No. 734,578. PATENTED JULY 28, 1903.

H. LEMMERMANN.

BATHING CAP.

APPLICATION FILED DEC. 4, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

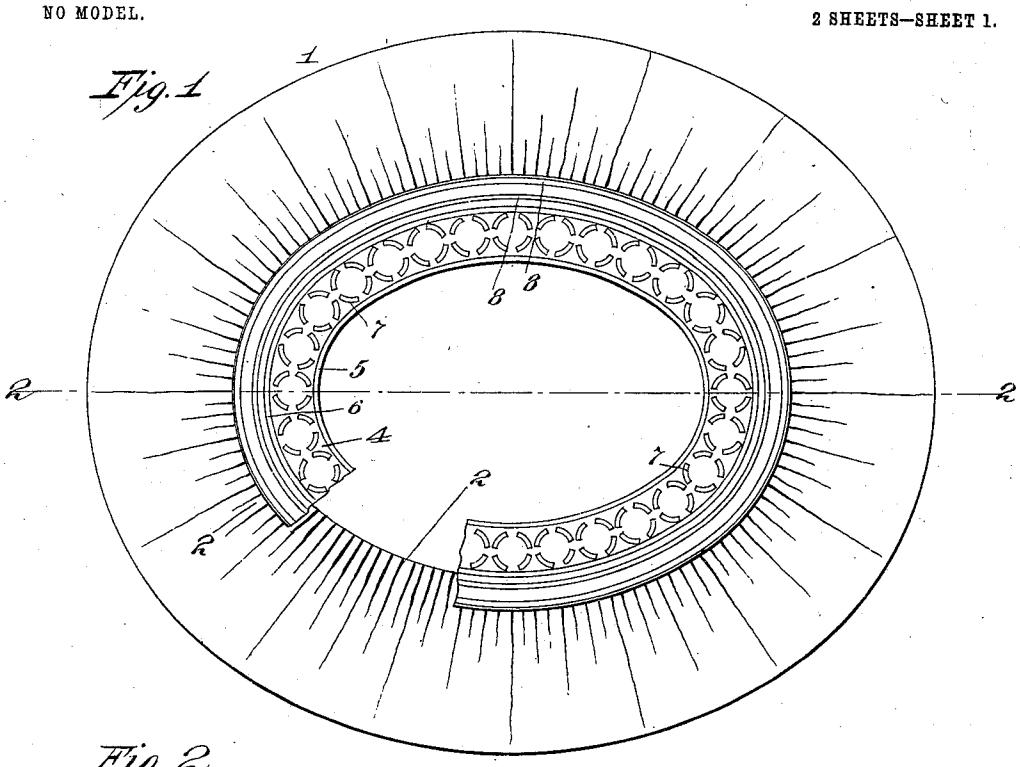


Fig. 2

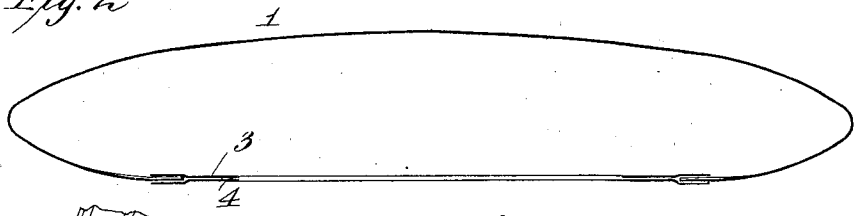


Fig. 3

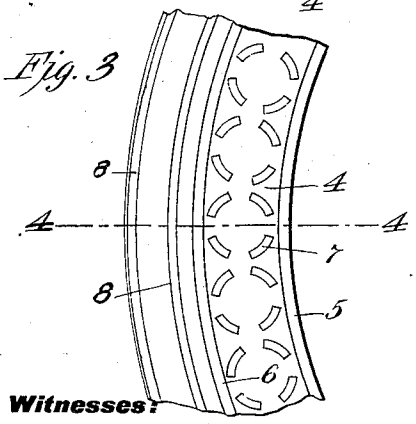
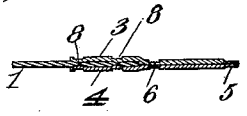


