

No. 868,001.

PATENTED OCT. 15, 1907.

D. T. OWEN.
COMBINED BED AND SEAT FOR RAILWAY COACHES.

APPLICATION FILED AUG. 21, 1905.

4 SHEETS—SHEET 1.

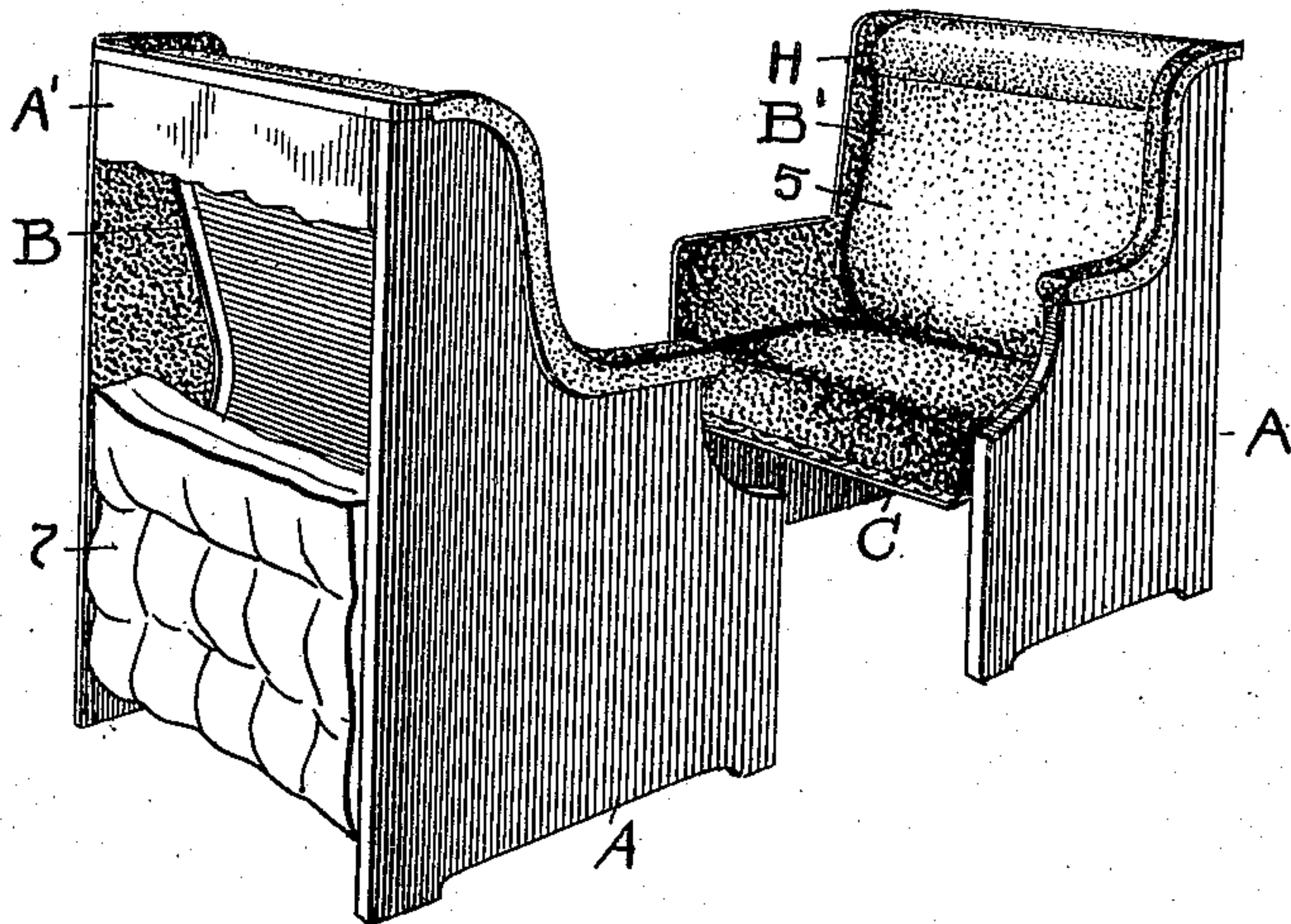


Fig. 1.

