July 28, 1925.

1,547,583

C. S. HOLDEN

KNITTED ARTICLE FOR CLEANING PURPOSES

Filed Dec. 22, 1923

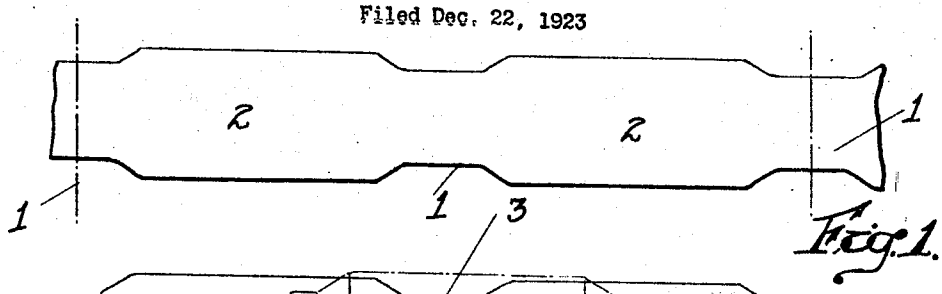


Fig. 1.

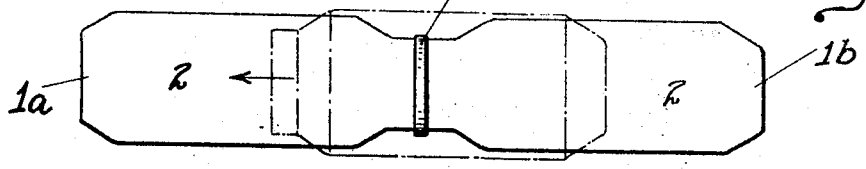


Fig. 2.

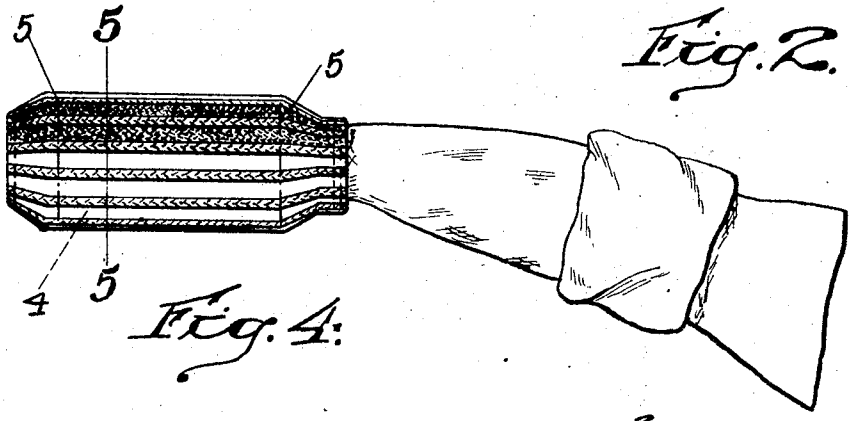


Fig. 4.

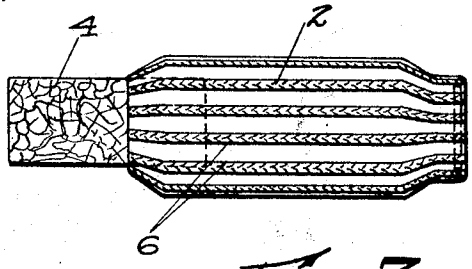


Fig. 3.

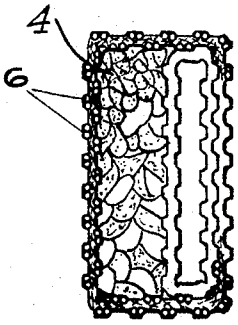


Fig. 5.

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Patented July 28, 1925. 1,547,583

UNITED STATES PATENT OFFICE.

CHARLES S. HOLDEN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HOLDEN KNITTING CO., OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

KNITTED ARTICLE FOR CLEANING PURPOSES.

Application filed December 22, 1923. Serial No. 682,215.

To all whom it may concern:

Be it known that I, CHARLES S. HOLDEN, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Knitted Article for Cleaning Purposes, of which the following, together with the accompanying drawings, is a specification.

My invention relates to knitted articles for cleaning purposes and has for its object to provide an article which may be readily drawn over the hand and then employed in somewhat the same manner as a sponge, or mop, for general cleaning purposes, in either a wet or dry condition.

In my copending application, Serial No. 495,156, filed August 25, 1921, there is shown and described a knitted article and method of making the same from tubular knitted material. The invention set forth in the above described application contemplates the formation of a knitted article suitable for hand use, by pulling a length of tubular knitted material back on itself to provide a mitt of double thickness on both sides. The article resulting from the practice of the above described method completely encloses the hand of the user, and is admirably suited for general cleaning purposes, in either a wet or dry condition.

The object of the present invention is to provide an article similar in form to the article described in my above mentioned application, but possessing certain additional advantages. The present invention contemplates the introduction of a piece of porous sponge-like material during the formation of the knitted article, so that the resulting article possesses all the moisture carrying properties of a natural sponge, in addition to the great durability of a knitted article. The above and other advantageous features of my invention will hereinafter more fully appear, reference being had to the accompanying drawings in which—

Fig. 1 is a plan view of a portion of a continuous web of knitted material from which my improved articles are to be made.

