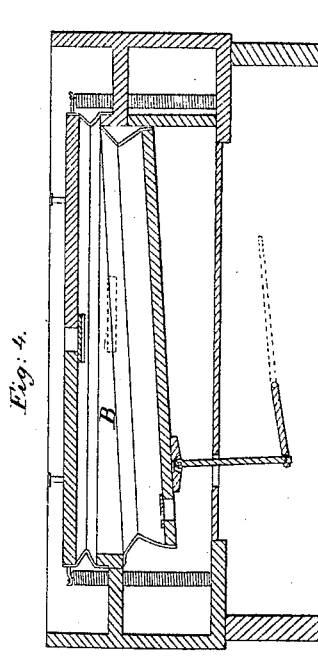
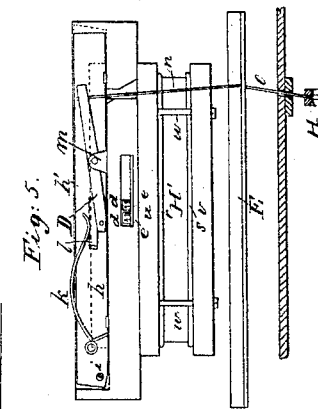
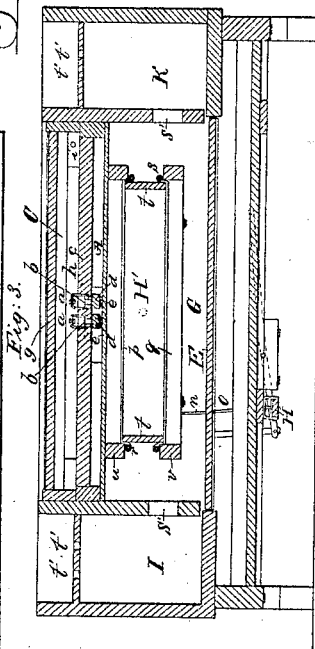
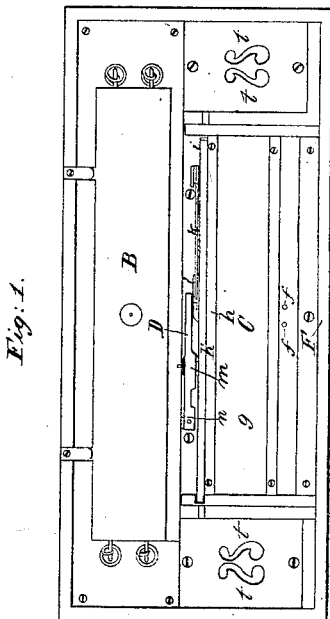
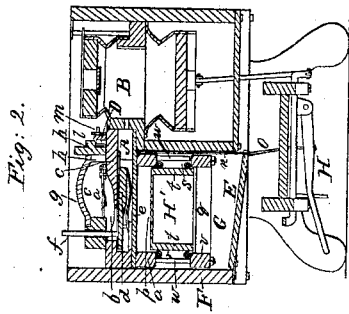


*L. Tracy,*  
*Reed Organ,*

*Nº 5,657,*

*Patented July 5, 1848.*



# UNITED STATES PATENT OFFICE.

LUTHER TRACY, OF CONCORD, NEW HAMPSHIRE.

SERAPHINE.

Specification of Letters Patent No. 5,657, dated July 5, 1848.

*To all whom it may concern:*

Be it known that I, LUTHER TRACY, of Concord, in the county of Merrimack and State of New Hampshire, have invented certain new and useful improvements in seraphines, which are applicable either in part or in whole to various other musical instruments; and I do hereby declare that the same are fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of said drawings Figure 1 denotes a top view of my improved musical instrument, the cover or top board being removed in order to more clearly represent the internal parts and their arrangement. Fig. 2 is a transverse section of the same. Fig. 3 is a longitudinal section taken through the reeds, air chamber, and drum beneath them. Fig. 4 is a longitudinal section taken through the bellows. Fig. 5 is a rear elevation of the swell board and mechanism by which it is operated.

In such of the said figures as it is seen A represents the wind chamber, or that which receives the wind directly from the bellows, and contains the valves which cover the openings leading to the reeds. The said bellows is seen at B. It is made to communicate with the wind chamber in the usual manner.