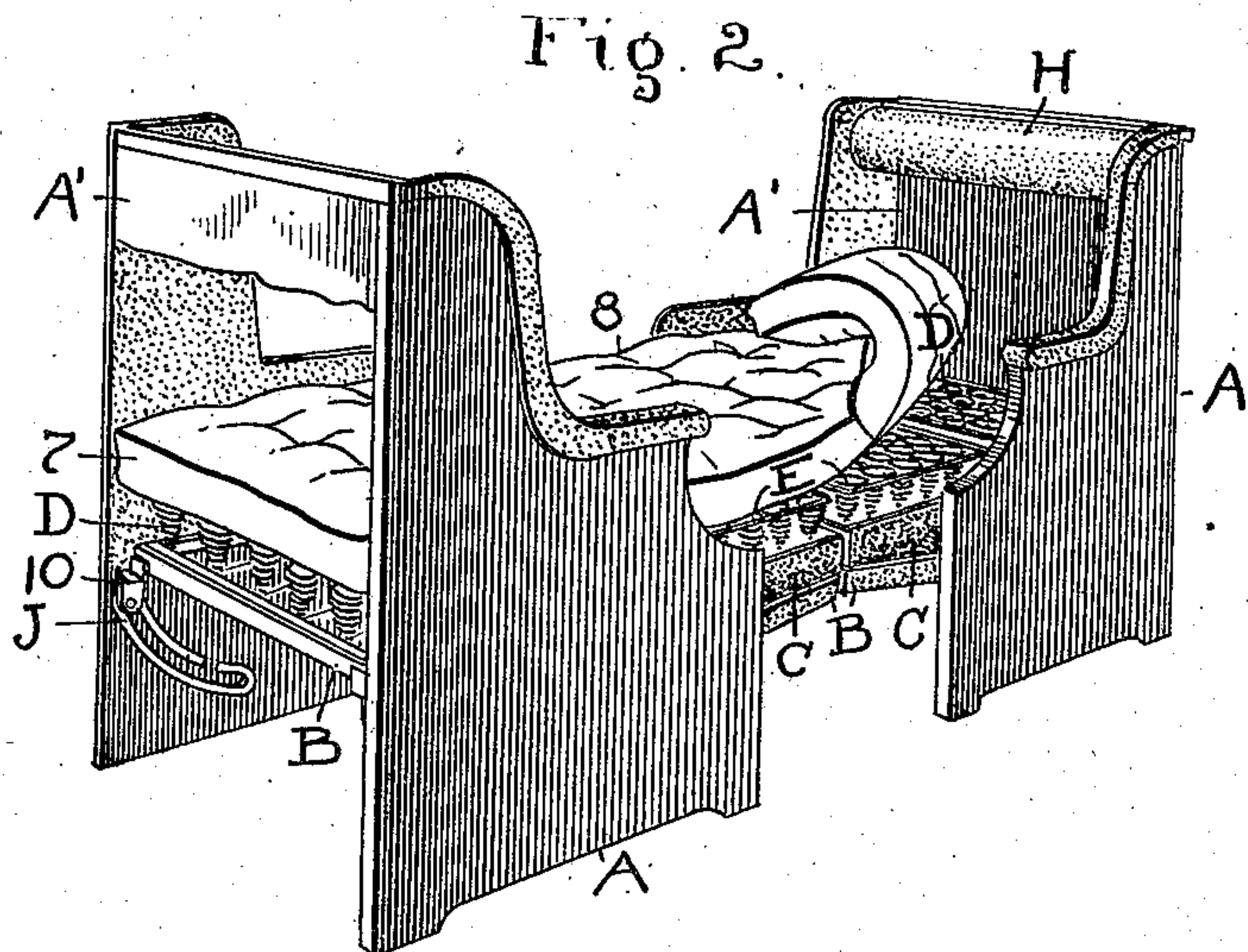


Fig. 2.

ATTEST.

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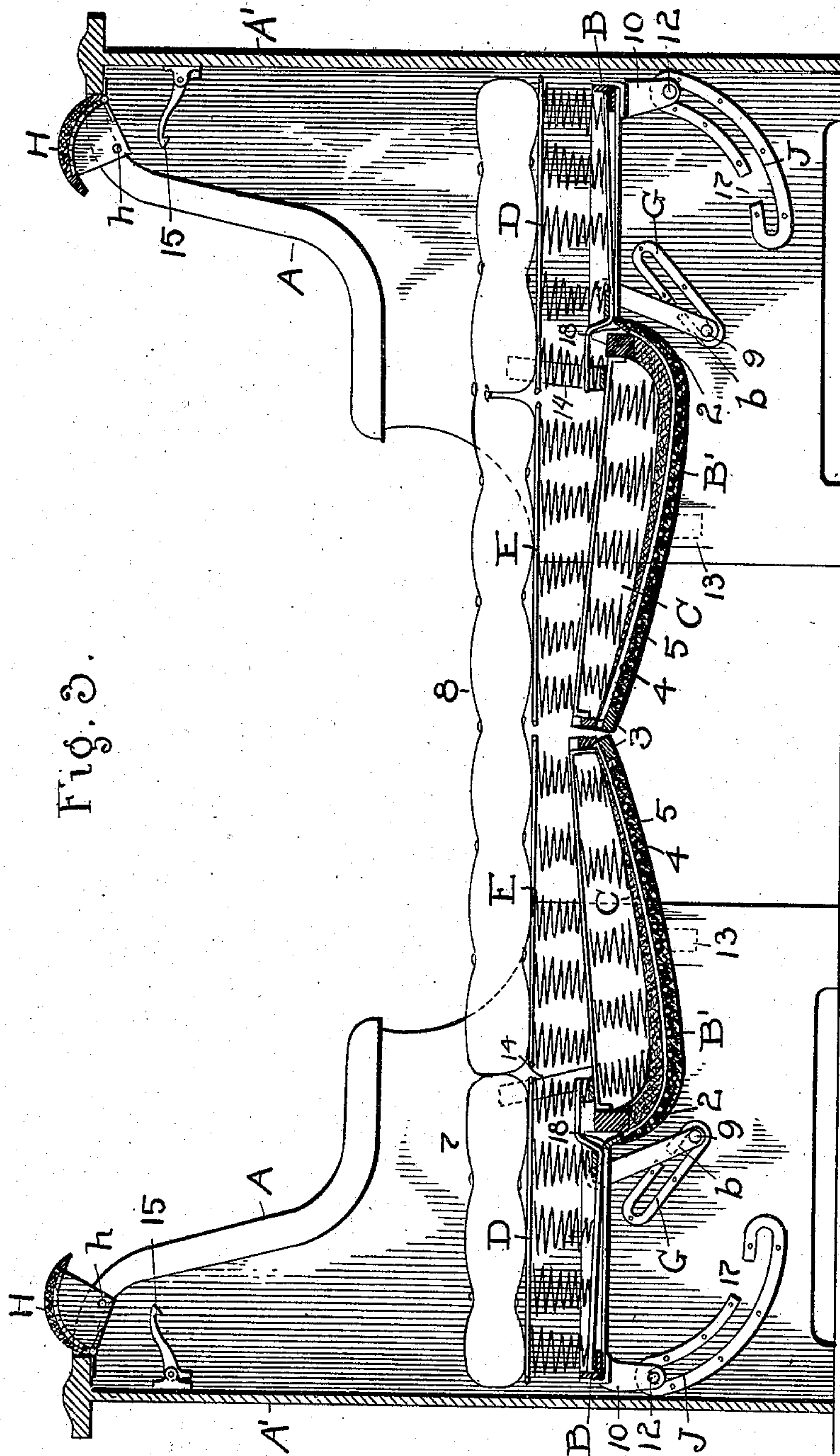
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4 SHEETS—SHEET 3

