June 17, 1958 N. M. DAVIS ET AL 2,839,063

BRASSIERE

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Fig. 1.

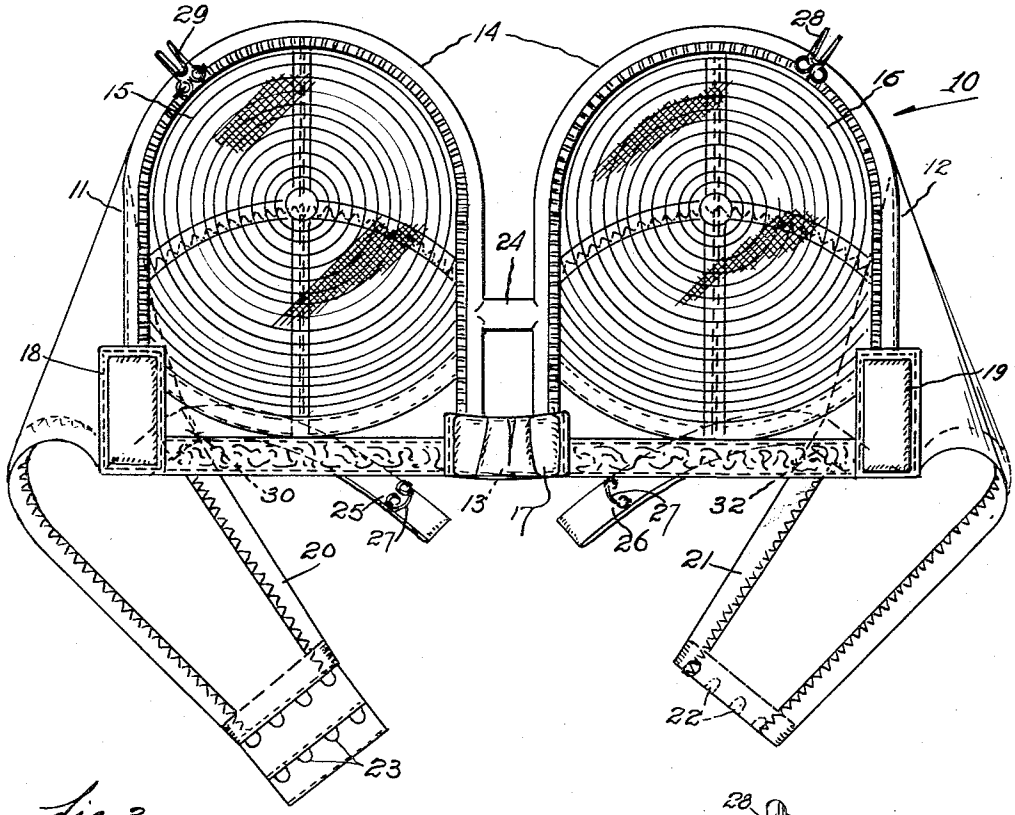


Fig. 3.

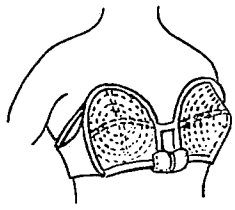
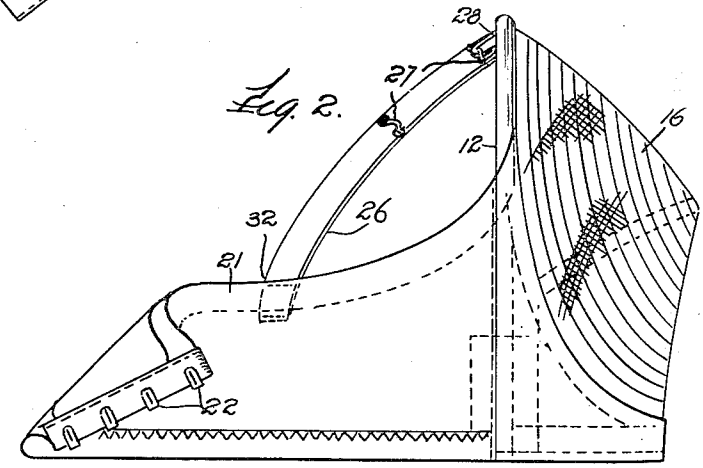


Fig. 2.



