

June 3, 1958

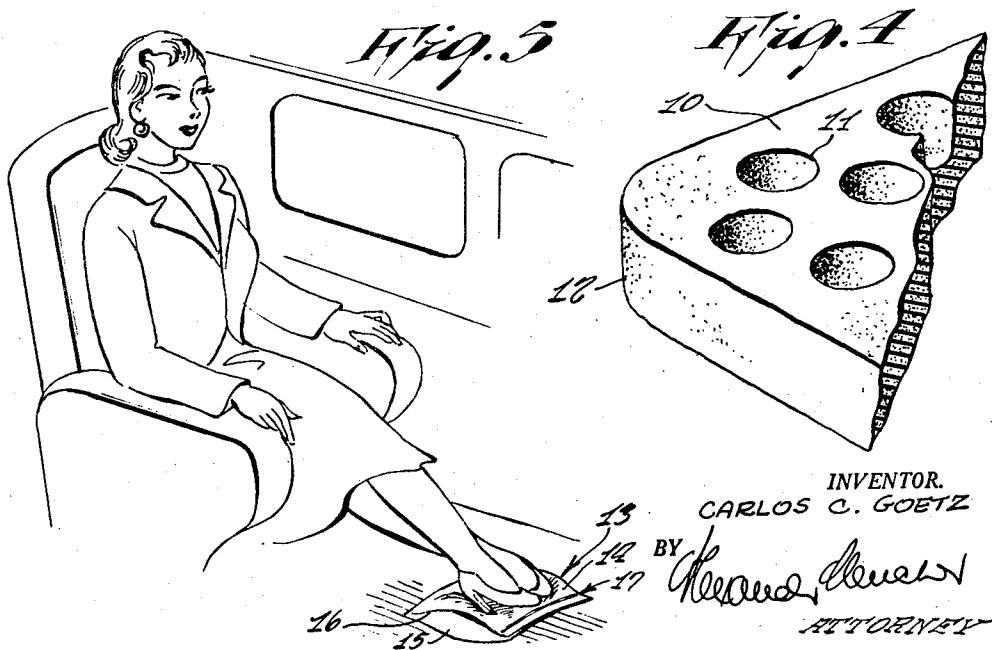
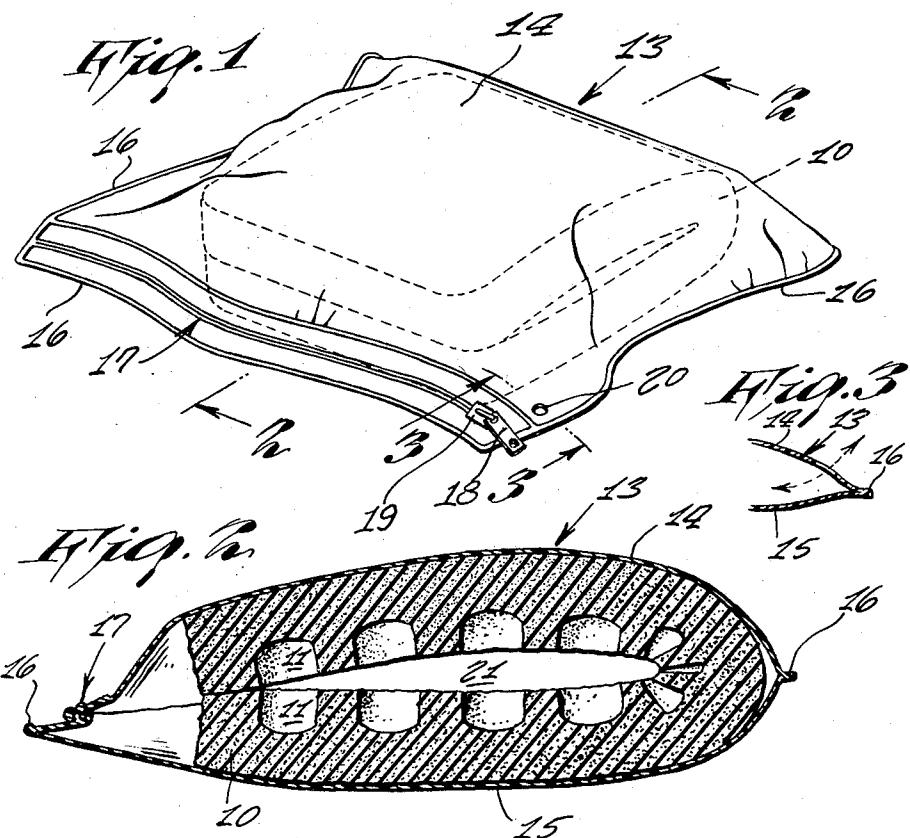
C. C. GOETZ