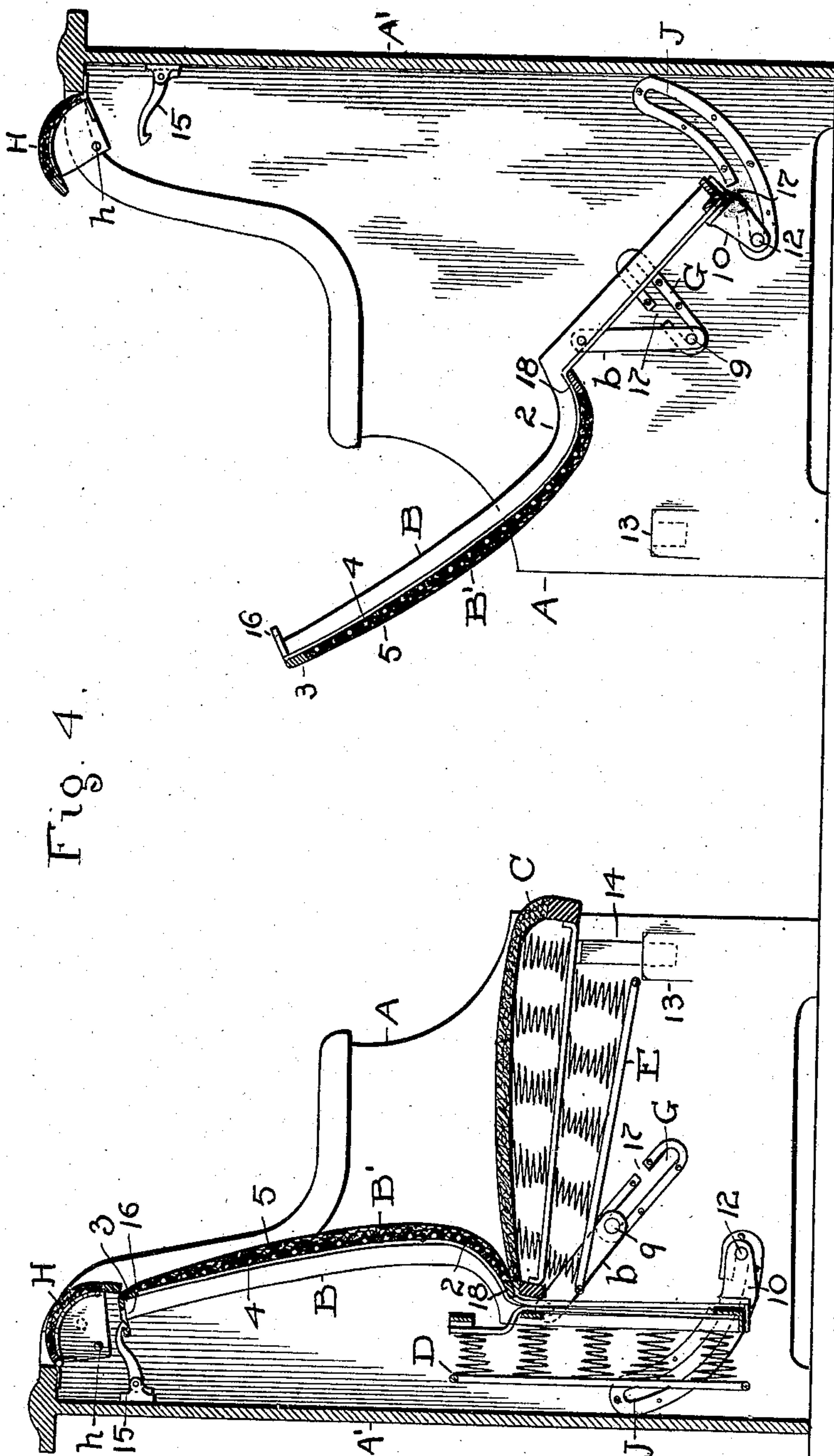


Fig. 4.

