

(No Model.)

J. HESSLER.

REED BOARD.

No. 335,700.

Patented Feb. 9, 1886.

Fig 1.

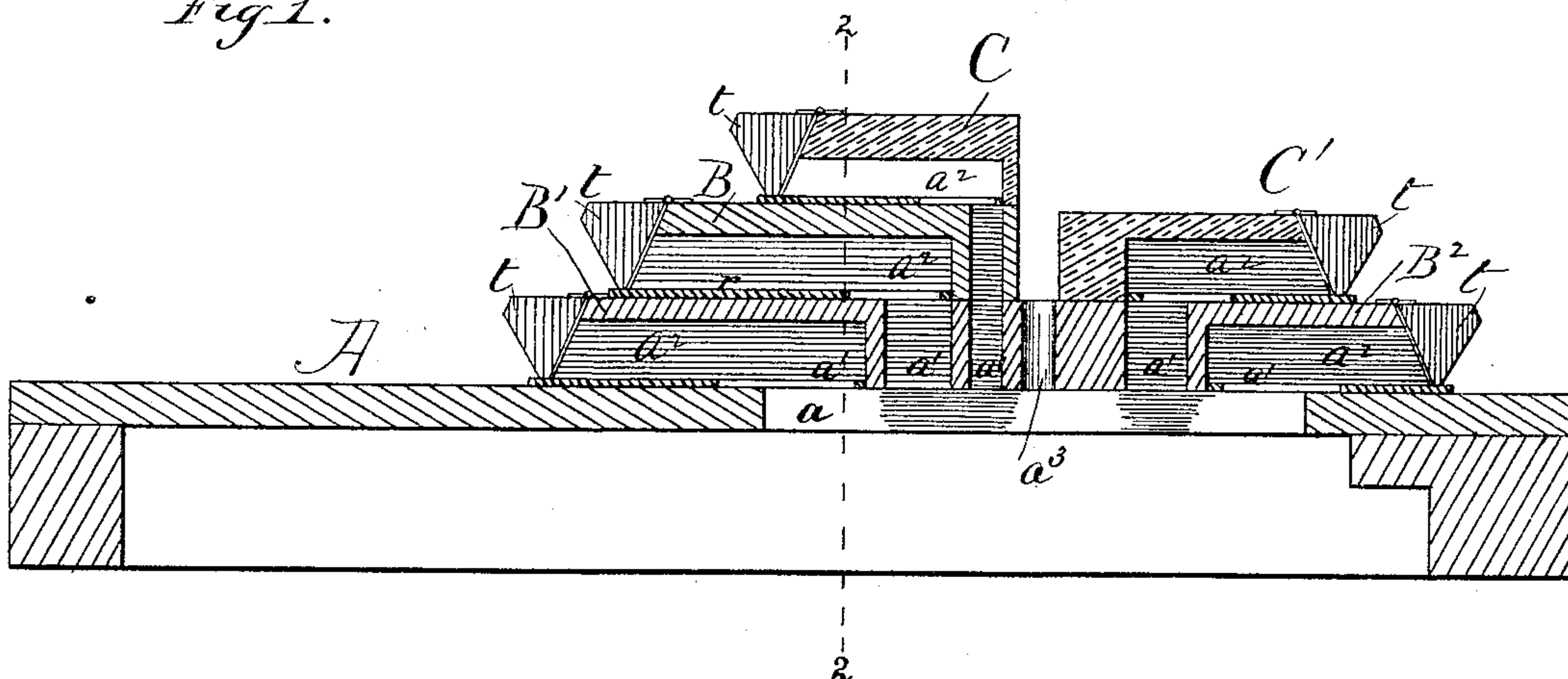


Fig 2.