Fig. 4



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5

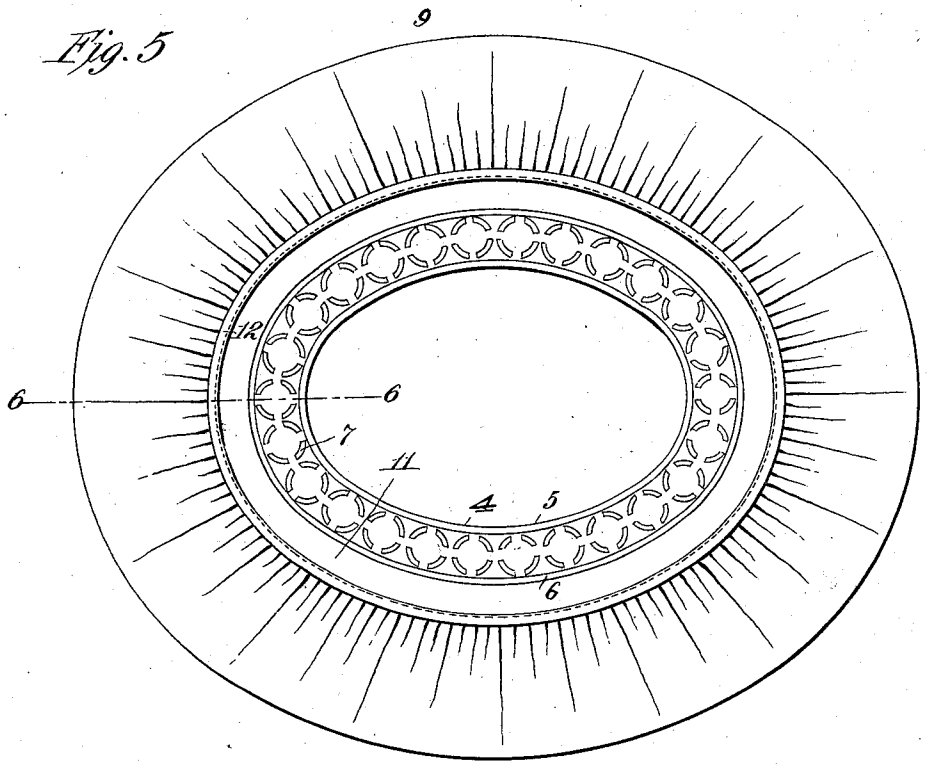
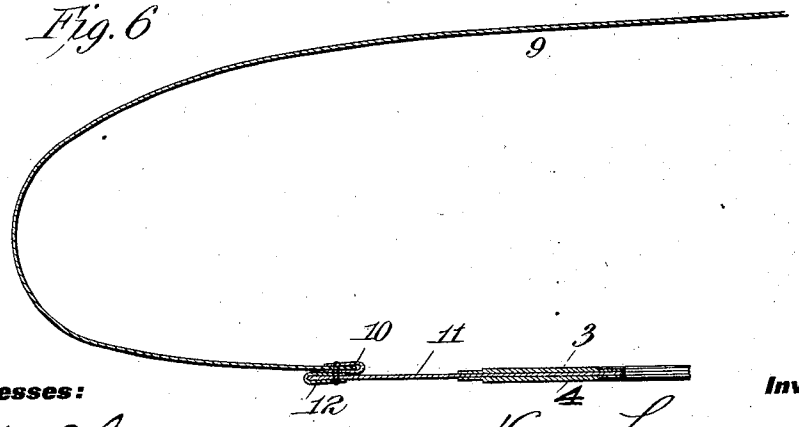


Fig. 6



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No. 734,578. Patented July 28, 1903.

UNITED STATES PATENT OFFICE.