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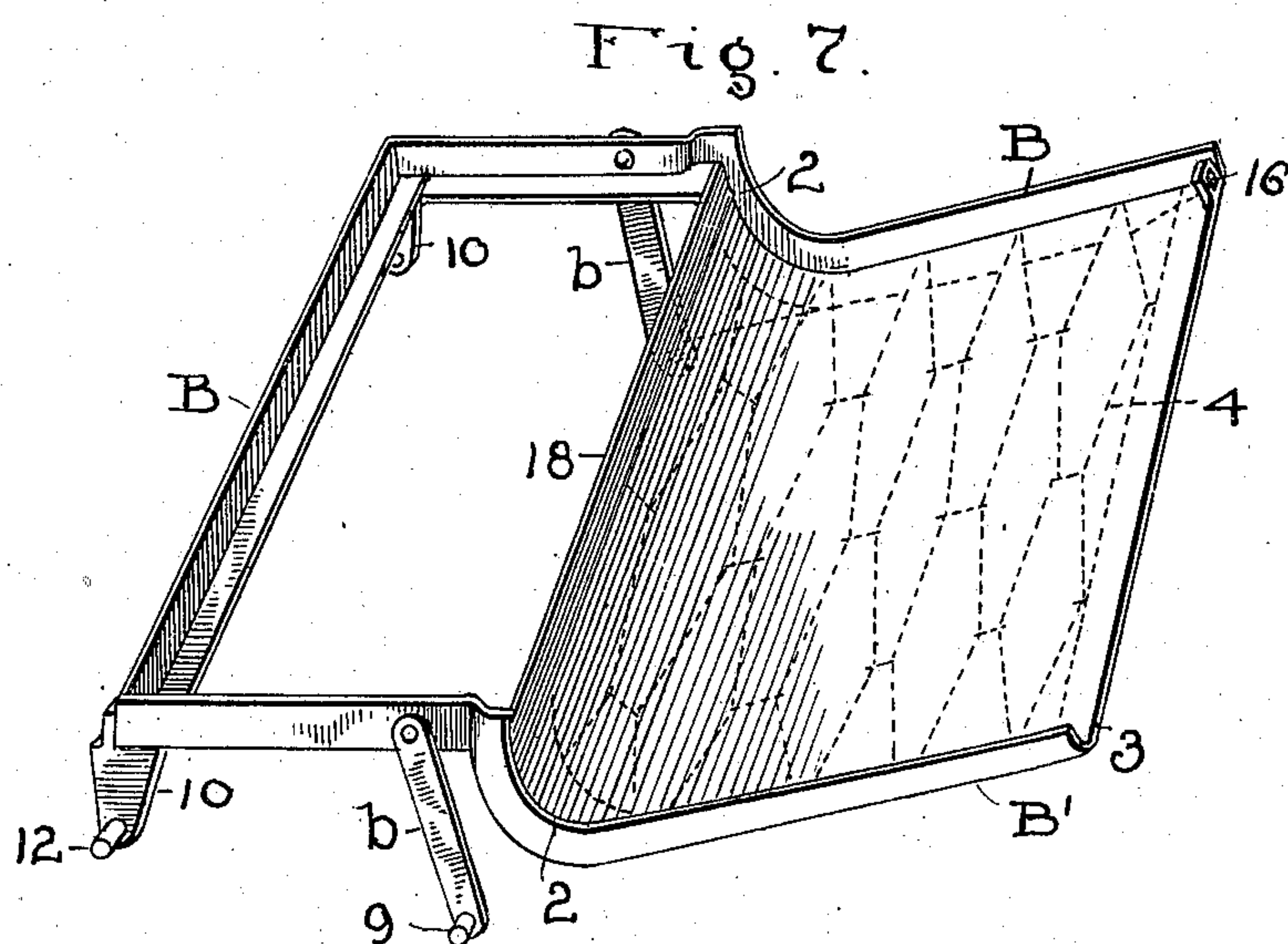
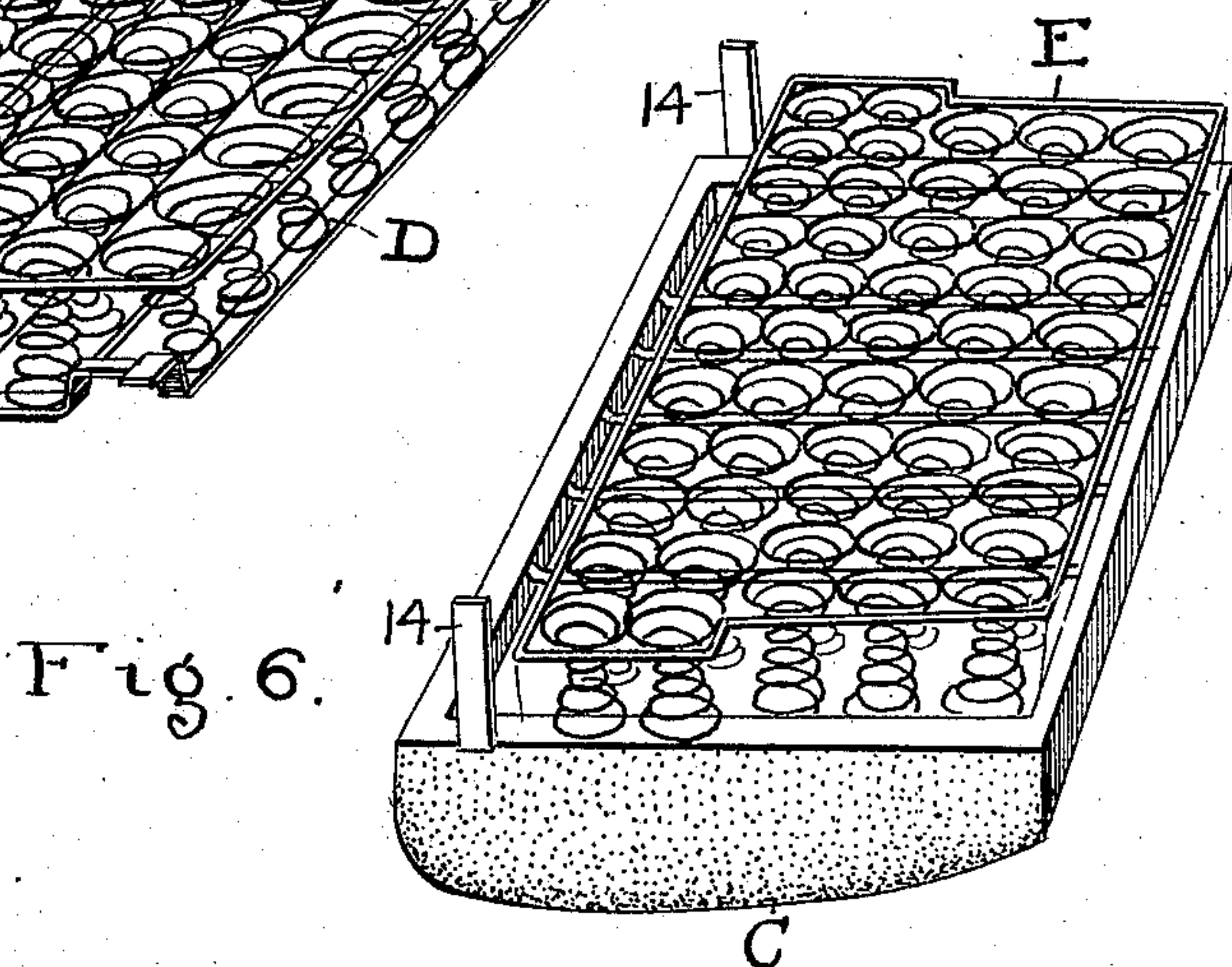
