

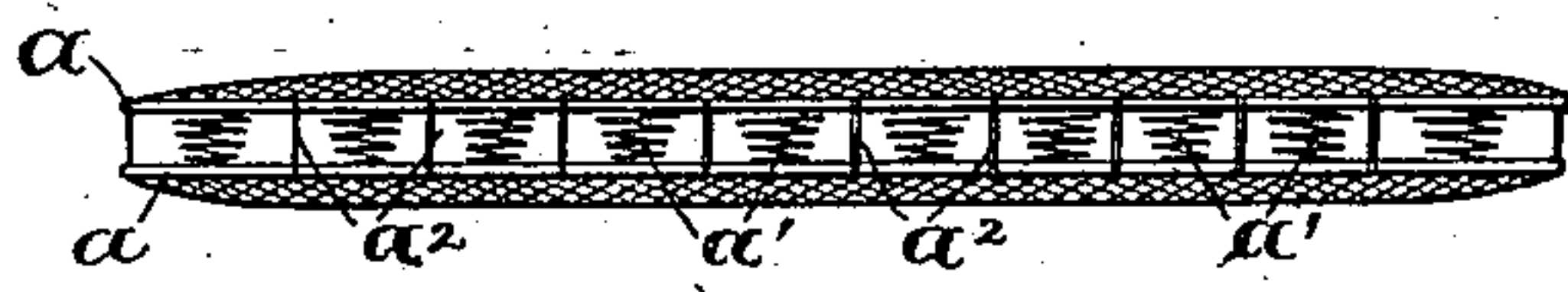
(No Model.)

T. E. O'BRIEN & W. E. DIX.  
MATTRESS.

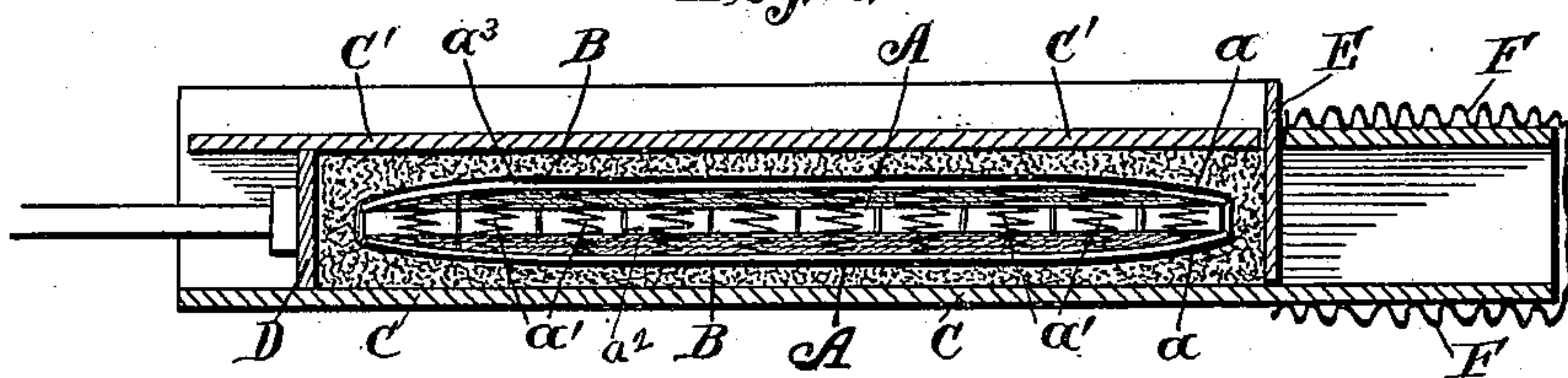
No. 549,248.

Patented Nov. 5, 1895.

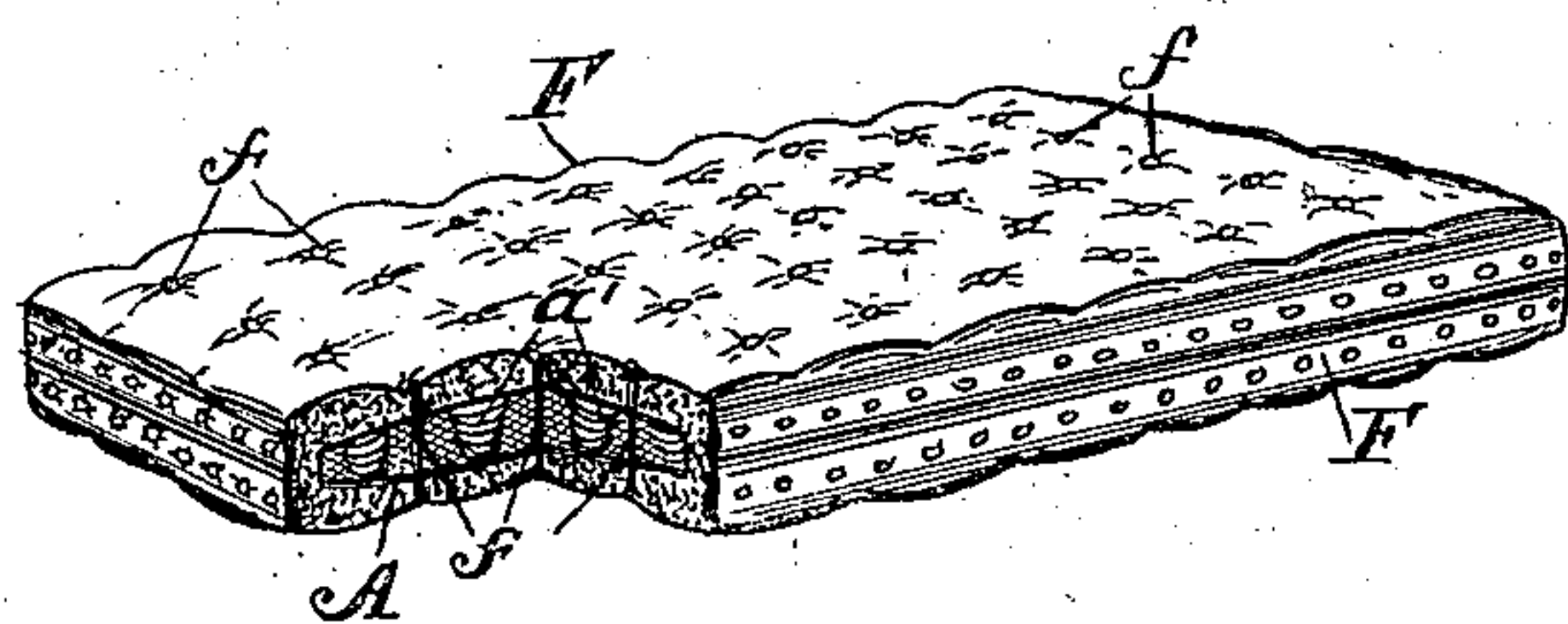
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