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Fig. 4

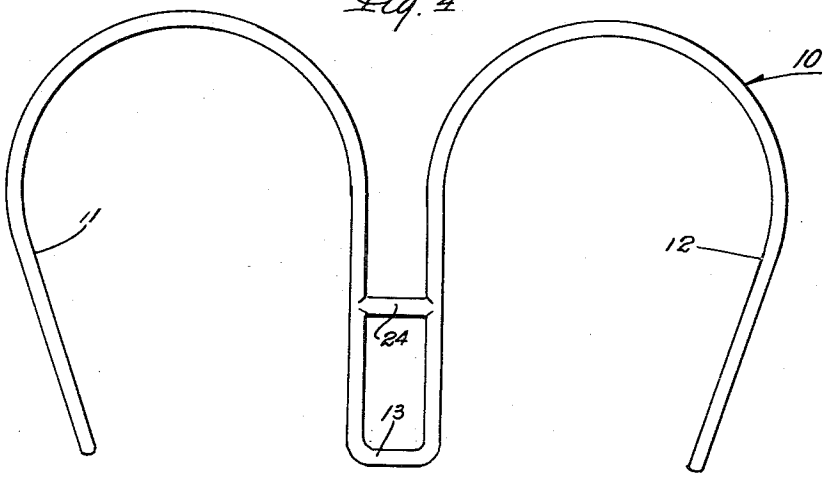


Fig. 5.

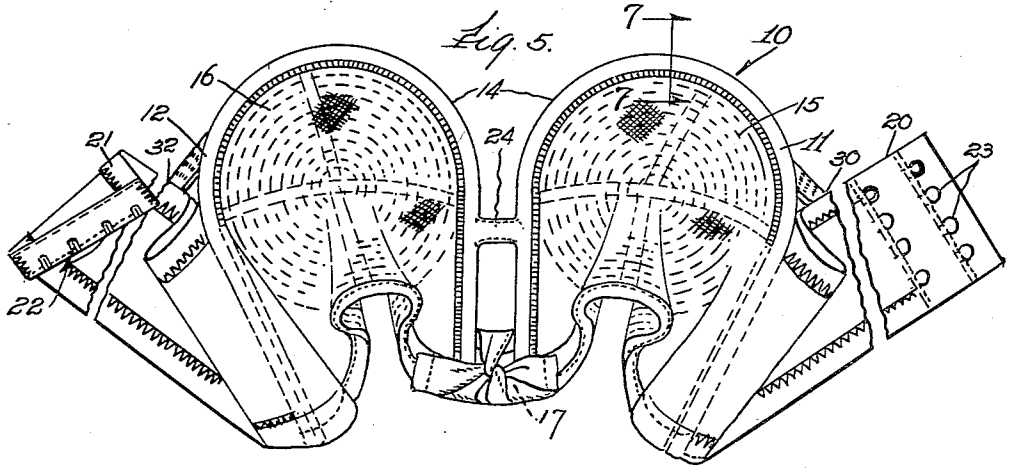


Fig. 6.

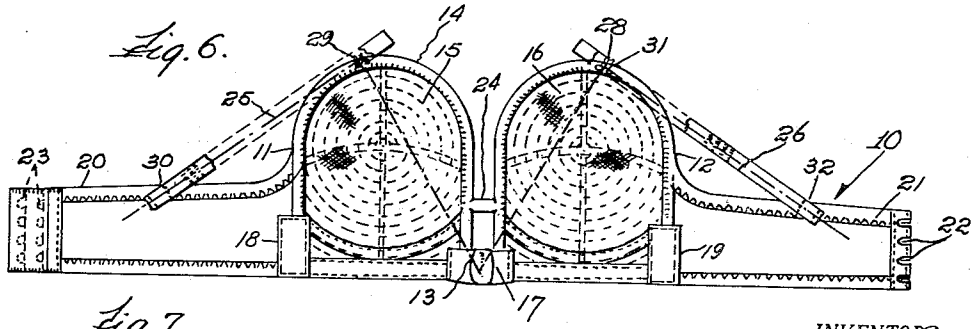


Fig. 7

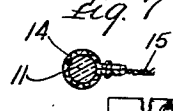
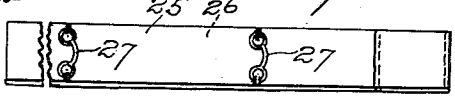


Fig. 8.



