A. J. COUGHENOUR.

ARTICLE CARRIER.

APPLICATION FILED MAR. 9, 1914.

1,113,415.

Patented Oct. 13, 1914.

3 SHEETS—SHEET 1.

Fig. 1

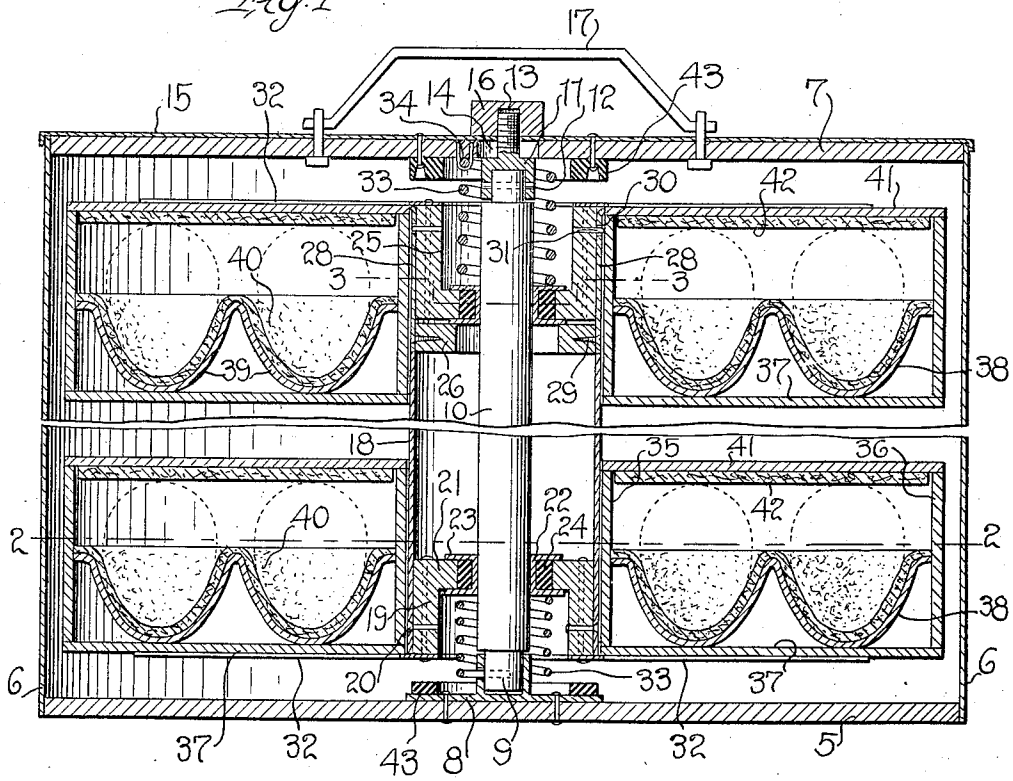


Fig. 3

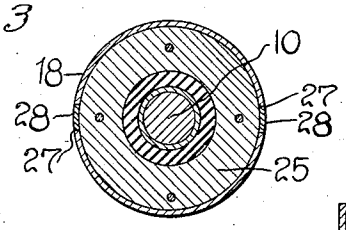


Fig. 8

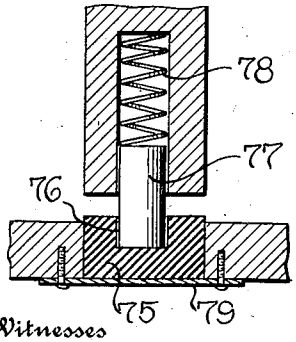
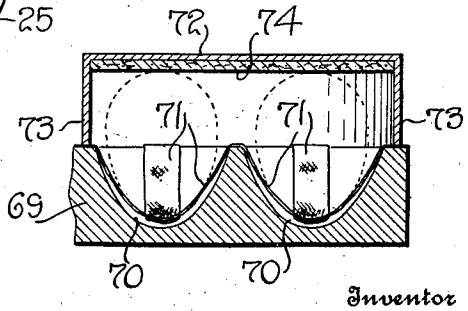