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VIBRATION INSULATOR

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2 Sheets-Sheet 1



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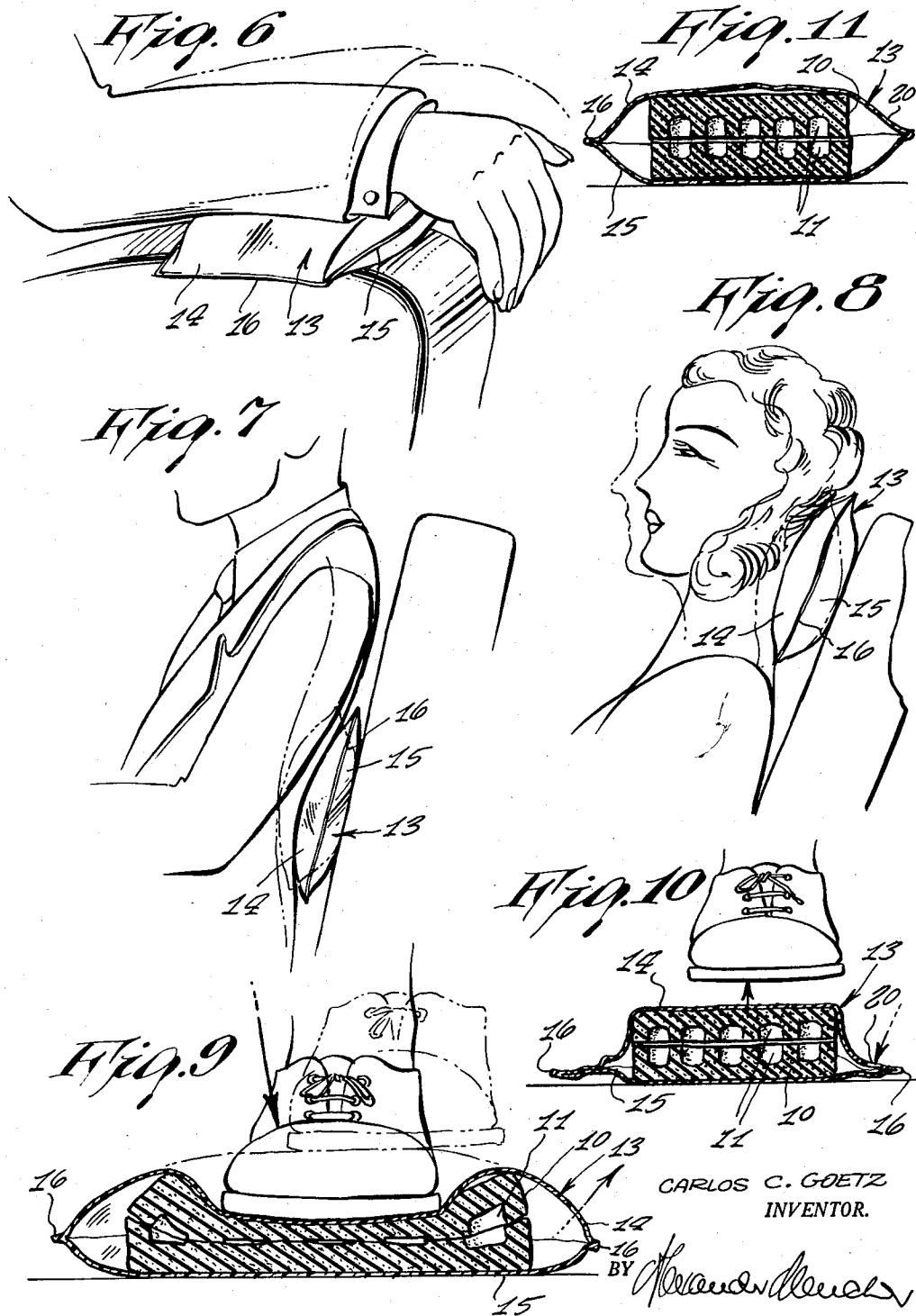
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VIBRATION INSULATOR

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4 Claims. (Cl. 155—182)

This invention relates to cushions.

