F. H. RICHARDS.

EYELET.

APPLICATION FILED DEC. 26, 1901.

903,778. Patented Nov. 10, 1908.

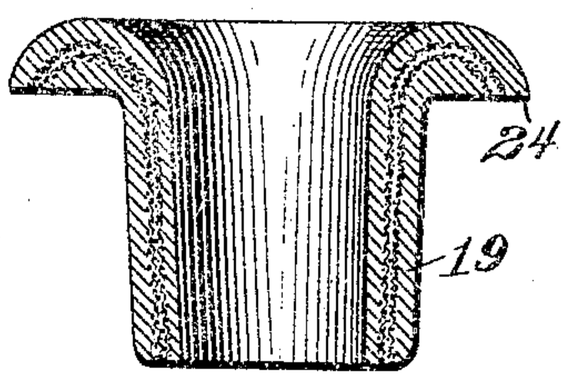


Fig. 1.

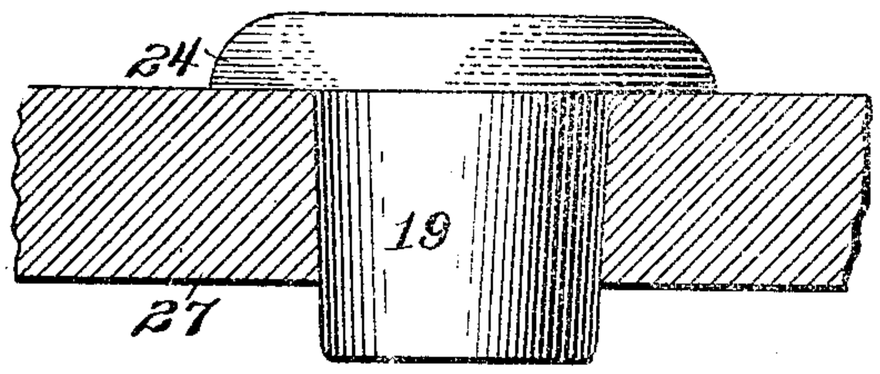


Fig. 2.

Fig. 3.

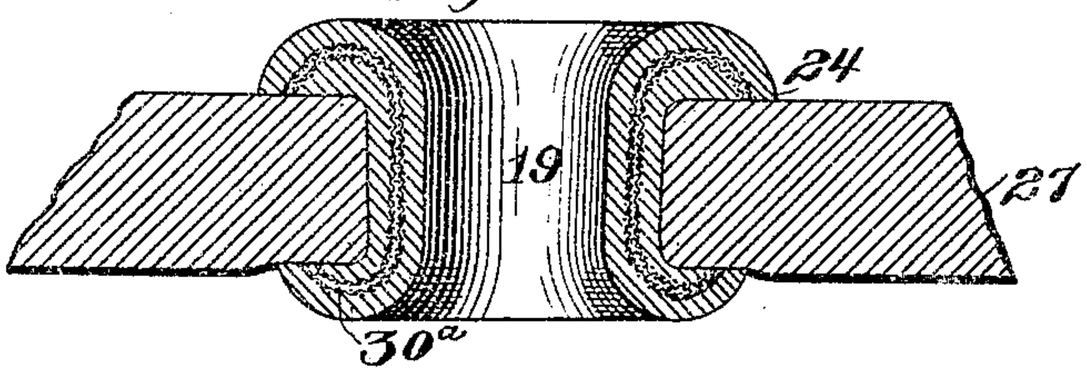


Fig. 4.

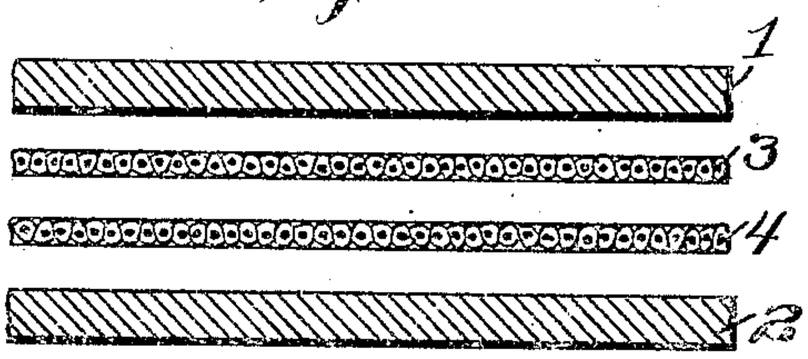


Fig. 5.