Fig. 2 is a view of a length of material cut from the web shown in Fig. 1, from which a single article is to be made by the performance of the step illustrated in dotted lines.

Fig. 3 is a view of the web shown in Fig. 2 completely pulled back on itself to receive a piece of sponge-like material.

Fig. 4 is a view of the completed article applied to the hand of a user.

Fig. 5 is an enlarged sectional view along the line 5—5 of Fig. 4.

Like reference characters refer to like parts in the different figures.

Referring to Fig. 1, a web of tubular knitted material is produced by any suitable knitting machine, certain portions 1 thereof being more closely knit than other portions 2 thereof. The portions 2 therefore appear wider than the portions 1, and the operation of the machine is so regulated that the portions 1 and 2 are formed alternately, with the portions 2 of greater length than the portions 1.

A continuous web of tubular knitted material having been produced, as shown in Fig. 1, separate lengths of material are taken therefrom by cutting every other closely knitted portion 1 along the dotted lines, so that each length of material thus severed, appears as shown in Fig. 2. The next step in the manufacture of the article is to hold the length shown in Fig. 2 at substantially its middle point, while one-half of the length is pulled over the other half, as indicated in dotted lines. The procedure described thus far is the same as that described in my above mentioned copending application, and if desired, a band 3 of elastic material may be positioned near the middle of the length shown in Fig. 2, so that the band 3 will be enclosed between the layers of the material when the latter is pulled back on itself.

The article then has the appearance of Fig. 3, from which it is evident that the ends of the half portions 1^a and 1^b are substantially even with each other, and that the article is then open at both ends. It is also obvious that the article when in a flat condition, then consists of four separate layers of knitted material, in which the outside layers surround the inside layers and are of one continuous web.

The next step in carrying out my invention consists in inserting a piece of porous sponge-like material 4 between an outer and inner layer of knitted material, as shown in Fig. 3. The piece of material 4 is preferably in the form of a natural sponge, or artificial rubber sponge, or other similar

porous material adapted to readily absorb moisture. After the piece 4 has been slipped into place, the ends 1^a and 1^b are sewed together so that the article is then only open at one end between the inner layers. If desired, suitable stitches 5 are then taken around the edges of the piece 4 to retain the latter in position. The completed article then appears as in Fig. 4, in which the article is shown as having been applied to a hand of the user. The hand is completely enclosed by the inner layers of knitted material with the sponge-like piece 4 retained between one inner layer and one outer layer, as clearly shown in Fig. 5.

The article is then ready for use, and it is apparent that it will possess all the moisture containing qualities of a natural sponge without the disadvantages of the latter. It is well known that natural sponges are extremely fragile, and when employed for washing irregular objects, such as automobile bodies, are torn by catching on protruding parts, and are soon rendered useless.

When using my improved article for washing purposes, the sponge-like material is always protected by the outer layer of knitted material, so that it is impossible for the sponge material to be damaged by contact with external objects. At the same time my article possesses all the moisture retaining properties of a natural sponge, and in fact it has been found superior to a sponge, by reason of the fact that the moisture must be squeezed through the relatively dense outer layer of knitted material.

As clearly shown in Figs. 3, 4 and 5, the completed knitted article provides longitudinal ribs 6 formed in the knitting of the web shown in Fig. 1. It has been found that these ribs 6 exert a very effective scouring or cleaning action, which is particularly noticeable when cleaning or washing a smooth polished surface, such as an automobile body. When using the article for this purpose, the ribs serve to remove grease and dirt stains without in any way damaging the surface.

The web shown in Fig. 1 is preferably knit on an ordinary circular knitting machine from two threads of yarn of different material. The yarn forming the surface ribs 6 is preferably heavier and stronger than the yarn forming the web between these ribs, as for example, when using a combination of wool yarn and cotton yarn. Consequently, particles of dirt, or other matter, removed by the scouring action of the ribs 6, are taken up by the relatively loose material between the ribs and held away from the surface being cleaned.

An additional advantageous feature of my article lies in the facility with which it may be supplied with water and at the same time cleanse itself. The nozzle of a hose may be readily inserted in the open end of the article so that water will pass outwardly through the sponge and the outer layer of knitted material, and it is apparent that if the water leaves the nozzle with considerable pressure, dirt will be removed from the outer knitted surface, particularly from those portions of the web between the ribs 6.

I claim,

1. An article for cleaning purposes, comprising a tube of knitted web doubled on itself to provide a pair of tubular portions, one portion inside the other portion, a piece of porous absorbent material enclosed between the two said portions, one end of the inside tubular portion being open to receive the hand of a user, the tube of knitted web presenting longitudinal ribs.

2. An article for cleaning purposes, comprising a tube of knitted web doubled on itself to provide a pair of tubular portions, one portion inside the other portion, a piece of porous absorbent material enclosed between the two said portions, one end of the inside tubular portion being open to receive the hand of a user, the tube of knitted web presenting longitudinal ribs of a material differing in character from the material between said ribs.

Dated this fourteenth day of December, 1923.

CHARLES S. HOLDEN.