

No. 701,562.

Patented June 3, 1902.

H. S. HALE.
CAR SEAT.

(Application filed Oct. 29, 1901.)

(No Model.)

Fig. 1.

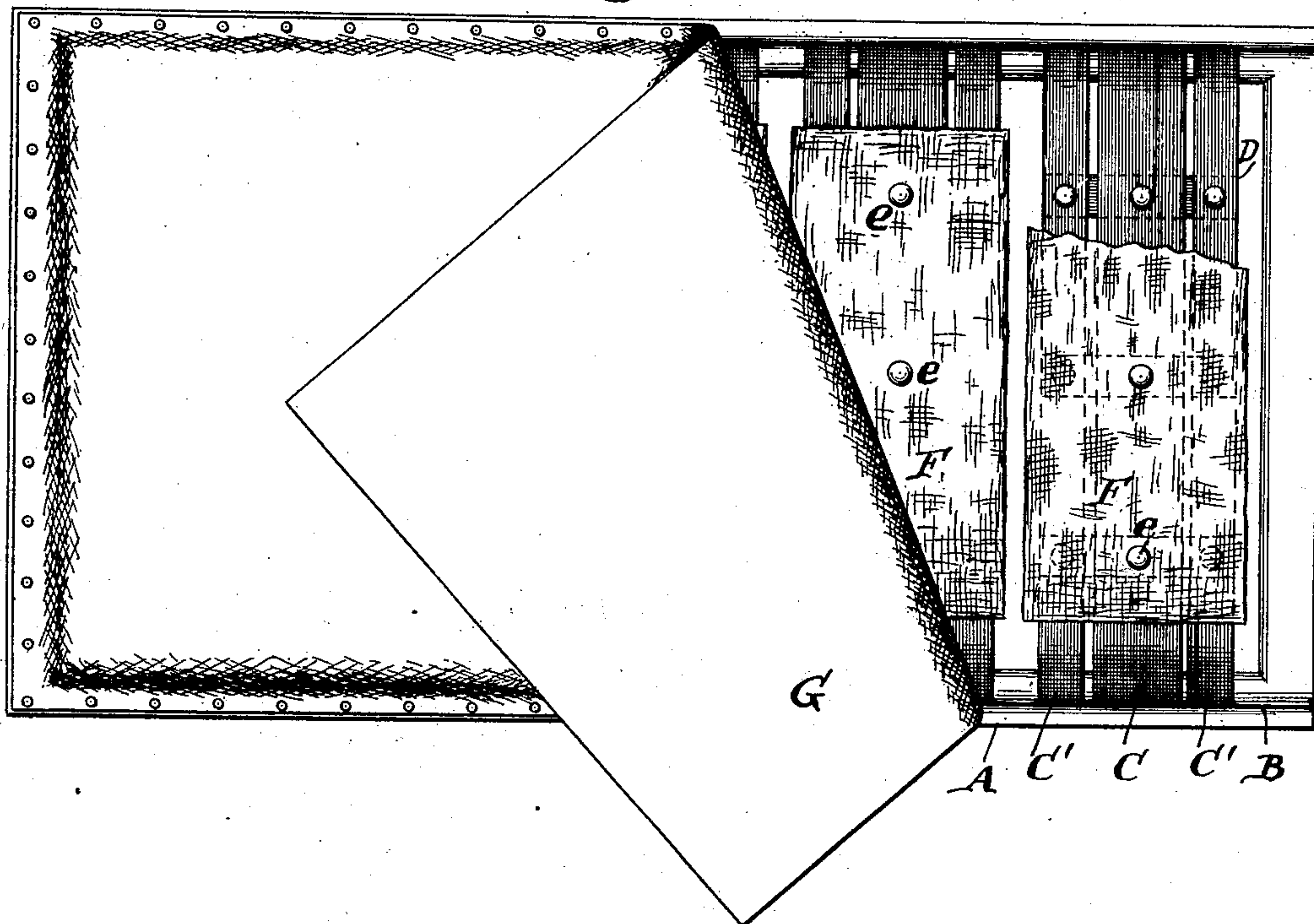


Fig. 2.

