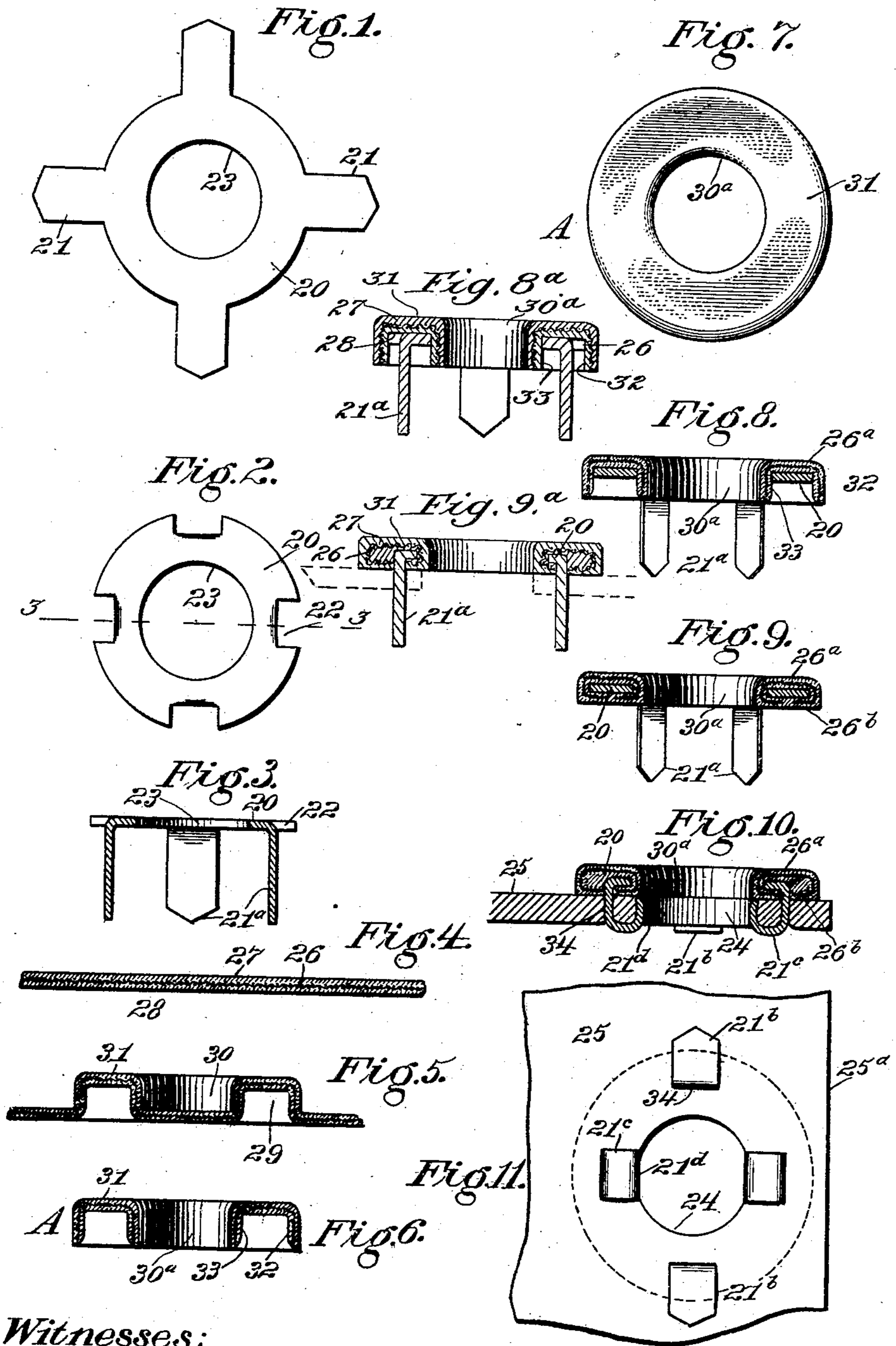


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EYELET.
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EYELET.

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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 such as used in shoes and other articles, and its objects are to improve the construction thereof and also to improve the method of applying eyelets to leather or other material.