HENRY LEMMERMANN, OF HASBROUCK HEIGHTS, NEW JERSEY, ASSIGNOR TO MATTSON RUBBER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

BATHING-CAP.

SPECIFICATION forming part of Letters Patent No. 734,578, dated July 28, 1903.

Application filed December 4, 1901. Serial No. 84,650. (No model.)

To all whom it may concern:

Be it known that I, HENRY LEMMERMANN, a citizen of the United States, residing at Hasbrouck Heights, in the county of Bergen and State of New Jersey, have invented a certain new and useful Improvement in Bathing-Caps, of which the following is a specification.

In my Patent No. 637,136, dated November 14, 1899, I describe a rubber bathing-cap made of two rubber disks secured together at the edges by a joint or seam, one of such disks having a reinforced head-opening. I have found that in practice the joint between the disks forming the body of the cap is a source of weakness unless very carefully made, besides which it detracts somewhat from the artistic appearance of the cap.

The object of my invention is to produce an improved bathing-cap in which the fold of the material toward the head-opening will be made without seam or joint and which will be strong in construction and artistic in appearance.

In carrying out my invention I first cut from a sheet of uncured rubber of the proper thickness a disk of the proper size, and I gather or tuck the edge of the disk to form the return fold in the cap without seam, the opening produced by this gathering of the material into folds being larger than the required head-opening of the cap. To produce the head-opening, I provide a wide flat band, which is made by cutting two rings of the proper size from uncured-rubber sheeting. These rings are laid one on top of the other and the gathered edge of the body material is inserted a sufficient distance between these two rings. These wide annular strips are then pressed together and upon the gathered edge of the body material which is inserted between them. The annular strips are also pressed together at their inner edges and likewise over limited areas in an ornamental pattern in the intermediate area, after which the rubber is vulcanized, with the result of securing the two parts of the band permanently together and to the gathered edge of the body material. This method of producing joints between different pieces of rubber sheeting is the same as that described in my patent already referred to. The wide flat band forms an extension of the body of the cap toward the head-opening and also forms a reinforced edge at the head-opening. By the employment of this wide band, extending from the gathered edge of the body material inwardly to the head-opening, it is not necessary to gather the body material sufficiently to form the head-opening, which would result in an excess of accumulation of the body material around the head-opening. The band being made of two sheet-rings instead of a piece doubled upon itself, the considerable width can be given to the band without puckering the material, and by having this band of a double thickness inclosing the gathered edge of the body material a strong joint is formed between the band and the body material and the gathered edge of the body material is covered both inside and outside the cap. If the band were made of one thickness of material pressed upon and vulcanized with the gathered edge of the body material either inside or outside the cap, the joint would not have sufficient strength and the rough gathered edge of the body material would be left exposed.

The wide flat band formed of two annular rubber sheets pressed and vulcanized together and upon the inwardly-turned edge of the body of the cap may be used in a cap the body of which is composed largely of a fabric coated with rubber or made waterproof in other ways, but non-elastic. In making a cap of such material a disk of the fabric will be gathered at its edges to form an overturned edge, to which a non-elastic binding may be secured. The wide flat head-band may be secured by pressing and vulcanizing to an annular sheet of rubber, which in turn will be attached to the gathered edge of the non-elastic body by sewing the outer edge of the annular rubber sheet, together with a strengthening-braid, to the bound and gathered edge of the non-elastic body.

In the accompanying drawings, Figure 1 is a bottom view of the bathing-cap formed of rubber throughout. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a plan view of a portion of the wide head-band. Fig. 4 is a

section on the line 4 4 of Fig. 3. Fig. 5 is a bottom view of a cap the body of which is made of waterproof fabric, and Fig. 6 is a section on line 6 6 of Fig. 5.

