(No Model.)

C. DENISON.

CHEST EXERCISER.

No. 497,774. Patented May 23, 1893.

Fig. 1.

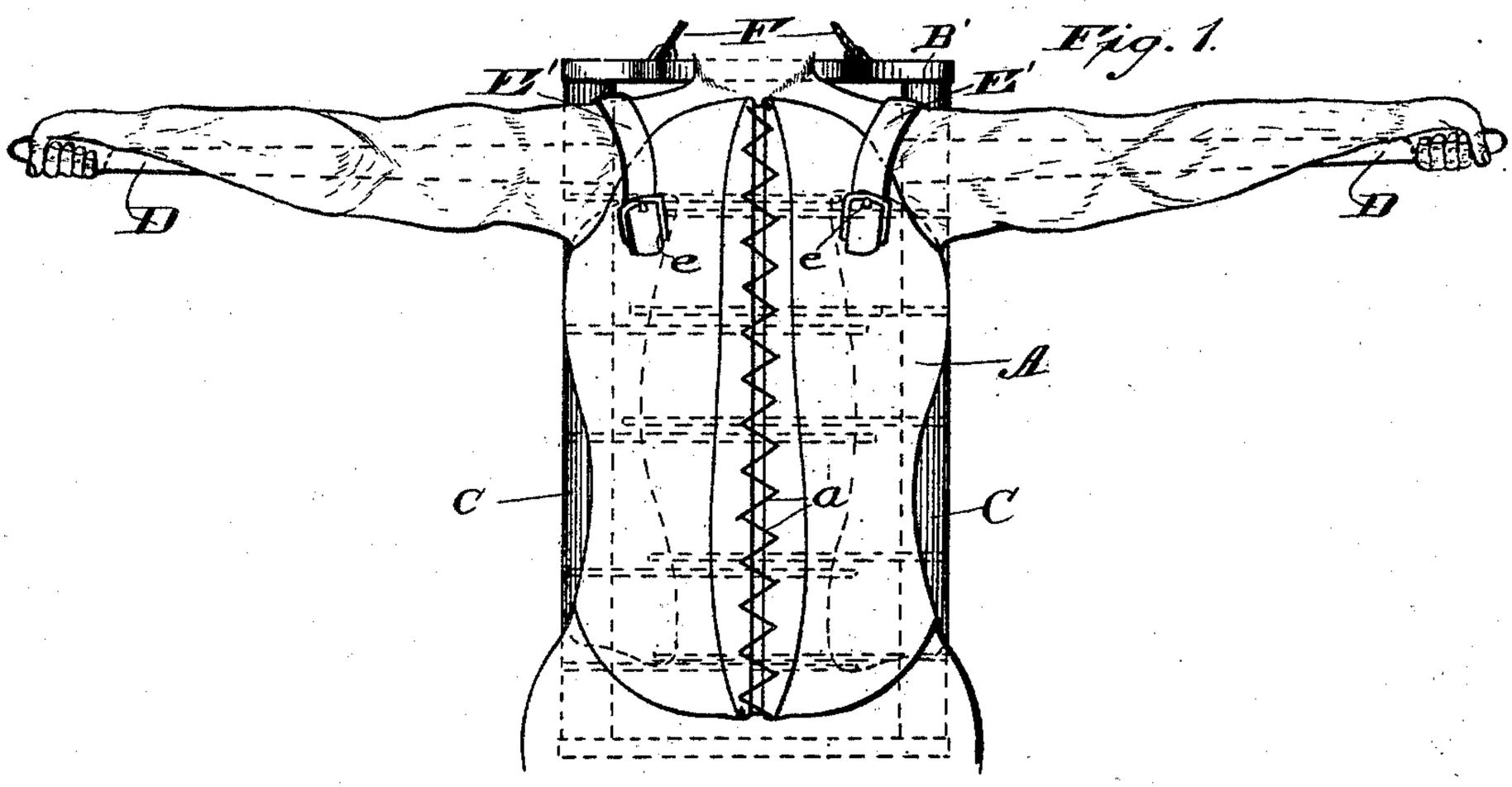


Fig. 3.

