July 28, 1970 J. L. JORDAN 3,521,642

BRASSIERE CONSTRUCTION

Filed March 14, 1968

Fig. 1

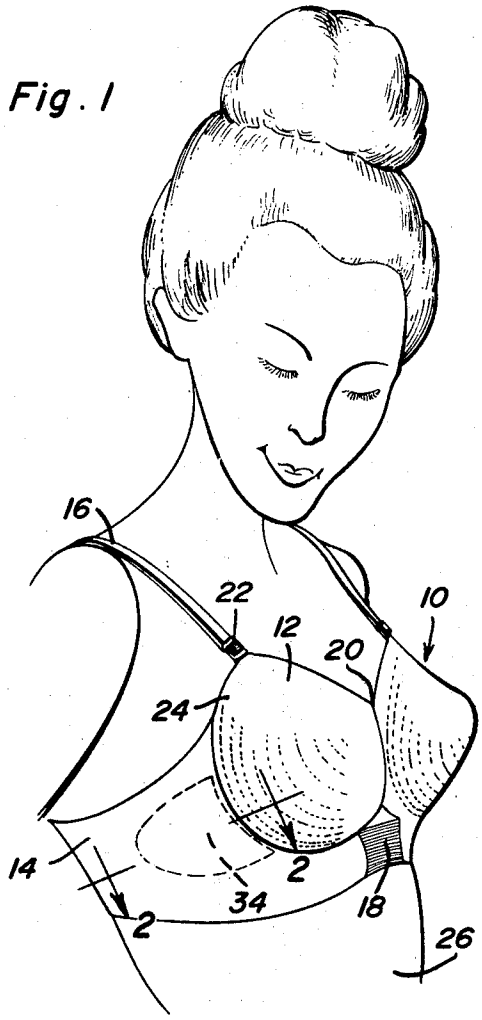


Fig. 4

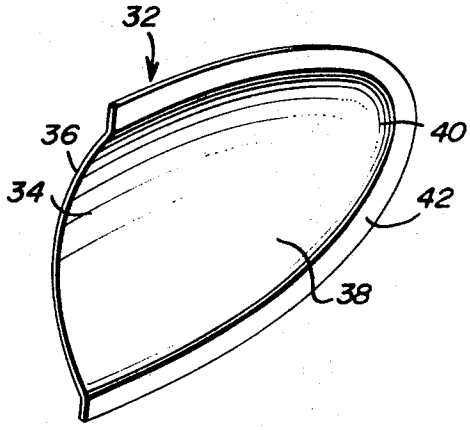


Fig. 3

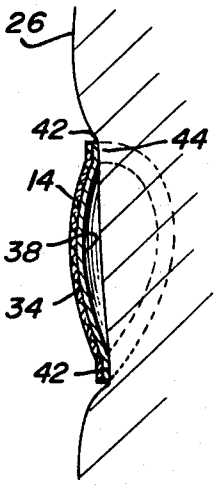


Fig. 5

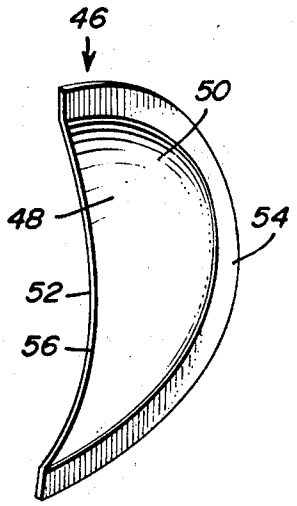
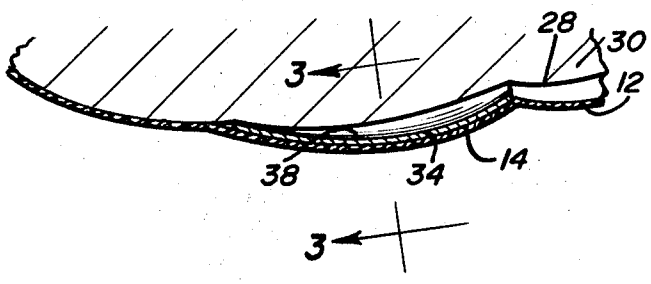