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BRASSIERE

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Our invention relates to a brassiere, whether worn as an undergarment with street wearing apparel, as an integral or separable part of a long-line brassiere, brassiere and girdle combination, formal, sports, casual, bed wear, beach, swimming, business attire, or the like.

An important object of our invention is to provide a brassiere that does not require or employ vertical support. Our brassiere allows the wearer freedom of movement, without restriction or interference in the 360 degees of body action. It has the advantage of fitting the wearer more than the wearer fitting it. Such a brassiere beneficially moves the center of gravity from the previous disadvantageous point of gravity which is anterior to the mid-horizontal plane to slightly posterior to the mid-horizontal plane. This alteration of the balance point of gravitation aids the wearer to enjoy conducive, beneficial assistance for the proper posturing of the body, improving the proper breathing positioning, and resulting in a reduction of the possibilities of increasing fatigue factors that are usually associated with disadvantageous posturing, positioning, and alinement of the body. This newer, superior type of brassiere is also able to better sustain, support, and protect the mammary glands and their supporting tissue and adenexa. This is the result of horizontal support rather than vertical support. As a result of the horizontal support, our invention is thus able to further support these glands and their supporting tissue and at the same time, give conducive and beneficial posturing of the rest of the body without the necessity of any type of supporting members such as straps, stays, or auxiliary material for vertical support, which cannot make such benefits possible. This further results in a brassiere that can not only sustain itself, but is further capable of sustaining a vertical support of auxiliary wearing apparel. Thus, the brassiere, besides being strapless, in itself is fully capable of supporting formal, casual, sports, costume, bed wear, business, or any other type of attire which might require vertical support. This invention thus enhances the possibility of bare shoulders, freedom of action, or rehabilitation of body coordinates where freedom of the upper portion of the body is considered as being healthful, therapeutic, or glamorous attraction. It is another object of our invention to provide such a brassiere that will also afford greater comfort, lightness, adhesive quality, to the wearer's body, while at the same time lend itself to an infinite series and types of styles to the wearer. Our invention also comprises such other objects, advantages, features, and capabilities as will later more fully appear, and which are inherently possessed by our invention.

While we have shown in the accompanying drawings a preferred embodiment of our invention, yet the same is susceptible of modification and change without departing from the spirit of our invention.

Referring to the drawings, Fig. 1 is an inside view of our brassiere; Fig. 2 is a side elevational view; Fig. 3 is a reduced front view showing it in use; Fig. 4 is a plan

view of our frame; Fig. 5 is an outside view of our brassiere; Fig. 6 is an inside plan view stretched out; Fig. 7 is a detailed sectional view on line 7—7 of Fig. 5; Fig. 8 is a broken plan view of our diagonal band.

The embodiment selected to illustrate our invention comprises a body member 10 of a tough, fairly rigid, yet pliable material. It may be constructed of bone, wire or plastic. The choice of material depends upon the specific needs, wants, or desired purposes. For example, an evening gown might require more solid reinforcement than a standard brassiere.

Body member 10 is formed into a configuration approximating two U-shaped portions 11 and 12 with a lower connecting portion 13. Each of the U-shaped portions 11 and 12 is covered with soft fabric 14, or the like and filled in with soft fabric to form cup portions or breast receiving pockets 15 and 16. The relationship between the soft fabric or cup portion and the tough supporting members 11 and 12 should be in ratio. The tough, pliable supporting members 11 and 12 must be strong enough to overcome the gravitational influence in a manner as designated and prescribed by this invention and yet not so tough and rigid as to incumber or discomfort the wearer. Connecting portion 13 is also covered by a similar soft fabric and should be of tough, fairly rigid, yet pliable material similar, if not the same, as the supporting members 11 and 12. It is very important that portion 13 have attached to its inner portion a pillow 17.

