

Aug. 2, 1927.

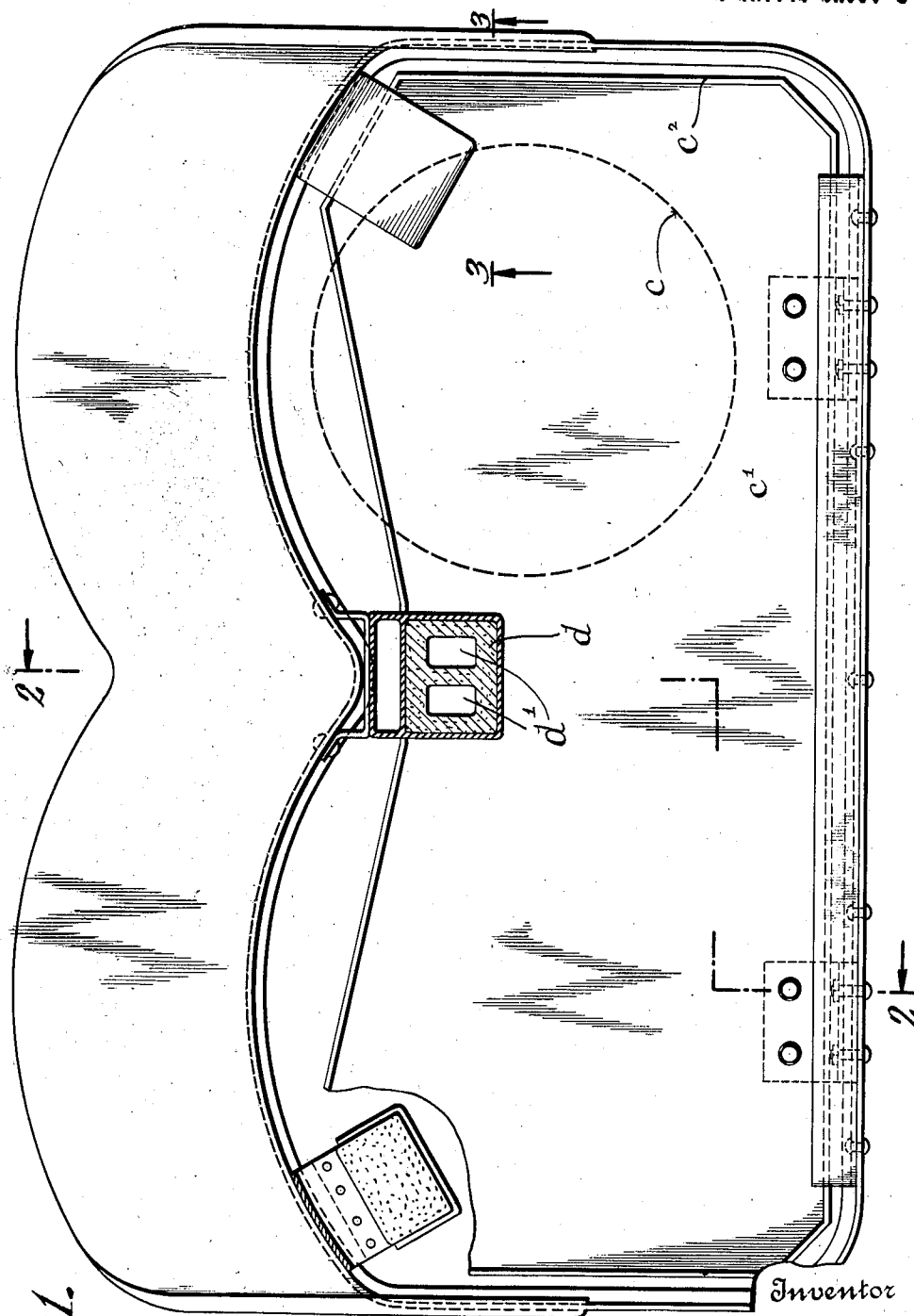
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1,637,780

