

July 19, 1938.

A. F. MULKA
DUST-, GAS-, AND WATERPROOF SLIDING CLASP
FASTENER FOR BOOTS AND OTHER ARTICLES
Filed July 13, 1937

2,124,206

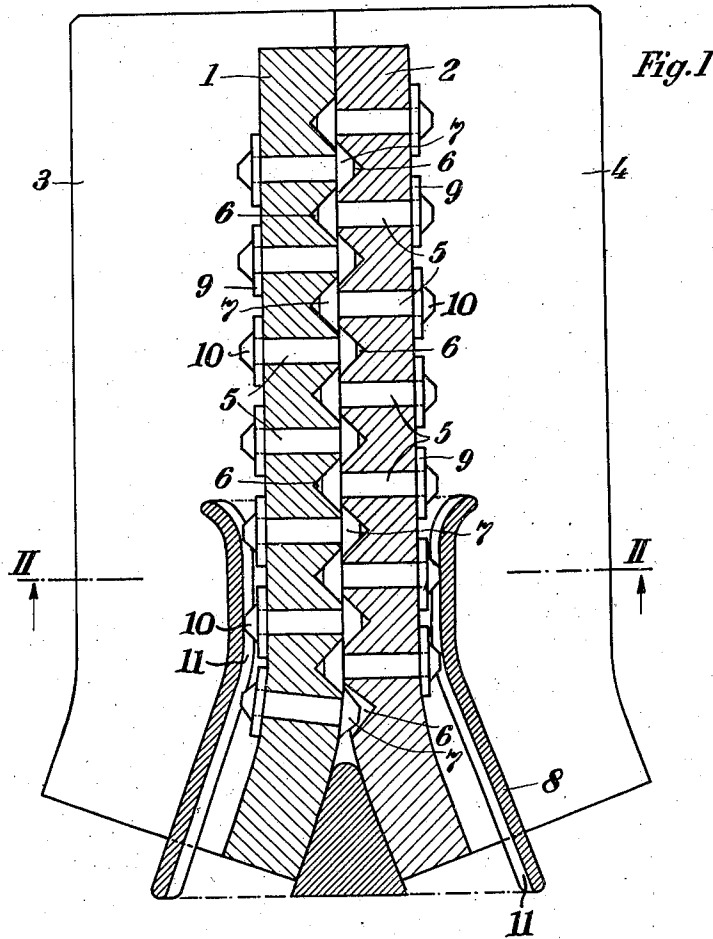
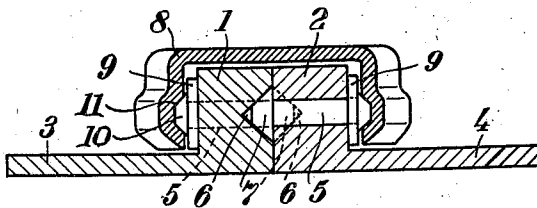


Fig. 2



Inventor:
August Frederick Mulka
by *John H. Smith*
his attorney

UNITED STATES PATENT OFFICE

2,124,206

DUST-, GAS-, AND WATERPROOF SLIDING
CLASP FASTENER FOR BOOTS AND OTHER
ARTICLESAugust Friedrich Mulka, Dortmund, Germany,
assignor to Erich Krause, Berlin, GermanyApplication July 13, 1937, Serial No. 153,346
In Germany October 16, 1934

5 Claims. (Cl. 24—205)

This invention relates to a sliding clasp fastener for shoes and other articles of clothing, pneumatic tires and the like, said fastener being dust-, gas- and water-proof.

The sliding clasp fastener consists of fastener elements fixed on the edges of the articles to be closed, said fastener elements being at suitable distances apart and adapted to be engaged the one between the others by a slide pulled along the same.

In the known sliding clasp fasteners of this kind the edges of the articles, on which the fastener elements are fixed, are submitted to very high tension so that when these edges are sharply bent at the points to which the fastener elements are fixed, it may easily happen that the edges tear.

To shut off the sliding clasp fastener against penetration of dust, gas or moisture, it has been proposed to cover the fasteners from the inner side additionally by a rubber strip, whereby, however, the costs of manufacture of such fasteners are considerably increased.

Also in sliding clasp fasteners of known type, the fastener elements of which engage very accurately the one into the other, an absolutely reliable packing is impossible owing to the curvature and bends of the fasteners, as the edges cannot be pressed tightly enough the one against the other.

According to the invention this inconvenience is obviated in that on each of the edges of an article to be closed a strip having a flap-like extension and of elastic material is provided, in which pins of metal or other solid material are inserted at distances apart. These pins engage in the closing position the one between the other, and their conical heads can be pressed into corresponding indentations of the elastic strip by pressure exerted upon the semispherical outer walls of the pins. This construction of the sliding clasp fastener ensures a reliable tight closing of the edges and prevents penetration of dust, gas or moisture between the edges.