Fig. 7



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

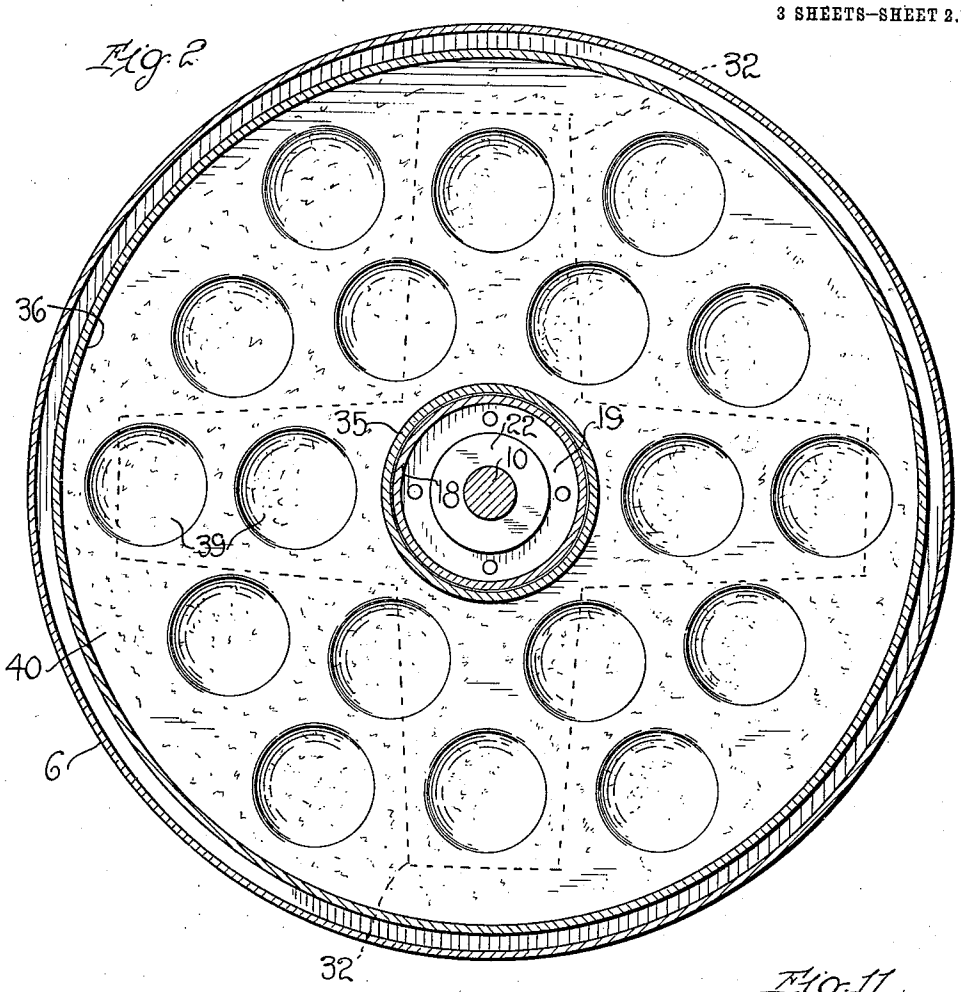


Fig. 9.

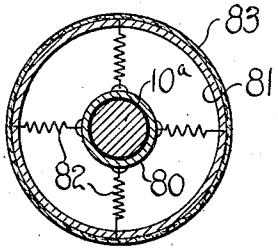


Fig. 10.