SEAT

Filed Dec. 3, 1925

2 Sheets-Sheet 1



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Fig. 3,

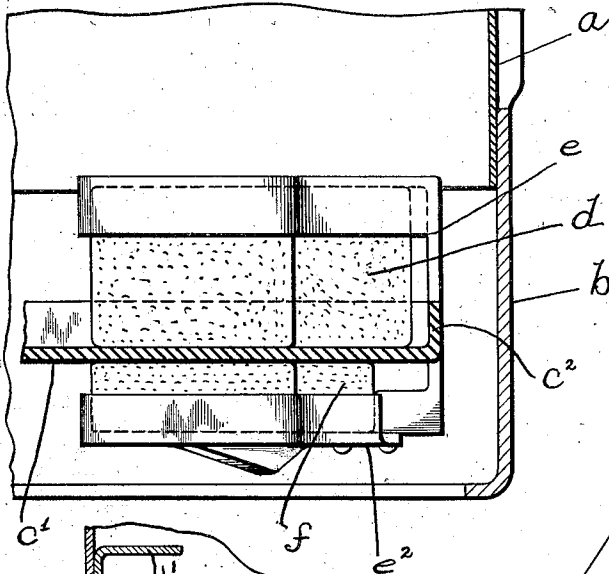


Fig. 4,

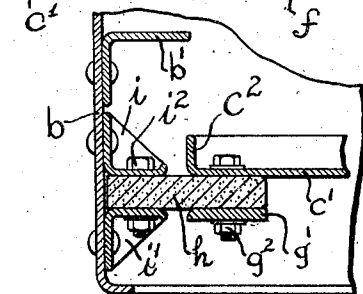
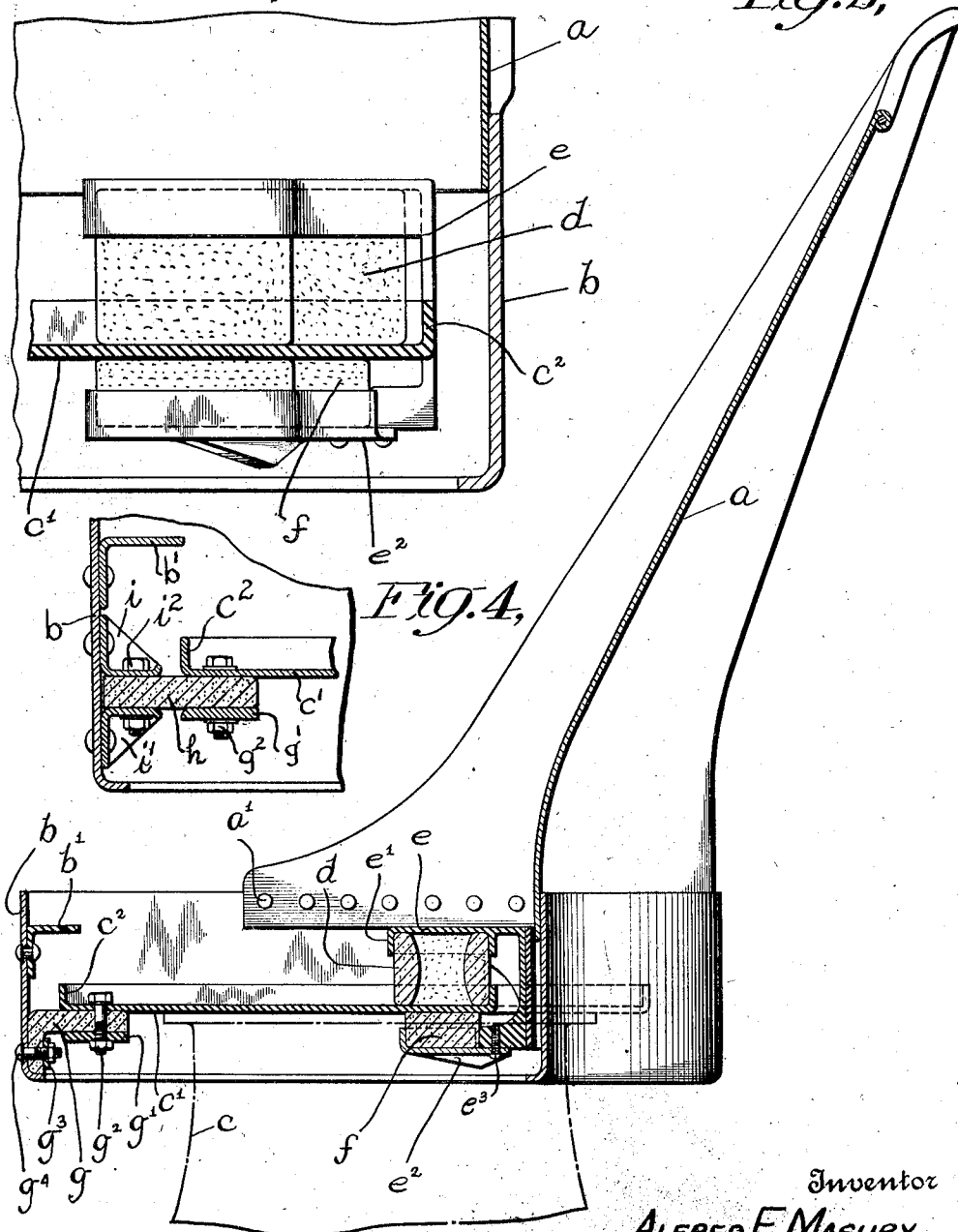


Fig. 2,



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UNITED STATES PATENT OFFICE.