A pair of pillows 18 and 19 are attached to fabric 14 at the inner surfaces of the outer ends of each of the U-shaped portions 11 and 12.

Back bands 20 and 21 are attached to their inner ends to the fabric 14 with band 20 attached at the outer portion of U-shaped portion 11 and band 21 attached to the outer portion of U-shaped portion 12. The outer ends of the bands 20 and 21 for illustration have connecting hooks 22 and eyes 23, but they may have any suitable fastening members for attachment of bands 20 and 21 together. Bands 20 and 21 may each be separately reinforced with tough, rigid, yet pliable material similar, if not the same, as the supporting members 11 and 12 so that they may be independently supported. The two connecting bands 20 and 21 do not necessarily have to be attached to each other.

An upper connecting member 24 is spaced above connecting portion 13. It forms part of or is securely attached to the inner portion of each of U-shaped portions 11 and 12. Connecting member 24 is covered by suitable fabric 14.

Diagonal elastic band 25 is attached to the fabric 14 adjacent to, but slightly below, the top portion of the arc of the U-shaped portion 11 and extends diagonally downward to back band 20 where it is attached intermediate its ends.

Diagonal elastic band 26 is attached to the fabric 14 adjacent to, but slightly below, the top portion of the arc of the U-shaped portion 12 and extends diagonally downward to back band 21 where it is attached intermediate to its ends.

Diagonal elastic bands 25 and 26 may have a plurality of spaced eyes or other means of compensational adjustments 27 for adjustable attachment to hook 28 attached to fabric 14 of U-shaped portions 11 and 12.

Instead of employing a single wire, bone, plastic or continuous wire 10, we may provide separate stiff U-shaped members for forming U-shaped portions 11 and 12 suitably attached to connecting members 13 and 24.

Under certain circumstances where lightness is of great advantage we may employ magnesium, aluminum, or any satisfactory light metal or alloy for U-shaped portions 11

and 12 so as to provide even further for lightness and strength.

Our brassiere uses the principles and advantages of muscular formation rather than shoulder straps opposing gravitational forces.. Our brassiere functions on three keystone, counter-levers working against gravity. In such construction, each is not only strong enough to sustain if necessary the other two members on the horizontal plane, but is also capable of sustaining considerable vertical or gravitational influence without inconveniencing the wearer of the garment.

This may be seen in the drawing on one section of the brassiere. Diagonal band 25 is attached to fabric 14 of U-shaped portion 11 at 29 with connecting portion 13 providing support for diagonal band 25. Diagonal band 25 is attached at its lower end to back band 20 at 30, so that diagonal band 25 is further supported by back band 20. The three points of the triangle for U-shaped portion 11 and cup portion 15 are 29, 13 and 30.

Further referring to the drawings, and noting the other section of our brassiere, diagonal band 26 is attached to fabric 14 of U-shaped portion 12 at 31, with connecting portion 13 providing support for diagonal band 26. Diagonal band 26 is attached at its lower end to back band 21 at 32, so that diagonal band 26 is further supported by back band 21. The three points of the triangle for U-shaped portion 12 and cup portion 16 are 31, 13 and 32.

When our brassiere is worn, diagonal bands 25 and 26 are placed under a small amount of stress. This is compensational depending upon the body that is concerned and compensational mechanism found in diagonal bands 25 and 26 that has already been discussed. The stress on diagonal bands 25 and 26 forces cup portions 15 and 16 to conform more closely and more satisfactorily to the configuration of the woman's form thus increasing the glamour, therapeutic, and freedom features of the garment. This stress is also experienced in the cooperation between bands 25 and 20 and bands 26 and 21. This results in the weight of the breasts being eased upward and slightly posterior, thus moving the center of gravity of the shoulder girdle of bones and muscles more toward normal posturing and body alignment.