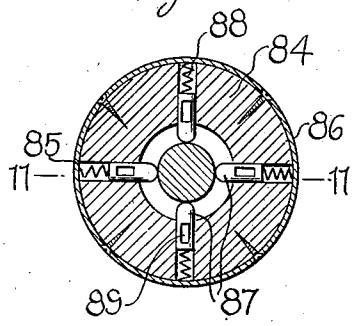
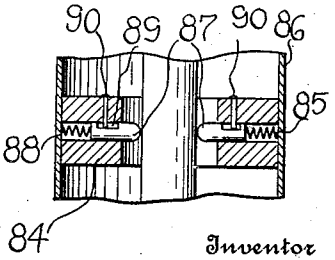


Fig. 11.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 4

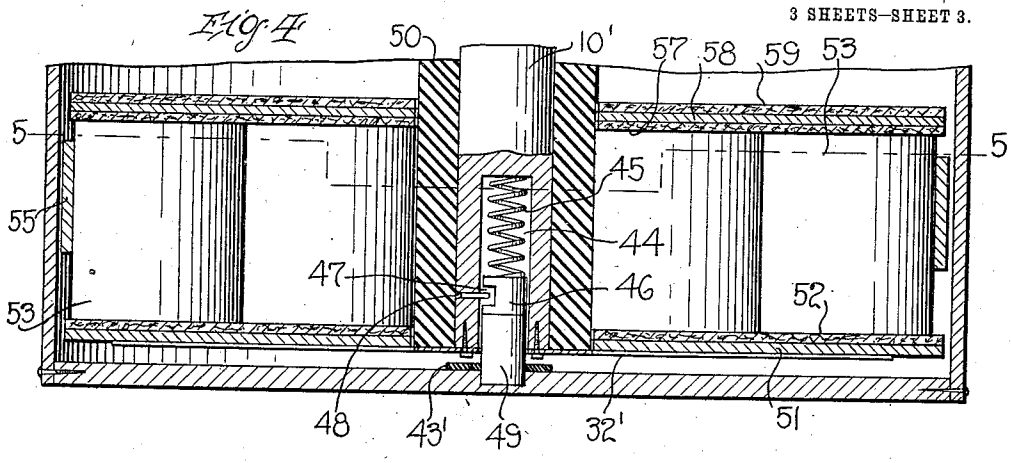


Fig. 6

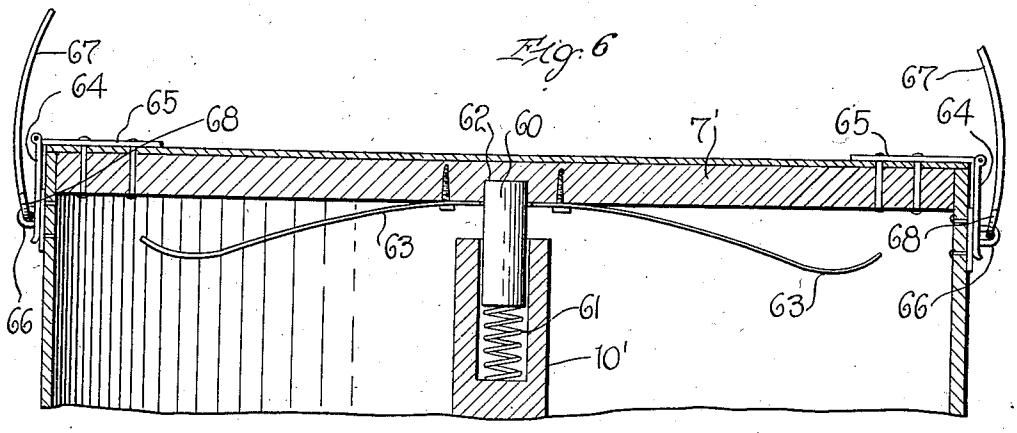
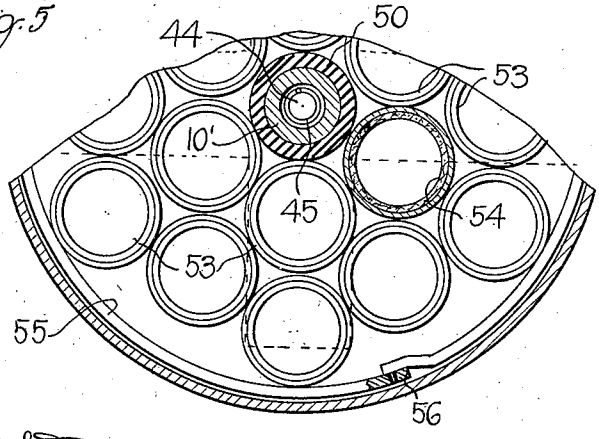


Fig. 5



Witnesses

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ARTICLE-CARRIER.