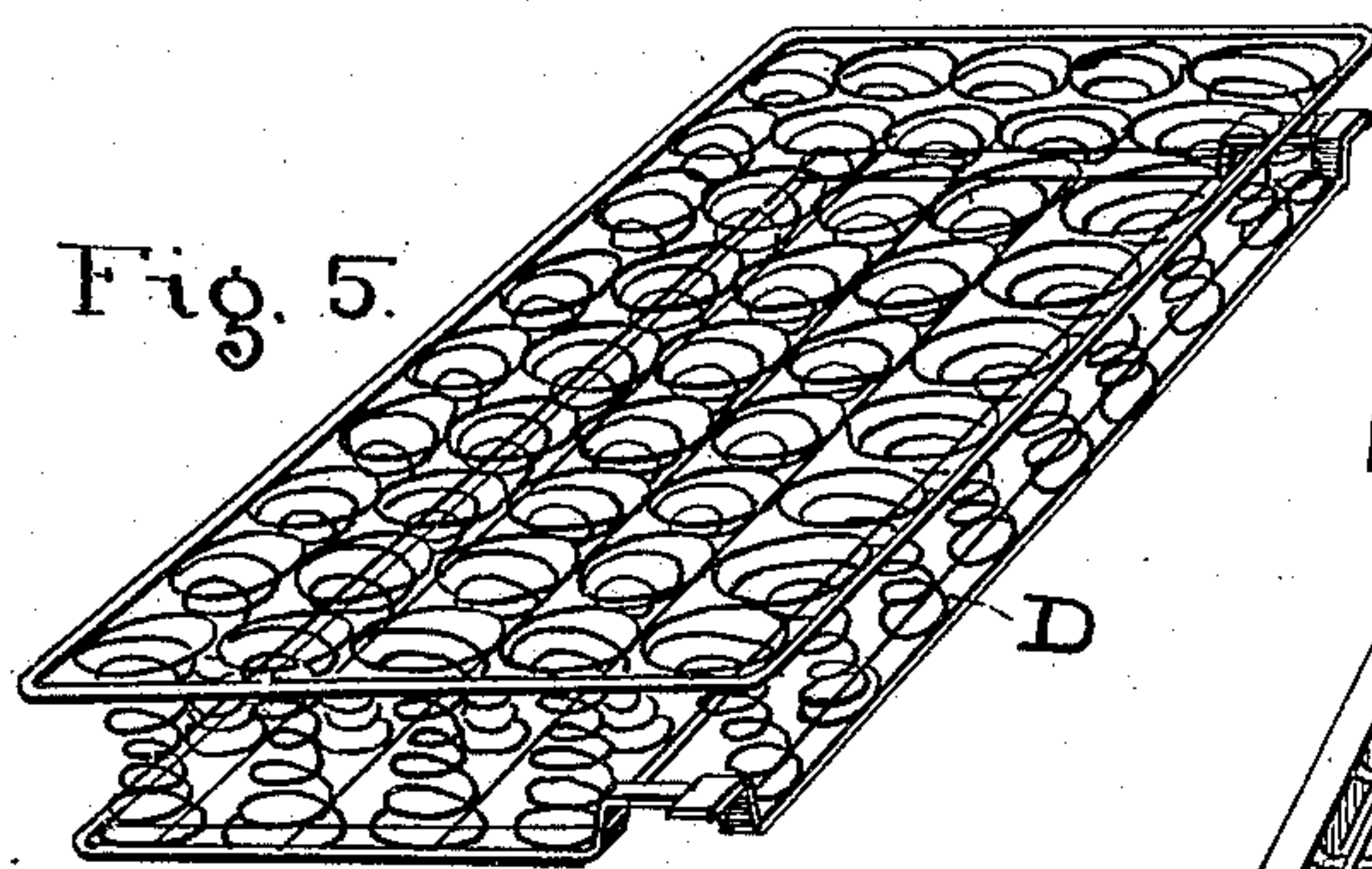
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4 SHEETS—SHEET 4.