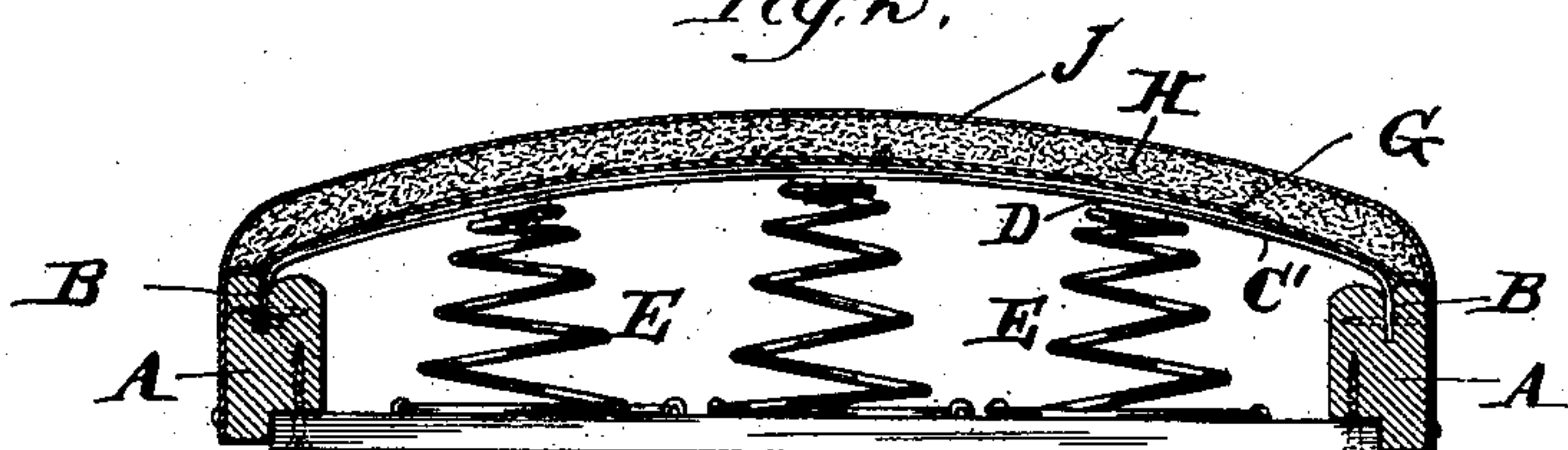


Fig. 3.