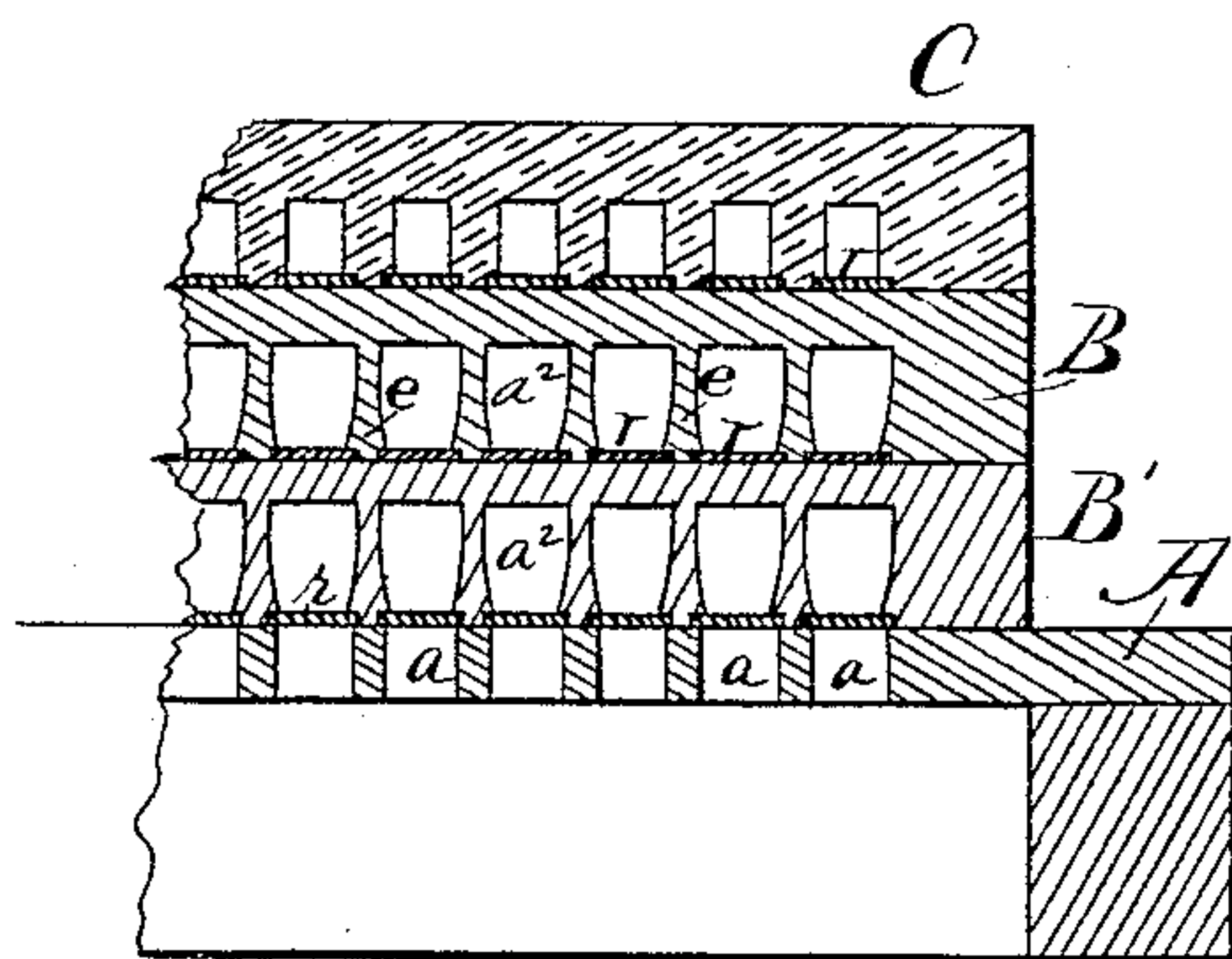