It is an object of the present invention to provide a portable cushion which may be used to support the user in a plurality of positions, as desired.

It is another object of the present invention to provide a portable cushion of the above type which is particularly useful during train, bus and airplane trips.

It is still another object of the present invention to provide a portable cushion of the above type which may be used to support the forearms of the user, as a foot pad, as a back cushion or as a neck support, as desired.

It is still another object of the present invention to provide a cushion of the above type which comprises essentially a foam rubber pad and a removable airtight plastic covering therefor and wherein novel means are provided to permit the escape and entrance of air through the cover as the cushion is compressed or expanded whereby to permit the easy and ready compression of the cushion while at the same time preventing the collapse thereof.

It is still another object of the present invention to provide a cushion of the above type which due to the construction thereof and to the materials employed provides a better cushioning effect than conventional cushions.

Other objects of the present invention are to provide a portable cushion bearing the above objects in mind which is of simple construction, inexpensive to manufacture, has a minimum number of parts, is easy to use and efficient in operation.

For other objects and a better understanding of the invention, reference may be had to the detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a preferred embodiment of the present invention;

Figure 2 is a vertical sectional view thereof taken along the line 2—2 of Figure 1;

Figure 3 is a fragmentary vertical sectional view taken along the line 3—3 of Figure 1 and showing the escape and entrance of air through the cover upon the cushion being compressed or released;

Figure 4 is a fragmentary perspective view of the foam rubber pad forming a part of the invention prior to being folded upon itself;

Figure 5 is a perspective view showing the invention in operative use as a foot pad;

Figure 6 is a perspective view showing the invention in operative use as an arm rest;

Figure 7 is a perspective view showing the invention in use as a back pad;

Figure 8 is a side elevational view showing the invention in operative use as a neck rest or support;

Figure 9 is a vertical sectional view of the invention showing the same in a compressed position and illustrating the manner in which the air escapes from the air tight covering;

Figure 10 is a view similar to Figure 9 but showing the disposition of the cushion after the pressure has been re-

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moved therefrom and just prior to the entrance of air into the cover and

Figure 11 is a view similar to Figure 10 but showing the cushion after the air has had an opportunity to reenter the covering.

Referring now more in detail to the drawing, 10 represents a pad of foam rubber having a plurality of spaced cylindrical openings 11 extending partially therethrough, the pad 10 being provided with the rounded corners 12, substantially as illustrated.

A plastic covering indicated generally at 13 is provided for the pad 10 after the latter has been folded down onto itself (Figure 2) with the openings 11 coming together to form unitary openings (Figure 11). The openings 11 of the pad 10 are so positioned that when the pad is doubled down upon itself, the openings 11 in the upper section will be aligned vertically with the openings 11 in the lower section.

The cover 13 includes the upper section 14 and the lower section 15 which are heat-sealed together around their peripheries as at 16, the sections 14 and 15 extending laterally beyond the doubled-up sides of the pad 10, as shown in Figure 1. The sections 14 and 15 also extend longitudinally beyond the doubled-up ends of the pad 10, as shown in Figure 2.

As shown in Figure 1, a plastic airtight slide fastener construction indicated generally at 17 is formed in the upper section 14 near the doubled-up ends of the pad 10, and includes the handle 18 and slide 19 to provide a releasable airtight closure for the cover and to permit the easy insertion and removal of the doubled-up pad 10.

The top section 14 is provided near the zipper 17 with an air opening 20.

As shown in Figure 2, the natural resilience of the pad 10 in the doubled-up position creates an air space 21 which is intermediate the overlying openings 11 whereby to impart a greater cushioning effect. When the cushion is depressed, as shown in Figure 9, the air space 21 is eliminated, and the air between the openings 11 is forced outwardly and escapes through the air opening 20 to permit the easy collapsing of the cushion for greater resilience and comfort.

As the pressure is removed, as shown in Figure 10, the pad 10 will first expand to its normal position, while the portion of the cover 13 surrounding the same will remain collapsed, since the air normally filling this area has been squeezed out through the air opening 20. However, immediately thereafter, the air will return through the air opening 20 to fill the covering 13, which will then assume the ballooned out position of Figure 11. Thus, a cushion support is provided not only by the pad 10 but also by the air filling the airtight covering 13, this air being permitted to escape gradually through the air opening 20 when the cushion is compressed, and returning after the pressure is released to provide a full, expanded cushion at all times for the greater comfort of the user.