Fig. 2



Jules L. Jordan

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

United States Patent Office 3,521,642 Patented July 28, 1970

3,521,642

BRASSIERE CONSTRUCTION

Jules L. Jordan, 59 Alta Drive, LaSelva Beach, Calif. 95076

Filed Mar. 14, 1968, Ser. No. 713,116
Int. Cl. A41c 3/10
U.S. Cl. 128—479 5 Claims

ABSTRACT OF THE DISCLOSURE

A brassiere construction having a laterally extending tunnel forming attachment extending from the breast cup seam or the lateral border of the pectoralis major muscle toward the axilla so as to relieve pressure over the lateral thoracic artery therefore allowing free flow of blood through the underlying blood vessels which form the external supply of blood to the mammary gland.

The use of brassieres results in various advantages such as supporting and shaping the breasts. However, by their very nature, brassiers restrict the flow of blood due to applying pressure to the exterior surface areas of the chest cavity, mammary glands and associated areas. For example, the edge of the breast cup which is disposed laterally and along the outer surface of the mammary gland which has the chest encircling strap or band attached thereto applies substantial external pressure to the lateral thoracic artery. The application of external pressure reduces the flow of blood through the underlying blood vessels which form the external supply of blood to the mammary gland.

The present invention has for its main object the incorporation of the device into a brassiere which forms a laterally extending tunnel so that its open end will align with the inner border of the cup seam and the lateral border of the pectoralis major muscle and extend laterally toward the axilla with the device having a flat periphery, a concave undersurface and a convex outer surface which tapers to the end of the device remote from the brassiere cup to provide support for the outer periphery of the brassiere cup and the adjacent portions of the chest strap from surfaces of the body spaced from the lateral thoracic artery thereby reducing pressure thereon and permitting free flow of blood through the underlying vessels.

Another object of the present invention is to provide a device for relieving pressure on the lateral thoracic artery which may be incorporated in the brassiere at the time it is manufactured and may vary in shape and size governed by the size and shape of that portion of the mammary gland which extends beyond the border seam of the brassiere cup. The device may be constructed of various materials although it has been found that shape-sustaining but yet flexible plastic materials may be employed so that the brassiere may be laundered in the usual manner and stored in the usual manner.

A still further object of the present invention is to provide a brassiere construction with the attachment of the present invention incorporated therein which is simple in construction, easy to incorporate into the brassiere construction at any time, effective for its particular purposes and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view of a brassiere with the present invention incorporated therein;

FIG. 2 is a detailed, sectional view taken substantially upon a plane passing along section line 2—2 of FIG. 1;

FIG. 3 is a vertical sectional view taken substantially upon a plane passing along section line 3—3 of FIG. 2 illustrating the supporting relationship of the device incorporated into the brassiere;

FIG. 4 is a perspective view of one form of the pressure relieving device; and

FIG. 5 is a perspective view of another form of the pressure relieving device.

Referring now specifically to the drawings, the numeral **10** generally designates the brassiere construction of the present invention which may be any suitable type of conventional brassiere which includes a pair of breast cups **12** supported by a chest strap **14** and a pair of shoulder straps **16**. The particular construction of the straps **14** and **16** as well as the cups **12** may vary and the specific structural features thereof form no particular part of the present invention except for the relationship of the insert device therewith. As illustrated, the front of the chest strap **14** which extends under the breast cup **12** may be provided with an elastic insert **18** and a center seam **20** interconnects the breast cups **12**. The rear of the chest strap **14** is provided with the usual detachable fasteners and the shoulder strap **16** may be detachable or adjustable by buckle structures **22** or the like. As is well known, the periphery of the cups **12** designated by numeral **24** where they are attached to the chest encircling strap **14** exert pressure on the exterior surface of the body of the wearer **26** with the pressure area generally being designated by numeral **28** in FIG. 2. This pressure at the area where the mammary gland extends outwardly from the body surface of the wearer includes the lateral thoracic artery and the pressure exerted by the cup seam or edge **24** and the adjacent portion of the chest strap **14** exerts external pressure on the thoracic artery thus reducing blood flow to the mammary gland designated by numeral **30**.