*a*, Fig. 2, denotes one of the reeds, which is placed in or on the bottom of a small chamber C (arranged directly over the wind chamber) and has a passage *b* leading to it and made through the bottom board *c* of the said chamber C. The said passage has a closing valve *d*, which it pressed down upon it by a spring *e*, and is opened by a pin or rod *f*, said rod or pin being properly sustained so as to be movable up and down. One of the key levers is made to rest upon the upper end of said pin *f*. When pressed down by the finger of the player, the valve will be depressed in such manner as to allow the air forced into the wind chest or chamber A to rush against the reed and vibrate the same. Each reed of the instrument is similarly arranged and operated. The swell chamber over the reeds may or may not have an arched or curved top, as seen in section at *g* in Fig. 3. Instead of hanging said top upon a hinge, and raising it in the usual manner, in order to produce the swell, I form or make a long horizontal passage or

opening *h*, through the rear side of said chamber; that is to say, that side thereof which is farthest from or opposite to the player. The said opening I provide with a long door valve or swell board *h'*, which I make turn vertically at one end upon a pin or screw *i*, as seen in Fig. 5. Said swell board is pressed downward upon its seat or bottom board of the swell chamber by a spring *k*, one end of which is inserted in or confined to the said bottom board, while the other is made to rest upon a small shelf *l*, projecting from the side of the swell board. The said swell board is elevated by a lever D which turns upon a fulcrum *m*. One end of said lever or a projection therefrom extends underneath the shelf *l*. The other end of said lever has one end of a cord *n* attached to it, the other end of said cord being fastened to the rear part or edge of a board E, Fig. 2, hinged at its front edge to the frame F of the instrument, and so as to constitute the bottom of a chamber G, disposed underneath the wind chest. The said hinged bottom board E, is drawn downward when necessary by means of a pedal lever H, which is placed within reach of the foot of the performer, and is connected to the said board E, by means of a cord *o*.

From the above it will readily be seen that when the performer presses his foot upon the pedal lever, he will not only depress the board E, so as to open the chamber G to the external atmosphere, but he will at the same time elevate the swell board and open the swell chamber to the atmosphere.

Within the chamber G, and beneath the bottom board of the wind chest, I place and affix a long drum H, made substantially like a common military drum except in shape, which may vary as circumstances may require. The two skin heads of said drum are seen at *p* and *q*. The respective edges of each are wound around or attached to a metallic frame *r* or *s*, which shuts over or incloses the body part of the drum, and rests in contact with one of two straining frames *u v*, which are drawn together by any suitable number of straining screws and nuts *w w*, the whole being arranged and applied together substantially as seen in the drawings.

When the instrument is played on the sounds of the reeds will produce a vibration or vibrations of the drum heads, such a one as will effect a most important mellowing or

improvement of the tone or tones of the reeds. I make the bellows of great power or capable of throwing a much greater quantity of air through the reed openings than it is common to force through them. I thus raise the sounds of the reeds to a greater degree than is customary in most other instruments of the kind. The drum melloes and improves the sounds when so elevated. For the purpose of allowing the vibrations of the air within the drum chamber G, to extend in some degree to the atmosphere of the room, I generally make one or more small holes or openings *s'* through each end of the drum chamber and into lateral or side chambers I K, which have openings *t, t*, made through their tops. By drawing down the bottom board of the chamber G, a greater atmospheric communication is produced, one by which the effect of the drum heads will be modified according to the extent of the opening.

The making the swell board of the swell chamber to open at the rear thereof, instead of at the front thereof, as is the customary way, prevents the air and sound escaping from the said chamber from issuing directly into the face of the performer. By thus causing the sound to pass out of the back part of the swell chamber, it strikes upon the

ear of the player in the modified manner in which it affects the ears of his hearers, whereas if his ear is brought close to the opening of the swell chamber, the sounds reach it directly and with a harsher effect than they do when returned by reflection or from a greater distance. By my improvement he is thus enabled to more properly adapt his music to his own ear and those of his audience than he would if the sounds were permitted to pass out of the front side of the swell chamber.

I claim therefore as of my invention—

1. The combination of the drum and reeds, or their equivalents to operate together, substantially, in manner, as above set forth.

2. I also claim the combination of the drum chamber, and hinged or valve bottom thereof, with the drum and reed instrument or seraphine, and so as to operate therewith substantially in manner and for the purpose as specified.

In testimony whereof I have hereto set my signature this tenth day of November, A. D. 1847.

LUTHER TRACY.

Witnesses:

L. D. STEVENS,  
ARTHUR FLETCHER.