Sept. 8, 1959 J. F. HOLDSWORTH 2,902,735

BUTTON TYPE FASTENING

Filed Nov. 18, 1957

Fig. 1.

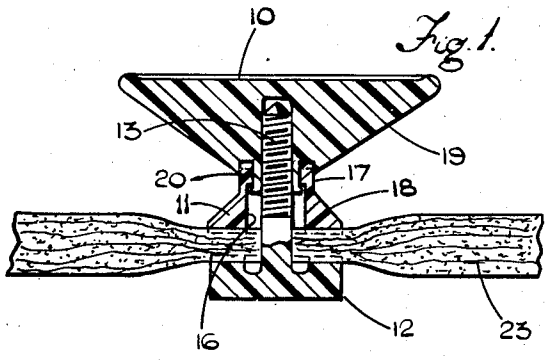


Fig. 2.

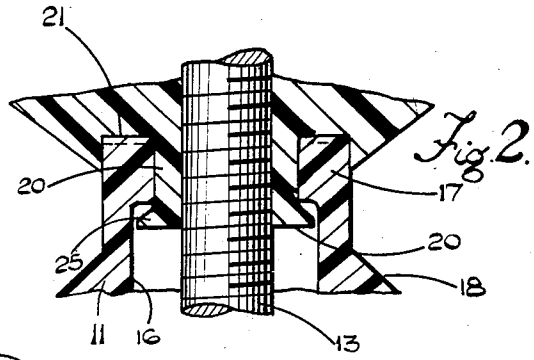
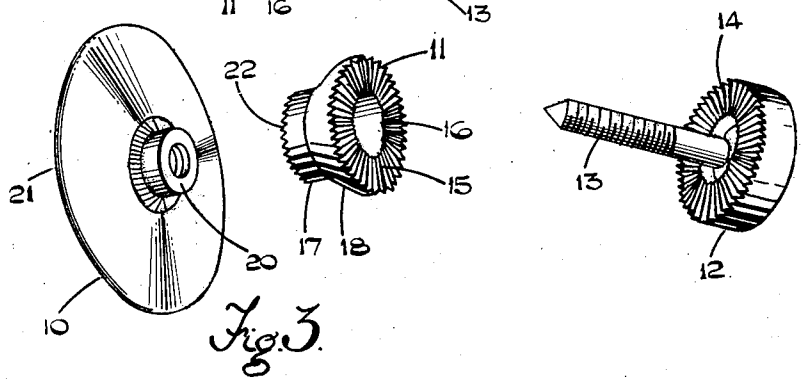


Fig. 3.



INVENTOR:
John Frederick Holdsworth

BY

Richardson, Davis and Nordon

ATTORNEYS.

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BUTTON TYPE FASTENING

John Frederick Holdsworth, Moseley, Birmingham, England

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3 Claims. (Cl. 24—105)

This invention relates to buttons and button type fastenings for use on all kinds and types of materials.

In the case of buttons which are sewn on to a material (such as for example, cloth) by means of cotton or thread it is well-known that this mode of fastening is easily subject to failure, due to wearing and breaking of the cotton or thread. Also it is difficult to satisfactorily sew buttons on certain kinds of material (such as, for example certain kinds of loosely woven blankets), because of the difficulty of obtaining a proper anchorage for the cotton or thread in the material itself.

The object of the present invention is to provide a new or improved button type fastening which will provide a considerably firmer and quicker attachment, whilst also having the advantage of being readily detachable and attachable at will.

A further object of the invention is to provide a new or improved button type fastening in which the material to which the button is to be attached can be clamped or gripped firmly between opposed co-operating formations on the fastening.

Another object of the invention is to provide a button type fastening having a base plate and a pressure plate between the opposed surfaces of which the material can be gripped.

These and other objects to be achieved by the invention will become more apparent from a reading of the following detailed description of one form of button fastening in accordance with the invention.

This example is described with reference to the accompanying drawings wherein:

Figure 1 is a section through the fastening when in position on a piece of material.

Figure 2 is an enlarged fragmentary view of a detail of the fastening.

Figure 3 is an exploded view showing the separate parts of the fastening.

The fastening in accordance with the present invention may be made in any suitable material or materials and the button head may take any desired form with a decorative finish or pattern on its surfaces if such is required.

In the example shown in the accompanying drawings, a button type fastening in accordance with the invention comprises a button head **10**, a pressure plate **11** and a base plate **12**.

The base plate **12** is of disc-like form and from one face thereof there extends an externally screw-threaded stem **13** which is disposed centrally and extends at right angles from the one face of the base plate **12**. This face of the base plate **12** is provided with an annular ring of radially extending serrations **14** and a set of corresponding serrations **15** are provided on the one face of the pressure plate **11**.

This pressure plate **11** has an axially extending opening **16** which is of greater diameter than the external diameter of the threaded stem **13**, so that when the fastening is assembled, there is clearance between the pressure plate **11** and the threaded stem **13**.

It will be observed from Figures 2 and 3 that the pressure plate **11** has a reduced neck portion **17** which is of circular cross-section which merges into an enlarged frustro-conical portion **18** the larger end face of which is provided with the aforesaid serrations **15**, and the opening **16** through the pressure plate is of two diameters, the reason for the reduced diameter through the portion **17** being referred to hereinafter.