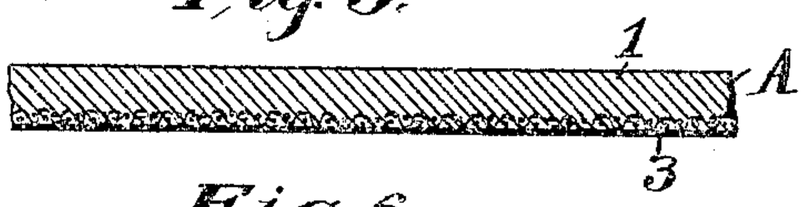


Fig. 6.

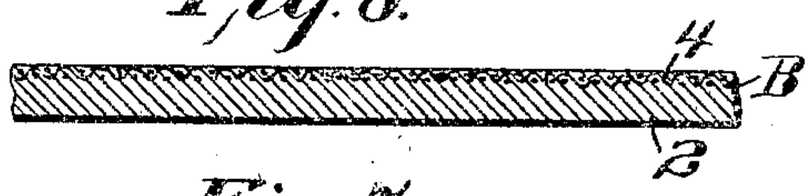
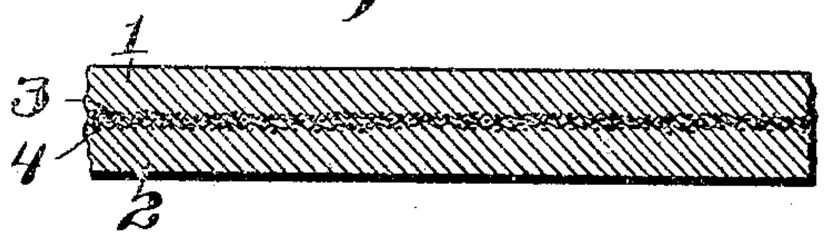


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF HARTFORD, CONNECTICUT.

EYELET.

No. 903,778. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed December 26, 1901. Serial No. 87,186.

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Eyelets, of which the following is a specification.

This invention relates to eyelets and particularly to lacing eyelets such as used on shoes or other articles; the chief object of the invention is to simplify the construction and improve the wearing or wear-resisting qualities of the article and to reduce the expense of manufacture thereof.

The entire eyelet I form of a material consisting of a suitable fibrous material such as fabric and a non-metallic material such as celluloid or other pyroxylin compound; the fabric contributing strength and toughness, while the celluloid forms the facing and gives rigidity and wear resisting qualities to the device which is suitably clenched upon the leather or other material according to its use.

In the drawings forming a part of this specification, Figure 1 shows a section of the complete eyelet ready for use. Fig. 2 shows the eyelet inserted in an aperture in an article, as for instance the upper of a shoe. Fig. 3 shows a section of the eyelet with the projecting tubular portion molded to clench it upon the article also shown in section. Fig. 4 illustrates the component parts of which the article is formed in separate positions. Figs. 5 and 6 show the material at a later stage in the process of manufacture; and Fig. 7 shows the several layers combined to a single structure from which the eyelet is formed.

In making the eyelet I preferably use four plies of material as shown in Fig. 4, the two outer plies being a non-metallic material preferably celluloid or its equivalent, the two inner plies are of a fibrous material preferably fabric of any suitable kind. It is preferable to first treat the fabric layers or plies 3 and 4 with celluloid and then the layers or plies 1 and 2 together with the plies of the fabric are brought together and subjected to heat and pressure, producing the unitary structure shown in Fig. 7. If desired the layer of fabric 3 may be first united with the celluloid sheet 1 and then the fabric 4 similarly united to the celluloid sheet 2; and next the two double plies brought together under heat and pressure. This sheet or ply of composite material is next brought to a tubular form 19 with one flanged end 24, as shown in Fig. 1. This is preferably done by a kind of drawing or spinning action that removes the central portion of the sheet, and then molds it to the cylindrically flanged form of Fig. 1. After the insertion in the article 27 as shown in Fig. 2, the projecting end of the tubular portion is headed over or flanged.

It will be observed from Fig. 3 that the flanges have the inner structure of fabric material or fabric curved over outwardly as at 30^a and its end is adjacent the faces of the leather or other material 27, whereby the fabric of the eyelet, is nowhere exposed to view or wear.