1,113,415. Specification of Letters Patent. Patented Oct. 13, 1914.

Application filed March 9, 1914. Serial No. 823,548.

To all whom it may concern:

Be it known that I, ALLEN J. COUGHENOUR, citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Article-Carriers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to carriers or receptacles for eggs and similar fragile commodities, the invention having for its principal object to provide a device of this character which is so constructed that all liability of breakage of the eggs or other articles in shipment will be obviated.

The invention has for another of its objects to produce an article carrier of the above character which will yieldingly support a large number of articles within a comparatively restricted space and admit of the rough handling to which such carriers are usually subjected without displacing the articles from their respective positions so that the same will engage or contact with each other.

The present invention has for another very important object to provide improved means for easily and quickly as well as tightly securing the top upon the body of the case whereby the entrance of water to the interior thereof is effectually excluded.

In its more specific aspect, the invention provides a centrally located perpendicular rod permanently mounted upon the base of the case, upper and lower resilient members, a plurality of article receiving cartons adapted to be arranged between said members, means for cushioning the cartons in their lateral movement with respect to said rod and the body of the case, and additional means for detachably holding the upper spring member in position, whereby the several cartons may be easily and quickly removed from the case.

The invention has for a further general object to improve and simplify the construction of devices of the above character and to produce a case or carrier especially adapted for the shipment of eggs which is highly serviceable and convenient in practical use and will satisfactorily perform the functions for which the same is designed.

With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a vertical section partly broken away of an egg case or carrier constructed in accordance with the preferred embodiment of the invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is a vertical section of the bottom portion of a case illustrating a slightly modified form of the invention; Fig. 5 is a section taken on the line 5—5 of Fig. 4 and on a slightly reduced scale; Fig. 6 is a fragmentary vertical section of the upper portion of the case showing another modification of the device; Fig. 7 is a detail section of an alternative form of the article receiving member. Fig. 8 is a detail vertical section showing a slightly different means for mounting the vertical rod upon the bottom of the case; Fig. 9 is a detail horizontal section showing a modified form of the means for cushioning the article receiving cartons against lateral movement in the case; Fig. 10 is a similar view showing another modification; Fig. 11 is a vertical section taken on the line 11—11 of Fig. 10.

Referring in detail to the drawings, and more particularly to Figs. 1, 2 and 3 thereof, 5 designates the base or bottom of the case, to the edge of which the upstanding annular body wall 6, preferably of fiber, is secured. 7 indicates the top of the case which is adapted to fit within the upper end of the body wall 6 and be secured in position therein in the manner to be later specifically set forth. To the upper surface of the base 5 of the case centrally thereof, a plate 8 is rigidly fixed and is provided with a socket 9 to receive the lower reduced end of a vertical rod 10. The upper end of this rod is disposed within a similar socket member 11 and is secured thereto by means of the rivet or bolt 12. This socket member is formed with a threaded shank 13 which is adapted to extend upwardly through a central opening 14 in the top 7 of the case. Upon the upper surface of the removable top 7, a sheet or disk 15 of fiber is secured, said disk being of slightly greater diameter than the diameter of said top so that the same will extend

over the upper edge of the body wall 6 of the case, as clearly shown in Fig. 1. The threaded shank or bolt 13 extends upwardly through a central opening in the fiber disk 15 and has a nut 16 threaded thereon. It will be readily understood that by simply adjusting this nut downwardly upon the shank 13, the top 7 is forced thereby downwardly into the case and the outer edge of the fiber disk 15 tightly engaged upon the upper edge of the body wall 6, thereby effectually preventing the entrance of water, dust or other foreign matter to the interior of the case. A suitable bail or handle 17 is mounted at its ends upon the removable case top.