The button head **10** is of generally disc-like form and its under surface **19** is of generally frustro-conical form merging into a central hollow boss **20** which is surrounded by an annular recess **21** at the bottom of which is a series of serrations which are adapted to co-operate with a corresponding series of serrations **22**, provided on the end face of the reduced portion **17** of the pressure plate. As seen best in Figure 2 the outer end of the hollow boss **20** has a laterally-extending peripheral lip **25** which is of slightly greater diameter than the diameter through portion **17** of the pressure plate.

When the fastening is in the assembled state as in Figure 1, the portion **17** of the pressure plate enters the annular recess surrounding the hollow boss **20** on the button head and the stem **13** is adapted to screw into a tapped hole extending into the button head from the hollow boss **20**.

The fastening is shown in Figure 1 in the assembled state as applied to a section of material which is indicated in a diagrammatic form at **23** and it will be observed that the stem **13** on the base plate has been passed through the material **23** from the rear face thereof and the material is gripped between the serrations **14** and **15** on the base plate and pressure plate respectively.

If the parts of the fastening above described are made in plastics then there will be sufficient inherent resilience to allow the portion **17** of the pressure plate to be "sprung" over the peripheral lip **25** on the button head so that the pressure plate is then held captive on the button head whilst however allowing it to revolve on the boss **20**. When the fastening is being applied to a piece of material the button head and pressure plate can be first put together in this manner and thereafter there are virtually only two separate pieces to be manipulated.

After assembling the button head and pressure plate, these two parts are placed on the stem **13** which has been pushed through the material and the button head turned to screw it on to stem **13** and force the pressure plate into clamping engagement with the base plate. The purpose of the serrations at **21** and at **22** on the underside of the button head and the one end of the pressure plate is to provide a non-positive form of lock between the button head and the pressure plate, so as to guard against accidental unscrewing of the button head when the fastening is in use.

Whilst the novel form of fastening in accordance with the invention is not limited in its application to any particular material, it is particularly advantageous for applying the button heads to blankets in the novel form of bed covering which is described in my co-pending application Serial No. 642,273 and it has been found in practice that this novel form of fastening provides an extremely firm attachment for the button head without doing any damage to the material of the blanket itself. It will be appreciated that the threaded stem **13** does not actually make any permanent hole in the blanket material, but only parts the fibres thereof when it is passed through the material and the material of the blanket itself is not in practice found to be damaged by the clamping between the opposed faces of the pressure plate and the base plate.

It will be appreciated that the radially-extending ser-

rations between the co-operating surfaces of the fastening as described and illustrated herein are but one method of obtaining the clamping and locking features and instead there may be employed various other forms of co-operating surfaces or formations which achieve the same result.

Also the base plate may take other forms than that shown and its screwed stem may extend from any position and at an angle other than a right angle depending upon the particular use to which the fastening is being put.

What I claim then is:

1. A button fastening comprising a base plate having an externally screw-threaded stem projecting centrally from one face thereof and an assembly of pressure plate and button head adapted to be engaged upon said stem to clamp between the opposed faces of the base plate and pressure plate the material to which the button fastening is attached, the said face of the base plate and the opposed face of the pressure plate having co-operating surface formations between which said material is clamped, said button head having an internal screw thread for engaging said screw-threaded stem, surface formations on the face of the button head which is opposed to the pressure plate and an axial projection on said face of reduced radial dimensions with abutment means provided on said projection; said pressure plate having a centrally apertured portion engaging rotatably upon said axial projection of the button head and a part adapted to engage said abutment means to retain the pressure plate upon the button head, and said pressure plate having on its face opposed to the button head surface formations adapted to have interengagement with the said surface formations on the button head.

2. A button fastening comprising a base plate having an externally screw-threaded stem projecting centrally from one face thereof and an assembly of pressure plate and button head adapted to be engaged upon said stem to clamp between the opposed faces of the base plate and pressure plate the material to which the button fastening is attached, the said face of the base plate and the opposed face of the pressure plate having co-operating surface formations between which said material is clamped, said button head having an internal screw thread for engaging said screw-threaded stem, surface formations on the face of the button head which is opposed to the pressure plate, and an axially projecting boss on said face of reduced radial dimensions with a laterally extending peripheral lip at its outer end; said pressure plate having an axial opening, the diameter of one end of said opening being less than the remainder, the said peripheral lip on the boss being of greater dimension than the reduced dimension of the said opening in the pressure plate, the button head and pressure plate being assembled together so that the reduced portion of the opening in the pressure plate engages rotatably over the boss on the button head, and the lip of said boss engages behind the shoulder formed by said reduced portion of the said opening in the pressure plate, and said pressure plate having on its face opposed to the button head surface formations adapted to have inter-engagement with the said surface formations on the button head.

3. A button fastening comprising a base plate having an externally screw-threaded stem projecting centrally from one face thereof and an assembly of pressure plate and button head adapted to be engaged upon said stem to clamp between the opposed faces of the base plate and pressure plate the material to which the button fastening is attached, the said face of the base plate and the opposed face of the pressure plate having co-operating surface formations between which said material is clamped, said button head having an internal screw thread for engaging said screw-threaded stem, surface formations on the face of the button head which is opposed to the pressure plate and an axial projection on said face of reduced radial dimensions with abutment means provided on said projection; said pressure plate having a centrally apertured portion engaging rotatably upon said axial projection of the button head and a part adapted to engage said abutment means to retain the pressure plate upon the button head, the face of the pressure plate which is opposed to the button head being of smaller diameter than the other face which is opposed to the base plate and said pressure plate having on its face opposed to the button head surface formations adapted to have inter-engagement with the said surface formations on the button head.

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