It will be noticed that the flaring or flanged end parts of the eyelet are curved to a substantially semi-circle in cross section as shown by a diametral section in Fig. 3, this leaves no abrupt edges to be subjected to undue wear. It will also be observed that the end face of the flange extends, in the embodiment shown, in a plane at right angles to the axis of the body portion.

In a certain sense, the material of the eyelet might be considered as three-ply in that there is an inner structure of fibrous material or fabric, that is faced on both sides with a non-metallic material preferably moldable and in the form of celluloid or other pyroxylin formation.

An eyelet formed as herein set forth requires no further finishing in the way of painting, and has no metallic inner structure to be exposed to view from wear, yet the form of fibrous material or fabric toughens and reinforces the celluloid to a large degree, and reduces the liability to breakage or fracture, and even should the parts become broken, the threads of the fabric will hold them together.

By the use of the term celluloid herein, I include all equivalents thereof, and the invention is not restricted to any particular composition or compound of the celluloid or pyroxylin class.

Having described my invention, I claim—

1. An eyelet consisting of fibrous material and hard, moldable, wear-resisting material in suitable combination.

2. An eyelet consisting of fabric faced with moldable wear-resisting material.

3. An eyelet having a body or tubular portion in which fabric is embedded, and having a flange or flaring portion at one end and also moldable at the other end.

4. An eyelet consisting of fabric and celluloid and having a tubular body and a flange-like head and moldable at the end opposite said head, said fabric being embedded in the celluloid throughout the eyelet.

5. An eyelet consisting of fabric and moldable material and having a tubular body portion and a flaring end.

6. An eyelet molded from sheet material consisting of celluloid and fabric.

7. An eyelet molded from celluloid in which sheet fabric is embedded.

8. A molded eyelet consisting of a head and a tubular body, the latter being drawn from sheet material consisting of a compound of celluloid in which fabric is embedded.

9. An eyelet consisting of fabric faced upon both sides with celluloid.

10. An eyelet formed with two plies of celluloid and an intervening ply of tough non-metallic material.

11. An eyelet consisting of a plurality of plies of fabric faced with celluloid.

12. An eyelet made from sheet-material consisting of two inner plies of fabric and two outer plies of celluloid, said sheet-material being drawn into a tubular, slightly tapering body, and a portion of sheet-material being left around said body so as to form a rounded flange provided with a plane under surface constituting a shoulder, substantially at right angles to the axis of the eyelet.

13. An eyelet made from plies of inner and outer material and which is drawn into a tubular slightly tapering body, and a portion of the material being left around said body so as to form a flange during manufacture, and provided with a plane surface constituting a shoulder transverse to the axis of the eyelet.

14. An article provided with a three-ply eyelet consisting of celluloid and fabric, and having a tubular body inserted in a perforation in said article, and having a flange at each end of said perforation.

15. An article provided with an eyelet comprising celluloid and two-ply fabric and having a tubular body inserted in a perforation in said article and having a flange at each end of said perforation.

16. An article provided with an eyelet consisting of two plies of fabric its outer sides faced with celluloid and having a tubular body which is inserted in a perforation in said article and has a flange at each end of said perforation.

17. In an eyelet, a tubular body of celluloid reinforced with fabric.

18. In an eyelet, a tubular body comprising outer and inner walls of celluloid and an insertion of tough non-metallic material.

19. In an eyelet, a tubular body consisting of a plurality of plies of fabric faced with celluloid.

20. In an eyelet, a tubular body consisting of a plurality of plies of fabric adhering together and lined upon the outside and inside with celluloid.

21. An eyelet formed of celluloid with an intermediate portion of fabric embodied therein, the eyelet having a tubular body portion and a flange-like head at one end, the fabric extending through the intermediate portion of the flange and terminating at the intermediate portion of the under face of the flange.

22. An eyelet composed of celluloid with an intermediate portion of fabric embodied therein, the eyelet comprising a tubular body portion with a flange portion at each extremity, the fabric extending into each flange portion and terminating intermediate of such flange at the end thereof.

23. An eyelet composed of celluloid with an intermediate portion of fabric embodied therein, the eyelet comprising a tubular body portion and a flange portion at one end having an end portion substantially semi-circular in cross section as set forth, the end face of the flange extending in a plane at a right angle to the axis of the body portion, the fabric extending through the flange portion at the intermediate part thereof, and curved similarly to the curved end of the flange.

24. An eyelet formed of celluloid with an intermediate ply of non-metallic material.

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