Referring to Figs. 1 to 4, the body 1 of the cap is formed of a suitable blank or sheet of uncured rubber cut to the proper disk-like or other shape, which sheet is gathered or puckered around the edge at 2 to form a generally bag-like body, as shown in Fig. 2. The puckering or gathering may be conveniently effected in an ordinary sewing-machine with a gathering attachment. The blank of which the body is formed being uncured-rubber sheeting, the action of the gathering-machine will subject each fold of the material to pressure as it is formed, whereby the gathering or plaits will retain their identity to a sufficient extent to enable the body of the article to be handled for the application of the head-band thereto. The opening formed by the gathering of the material is not made small enough for the head-opening of the cap. The head-band is a wide flat band formed of two uncured-sheet-rubber rings 3 and 4, secured together for a part of their width by the application of pressure within limited areas. For example, as shown in Fig. 4, I may apply pressure along the zones 5 and 6 and also coincident with the ornamental pattern 7. (See Figs. 1 and 3.) The application of this pressure, as is described in my patent already referred to, results in the two bands or rings being intimately and, when vulcanized, permanently attached together. The plaited or gathered mouth of the body 1 of the cap is now introduced at its edge between the two rings constituting the head-band for a short distance at the outer edge of these rings. Pressure is then applied—as, for example, along the zones 8 8—whereby the band will be firmly secured to the body of the cap. The complete article is now vulcanized and is ready for use.

When the cap is made with its body largely of a non-elastic waterproof fabric, Figs. 5 and 6, a disk of the fabric 9 is gathered at its edge, forming an opening to the bag-like object, which will be large enough to permit the cap to be placed on the head of the wearer without any extension at this point. This gathered edge of the fabric 9 is bound with a tape or braid 10 sewed in position. An annular section 11 of sheet-rubber is placed between the gathered edge of the fabric and the head-band 3 4. This head-band 3 4 is made of two wide flat rubber rings, as before explained, and is attached to the rubber section 11 in exactly the same way as the head-band already described is secured to the body of the cap shown in Figs. 1 to 4. The rubber section 11 is provided with a tape or braid 12, sewed to its outer edge, and the two braids 10 and 12 are sewed or otherwise secured together, as indicated. The rubber section 11 forms an elastic extension of the body of the cap, so as to permit a sufficient distention of the head-band to permit the cap to be drawn over the head of the wearer.

Whether the bathing-cap is made as shown in Figs. 1 to 4 or as shown in Figs. 5 and 6, it will be a cap of disk-like construction which will lie flat when not in use, as described in the patent to H. B. Williams, No. 482,773, dated September 20, 1892.

What I claim is—

1. In a bathing-cap, the combination with the bag-like body of waterproof material having an opening or mouth larger than the head-opening of the cap, of a head-opening band composed of two separate, wide, flat, unbroken rings of rubber sheeting secured together and secured to the body-opening at their outer edges, the edge of the body material being inserted between the rings of the head-opening band, substantially as set forth.

2. As a new article of manufacture, a bathing-cap made of waterproof material gathered or puckered to constitute a bag-like article, with a mouth larger than the head-opening of the cap, and a wide band forming the head-opening, composed of two flat rings of rubber sheeting secured together and to the body of the cap, substantially as set forth.

3. As a new article of manufacture, a bathing-cap having a body formed of a seamless sheet of rubber, the edges of which are puckered or gathered to constitute a bag-like article, with a mouth larger than the head-opening of the cap, and a wide band forming the head-opening, composed of two flat rings of rubber sheeting, secured together at their inner edges, and secured at their outer edges to opposite sides of the puckered edge of the rubber body, substantially as set forth.

4. As a new article of manufacture, a bathing-cap having a body formed of a seamless sheet of rubber, the edges of which are puckered or gathered to constitute a bag-like article, with a mouth larger than the head-opening of the cap, and a wide band forming the head-opening, composed of two flat rings of rubber sheeting pressed and vulcanized together at their inner edges and over a portion of their area, and pressed and vulcanized at their outer edges to opposite sides of the puckered edge of the rubber body, substantially as set forth.

This specification signed and witnessed this 22d day of November, 1901.

HENRY LEMMERMANN.

Witnesses:
JNO. ROBT. TAYLOR,
JOHN LOUIS LOTSCH.