In the accompanying drawings, Figure 1 is a metallic blank. Fig. 2 is a plan of the metal portion of the eyelet or grommet. Fig. 3 is a section thereof on the line 3—3 indicated in Fig. 2. Fig. 4 is a section of a sheet of material employed for making casing blanks or caps for the eyelets. Fig. 5 illustrates a stage in forming a cap from the Fig. 4 material. Figs. 6 and 7 show, respectively, sectional and plan views of a completed blank for a cap. Fig. 8 shows a cross-section of a cap placed upon the Fig. 2 article, this section being taken at a point between the turned down or bent prongs upon the metal grommet shown in Fig. 2. Fig. 8^a is a cross section showing the same step shown in Fig. 8, the section, however, being taken through a pair of the turned down or bent prongs. Fig. 9 shows the cap molded in position and the eyelet finished, the section being taken at a point between the turned down or bent prongs. Fig. 9^a is also a sectional view showing the cap placed in position and the eyelet finished as illustrated in Fig. 9, the cross section, however, being taken through a pair of the turned down or bent prongs. Fig. 10 is a cross-section, and Fig. 11 an inverted plan, of an article eyeleted in accordance with my improvements.

In the several views similar parts are designated by similar characters of reference. I form a sheet-metal annulus 20, having projections 21, preferably four, which are subsequently punched down at right angles to said annulus to form attaching prongs 21^a. Said prongs lie within the outer border or peripheral line of annulus 20, being preferably punched so as to leave recesses 22 in the latter, which forms the head of the grommet. The open center 23 of the annulus is intended for a lacing passage, and preferably equals in diameter a hole 24, Fig. 11, formed in the material 25 to be eyeleted.

The prongs 21^a are adapted to be bent at the points either inwardly or outwardly, and in either position to cooperate with the head 20 to clench the material 25.

In capping the annular head 20 I employ material consisting preferably of a ply of fabric 26 confined between two plies of celluloid 27 and 28, the three plies being preferably compacted under heat and pressure and being in such condition as to permit subsequent reduction of the celluloid to a plastic condition upon the application of heat so as to enable the same to be molded into a cap upon the grommet.

By suitable tools I form in the Fig. 4 material an annular depression 29, surrounding a cupped portion 30. I then cut out the bottom of the cup so as to leave a central opening 30^a, and then trim off the surrounding fabric, thereby leaving a channeled cap blank A, Figs. 6 and 7, comprising an annulus 31, having an outer rim 32 and an inner rim 33, said cap being adapted to fit down upon the head of the Fig. 3 grommet, and inclose said head upon three sides, as at Fig. 8.

The parts thus assembled are placed between heating and forming dies, whereby the celluloid is rendered plastic and caused to fill the cavities 22 and completely inclose the annulus 20, leaving only the prongs 21^a visible, as seen at Fig. 9, thus forming a complete eyelet having prongs adapted to be inserted in the material at points outside of the eyelet opening in the material 25. The annulus of celluloid 26^a, Fig. 8, is wrapped or coiled around the outer and inner edges of said head and against the underside thereof, as at 26^b.

The material or leather 25 may be provided outside of the eyelet hole 24 with small perforations 34, for receiving the prongs 21^a, which after insertion may be bent either outwardly, as at 21^b, Figs. 10 and 11, or inwardly, as at 21^c; and in the latter case the point of the prong may also be bent up at 21^d to form a partial lining for the inner surface of the eyelet hole 24 in the material. Said lining may be set at a portion of said hole close to the edge 25^a of the material, so as to receive the wear of the lacing and protect the leather from cutting or other injury.

As seen at Figs. 9 and 10, my improved cap may be formed very thin, so as not to protrude unduly from the material, thus conducing to the neat appearance of the article. By compounding the cap of fabric and cellu-

loid, I form a durable eyelet, the material of the cap being proof against chipping or cracking, the fabric toughening the material to a phenomenal degree and rendering the eyelet practically indestructible. By incasing the top, bottom and both edges of the annulus 20, the cap is inseparably secured thereto and forms upon the under side a broad flat seat for fastening upon the material.

One important advantage of my improvement is that the annular head projects upon both sides of the prongs 21^a, as seen at Fig. 10, the material of the cap being wrapped or molded beneath both the outer and inner edges of the annulus, thereby preventing the edges of the metal from protruding, and leaving only a facing of celluloid visible. The grommet may, if desired, be made of thicker or stronger material than usual in the case of tubular eyelets. Moreover, the insertion of the prongs at separate points around and without the eyelet hole 24, prevents twisting or loosening of the eyelet in the material; and by turning the prongs out, as at 21^b, a more extended bearing or clench than heretofore is obtained. By using a grommet whose head is a flat ring and projects upon each side of the securing devices, a flat and neat casing may be produced.

Having described my invention, I claim—

1. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture.

2. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture, the head having peripheral notches where the tongues are bent therefrom.

3. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture, and a cap molded upon the annular portion of the head and incasing the same.

4. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery

and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture, the head having peripheral notches where the tongues are bent therefrom, and a cap molded upon the annular portion of the head and incasing the same.

5. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture, the head having peripheral notches where the tongues are bent therefrom, and a cap molded upon the annular portion of the head and incasing the same, the material of the cap extending into said recess portions.