A cylinder 18, preferably of card board or other similar material, surrounds the central rod 10 and is normally disposed in concentric relation thereto. In the lower end of this cylinder, a sleeve 19 of wood or papier mâché is arranged and permanently secured by suitable rivets 20. The upper end of this sleeve is formed with an inwardly projecting annular flange 21. A metal ring or annulus 22 is arranged upon the rod 10 and provided upon its upper and lower ends with outwardly projecting annular flanges 23, which extend over the edge of the flange 21 on the sleeve 19. Between this annulus and the flange 21, a ring or washer of rubber or other suitable cushioning material indicated at 24 is arranged. This rubber washer yieldably holds the sleeve 19 and the cylinder 18 against lateral movement with respect to the rod 10. A similar sleeve 25 is also arranged upon the upper end of the rod 10 and is provided with a cushioning device identical with that above referred to. This upper sleeve, however, is not permanently fixed in the cylinder 18 but is adapted to be readily removed therefrom. To this end, I provide a wood or paper annulus 26 which is riveted or glued, or otherwise permanently secured to the inner wall of the cylinder 18. The upper end of said cylinder is provided at diametrically opposite points with longitudinal slots 27 within which the spring latch plates 28 are located. The lower ends of these plates are fixed as at 29 to the annulus 26, and project at their free ends from the open ends of the slots 27 upon the upper edge of the cylinder 18. These free ends of the spring plates are provided with openings 30 to receive pins 31 fixed in the sleeve 25. To the open ends of the upper and lower sleeves 19 and 25, diametrically opposed spring metal plates 32 are fixed at their inner ends. Coil springs 33 are arranged upon the upper and lower ends of the rod 10, and bear against the respective metal rings 22. It will thus be observed that these springs yieldingly support the cylinder 18 and parts carried thereby against vertical movement upon the rod 10. The top spring 33 has its upper end fixed as at 34, to the removable top 7 of the case while the lower end of the bottom spring 33 extends through an opening in the wall of the socket 9 and is rigidly secured to the end of the rod 10.

The article receiving cartons or trays are each constructed of inner and outer circular walls 35 and 36 respectively, which are glued or otherwise suitably secured upon a base 37. This base as well as the annular body walls of the carton are preferably constructed of paste board or similar material. Between the body walls 35 and 36, the annular molded tray form 38 is arranged, said form being also constructed of card board which is molded or formed with the article receiving pockets indicated at 39. The surfaces of these pockets are lined with a felt sheet 40 which is glued or otherwise attached to the tray form, which in turn is similarly secured to the body walls of the article receiving carton. Each carton is provided with a removable top 41 upon the under side of which a felt sheet 42 is secured. When the eggs are arranged in the cartons, upon the soft yielding felt base sheet 40, and the top 41 arranged in position with the felt sheet 42 disposed over the eggs, it will be seen that each of the eggs is provided with an individual and intimate cushioning support so that they are held out of contact with each other and will not be broken by movement in the respective pockets of the carton. The lowermost carton in the case is supported upon the spring arms 32 while the upper spring arms engage upon the top carton. It will be apparent that the case may be of any desired depth so as to contain a greater or less number of these article receiving cartons. It will be understood that there is sufficient space between the annular walls 36 of the cartons and the body wall 6 of the case to permit of a limited lateral movement of the cartons within the case, such movement, however, being cushioned by the rubber washers 24 as above stated.

To the top 7 and the bottom 5 of the case or carrier, concentrically arranged rubber rings 43 are secured, which provide additional cushioning means to prevent shock or jar to the cartons in the event that the case is violently agitated so that the springs 33 will not wholly sustain the cylinder 18 against an extraordinary longitudinal movement with respect to the rod 10.