ATTEST.

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UNITED STATES PATENT OFFICE.

DAVID T. OWEN, OF CLEVELAND, OHIO, ASSIGNOR TO THE D. T. OWEN COMPANY,
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COMBINED BED AND SEAT FOR RAILWAY-COACHES.

No. 868,001.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed August 21, 1905. Serial No. 275,014.

To all whom it may concern:

Be it known that I, DAVID T. OWEN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Combined Beds and Seats for Railway-Coaches, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

10 My invention relates to a combined bed and seats for railway coaches, and other carriers, and is an improvement in the style or construction of convertible bed and seats shown in my pending application Serial No. 269,258. In the said application the construction
15 and arrangement of parts is such as to neither afford as much room as is thought generally desirable for stowing away the bedding during the day time, nor for disposing of the baggage at night when the bed is down. The present construction is devised with especial reference to these needs, while it also works material improvement in other particulars, as will appear in the further description herein.

In the accompanying drawings Figure 1 is a perspective view of the invention converted into seats and exposing the rear of the rear seat. Fig. 2 is a perspective view of the invention converted into a bed. Fig. 3 is a longitudinal sectional view of the invention in the form of a bed. Fig. 4 is a vertical front to rear sectional elevation of the invention disclosing a complete seat
25 at the left and one of the combined bed and seat back frames as it appears when part way down, or up, and without the seat or sections of bed mattress. Fig. 5 is a perspective view of one of the removable spring mattress sections adapted to be supported and carried on the rear and bottom of the bed and back frame, seen at the rear in Fig. 4. Fig. 6 is a perspective view of a seat in reversed position and with the section of the bed mattress on top as when used in a bed, Fig. 3. Fig. 7 is a perspective view of one of the combined
30 bed and back frames, with the rear or inside on top, and as it appears in Fig. 3 with the bed mattress sections removed.