6. An eyelet member comprising a flat annular head of sheet metal provided with a circular series of tongues projecting on one side from the head between the periphery and the inner edge, and adapted to penetrate the material a short distance beyond the aperture and thereupon be bent inward against the face of the material and upward against the wall of the aperture, the head having peripheral notches where the tongues are bent therefrom, and a cap of fabric and celluloid molded upon the flat portion of the head with portions extending into the recesses thereof.

7. An eyelet comprising an annular head, a cap of hard, wear-resisting material molded upon and incasing said head, the central opening in said incased head serving as a lacing passage, and a plurality of prongs projecting from said head and adapted to be inserted in the material to be eyeleted at points outside of the eyelet hole in said material, and also adapted to be bent or formed so as to clench the eyelet upon said material.

8. An eyelet comprising an annular sheet-metal head, a cap of hard, wear-resisting material incasing the inner and outer edges and also the top and bottom sides of said head, and a plurality of prongs integral with said head and projecting from points between the inner and outer borders thereof, and adapted to enter the material to be eyeleted at points without the eyelet-hole therein, and to clench the eyelet upon said material.

9. An eyelet comprising a sheet-metal grommet, said grommet consisting of an annular head portion and a plurality of prongs punched and bent up from said head portion so as to form recesses therein; and a cap of hard, wear-resisting material molded and compressed upon said head and filling said recesses and incasing said head upon all sides.

10. An eyelet comprising an annular sheet-metal head incased in celluloid, and a plurality of prongs projecting from said head and outlying the central opening in said head; 5 said prongs being adapted to be inserted in the material to be eyeleted at points outside of the eyelet-hole in said material, and at least one of said prongs being of sufficient length to bend up inside of said eyelet-hole so 10 as to form a partial lining therefor.

11. An eyelet comprising an annular sheet-metal head incased in celluloid, and a plurality of prongs projecting from said head and outlying the central opening in said head; 15 said prongs being adapted to be inserted in the material to be eyeleted at points outside of the eyelet hole in said material, at least one of said prongs being of sufficient length to bend up inside of said hole so as to form a 20 partial lining therefor, and at least one other of said prongs being opposite to said lining prong.

12. An eyelet comprising an annulus of hard, wear-resisting, moldable material reinforced with fabric, and a plurality of separated metallic prongs projecting from points 25 without the inner border of said annulus.

13. An eyelet comprising an annulus of metal incased in a compound cap of fabric and 30 celluloid, and a plurality of prongs for attaching said annulus to the material to be eyeleted.

14. An eyelet comprising an annulus of metal upon which is molded and compressed 35 an annulus of fabric faced with hard, wear-resisting material; and a plurality of devices for attaching said annulus to the material to be eyeleted; said devices lying without the central opening or lacing passage in said 40 annulus.

15. An eyelet comprising an annulus of metal, and a cap compounded of cloth and hard, wear-resisting material, and a plurality of prongs projecting from points between 45 the inner and outer borders of said annulus; said fabric being curled or wrapped around both the inner and outer edges of said annulus of metal.

16. An eyelet comprising an annular head 50 of rigid material, a cap molded upon said

head and comprising a layer of cloth compounded with celluloid, said cloth being wrapped around both the inner and outer edges of said annular head, and a plurality of metallic prongs projecting from said head 55 and adapted to be inserted in the material to be eyeleted at points outside of the eyelet-hole in said material.

17. An eyelet comprising a sheet-metal grommet, said grommet consisting of an 60 annular head portion and a plurality of prongs struck up from said head portion so as to form recesses therein; and a cap or annulus of fabric and a hard, wear-resisting material molded and compressed upon said 65 head and filling said recesses and incasing said head upon all sides thereof.

18. An eyelet comprising an annular sheet-metal head incased in a cap consisting of fabric faced upon both sides with celluloid, 70 and a plurality of prongs projecting from said head at points without the central opening or lacing passage therein; said prongs being adapted to be inserted in the material to be eyeleted at points outside of the eyelet-hole in the latter, and at least one of said 75 prongs being of sufficient length to bend up inside of said hole so as to form a partial lining therefor.

19. An eyelet comprising a sheet-metal 80 annulus incased upon both its outer and inner edges and also upon both top and bottom with a cap consisting of fabric faced upon both sides with celluloid and molded and compressed upon said annulus; and 85 means for attaching said annulus to the material to be eyeleted.

20. An eyelet comprising a flat annulus of metal and a thin flat cap of cloth faced upon both sides with celluloid and molded 90 upon said annulus; said cloth curling or wrapping over both the inner and outer edges of said annulus; and a set of prongs projecting from said annulus between the inner and outer borders of said cap.

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