



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Sheet 2-2 Sheets.

R. H. Green,

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Fig. 3.

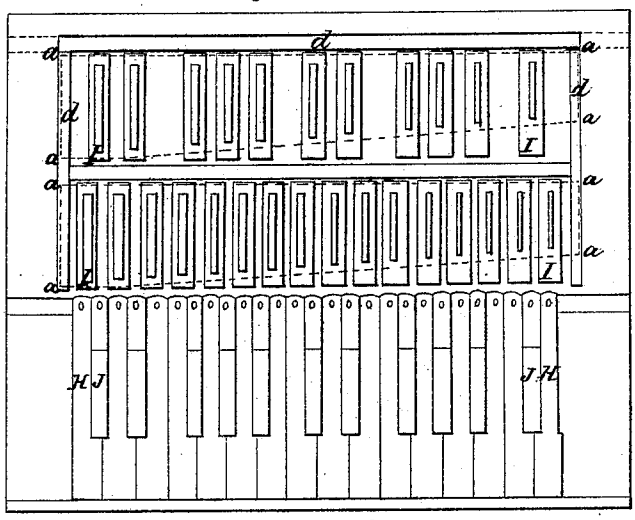


Fig. 4.

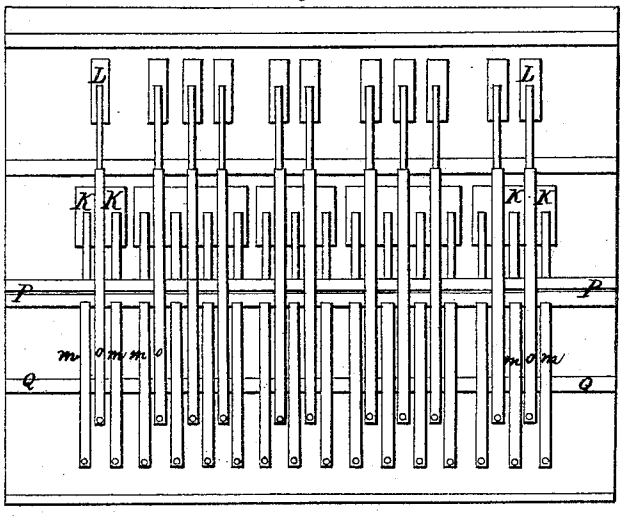
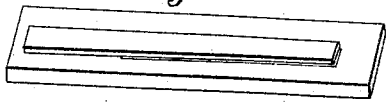


Fig. 5.



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UNITED STATES PATENT OFFICE.

RUFUS H. GREEN, OF POULTNEY, VERMONT.

SERAPHINE.

Specification of Letters Patent No. 7,113, dated February 19, 1850.

To all whom it may concern:

Be it known that I, RUFUS H. GREEN, of Poultney, in the county of Rutland and State of Vermont, have invented a new and useful Improvement in the Musical Instrument Usually Denominated the Seraphine; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a front view of the machinery without the frame or casing. Fig. 2 is a transverse section, presenting a side view of the blowers, keys, valves and levers. Fig. 3 is a vertical view of the key-board, with its keys, beams and reeds. Fig. 4 is a view of the under side of the key-board, with the reed-valves and levers, and Fig. 5 represents one of the reeds.

The nature of this improvement consists in a new and improved construction of sounding reeds; and an improved mode of applying power, and of regulating the application of power to the blowers.