For reducing this pressure, this invention includes an insert device **32** constructed of shape-sustaining material such as plastic or the like which may be rigid or sufficiently flexible to enable laundering thereof. The insert device **32** includes an elongated main body **34** having an arcuate configuration and provided with a convex outer surface and a concave inner surface designated by numerals **36** and **38** respectively and tapers from an open end to a closed end designated by numeral **40**. Peripherally of the insert is a flat peripheral flange **42** which extends around the closed end **40** and up to the open end of the insert device thus providing an open ended tunnel in which the open end thereof is disposed in alignment with the inner border of the outer cup seam or edge **24** in overlying relation to the lateral border of the pectoralic major muscle so that pressure exerted along the area **28** on the lateral thoracic artery is relieved and the support for the chest strap is provided by engagement of the flange **42** with the wearer **26** along an area generally designated by numeral **44** in FIG. 3 with it being noted that the area of the body between the flanges **42** in FIG. 3 is relieved of pressure thus enabling free flow of blood through the underlying vessels which form the external supply of blood to the mammary gland **30**.

FIG. 5 illustrates another embodiment of the insert device generally designated by the numeral **46** which includes a main body panel **48** having a convex outer surface **50** and a concave inner surface **52** with the closed end and side edges thereof being generally in the form of a semi-circle with a peripheral flange **54** provided thereon so that the free edge of the main body panel is spaced away from the surface of the body of the wearer. In

this construction, the edge of the main body panel **48** as designated by **56** is arcuate generally conforming with the arcuate curvature of the periphery of the breast cup.

The insert device is constructed so that it can be easily incorporated into a brassiere at the time it is being manufactured or after it has been completed. The insert device will be placed so that its open end will align with the inner border of the cup seam and the lateral border of the pectoralic major muscle and extend laterally toward the axilla. The size and shape of the insert device is governed by the size and shape of that portion of the mammary gland which extends beyond the border seam of the brassiere cup which is generally that area indicated by dotted line in FIG. 1.

This device assures that the portion of the mammary gland which it covers is free from the pressure that can be applied to it by a conventional brassiere, this relief of pressure in turn guarantees that underlying blood vessels such as the thoracic artery are not impinged upon.

This insert device can be constructed of any shape retaining material that will withstand frequent laundering or the like and in effect forms a tunnel which has a peripheral flat surface that defines a supporting base. The main body of the device is concave from the undersurface and convex on the outer surface with the open end shaped in an upward angle so as to blend with the angle of the mammary gland as it grows outward from the chest wall. The device will be placed in the brassiere generally occupying the area indicated by dotted line in FIG. 1 which also represents the extension of the mammary gland beyond the brassiere cup **12**.

While the present invention has been illustrated and described with a brassiere having shoulder straps, it is within the purview of this invention to incorporate the tunnel forming construction into strapless brassieres and other types of breast supporting and shaping devices.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination with a brassiere having breast supporting cups and a chest encircling band attached thereto, an insert device comprising a shape-sustaining shallow channel forming member having one edge thereof substantially aligned with a portion of the periphery of the breast cup where it is attached to the chest band and extending laterally away from said breast cup and underlying a portion of said chest band to support a portion of the chest band away from the body surface to relieve pressure on the mammary gland and underlying blood vessels such as the lateral thoracic artery disposed thereunder.

2. The combination as defined in claim **1** wherein said insert device is constructed of shape retaining material capable of being laundered without damage and including a flat periphery around the portion of the device disposed laterally of the brassiere cup to engage the body surface and support the chest band therefrom.

3. The combination as defined in claim **1** wherein said insert device is transversely arcuate provided with a concave undersurface and convex outer surface and tapering from an open end aligned with the periphery of the breast cup to a closed end thereby defining an open-ended tunnel extending laterally outwardly from the periphery of the breast cup for supporting the periphery of the breast cup and chest strap in such a manner to relieve pressure from that portion of the mammary gland which extends laterally beyond the breast cup and the underlying blood vessels.

4. The combination as defined in claim **3** wherein said insert device is substantially semi-circular in configuration with the open-ended edge thereof being concavely arcuate.

5. The combination as defined in claim **3** wherein said insert device is substantially semi-elliptical in configuration with the open end thereof being substantially straight.

References Cited

UNITED STATES PATENTS

2,764,759	10/1956	Gazelle	128—462
2,896,623	7/1959	Fitzgerald	128—280

ADELE M. EAGER, Primary Examiner

U.S. Cl. X.R.

128—463, 481