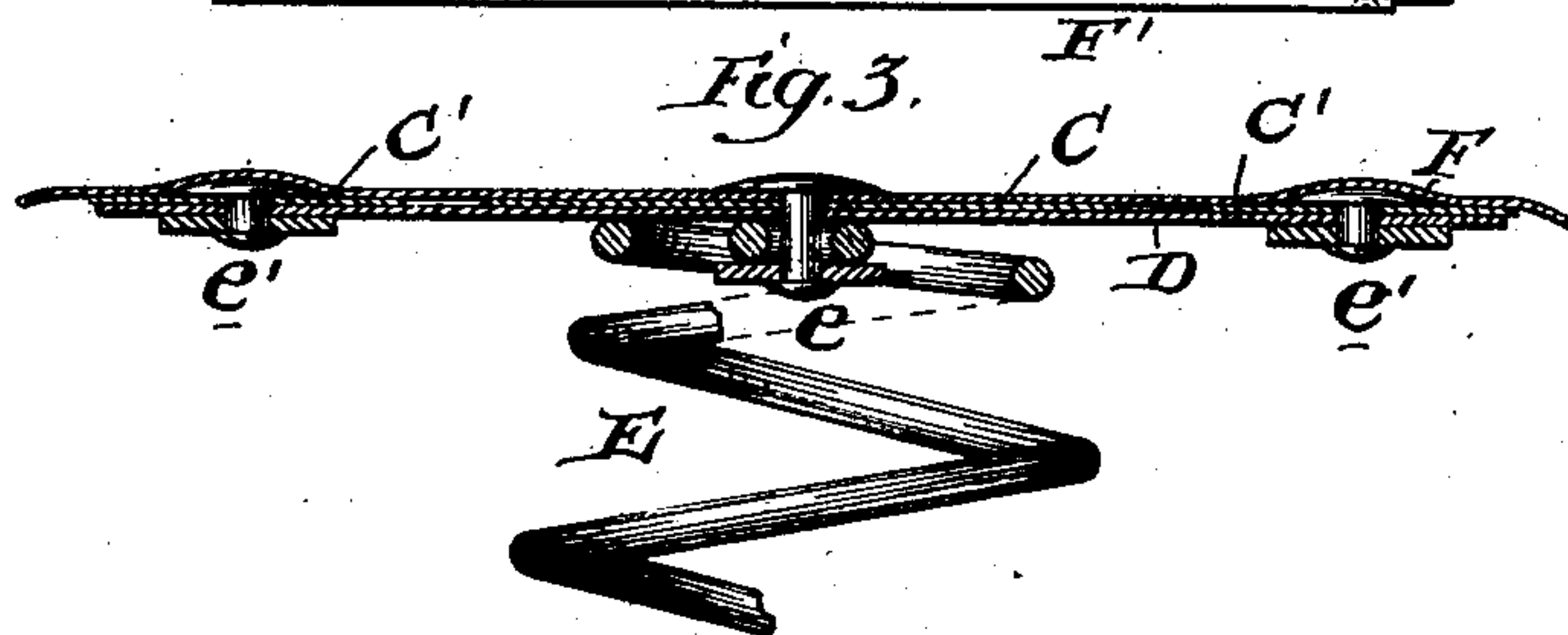
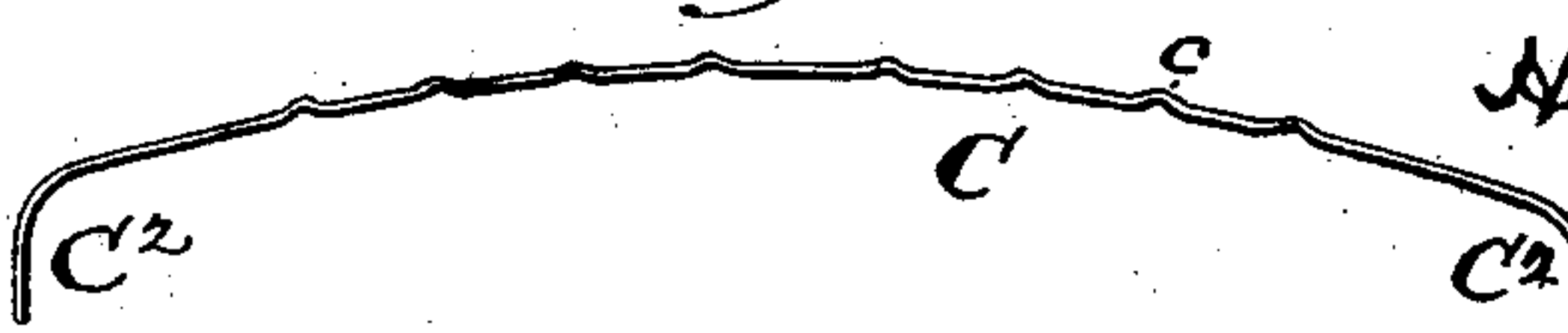


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY S. HALE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
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CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 701,562, dated June 3, 1902.

Application filed October 29, 1901. Serial No. 80,409. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. HALE, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Car-Seats, of which the following is a specification.

My invention has reference to car-seats; and it consists of certain improvements, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a suitable construction of car-seat cushion combining metal and textile material which shall be strong and at the same time very flexible or yielding, whereby it has great sustaining qualities coupled with softness and comfort to the occupant in use.