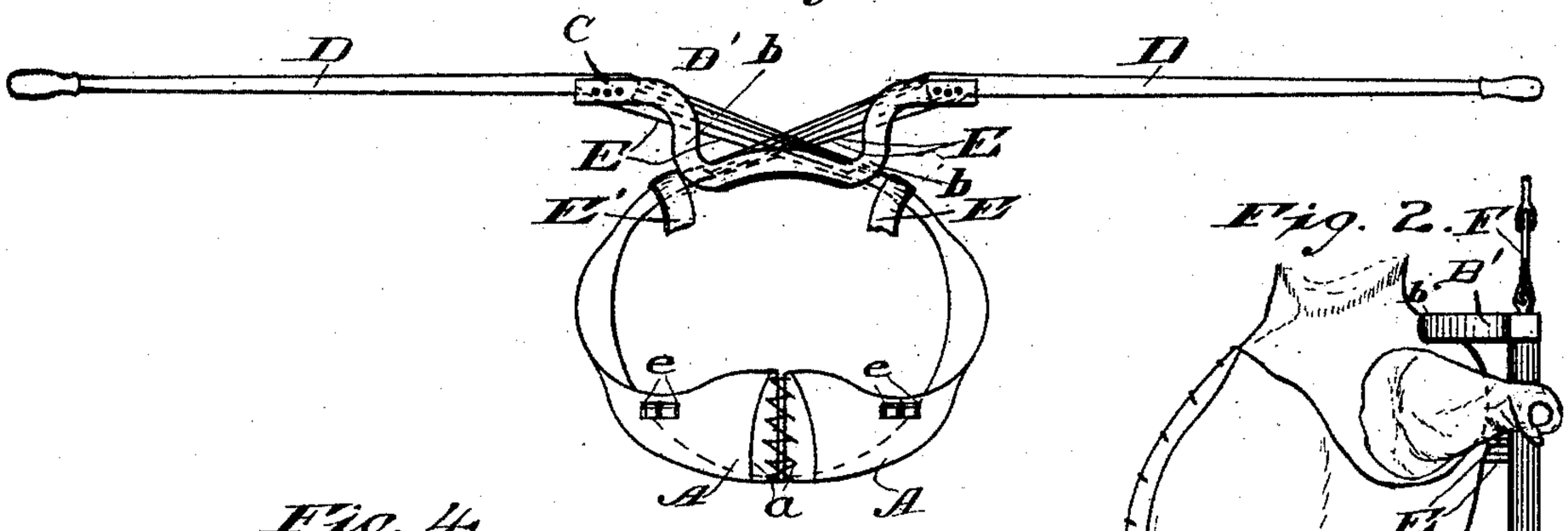


Fig. 4.

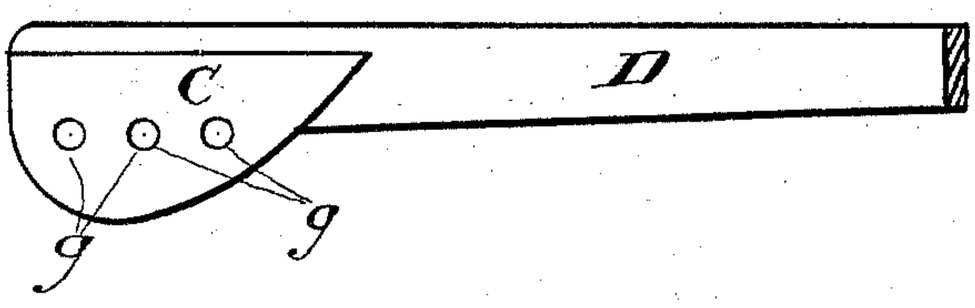
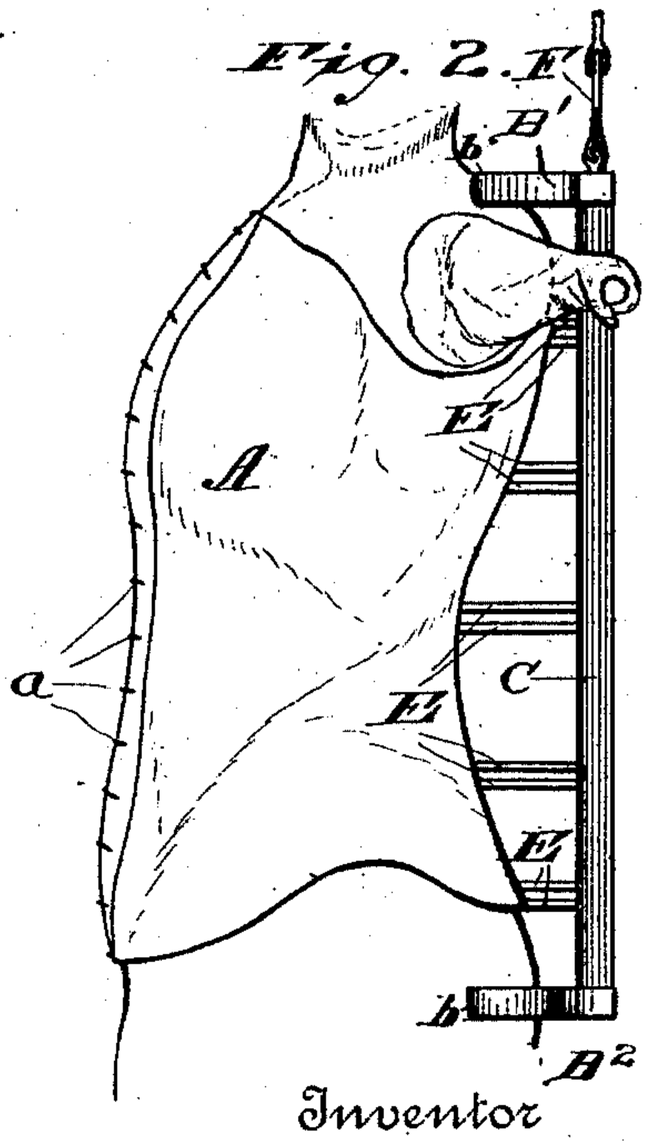