THOMAS E. O'BRIEN AND WILLIAM E. DIX, OF CHICAGO, ILLINOIS.

## MATTRESS.

SPECIFICATION forming part of Letters Patent No. 549,248, dated November 5, 1895.

Application filed October 13, 1894. Serial No. 525,773. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS E. O'BRIEN and WILLIAM E. DIX, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Mattresses, of which the following is a specification.

Our invention relates to mattresses comprising a tick or cloth casing stuffed with a mass of fibrous material and tufted; and the object of our improvement is to provide mattresses of this class with means for increasing the exits and entrances of air into the interstices of the tick and fibrous material upon compression and expansion of the mattress, thus affording better circulation throughout the mass of the filling. We attain this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is a detail showing an edge elevation of a detached part. Fig. 2 is a longitudinal vertical section through the mass of material shown as compressed in a box in the process of manufacturing the mattress. Fig. 3 is a perspective view of a completed mattress embodying our improvement, one corner being represented as having the exterior broken away to show the interior construction.

The improved mattress comprises a distended pervious bag enveloped by an outer layer of fibrous filling, which is inclosed by a tick or cloth casing, the whole being tufted by threads running continuously through the tick, fibrous filling, and distended bag from top to bottom.

In the drawings, A designates the distended bag, which is made of burlap or other stout coarse cloth reflected and having its edges joined, so as to form a complete inclosure over the top, bottom, sides, and ends of the distending means. It is distended by means of upper and lower layers  $a a$  of elastic wire fabric separated by a series of vertical coiled springs  $a'$ , which are severally attached to each of said layers of wire fabric. The end and side edges of said layers of fabric are drawn a little toward one another by means of flexible cords  $a^2$ , so that the structure comprising said layers of fabric and vertical springs will be thinner at the edges and more

distended at the parts inward from the edges. Said distending structure is inserted through an opening of the bag, which is then closed upon the same, so that the bag fits over and completely envelops said structure, covering the top, bottom, sides, and ends of the same alike. Said distended bag is enveloped in the fibrous filling B, extended over the top, bottom, sides, and ends thereof, such envelopment being best accomplished in the manner following, in order that the whole may be conveniently incased in the tick. One part of the fibrous material is placed in the bottom of a box C of the proper dimensions. The distended bag is then placed upon such part of the fibrous material, and then the rest of the material is placed in the box around and upon the bag, care being observed to have the material as nearly equal in thickness upon the top, under side, edges, and ends of the bag as possible. The lid C' of the box is now brought down upon the material with sufficient pressure to compress the whole to the thickness or depth of the tick or casing, after which it is compressed longitudinally between a plunger D and vertically-sliding gate E to about the length of the tick. The tick F being gathered on a spout F' and the sliding gate raised, the plunger may be further operated to force the mass of filling thus enveloping the distended bag, together with said bag, into the tick, after which the open end of the tick is closed and the mattress is tufted, the threads  $f$  being passed continuously through the tick, filling, and distended bag from top to bottom and drawing the top and bottom together to the extent desired. The distended bag thus incorporated in the mattress furnishes a central air-space in the mattress, and whenever any weight is placed upon the mattress the vertical springs yield, making the air-space less and forcing the air out through the filling and tick. When the weight is removed or lessened, the air-space immediately enlarges by the action of the springs and air from without is forced into the central air-space as it expands. By this means the amount of air making exit and entrance into the interstices of the tick and filling is largely increased, which from the standpoint

of health is invaluable, inasmuch as it affords a complete circulation of air throughout the entire mass of filling.

What is claimed is—

- 5 In a mattress, the combination with a bag of burlap, of a distending structure composed of two layers of elastic reticulated wire fabric held apart by vertical springs placed within said bag, a layer of fibrous material envelop-

ing said bag, a tick enveloping said fibrous material, and tufting-threads adapted to draw the whole together, as specified.

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