In carrying out my invention I provide a wooden frame with a series of sheet-metal spring-plates sustained upon coil-springs and over which the textile padding and covering is placed. The spring-plates are built up in compound construction—that is to say, they are each comprised of a series of long parallel plates connected at intervals by short transverse plates, the central long plate when employed being preferably wider than the outer plates and directly supported upon the coil-springs and the connection with said springs being desirably formed by bolts or rivets passing through the cross and long central plates and ends of the coil-springs. The ends of the long parallel plates may be bent downward and secured to the wooden frame, and the textile covering is placed over the series of metal spring-plates and secured to the wooden frame of the seat.

My invention also embodies details of construction, all of which will be better understood by reference to the drawings, in which—

Figure is a plan view of a car-seat embodying my invention and having the padding and covering removed and part of the under textile covering turned back to expose the spring structure. Fig. 2 is a cross-section of same with the upholstery in place. Fig. 3 is an enlarged transverse sectional view through one of the spring-plates and top of the coil-spring, and Fig. 4 is a side view of one of the long spring-plates removed.

A is the wooden frame and consists of the side and end rails and a series of cross-bars F' at the bottom. The side rails of the wooden frame A are longitudinally grooved on the upper edge, as at B, and are adapted to receive the ends of the spring-plates. These spring-plate structures extend across the wooden frame at intervals in its length and constitute a metallic support for the padding. They each consist of a wide central metal plate C and two side plates C' C', set close to it, but preferably without contact. The ends C² of these plates are curved downward and secured in the grooves B of the wooden frame by nails or otherwise. The three plates C' C' C' are connected by three cross-plates D, which are riveted thereto at e and e'. The wider central plates C are secured by the rivets e also to the upper ends of the coil-springs E, as shown in Figs. 2 and 3. This construction gives great elasticity and flexibility, but at the same time it maintains sufficient strength to sustain great weight. By the use of the side strips C' the space between two adjacent plates C is filled in, and this is accomplished without making the plates C so abnormally wide as to destroy the universal elasticity required in said plate. Moreover, the transverse plates I greatly strengthen the spring-plate structure as a whole without interfering with its elasticity, so necessary in a seat of this construction.

Above the spring-plate structures I arrange textile webbing of sufficient width as to overlap the lateral or outer edges of the plates, so as to shield the upper textile covering against cutting or abrading action. These webbing-pieces are shown at F and are riveted in place by the three rivets e, passing through the central plate C. They are not secured to the side plates C', because it is not necessary to hold them in position, and, secondly, it is preferable to leave the said plates free on account of securing more flexibility.

G is a sheet or cover of textile material covering all of the springs and is secured to the wooden frame. Above this is placed the padding H, and over said padding is a covering of upholstery J. The padding may be omitted, if desired.

While I prefer the construction shown, I

do not limit myself to the minor details thereof, as they may be modified without departing from the spirit of the invention.

The strips C C' may be smooth or corrugated, as indicated in Fig. 4 at c, said corrugations being at intervals in the length of the plate. While all three plates of the spring-plate structure may be corrugated, if desired, the corrugations may be put upon the central plate C alone. The object of the corrugations is to give additional strength transversely to the length of the plate, and thus enable a thinner plate to be used than is otherwise suitable. While I prefer the central plate C wider than the side plates C', it is evident that all of these plates may be of the same or any suitable width.

While I have shown the use of three spring-strips C C' C' for each spring-plate structure, it is evident that more than three strips may be secured together in the manner shown, or, if desired, the central strip C may be omitted and the springs E connected only with the cross-strips D, to which the strips C' C' are connected. It is further evident that, broadly considered, it is not necessary that the ends of the strips C C' C' shall be directly fastened upon the side rails of the frame A, since they will be retained in their position by the upper webbing.

While I prefer the construction shown, I do not limit myself to the details, as these may be varied without departing from the spirit of my invention.