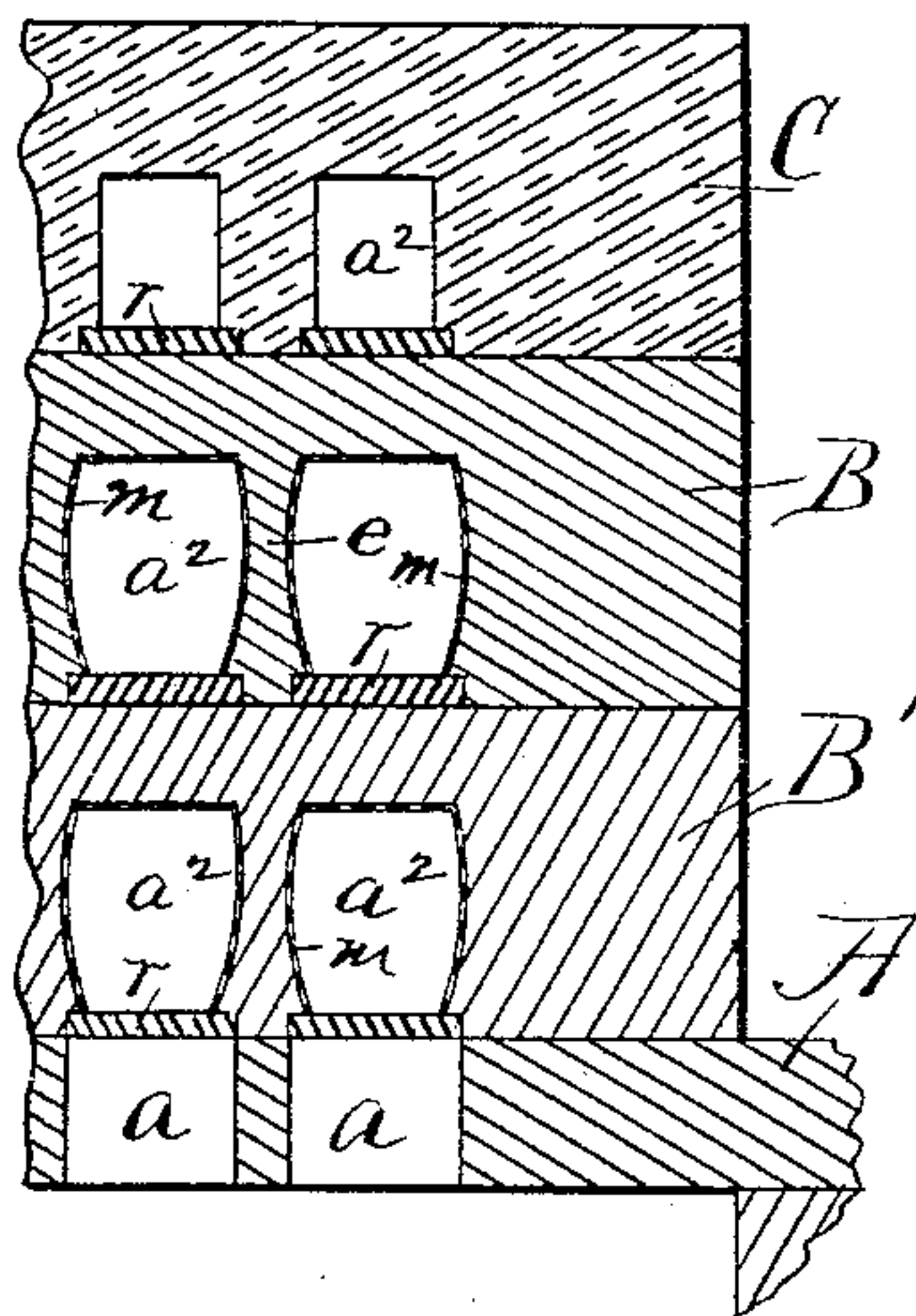