Due to its compactness and portability, the cushion may be conveniently carried along on airplane, bus and train trips and employed at any one of the positions shown in Figures 5—8. This versatility of function permits the invention to serve where normally a plurality of cushions would be required.

It is well known that when parts of the body are supported on rests whether they be for the arms, back, neck, legs and the like, body pressures vary not only when the body is relatively at rest but especially when the body is in motion as on carriers causing vibration. According to the invention, with each variation of pressure, the rest described expands or contracts and virtually breathes in a smooth manner and thereby helps to eliminate "vibration" fatigue which accompanies long and rough trips on carriers especially trains and aeroplanes.

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 Although foam rubber has been designated as the filler for the cushion, other porous material having the quality of compressibility and expansibility on application and release of pressure may be utilized. Included in such materials are rubber, fiber, composition and synthetics which are resilient and which are formed with air cells adapted to communicate with the exterior environment for release and acquisition of air upon freedom and application of pressure respectively.

Moreover, by virtue of the use of a removable covering 13, the cushion may be dismantled for washing, cleaning and change of covering.

It is understood that minor changes and variations in the size, location, material, integration and assembly of parts may all be resorted to without departing from the spirit of the invention and the scope of the appended claims.

I claim:

1. A cushion comprising a resilient pad folded downwardly across itself to form sections to provide an air space intermediate the upper and lower sections thus formed with the free ends of said pad coming together, said pad along one face having a plurality of spaced openings extending partially therethrough, said openings being adapted to be aligned with corresponding openings when the pad is doubled over to form unitary air pockets within the cushion, and a plastic airtight covering for said pad, said covering extending beyond the doubled-up sides and end of said pad to provide air pockets, said covering near the doubled-up ends of said pad being provided with a plastic slide fastener construction whereby to permit the insertion and removal of the pad, said covering further being provided with a relatively small air opening therethrough to permit the escape of air when the cushion is compressed and the return of the air into the air pockets when the cushion has been expanded to its normal position.

2. A cushion comprising a substantially rectangular pad of foam rubber, said pad on one face having a plurality of laterally spaced, substantially cylindrical openings extending partially therethrough, said pad being folded back upon itself with the free ends thereof coming together, said openings being adapted to be aligned with corresponding openings provided in the opposing sections of the pad, an airtight plastic covering for said pad whereby to retain the same in a doubled-up position, said covering being adapted to permit the spaced relationship of the inner faces of the pad to provide an internal air pocket to increase the cushioning effect of the construction, said covering extending beyond the double sides and end of

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 said pad to provide an air space therewithin, a plastic slide fastener construction in said covering, said covering having a relatively small air opening therethrough to permit the escape of air when the cushion is compressed and to permit the gradual return of the air when the cushion has expanded to its normal position.

3. A cushion comprising a substantially rectangular pad of foam rubber, said pad on one face having a plurality of laterally spaced, substantially cylindrical openings extending partly therethrough, said pad being folded back upon itself with the free ends thereof being brought together, said openings being adapted to be aligned with corresponding openings in the opposing inner faces whereby to provide unitary air openings upon said inner faces being brought together, and a plastic covering for said pad adapted to retain the same in the doubled-up position with an air space between the inner faces thereof, said cover extending laterally beyond the double sides of said pad and longitudinally beyond the double end thereof to form a continuous air space around three sides of said pad, said plastic covering being provided with a relatively small opening to permit the escape of air when the cushion is compressed and the gradual return of air when the cushion has expanded to its normal position, said plastic covering having a plastic airtight slide fastener construction to facilitate the insertion and removal of the pad therefrom.

4. A cushion comprising a resilient pad of cellular material folded downwardly across itself to form sections to provide an air space intermediate the upper and lower sections thus formed with the free ends of said pad coming together, a plastic air-tight covering for said pad, said covering extending beyond the double-up sides and the end of said pad to provide air pockets, said covering being provided with an air-tight fastener construction whereby to permit the insertion and removal of the pad, said covering further being provided with a relatively small air opening therethrough to permit in dash-pot operation escape of air through said opening from the cushion and the air pockets when the cushion is relatively compressed and the return of the air to the air pockets and the cushion when the cushion has been relieved of relative compression.

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