In Figs. 4 and 5 of the drawings, I have illustrated a slightly modified construction wherein it is to be noted that the central vertical rod 10′ is provided in its lower end with a longitudinal socket 44 in which a spring 45 is arranged. It is to be understood that the construction and arrangement of the several parts to be now described is identical at the upper and lower ends of the central rod 10′. One end of the

spring 45 bears against the base of the socket 44 while the other end thereof is secured to the disk 46 arranged in said socket and provided with a groove 47 in which the inner end of a pin 48 fixed in the rod 10′ is disposed. It will thus be obvious that said pin limits the longitudinal movement of the disk 46 under the action of said spring. This disk normally rests upon an upstanding stud 49 centrally fixed in the base or bottom of the case. The spring arms or plates 32′ for supporting the article receiving cartons are attached at their inner ends directly to the end of the rod 10′. A sleeve 50 of rubber, felt or other resilient cushioning material is arranged upon the rod 10′, and extends the entire length thereof the opposite ends of this sleeve engaging upon the upper and lower series of spring plates 32′ respectively. Upon the spring plates 32′, a card board disk 51 is arranged, the upper surface of said disk being covered with felt indicated at 52. Individual cylindrical cases or cartons 53 are provided for the eggs or other articles, and are adapted to be arranged within the case upon the felt sheet 52. The inner walls of these cases are lined with felt as indicated at 54. In the illustrated construction, provision is made within the case for eighteen of these cartons and they are held against relative movement by a resilient metal band 55 which encircles the same and is provided at its extremities with fasteners indicated at 56. Upon the cartons 53, a card board disk 58 is adapted to be arranged, the same being provided upon its bottom surface with the felt sheet 57. A second felt sheet 59 is also arranged upon the upper surface of the card board disk upon which a second series of article containing cartons 53 is adapted to be arranged. This disposition of the cartons within the case is continued until the same is entirely filled. Rubber cushioning disks 43′ are also centrally secured to the top and bottom of the case. The operation of this form of the invention is substantially the same as that above referred to.

In Fig. 6 of the drawings, I have illustrated a further modified construction wherein a pin 60 is arranged in the end of the centrally located rod and is yieldingly supported by means of the coil spring 61. The upper end of said pin is adapted to be received in a central socket 62 provided in the top 7′ of the case. To the under side of this case, oppositely extending spring plates 63 are fixed, said plates being preferably curved as illustrated and having their outer free ends spaced from the top 7′. These plates are adapted to bear against the cover disks or sheets for the uppermost series of cartons within the case. A similar arrangement of parts is also provided in the bottom of the case. In this construction, the top 7′ is provided at each side with a hasp 64, which is hinged at one end to the plate 65, secured to the outer edge of said top. This hasp at its other end is provided with a slot to receive a staple 66 secured to the annular body wall of the case. It is to be understood however, that if desired, instead of hingedly connecting the hasp 64 to the plate 65, these two elements may be constructed of spring metal so that the hasp can be snapped over the staple 66 or readily disengaged therefrom. 67 indicates a resilient wire bail or handle, the ends of which are provided with open loops or hooks 68 which are adapted for removable engagement in the staples 66. In this manner, it will be obvious that the top 7′ is securely locked in position upon the upper end of the case, while at the same time, said locking means has the further useful purpose of serving as a bail or handle whereby the case may be conveniently carried.

In Fig. 7 of the drawings, I have shown a slightly different means for supporting the eggs or other articles within the case. In this construction, a molded form 69 is provided, preferably of paper mâché, said form being provided with spaced pockets 70 through which intersecting ribbons or strips of felt 71 extend. These strips may be adhesively secured at their ends to the form body. The pockets 70 are of sufficient depth to receive substantially one-half of an egg therein so that said eggs will project above the upper surface of the form. Over the same, an annular disk 72 is adapted to be arranged, said disk being provided upon its inner and outer edges with vertical walls 73, the inner wall fitting loosely around the central post or rod. The under side of the annular card board disk 72 is provided with a felt sheet 74 for direct contact with the eggs or other articles.

In Fig. 8 of the drawings, I have illustrated a slightly different manner of yieldably mounting the central rod or post wherein, a rubber disk 75 is arranged in a central opening provided in the top and bottom of the case and is provided with a recess or socket 76 to receive a pin 77 which is loosely mounted for longitudinal movement in the end of the rod, and is projected therefrom by means of the cushioning spring 78. Metal plates 79 are secured to the top and bottom of the case to retain the rubber cushioning disks 75 in place.