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SEAT.

Application filed December 3, 1925. Serial No. 72,928.

This invention relates to seats or other weight supporting instrumentalities for a person in either a sitting or reclining position wherein the use of springs or other resilient media usually found necessary to comfort is obviated by the use of yielding non-metallic cushioning connections or supports therefor. In the following description whenever any type of supporting surface for a person is intended, it will be referred to, for the sake of convenience, as a seat. More specifically the invention contemplates the interposition of yielding non-metallic material between a seat and a base or frame therefor with capacity for a predetermined degree of compression. Other yielding non-metallic material may, if desired, be associated with the said material having a capacity for expansion proportionate to the compression of the first named material. In the preferred embodiment of the invention a plurality of perforated blocks capable of predetermined distortion are interposed between a seat and a base or frame therefor along the rear while other blocks of yielding non-metallic material capable of expansion in direct relation with the distortion of the aforesaid blocks co-operate with them. Forwardly the seat may be positioned with respect to the frame by means of yielding non-metallic strips since the normal application of force with a load upon the seat is naturally in a downwardly and rearwardly direction thereby placing the connections at the rear under compression and the connections at the front end under some degree of tension. The objects of the invention and the means for their attainment will be more apparent from the following detailed description of a preferred embodiment taken in connection with the accompanying drawings.

In the drawings:

Figure 1 is a view of the seat and a portion of the frame looking from below, certain of the connections being illustrated in section.

Figure 2 is a transverse vertical sectional view taken in the plane indicated by the broken line 2—2 in Figure 1 and looking in the direction of the arrows.

Figure 3 is a view taken in the plane indicated by the line 3—3 in Figure 1 and

looking in the direction of the arrows and showing one of the connections at the rear of the seat.

Figure 4 is a fragmentary vertical sectional view showing a modification of the front hinge joint illustrated at the left of Figure 2.

While the cushion seat according to the present invention will be found particularly applicable in situations where a chair or seat is adapted to be supported from the floor of the vehicles whereby shocks and stresses incident to the travel thereof are absorbed or cushioned and prevented from being impressed upon the seat, it is to be understood that the following description is in no wise limited to such use but that such cushion support may be used in many situations where it is desired to do away with metallic springs in the seat cushions in all types of weight supporting media.

In the drawings a unitary seat is indicated as formed of a back rest *a* secured as by rivets or the like *a'* to a frame *b* having inwardly directed flanges *b'* adapted to support a cushion, not shown. This seat may be supported from any convenient form of frame or base. In the illustrated embodiment a pedestal is indicated at *c* adapted to be disposed at one side of the seat proper although obviously a plurality of pedestals or legs or a frame extending from the side of the vehicle may be availed of in lieu of the pedestal indicated. Supported upon the pedestal there is shown a transversely extending plate *c'* which in the illustrated embodiment is formed with a rim *c''*. When in operative position the plate *c'* will be disposed within the frame *b* but below the flange *b'* for the seat cushion.

At predetermined points along the rear plate *c'* there are disposed yielding non-metallic cushion connections and supports for the seat. These connections include blocks *d* of yielding non-metallic material, such as rubber, disposed above the plate *c'* and engaged by a housing or seat member carried with the frame *e*. Downwardly directed flanges *e'* may define the block receiving portion of the housing and serve as a seat or retaining means for the upper portion of block *d*. Similar seats may, if desired, be arranged on the plate *c'*. In

the illustrated embodiment block d is shown as formed with two apertures d' defined by a hyperboloid.

It will thus be seen that the block d is adapted to receive directly the load of the seat. It is normally maintained under a predetermined degree of compression whereby its strength, resiliency and wearing qualities are increased. Obviously an increase in the distortion of the block will be effected when the load applied to the seat is increased. In order to compensate for the distortion or compression of the block d a block of yielding non-metallic material, such as sponge rubber, may be disposed immediately therebeneath upon the opposite side of the plate c' . This block is indicated at f and is adapted to be retained in operative position by means say, of a cup member e^2 secured in any convenient manner either removably or irremovably to the housing e . Block f is so proportioned and is retained under such degree of compression as to be expansible in direct proportion to the distortion or compression of the block d in order that the connection between the seat and plate c' may be at all times assured. As the blocks d and f , and particularly the block f will be assembled initially under a degree of compression, it will be found convenient to facilitate assembly to arrange the cup member e^2 so that it may be readily secured in assembled relation after the blocks d and f are in operative position. To this end a bolt or screw e^3 is provided to secure cup member e^2 to the frame b . Three of these connections are illustrated in the drawings, one disposed in the longitudinal median line of the seat and one substantially at either rear corner.