Fig 3.



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# UNITED STATES PATENT OFFICE.

JACOB HESSLER, OF CHICAGO, ILLINOIS.

## REED-BOARD.

SPECIFICATION forming part of Letters Patent No. 335,700, dated February 9, 1886.

Application filed June 2, 1884. Serial No. 133,550. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB HESSLER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Reed-Organs, of which the following is a specification.

The reed-cells of reed-organs are formed in the "socket-boards," so called, by recessing such boards transversely of the grain of the wood, and, in order to economize room, are placed so near together that the partitions or portions of the board left between the recesses are necessarily very narrow and thin. The direction of the wood fiber renders the partitions quite porous, and when a vacuum is created in any cell by the sounding of the reed therein the air from the adjoining cells is apt to leak through the partitions separating them from the sounding-cell. This leakage is sometimes sufficient to draw the air from the passages connecting the adjoining cells with the wind-chest, and thereby to vibrate to some extent the reeds of such adjoining cells and produce interfering tones. The porous character and roughness of the walls of the cells also affect unfavorably the quality of the tone produced, even when the leakage referred to does not exist. These evils, which are of course modified by using hard and close-fibered wood and by thickening the partitions, may be wholly removed by the use of my present invention, the main feature whereof consists in coating the ends of the fibers where exposed in the cells with some impervious material, such as shellac, which closes the pores of the wood so the air cannot pass through the same, and thereby prevents the production of interfering sounds by the reeds of adjoining cells.

The invention further consists in coating the entire interior surface of the reed-cells with the same or a similar preparation, whereby such surfaces are rendered smooth and hard, and the quality of the tone is much improved, being rendered clearer, more resonant, and more gamba-like.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a transverse vertical section of the upper part of the wind-chest and of the reed-

socket boards supported thereon. Fig. 2 is a partial longitudinal section of the same parts upon line 2 2 of Fig. 1, and Fig. 3 is an enlarged detail section similar to Fig. 2.

In the drawings, A represents the wind-chest of an ordinary reed-organ, the top thereof being provided with a series of slots, *a*. These slots connect with passages *a'*, leading to the reed-cells *a''*, and are closed by valves, (not shown,) such valves being operated by tracker-pins working in holes *a'''*.

B, B', B'', C, and C' represent reed-socket boards embodying the cells *a''* and passages *a'*. The cells in the different boards vary in size and shape to give the different musical effects, and are all cut transversely to the line of the boards. Some of the partitions *e* between the cells are quite thin, as will be seen, and as the fiber of the wood runs across these partitions—that is, from cell to cell—the ends of such fibers are exposed at each side of the cells and form the side walls thereof. This renders the partitions quite porous and the interior surface of the cells rough. The porosity allows the air to be drawn through the partitions, as before stated, and the roughness of the cell-walls detracts from the purity and resonance of the tone produced. The coating which I employ to remedy these defects is indicated in Fig. 3 by *m*. In Fig. 1 it is represented by the close horizontal lines. It is applied to the side walls of the cells and closes the pores therein, so as to render them impervious to the air and make each cell completely independent of its neighbor cells. If it is desired to improve or modify the tone in other respects—that is, to render the tone more intense and clear than it is where the wood itself forms the walls, &c., of the cells—the coating is applied in such quantity as to fill up the roughnesses in the surfaces of the cells and render them smooth, and preferably this is done at the end and top as well as sides. I find by my tests that the smoothing of the cells in this way changes the tone for the better, rendering it clearer and more resonant, with more of the gamba quality. The coating may be of shellac or any similar material, and is preferably applied in a number of thin coats, one upon another, until the desired thickness or result is obtained.

The evil of the production of interfering



tones is not confined alone to the reeds immediately adjoining the speaking reed, but extends to all the reeds in the immediate vicinity, and especially to those at either side of the reeds immediately above and below the speaking reed—that is, to the reeds adjoining the ones which connect with the same valve-opening with which the speaking reed is connected; and I find that by coating in the manner described the partitions of all the reed-boards where the leakage exists this difficulty is also removed. This enables me to combine with a single set of valves a greater number of boards than has heretofore been found practicable without duplicating the valves and their actuating devices.

In the drawings I have illustrated an instrument wherein five reed-boards are brought in conjunction with one set of valves, and I contemplate increasing this number. Some of the boards may be of hard close-fiber wood with thick partitions, and may not require the

cell-coating. Board C is an instance of this. The passages *a'* are preferably coated like the walls, and for the same reasons.

The reeds are indicated by *r* and the mutes by *t* in the drawings.

I claim—

1. A socket-board for reed-organs wherein the fiber of the wood runs across the partitions from cell to cell and the exposed ends of the fiber are coated with shellac or similar material, substantially as and for the purpose set forth.

2. In a reed-organ, a socket-board wherein the walls of the reed-cells are rendered smooth throughout by a coating of shellac or similar material, substantially as and for the purpose set forth.

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Witnesses:

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