In Figs 9 and 10 of the drawings, I have shown a slightly different means for cushioning the article containing cases or cartons against lateral movement within the case which is applicable to either form of the invention above referred to. In Fig. 9, I have shown an inner sleeve 80 arranged upon the central post or rod 10^a and an outer metal cylinder or sleeve 81. These

metal sleeves are normally held yieldingly in concentric relation by means of a plurality of radially disposed springs 82 extending between and secured to the same. It will of course be obvious that in lieu of these springs, a resilient rubber annulus may be employed if desired. The outer metal sleeve 81 is preferably provided with a covering sheet 83 of felt or other similar material.

In Fig. 10 of the drawings, I have shown a disk 84 preferably of wood, arranged in spaced concentric relation to the central post or rod and provided with a plurality of radially extending openings 85. This disk is arranged within a metal sleeve or cylinder 86 and is suitably secured thereto. In the openings 85, pins or plungers 87 are disposed, said pins being yieldingly held in engagement upon the periphery of the central rod or post by means of coil springs 88 arranged in said openings, the outer ends of said springs bearing against the metal cylinder 86. Each of the pins is provided with a longitudinal recess 89 to receive a stop lug 90 fixed in the disk 84. It will be understood that these stop lugs limit the sliding movement of the pins or plungers. Any desired number of these cushioning devices may be employed as may be deemed advisable in accordance with the size and capacity of the case.

From the foregoing description taken in connection with the accompanying drawings, it is thought that the construction, manner of use and several advantages of the several illustrated forms of my invention which I have deemed it advisable to describe will be fully and clearly understood. It will be obvious from such description that the invention is capable of still further modifications in various respects, and while I do not specifically refer to the same, all alternative forms which might be fairly construed as embracing the essential characteristics of the device are contemplated in putting the invention into practical use.

The shipping case or crate for frangible commodities constructed in accordance with my invention is highly efficient and serviceable in practical use, as it eliminates all liability of breakage, which, in the case of eggs frequently results in considerable monetary loss to the shipper. However, it is of course manifest that the invention may be utilized with the adoption of slight modifications for the transportation of various other articles of commerce with the same advantageous results. It is also apparent that the crates or cases may be constructed in various forms and sizes, as may also the article receiving cartons, to suit the particular circumstances of their use. It is therefore to be understood that I reserve the privilege of resorting to all such legitimate modifications in the form, proportion and arrangement of the several elements employed, as may be fairly embodied within the spirit and scope of the invention as claimed.

Having thus described the invention, what is claimed is:

1. In a carrier of the class described, a case, a vertical rod centrally arranged in said case, a plurality of carton supporting spring members, means yieldably supporting said spring members within the case against vertical movement, and additional means arranged upon said rod for yieldably preventing lateral movement of said spring members and the cartons supported thereby with respect to the case.

2. In a carrier of the class described, a case, a vertical rod centrally arranged within the case, upper and lower series of vertically yieldable members mounted upon said rod, a plurality of article receiving cartons arranged between said members, and means mounted upon the rod to yieldingly prevent lateral shifting movement of the cartons with respect to the case.

3. In a carrier of the class described, a case, a vertically disposed rod permanently mounted upon the bottom of the case, spaced horizontally disposed spring members loosely mounted upon said rod, means yieldably holding said members against longitudinal movement with respect to the rod, and a plurality of article receiving cartons arranged between said spring members.

4. In a carrier of the class described, a case, a vertically disposed rod secured at its lower end centrally upon the bottom of the case, sleeves loosely mounted upon the upper and lower ends of said rod, horizontally disposed spring arms fixed to the respective sleeves, a plurality of article receiving cartons arranged between the upper and lower series of arms, and means for yieldably holding the sleeves against vertical movement upon said rod.

5. In a carrier of the class described, a case, a vertically disposed rod secured at its lower end centrally upon the bottom of the case, sleeves loosely mounted upon the upper and lower ends of said rod, horizontally disposed spring arms fixed to the respective sleeves, a plurality of article receiving cartons arranged between the upper and lower series of arms, means for yieldably holding the sleeves against vertical movement upon said rod, and means carried by said sleeves and coöperating with the rod to yieldably maintain the sleeves in concentric relation to said rod.