A represents the opposite stationary seat frames and A' the walls separating groups of two seats, as usual, and B represents the combined bed and back frame, one for each seat and also for each half of the bed. C represents one of the car seats, and D and E sections respectively of the spring bed-mattress. One of the novel and important features of this construction is the removable interchangeable and invertible seat C, which carries a section E of the bed mattress at its bottom and is adapted to be stowed out of the way but in a position of service on the back of frame B when said frame is lowered to make a bed. It will
45 be observed that said frame has a flat and straight

lower portion carrying spring bed or mattress section D, while its upper portion is abruptly curved outward at 2 where the base of the back of the seat begins and runs thence inwardly on more or less of a curve to its upper edge or end 3, thus giving a comfortable outline
60 or shape for the back of the seat, and said back is provided with its own wire mesh or spring 4, or its equivalent, and finishing or upholstering 5 over the same, so that so far as the said back is concerned it is complete in itself and is not affected or modified by other parts. However, when viewed from the standpoint of a section or half of the bed-frame, it is seen that a deep depression comes therein forward of shoulder 2 and especially of the end mattress section D, and it is into this depression that I am enabled to place the
70 seat and by means thereof build up a base or support for spring bed section E which brings said section flush with the top of section D and close thereto at its edge, thus providing the equivalent of a continuous and unbroken bed surface for the mattress. The materiality of this particular construction of frame B is thus made apparent, and the seat C with its frame as a part thereof is not only taken away as a possible obstruction to baggage but is made useful as a means of building up the bed. It will be noticed, also, as
80 a feature, that the seat is deepest at its front and tapers toward its rear, which conforms it to the shape or outline of frame B and the seat back from its shoulder 2 upward. But the lower surface of the seat or seat frame is straight across where it receives the mattress section or frame E, and the respective springs of the said mattress section and the seat shorten somewhat toward the meeting edges of the parts from the opposite sides at the middle of the bed so as to obtain a horizontal surface from end to end of the bed. This, however, does not become a noticeable feature when the hair mattress sections 7 and 8, respectively, are placed thereon. These, likewise, for convenience of stowing away, are made in sections.

Now, for converting the structure from one use to the other, I provide frame B with a brace *b* at each side near shoulder 2, and provided at its other end with a side lug or projection 9 running in an inclined guide G, fixed to the inside of frame A. This guide or guide way might be a slot or any equivalent of the special piece and
95 special construction shown, its object being to serve as a means of confining the end of brace *b* and to form a support for the bed through said brace when the bed is down as in Fig. 3. At its rear said frame has fixed and rigid arms 10 at each end and bottom provided with side
105 lugs or projections 12 adapted to run in curved guides J fixed rigidly to the sides of main frame A. The lower end of guide G and the upper end of guide J, taken with the lengths of arms 10 and braces *b*, respectively, are so disposed that when the bed is lowered in use, the brace
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b is at the bottom of guide G, and the arm 10 at the top of guide J. This not only constitutes a firm support for the bed frame, but by reason of the upper end of the guide or keeper J terminating right at the cross partition wall A', it brings the mattress back against said wall, and thus makes the bed as long as the entire distance between said walls, and, brace *b* being brought to a backward inclination at its top, makes it tend to keep the bed frame and mattress in this position continually.

Of course the bed frame B is rigid and therefore is held firmly to its place by braces *b* and arms 10 as just described, but the sockets 13 on the inside of frame A for legs or standards 14 on the seat frame assist in some measure, more or less, to sustain the inner weight upon the bed. The said standards or legs 14 are on the front and bottom of the seat frame, and of a length to hold the seat to the proper elevation as well as serving to prevent it from working forward when said legs are socketed as shown. This also brings the rear of the seat into the jog at the base of seat back proper, B', and makes the seat a medium for at least helping to hold the back in an upright position. Indeed nothing more than this would be required if the space behind the seat back and between the same and wall A' were not filled with bedding. But this space is purposely provided for bedding, and when it becomes filled its tendency is to crowd the back outward. For this reason I have provided a positive catch or latch 15, hung onto frame A' and adapted to engage in a loop, link or the like 16 at the top and rear of said back or frame B. This makes a positive engagement to hold the back where it belongs, whether there be much or little bedding packed away behind the same.

It is to be observed that both spring bed bottom sections, D and E, are removably seated in frame B, and the guides or keepers G and J have open spaces 17 on top to allow the parts *b* and 10 to be removed therefrom. This enables all the parts to be separately taken out for cleansing or other purposes, including frame B, to dust or clean the seat-back B'. In this instance hood H for the top of the seat back is pivoted or hinged to the top of the cross partition A' and is shown as having a bolt *h*.

By the foregoing construction and disposition of the parts I obtain either a seat or a bed of the most comfortable kind, and can convert the same from one to the other in a very few moments and in an obviously simple manner. In this operation the bed sections D are not necessarily disturbed nor handled, and, after removing the seat and pulling down frame B, the seat is inverted and placed therein and one half of the bed is made. The other half is a duplicate of this, and the entire change takes only a few moments to perform. The top mattress is then placed in position and the bed is speedily made ready for occupancy. This also furnishes a lower bed or berth of unsurpassed comfort, because of the deep and excellent spring mattress I am enabled to use, while it leaves an exceptionally large amount of room beneath the bed or berth for baggage and parcels.

Frame B is preferably of angle iron but may be of any other metal or material, and may be made in single side pieces or in two pieces united at shoulder 2 where the depression in said frames begins.

At its rear seat C rests on the braces *b* when in use as in Fig. 4, and in that position extends in beneath the

cross bar 18 of frame B, which is also the bottom of the back proper, B', of the seats.

The spring mattress is comprised in this instance of separate sections, but for convenience might be in one piece and the hair mattress, 7 and 8, might be made a part thereof, whether in sections or whole, and the term "mattress" is understood as comprehending either or both constructions.