An embodiment of the invention is illustrated, by way of example, in the accompanying drawing in which

Fig. 1 shows a sliding clasp fastener on enlarged scale in longitudinal section.

Fig. 2 is a cross-section on line II—II of Fig. 1.

The sliding clasp fastener for boots, articles of clothing of any kind, pneumatic tires and the like consists of two strips 1, 2 of elastic material designed to be fixed one on each of the edges of the article to be closed, each strip having a flap-

like extension 3, 4. Pins 5 of metal or other solid material are inserted at uniform distances apart into the strips 1, 2. Between the pins 5 indentations 6 are pressed into the strips 1 and 2. Each pin 5 has on the end facing the opposite pins a conical head 7 adapted to engage in the corresponding indentations 6 in the opposite elastic strip and between the heads 7 of two adjacent pins 5 so that the elastic strips bear tightly the one against the other and penetration of dust or moisture through the joint between the strips is prevented.

A slide 8 serves for closing the sliding clasp fastener, and has in each of its side walls a longitudinal groove 11 adapted to receive and guide the upset outer ends 10 of the pins 5 during the displacement of the slide for opening and closing the fastener. This slide is so shaped that it bends the strips 1, 2 apart, stretching the material of the inner edges thereof to enable the heads 7 of the pins 5 on one strip to pass between and engage under the heads 7 of the pins on the other strip, the pins being pressed inwards and at the same time maintained in the same plane by the fact that their outer ends 10 are guided in the grooves 11 on the slide 8. The heads 7 of the pins 5 are also guided into their correct engaging position and protected against displacement by the fact that the heads of the pins on one strip engage in the cup-shaped indentations 6 in the opposite strip. The conical heads 7 have flat bases which normally bear against the inner faces of the strips and when the fastener is closed the flat bases of the heads of the pins in one strip overlap and engage the flat bases of the heads of the pins of the other strip, so that the flat bases of the heads of all the pins in the two strips are in alignment and form a straight line. To prevent the outer ends 10 of the pins 5 from being pressed into the elastic strips under the strong pressure exerted by the slide, washers 9 may be provided between these ends 10 and the outer sides of the strips.

I claim:—

1. A sliding clasp fastener, comprising in combination two strips of elastic material, pins of non-elastic material fixed in said strips and arranged so that the pins in one strip are alternate with those in the other strip when the fastener is closed, each of said strips having indentations between said pins, heads on the inner ends of said pins, each of conical shape with a flat base and adapted to engage in a recess in the opposite strip when the fastener is closed, upset outer ends on said pins, a slide shiftable

along said strips to open and close the fastener, side walls on said slide bearing tightly against the outer ends of said pins and each having a longitudinal groove adapted to receive said upset

5 outer ends of said pins to maintain said pins in the same plane, said slide being shaped to bend said strip apart and stretch the material on the inner edge thereof to allow the heads on the inner side of one strip to pass and engage under

10 the heads on the inner side of the other strip, the flat bases of the conical heads of said pins on one strip overlapping and bearing against the flat bases of the heads of the pins on the other strip and forming therewith a straight line when

15 the fastener is closed.

2. In a sliding clasp fastener, a pair of pin carrying strips of elastic material, pins of non-elastic material carried by the strips with the pins in one strip alternate with those in the other strip, each

20 pin including a shank, a head on the shank projecting outwardly of the strip, the bases of the heads defining abrupt abutment shoulders, each strip having spaced depressions in the side facing the other strip and at each side of the pin heads

25 for the reception of the pin heads carried by the opposite strip, the abutment shoulders of the heads on the adjacent pins being movable into abutting engagement for retaining the strip in contact and means slidable on the strips

30 for engaging and disengaging the pin heads.

3. In a sliding clasp fastener, a pair of pin carrying strips of elastic material, pins of non-elastic material carried by the strips with the pins in one strip alternate with those in the other strip, each pin including a shank, a head on the shank projecting outwardly of the strip, the bases of the heads defining abrupt abutment shoulders, each strip having spaced depressions in the side facing the other strip and at each side of the pin heads for the reception of the pin heads carried by the opposite strip, the abutment shoulders of the heads on the adjacent pins being movable into engagement for retaining the strip in contact and means slidable on the strip for engaging and disengaging the pin heads, the outer end of each pin at the opposite side of the strip being upset for cooperation with the pin head for holding the pin in the strip and said means including a sliding member having side walls with inner guide grooves cooperating with the upset ends of the pins.

4. A sliding clasp fastener as set forth in claim 2, characterized by the abutment shoulders being at right angles to the longitudinal axes of the pins.

5. A sliding clasp fastener as set forth in claim 3, characterized by the abutment shoulders being at right angles to the longitudinal axes of the pins.

AUGUST FRIEDRICH MULKA.