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

1. In a seat-cushion the combination of a wooden frame, a series of spring-plate structures extending across the top of said frame and each comprising a series of parallel strips connected together by cross-strips, coil-springs secured to the cross-strips and supported within the wooden frame, and suitable upholstery arranged above the spring-plate structure and secured to the wooden frame.

2. In a seat-cushion, the combination of a wooden frame, a series of spring-plate structures extending across the top of and having their ends secured to said frame and each comprising a series of parallel strips connected together by cross-strips, coil-springs secured to the cross-strips and supported within the wooden frame, wide textile webbing resting upon the said series of parallel strips of metal and wider than the width of the said spring-plate structures, and suitable upholstery arranged above the spring-plate structures and webbing and secured to the wooden frame.

3. In a seat-cushion, the combination of a wooden frame, a series of spring-plate structures extending across the top of said frame and each comprising a central wide strip and a narrow strip upon each side thereof connected together by cross-strips and having their ends bent downward and fastened to the

side bars of the wooden frame, coil-springs secured to the central wide strips and supported within the wooden frame, and suitable upholstery arranged above the spring-plate structures and secured to the wooden frame.

4. In a seat-cushion, the combination of a wooden frame, a series of spring-plate structures extending across the top of and having their ends secured to said frame and each comprising a central wide strip and a narrow strip upon each side thereof connected together by cross-strips and said wide and narrow strips having transverse corrugations at intervals in their length, coil-springs secured to the central wide strips and supported within the wooden frame, and suitable upholstery arranged above the spring-plate structures and secured to the wooden frame.

5. A spring-plate structure for a seat-cushion consisting of three parallel plates connected at intervals in their length by transverse or cross-plates riveted thereto, and coil-springs secured to the under side of the middle strip.

6. A spring-plate structure for a seat-cushion consisting of three parallel plates connected at intervals in their length by transverse or cross plates riveted thereto, a strip of textile webbing of a width greater than the whole width of the strips and secured in position upon the central strip and having its lateral edges extending over the side strips, and coil-springs secured to the under side of the middle strip.

7. A spring-plate structure for a seat-cushion consisting of a wide central corrugated spring-plate, two narrow side plates, transverse or cross plates riveted to the middle plate of said parallel plates and arranged at intervals in their length, and coil-springs secured to the under side of the corrugated middle plate.

8. In a spring-plate structure for seat-cushions, the combination of a wide central plate C and two narrow side plates C', C', with cross-strips D riveted to said plates C, C', C' and coil-springs E secured to the central plate C in line with the cross-strips D.

9. In a spring-plate structure for seat-cushions, the combination of a wide central plate C and two narrow side plates C', C', having their ends curved downward, with cross-strips D riveted to said plates C, C', C', textile webbing resting upon the plates C, C', C', and of a width greater than the total width of the plate structure and secured thereto and of less length than the length of said plate structure, and coil-springs E secured to the central plate C in line with the cross-strips D.

10. In a spring-plate structure for seat-cushions, the combination of a central plate C and two side plates C', C', with cross-strips I riveted to said plates C, C', C' and coil-springs E secured to the central plate C in line with the cross-strips I.

11. A spring-plate structure adapted for use in seat-cushions made of greatly less width than the length of the completed seat

and consisting of parallel spring-plates or strips of metal connected at intervals in their length by transverse or cross strips or plates secured thereto, and a single row of coil-springs secured to the under side of the spring-plate structure and located under said cross strips or plates.

12. A spring-plate structure adapted for use in seat-cushions made of greatly less width than the length of the completed seat and consisting of parallel spring-plates or strips of metal connected at intervals in their length by transverse or cross strips or plates

secured thereto, a single row of coil-springs secured to the under side of the spring-plate structure and located under said cross strips or plates, and a strip of textile webbing of a width greater than the whole width of the plate structure and secured in position upon it.

In testimony of which invention I have hereunto set my hand.

HENRY S. HAILE.

Witnesses:

JOHN B. KILBURN,
P. J. TUCKER.