(No Model.) 2 Sheets—Sheet 1.

# E. G. DURNER.

## MUSICAL INSTRUMENT.

No. 457,707. Patented Aug. 11, 1891.

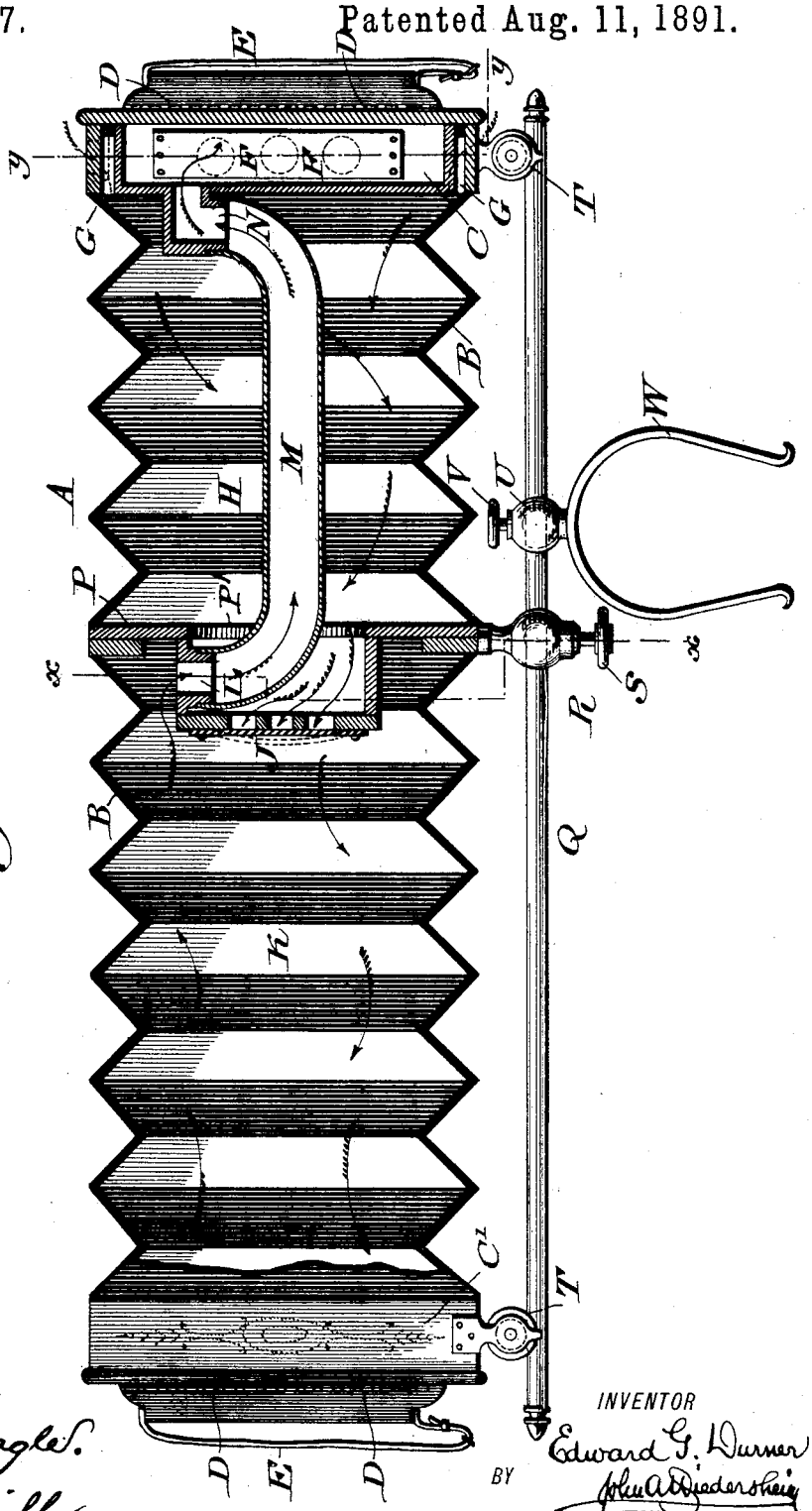


Fig. 1.

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(No Model.) E. G. DURNER. 2 Sheets—Sheet 2.

MUSICAL INSTRUMENT.

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Fig. 3.

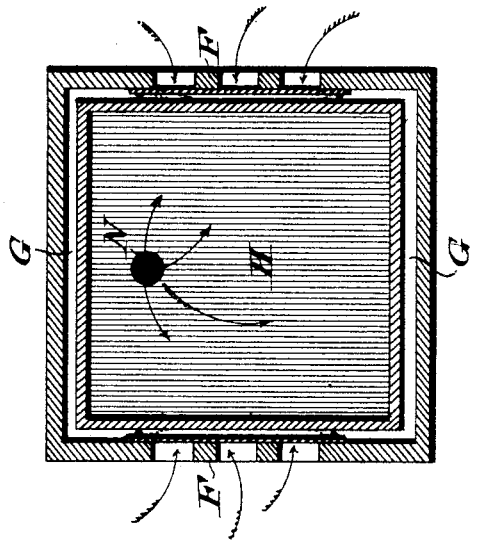
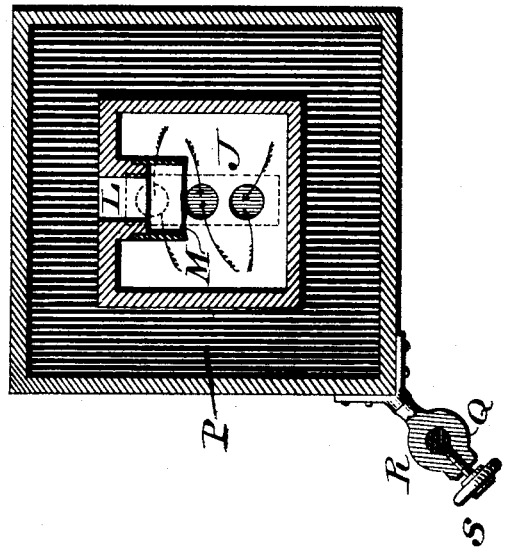



Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 457,707, dated August 11, 1891.