As clearly indicated the depressions in frames B behind back support B' serve the twofold purpose of chambers to store bedding and to carry the seats for building up the middle of the bed to the desired level. From this point of view the said construction is designed and chiefly important for making storing room, first and last, and this it does, but there are other purposes subserved thereby, as, for example, forming a comfortable swell for the back of the seat and a place where the spring upholstered seat can be used to level up the bed and contribute to its comfort.

The invention is described herein as especially adapted to use in sleeping coaches, but, obviously, it may be used in other carriers, as well if found adaptable and for stationary uses if preferred. It will also be observed that in this way I get a lower berth for a car which is wholly independent of the upper berth in all particulars, and hence such a berth can be made up and occupied for seating while the upper berth remains for sleeping. It is to be noticed in this case, that the inverted seat placed upon frame B is necessary to constitute a complete bed-bottom adapted to receive the top or hair mattress, and that the said seat performs the double office of a seat and a mattress support at different times and inverted position. The same idea more fully elaborated appears in another application filed by me August 25, 1905 and bearing Serial No. 275,764.

What I claim is:—

1. In a convertible seat and berth for cars, a pair of frames having seat backs on one end and side and bed portions at their opposite ends and sides, said frames being adapted to be turned down to a horizontal plane to form a bed, and seats adapted to be placed upon the meeting end portions of said frames to complete the bed.

2. In a combined berth and car seat, a pair of frames adapted to be turned down toward each other to a horizontal plane to make a bed and having depressions in their outer portions, in combination with car seats removably supported in said depressions.

3. In a convertible bed and seat, a combined bed and seat-back frame having the upper portion thereof bent forward of the lower portion at the point where said portions meet and inclined from above said initial bend toward the plane of the said lower portion, whereby a swell is formed in said frame for a seat back and a depression for storing purposes.

4. In convertible berths and seats for sleeping cars and the like, the combination of oppositely arranged seats adapted to be bodily removed, with folding bed-frames constructed to receive said seats.

5. The combination of a pair of frames provided with seat backs on one side and a portion of a bed spring bottom on the other side and adapted to fold toward each other to a horizontal position and form a bed, with a pair of seats removably supported upon said frames in an inverted position to complete the bed bottom.

6. A pair of oppositely arranged frames adapted to be turned down to form a bed, and a spring bottom section on one side of said frames and an upholstered seat back on the other side, in combination with a pair of seats adapted to be removably supported in inverted position on said frames and provided with spring bottom sections adapted to complete the bed.

7. In a combined bed and seat, oppositely arranged frames adapted to be turned to a horizontal position and having their outer end portions on a higher plane than their inner end portions, inverted seats adapted to build up said inner end portions and a spring mattress over spreading said parts and forming a bed.

8. In a combined bed and seats, bed frames pivoted to fold toward each other on a horizontal plane and constructed with their middle portions depressed as to the planes of their respective ends, in combination with seats constructed to conform substantially to said depressions in inverted position.

9. In a combined bed and seat, a bed and seat-back frame having a substantially rectangular lower end constructed on its inside to receive a section of a spring mattress, an inverted seat supported on said frame and a spring mattress section thereon on the same plane as the outer section.

10. In a convertible bed and seat, a bed frame having swinging pivot braces at its opposite sides centrally between its ends and rigid projections at its inner and lower ends, and separate supports for said frame comprising an inclined guide for said pivot braces and a curved guide for said projections.

11. In a convertible bed and seat, a support having sides and a transverse partition wall, in combination with a bed frame pivotally supported at said sides and having its upper half spaced apart from said wall a greater distance than the lower half, whereby space is formed to keep bedding, and a removable spring bottom section on the said lower half of said frame, combined with a spring seat adapted to rest on the upper half and make a complete bed bottom.

12. In a convertible bed and seat, a tilting bed frame having a finished couch back and spring mesh support therefor stretched across its bottom and outer portion, in combination with a couch seat adapted to rest within said couch back to provide a bed bottom section, and a spring bed bottom section on the inner portion of said frame adapted to complete the bed bottom.

13. In a convertible bed and seat, a suitable support having sockets in its sides, in combination with a seat having legs engaged in said sockets.

14. In a convertible bed and seat, a suitable support having sockets on its inside, in combination with a seat having projections at its bottom engaged in said sockets and means to carry the rear edge of the seat.

15. In a convertible bed and seat, a main frame, a tilting bed frame having a seat back on its upper portion and pivoted braces on its sides and center, inclined guides for said braces, and separate guide and supporting members on said frames, in combination with a removable seat resting upon said braces at its rear and detachably fixed to the main frame at its front to prevent sliding forward.

16. The main frame, the bed frame pivotally supported therein and constructed in its upper half to provide a chamber behind the same for bedding, and a catch to lock the said frame definitely in respect to the main frame.

In testimony whereof I sign this specification in the presence of two witnesses.

DAVID T. OWEN.

Witnesses:

R. B. MOSER,
C. A. SELL.