Forwardly the connections between the plate c' and the frame b are illustrated as comprising two straps or hinges of yielding or flexible non-metallic material g secured to the plate at one end as by a strip of metal g^1 and the bolt g^2 and to the front face of the frame b by a similar strip of metal g^3 and the bolt g^4 . In Figure 2 the strap g is illustrated as secured in a horizontal plane to the plate c' and in a vertical plane to the front wall of the frame b . In Figure 4 a modified construction of joint is illustrated in which the strap h of yielding or flexible non-metallic material is secured as before to the plate c' . The strap h is not bent in the form of an angle as in the previous embodiment, however, but is clamped in horizontal relationship between two brackets i, i' carried with the front wall of the frame and drawn together by the bolt i^2 .

The general distribution of forces when a person is occupying a seat will be in a downwardly and rearwardly direction and the compression stresses will thus be applied principally upon the blocks d . The seat will

thus have a tendency to rotate about a point or horizontal transverse line including the supports d . These supports are, therefore, under compression. In consequence, the connections g^1 will be under tension and it is for this reason that the strips g are found most advantageous.

It will thus be seen that a seat has been provided wherein the tendency of the occupant due to the starting and stopping or swinging of the vehicle is yieldingly resisted by cushioning material dampening or overcoming to a marked degree the shocks and vibrations which would otherwise be transmitted from the vehicle to the passenger.

Various modifications may be made in the configuration, arrangement and location of the component elements forming the cushion connection according to the present invention and no limitation is intended by the foregoing description or illustrations except as indicated in the accompanying claims.

What I claim is:

1. In a device of the character described, in combination, a base, a plate carried with the base, a supporting element, blocks of yielding non-metallic material disposed between the plate and the supporting element along the rear edge thereof, said blocks being formed with a plurality of vertically disposed recesses, and straps of yielding non-metallic material secured to the forward edge of the supporting element and to the plate adjacent thereto.

2. In a device of the character described, in combination, a base, a plate carried with the base, a supporting element, blocks of yielding non-metallic material disposed between the plate and the supporting element along the rear edge thereof, and straps of yielding non-metallic material secured to the forward edge of the supporting element and to the plate adjacent thereto.

3. In a device of the character described, in combination, a base, a plate carried with the base, a supporting element, a block of yielding non-metallic material disposed between the plate and the supporting element along the rear edge thereof, and a strap of yielding non-metallic material secured to the forward edge of the supporting element and to the plate adjacent thereto.

4. In a device of the character described, in combination, a seat, a base, a block of yielding non-metallic material disposed between a portion of the seat and the base, said block resting upon the base and said seat resting upon the block, and a second block of yielding non-metallic material disposed between another portion of the seat and the base, said second named block depending from the base and said second named portion of the seat depending from said second named block, said blocks of non-metallic material comprising the sole sup-

porting means between the seat and the base.

5 5. In a device of the character described, in combination, a seat, a base, blocks of
10 yielding non-metallic material disposed between the seat and the base proximate the rearward portions thereof, said blocks resting upon the base and said portion of the seat resting upon the blocks, and blocks of
15 yielding non-metallic material disposed between the seat and the base proximate the forward portions thereof, said last named blocks depending from the base and said portion of the seat depending from said
20 blocks, said blocks of non-metallic material comprising the sole supporting means between the seat and the base.

6. In a device of the character described, in combination, a seat, a base, a series of
25 blocks of yielding non-metallic material mounted between the seat and the base and disposed above that portion of the base and below that portion of the seat between which they are mounted, and a second series of
30 blocks of yielding non-metallic material mounted between the seat and the base and disposed below that portion of the base and generally above that portion of the seat be-

tween which they are mounted, whereby the seat is supported upon the base by compression and tension of the respective blocks, said blocks of non-metallic material comprising the sole supporting means between the seat and the base. 30

7. In a device of the character described, 35 in combination, a seat, a base, a bracket carried with the seat, a seat portion formed on said bracket, a block of yielding non-metallic material mounted in the seat portion of said bracket, said block being disposed above 40 and resting upon the base, a second seat portion carried by said bracket, a second block of yielding non-metallic material mounted in the second named seat portion carried by said bracket, said block being 45 disposed below the portion of the base upon which the first named block rests and bearing against that portion of the base, and a third block of yielding non-metallic material mounted between the seat and the base at a 50 point remote from the first and second named blocks.

This specification signed this 29 day of October, A. D. 1925.

ALFRED FELLOWS MASURY.