This instrument, which I denominate an æolian organ, resembles in its general construction the seraphine, being furnished with keys arranged like those of an organ, and the tones being produced by the vibration of elastic reeds. The vibration of the reeds is produced by wind from two blowers (or bellows) A A; the wind being forced directly upon the reeds, from the blowers, without any intervening reservoir; and neither the sound nor the blast are continued any longer than force is applied to one or both of the blowers. The two blowers are equal and arranged side by side, being connected to the under side of a horizontal board B, through which are two or more apertures *c* (one or more to each blower) over which are adjusted simple flap-valves of leather. The bottom of each blower is also furnished with similar valves and apertures (*e*) for the induction of air. Above and parallel to this board is the key-board D D, through which are two rows of apertures (F, G, Fig. 2,) over which are adjusted two rows of reed-plates and reeds, (I I I Figs. 2 and 3). These reed-plates are arranged to correspond, longitudinally with the two sets of keys, H (white, regular) and J, (black, chromatic). To the bottom of each reed-aperture, is adjusted a clapper valve, K L which are pressed upward by wire springs. To the under side of each valve, is attached an arm *n* which projects two or three inches frontward, inclining slightly from the key-board; so that when the arm is elevated, the valve is depressed and the wind is admitted to the reed; the front end of the valve serving as a fulcrum. The valves are faced with strips of soft leather, the front ends of which are attached to the board by glue. Under each key, and in front of its respective valve, is an action lever *m*, *o*, the front end of which communicates with its respective key, by a vertical pin *r*, and the rear end thereof extends under the front end of the valve-arm. These levers have their fulcrums in the beam, P and Q, so that when the keys are depressed, the valves are opened.

The sounding reeds and the plates thereof are constructed of wood, in the form represented in Fig. 5. Each reed-plate consists of a piece of cedar or other wood, from one inch to three inches in length, three fourths of an inch wide and one fourth of an inch thick, and has a narrow longitudinal aperture through its center. The sounding reed consists of a strip of reed-cane or other elastic wood reduced to a thin plate, and to a width a little less than that of the aperture, but exceeding that in length by a fourth of an inch. This thin plate is saturated with beeswax by being boiled therein; (oil or resinous matter will answer for this purpose, but are not so good;) and afterward is placed upon the reed-plate, over the aperture, in such a position that one end of the reed may be depressed into the aperture, without friction or contact; the other end is attached with glue to the face of the plate, as represented in Fig. 5. A reed thus constructed will produce a tone an octave higher, and much more soft and melodious than a metallic reed of equal size, and more readily on the application of wind. These reed-plates are placed over the valve apertures of the key-board, (as shown in Fig. 3) and attached thereto by any convenient method.

To the bottom of each blower is attached an adjustable block T, through which is an oblong aperture or slot to accommodate a set-screw *w*, by which it is secured, and allow the block to be moved forward or back, and secured in such position as will best accommodate the performer. To these blocks are connected by hinges or strips of leather, the upper ends of two lifting rods X, the

bottoms of which are connected to the rear ends of two pedals Y, which are mounted centrally upon a fulcrum pivot supported by a vertical hanger Z, the top of which is attached to the front of the blower-board B. Each pedal projects about nine inches in front of the hanger and fulcrum-pivot.

Immediately over the two sets of reeds are placed and adjusted two thin sounding boards *a a* Fig. 2, of form and relative extent represented by dotted lines *a a a a* Fig. 3. The elevation of the sounding boards above the key-board, is about one inch at the left or bass end, and half an inch at the right; these boards being both lower and narrower at the right, to strengthen more effectually the tones of the small reeds. Over these sounding boards, and at an elevation of an inch and half above the key-board, is adjusted another thin horizontal board (*b′ b′* Fig. 2,) which is perforated with several round apertures half an inch in diameter. This board is denominated the piano board, and its use is to smother or soften the tones more or less according to the number of apertures therein. This board is furnished, at its borders, with flanges on its under side, and of such extent as to shut closely outside of the ledges (*d d d*, Fig. 3) which support the sounding boards.

I do not claim the use of wooden sounding reeds, abstractly; nor the adjustable blocks, nor the combination of duplicate blowers with a keyed reed instrument; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The combination of wooden sounding reeds with wooden reed-plates, constructed in the manner herein described.

2. The combination of the adjustable blocks T, with the duplicate blowers A and the lifting rods X arranged as herein described, and

3. The combination of the two sounding boards *a a* and the piano board *b′ b′* with the sounding reeds and keys, arranged in the manner and for the purpose herein set forth.

RUFUS H. GREEN.

Witnesses:

SOLOMON CHAPIN,

RUFUS PORTER.