Diagonal bands 25 and 26 can exert such pressure because of connectors 13 and 24. Connectors 13 and 24 are the compensational pieces against which diagonal bands 25 and 26 exert their stress. These connectors along with back bands 20 and 21 form horizontal stress lines against all gravitational pull on the part of our brassiere. They form counter-stress lines against the pull of diagonal bands 25 and 26. In providing support to this horizontal line, connector 13 is actually the keystone of the brassiere. Our construction provides all the vertical support necessary not only to hold up the brassiere, but any auxiliary garments as well. The triangles of 30, 29 and 13, and 31, 32 and 13 and when supported by bands 20 and 21 and connectors 13 and 24, plus the stress lines of 25 and 26 form counter fulcrums of support upon which this invention is predicated.

The ratio relationship of 24 and 13 and the ratio relationship of 25 and 20 and 26 and 21 must be fluctuating ratios depending upon the intended use, purpose, and variables to be considered in any person and the use to which that garment is employed. Our brassier has the added advantage of being produced in mass production and yet has the added advantage of feeling specially constructed and individually fitted for the wearer. Because of the possibility of multiple ratios, our brassiere will have the added advantage of assuming the exact contour formation of the wearer. This allows the manufacturer to enjoy a wide diversity of styles, shapes, and auxiliary equipment, such as a various types of paddings, laces, and the like.

The use of our brassiere eliminates the possibility of deformation of the breast caused by an ill-fitting brassiere. It also eliminates posture difficulties, and the possibility of cutting, hurting, impairing, or limiting the freedom of the wearer. Now gowns, sports goods, swim suits, and other types of flattering wearing apparel that could not be previously enjoyed by the female population are available. Breast amputees and others physically handicapped, who were previously unable to raise their arms high enough to wear brassieres may now be confident of freedom, confidence, and ease of action that they could previously not enjoy or experience.

Having thus described our invention, we claim:

1. A shoulder strapless brassiere comprising a body member of tough, fairly rigid yet pliable material of the class consisting of bone, metal and plastic, said body member formed into a pair of U-shaped members, a lower connecting member extending between the inner bottom portions of said U-shaped members and an upper connecting member spaced above said lower connecting member and extending between said U-shaped members, fabric attached to and covering said body member, said fabric forming with said U-shaped members a pair of breast receiving cups, a back band attached to said fabric adjacent the outer bottom portion of each U-shaped member, means on each band for detachably attaching said bands at their outer ends, a pair of diagonal bands, each diagonal band attached at its upper end to said fabric adjacent but short of the top of a U-shaped member, and attached at its lower end to the adjacent back band intermediate its end, said lower and said upper connecting members bearing against the user and acting as a sternal lock and providing a primary vector for support of the brassiere, said diagonal bands by virtue of their said points of attachment to said fabric and to said back bands providing winged vectors inextricably coordinating, cooperating and integrating with said primary vector to suport the brassiere on the wearer without shoulder straps.

2. A shoulder strapless brassiere comprising a body member of tough, fairly rigid yet pliable material of the class consisting of bone, metal and plastic, said body member formed into a pair of integral inverted U-shaped portions, a lower connecting portion extending between the inner bottom portions of said U-shaped portions and an upper connecting portion spaced above said lower connecting portion and extending between said U-shaped portions, fabric attached to and covering said body members, said fabric forming with said U-shaped portions a pair of breast receiving cups, a back band attached to said fabric adjacent the outer bottom portion of each U-shaped portion, means on each band for detachably attaching said bands at their outer ends, a pair of diagonal bands, each diagonal band attached at its upper end to said fabric adjacent but short of the top of a U-shaped portion, and attached at its lower end to the adjacent back band intermediate its end, said lower and said upper connecting portions resting on the sternum of the user as a sternal lock and providing a primary vector for support of the brassiere, said diagonal bands by virtue of their said points of attachment to said fabric and to said back bands providing winged vectors inextricably coordinating, cooperating and integrating with said primary vector to support the brassiere on the wearer without shoulder straps.

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