6. In a carrier of the class described, a case, a vertically disposed rod secured at its lower end centrally upon the bottom of the case, sleeves loosely mounted upon the upper

and lower ends of said rod, horizontally disposed spring arms fixed to the respective sleeves, a plurality of article receiving cartons arranged between the upper and lower series of arms, means for yieldably holding the sleeves against vertical movement upon said rod, and a resilient cushioning ring carried by each of the sleeves and disposed between the same to yieldably hold the sleeves in concentric relation to the rod.

7. In a carrier of the class described, a case, a vertically disposed rod secured at its lower end centrally upon the bottom of the case, sleeves loosely mounted upon the upper and lower ends of said rod, horizontally disposed spring arms fixed to the respective sleeves, a plurality of article receiving cartons arranged between the upper and lower series of arms, means for yieldably holding the sleeves against vertical movement upon said rod, each of said sleeves being provided with an opening in one end, a metal retaining ring loosely arranged upon the rod within said opening, and a rubber cushioning member carried by said ring and disposed within the opening of the sleeve to yieldingly hold the sleeve in concentric relation to the rod.

8. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a cylinder normally disposed in concentric relation to the rod, a series of spring arms permanently mounted upon the lower end of said cylinder, a second series of spring arms, means for detachably mounting the latter arms upon the upper end of said cylinder, a plurality of article receiving cartons arranged between said arms, and means disposed within the cylinder for yieldably holding the same in spaced concentric relation to the rod.

9. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a cylinder arranged in spaced concentric relation to the rod, means yieldingly holding said cylinder against vertical movement with respect to said rod, a sleeve fixed in the lower end of said cylinder, a second sleeve mounted in the upper end of said cylinder, means for detachably connecting the latter sleeve to the cylinder, a series of horizontally disposed spring arms carried by each of said sleeves, a plurality of article receiving cartons arranged between the upper and lower series of spring arms, and means for yieldably holding the cylinder in spaced concentric relation to the rod.

10. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a cylinder arranged in spaced concentric relation to the rod, means yieldingly holding said cylinder against vertical movement with respect to said rod, a sleeve fixed in the lower end of said cylinder, a second sleeve mounted in the upper end of said cylinder, means for detachably connecting the latter sleeve to the cylinder, a series of horizontally disposed spring arms carried by each of said sleeves, a plurality of article receiving cartons arranged between the upper and lower series of spring arms, and means carried by each of the sleeves for yieldably holding the cylinder in concentric relation to the rod.

11. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a removable top for the case, a cylinder disposed in spaced concentric relation to said rod, a sleeve permanently secured in the lower end of said cylinder, a second sleeve in the upper end of said cylinder, means for detachably connecting the latter sleeve to the cylinder, means carried by each of said sleeves for yieldably holding the cylinder in concentric relation to the rod, springs bearing against the respective sleeves and against the top and bottom walls of the case to yieldably hold the cylinder against vertical movement with respect to the rod, a plurality of horizontally disposed resilient arms carried by each of the sleeves, and article receiving cartons arranged within the case between said arms.

12. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a cylinder normally disposed in concentric relation to the rod, carton supporting means carried by said cylinder, and means arranged within the cylinder for yieldably holding the same in its normal position with respect to the rod and cushioning the cartons against lateral shifting movement within the case.

13. In a carrier of the class described, a case, a vertical rod centrally arranged within said case, a cylinder concentrically disposed with relation to the rod and longitudinally movable with respect thereto, carton supporting means carried by said cylinder, means for yieldably holding the cylinder against longitudinal shifting movement with respect to the rod, and additional means carried by the cylinder for yieldably holding the same in concentric relation to the rod and cushioning the cartons against lateral shifting movement within the case.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ALLEN J. COUGHENOUR.

Witnesses:
B. F. COUGHENOUR,
A. F. COUGHENOUR.