Fig. 2.



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CHEST-EXERCISER.

SPECIFICATION forming part of Letters Patent No. 497,774, dated May 23, 1893.

Application filed January 12, 1891. Serial No. 377,487. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DENISON, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Emphysema-Jackets or Chest-Exercisers, of which the following is a specification.

My invention relates to apparatus for use in emphysema and kindred affections, or exercising the lungs and expanding the chest and it consists mainly in a portable compressing jacket for the chest, that is, a jacket which may be placed upon the body and alternately contracted and relaxed with the inspirations and aspirations of the breath while moving about the room, although it will be evident from the ensuing description that it may be used as a stationary compressor attached to or supported by a chair or the wall in case the condition of the patient so requires.

In the drawings: Figure 1 represents a front view of a human trunk carrying upon the chest a compress constructed according to my invention, and with the arms extended grasping the lever handles of the compress for operation. Fig. 2 is a side elevation of the trunk and devices represented in the foregoing figure; Fig. 3 a top view of the compress detached, and Fig. 4 a detail.

A represents a corset to be placed over the chest, and advisably laced down the front, as at *a*, to conform to the body.

B is a rectangular frame having neck and body rests, *b*, *b'*, which may be provided by properly curving its upper and lower tie bars, B', B^2, and having said upper and lower bars connected by drums, rollers, or oscillating winding bars, C, one at each side, provided each with a lever, D, of sufficient length to be grasped by the hands when the arms are extended, as in the first figure of the drawings.

The rear of the corset is practically open, except that the opposite edges will be connected at suitable intervals with the winding bars or drums by straps, bands, or tapes, E, crossing each other, as shown in the third figure of the drawings. These crossed straps, bands or tapes at the rear of the corset will advisably be connected with the rollers or oscillatory side-bars by means of buckles, or in any suitable manner for adjustment, so as to obtain an even pressure. Supporting straps, E', may pass over the shoulders and hold the corset upon the body and be adjustable by buckles, *e*, so as to keep it at a suitable height. A cord or other device, F, may be connected with the top bar of the frame to provide means for hanging the compress upon the wall when out of use and to enable the person to put on or adjust the corset without the help of an assistant.

The winding bars or rollers will advisably have a series of journal openings, *g*, for instance three, as shown in the detail view, for the insertion of the pivotal rod, so that three degrees of pressure may be obtained by adjustment. Evidently, however, they can be adjusted by pivot openings in the top or bottom pieces. They may also have a cam outline, as shown, to give available pressure corresponding with the movement of the chest in exhaling.

As thus constructed, it is evident that, starting from the position shown in Fig. 1, if the arms are brought forward the chest will be compressed by the taking in of the rear straps, so as to aid expiration, and that when the arms are thrown back the chest will be relieved at the same time that the movement of the arms themselves expands it so as to aid inspiration. This is of great advantage in the treatment of emphysema, dilation of the bronchial tubes, and similar states of abnormal air pressure in the lungs.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, to form a lung or chest compressor, of the corset, the rectangular rear frame with its oscillatory side-bars and top and bottom pieces adapted to fit or rest against the body, the levers attached to the side-bars, and the straps connecting the rear edges of the corset with said side-bars.

2. The combination, substantially as hereinbefore set forth, of the corset, the rear frame having adjustable side-bars or rollers, to give different degrees of pressure, and top and bottom pieces to rest against the neck and body, the levers attached to the side-bars or rollers, and the straps connecting the rear edges of the corset with said side-bars or rollers.

CHARLES DENISON.

Witnesses:
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