Application filed January 7, 1891. Serial No. 376,937. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD G. DURNER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Musical Instruments, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a musical instrument of the order of an accordion, concertina, organ, &c., having means for providing the bellows with a continuous pressure of wind, whereby notes may be greatly prolonged and the instrument played most effectively.

It also consists of novel means for supporting the instrument on the knee.

Figure 1 represents a partial side elevation and partial longitudinal section of a musical instrument embodying my invention. Fig. 2 represents a section on line *x x*, Fig. 1. Fig. 3 represents a section on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a musical instrument generally known as a "concertina," the same consisting of the bellows B, the end boxes C C′, containing the action, the keys D, and handles E, which parts, excepting the features of my invention applied to operate in connection therewith, are of usual construction. The box C is provided with air-inlet valves F, which are in communication with passages G between the walls of said box, the same communicating with the feeding portion H of the bellows B, but not being directly in communication with the box itself.

J designates a valve-chest, which is located within the air-reservoir K of the bellows and secured to the frame thereof, the valves of said chest, when opened, (in the present case to the left,) forming communication between the two parts of the bellows. In the side of the chest J is an air-inlet L, with which is connected the flexible tube M, the same extending from said inlet to an outlet N, which is secured to the inner side of the box C and opens thereinto, it being noticed that the tube M after leaving the inlet L passes through an opening P′ in a diaphragm P, which is located at the junction of the two parts of the bellows and is secured to a frame thereat, it being noticed that the solid portion of the diaphragm around the opening closes the communication between the two parts H.

The operation is as follows: The bellows is worked as usual in musical instruments of the class, and the air is drawn through the valves F into the passages G and fills the feeding portion H of the bellows, from whence it passes through the valves J into the reservoir K, whereby it fills the box C′, so that the reeds therein may be operated when the keys are depressed. On the return motion of the bellows the valves of the chest J close, preventing the air from entering the feeding portion H. Some of the air also enters the inlet L and is directed by the tube M to the outlet N, and so fills the box C, whereby the reeds therein may be duly operated, both boxes C C′ thus being supplied with air.

It will be noticed that owing to the reservoir K a large quantity of air may be stored in the bellows, the same being distributed to the two boxes, as has been stated, and especially in great volumes to the box C, where the treble is played, it being noticed that said box takes its air directly from said reservoir, and there is a continuous or constant pressure thereat, said reservoir being preferably much longer than the feeding portion of the bellows, it being evident that the instrument may be played with great effect, there being a uniformity in the supply of air to the reeds, causing regularity of action and permitting the playing of long notes.

In order to support the instrument, say, on the knee, I employ a rail Q, which is secured between its ends to a post R, the latter being connected with the frame of the bellows adjacent to the diaphragm P, said post being movable on the rail for purposes of adjustment and provided with a screw S, in order to render the rail immovable when the adjustment is accomplished. Attached to the boxes C C′ are pulleys or rollers T, which are mounted on said rail and serve to support the bellows in its motions, thus easing the operation thereof. To the rail adjacent to the post R is a post U, which is provided with a set-screw V, said post receiving the rail and being adjustable thereon, said screw serving to hold the post in its adjusted posi-

tion. Connected with the post is a bow or yoke W, which is open below, so as to be fitted on the knee of the player, and thus support the instrument, the effect of which is evident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A musical instrument of the class stated, having a bellows provided with an air-feeding portion and an air-reservoir, which are in communication by an intermediate valve, and a reed-box which is in communication with said reservoir, whereby a continuous pressure of air may be maintained, substantially as described.

2. A musical instrument of the class stated, having a bellows formed in divisions with a valve between the same, an air-inlet valve communicating with one of the divisions, and an air-returning pipe or tube leading from said division to the reed-box, substantially as described.

3. A musical instrument of the class stated, having a divided bellows, reed-boxes at the ends of the divisions thereof, a valve between said divisions, a supply-valve leading into one of the divisions, and a pipe or tube leading from the other division to the reed-box at the air-supply valve, substantially as described.

4. A musical instrument of the class stated, having a two-part bellows, one part being a feeder and the other part a reservoir, with a valve between the parts thereof, an air-supply valve connected with the feeder, and a pipe or tube leading from the reservoir to a reed-box, substantially as described.

5. In a musical instrument such as stated, a bellows formed of a feeder and reservoir, the feeder carrying a reed-box which is provided with an air-inlet valve in communication with the feeder, said box being connected with the reservoir, so as to be in communication with the reservoir while cut off from communication with the feeder, substantially as described.

6. In a musical instrument of the order stated, a bellows formed of a feeder and reservoir, with a valve between the same for directing air from the feeder into the reservoir, and thus to a reed-box at one end, and provided with means for returning air from said reservoir to the reed-box at the other end, substantially as described.

7. The reed-box C, having an air-supply valve and a communicating passage opening into the feeder H, a bellows, and a connection with a pipe or tube leading from the reservoir K of said bellows, substantially as described.

8. A musical instrument of the order stated, having a rail connected intermediate of its ends with the bellows thereof, and rollers also connected with said bellows and mounted on said rail, substantially as described.

9. A rail connected with the bellows of a musical instrument of the order of an accordion, concertina, &c., and a knee-supported bow attached to said rail, substantially as and for the purpose set forth.

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