April 1, 1930. F. K. EASTMAN 1,752,423

DOORCHECK

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FIG. 1

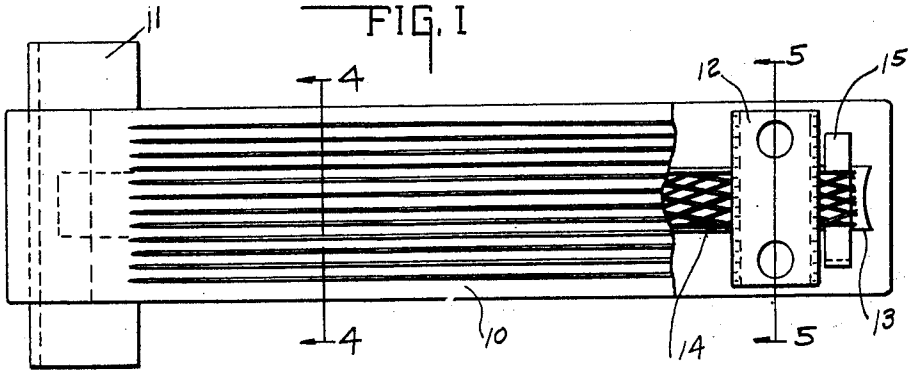


FIG. 2

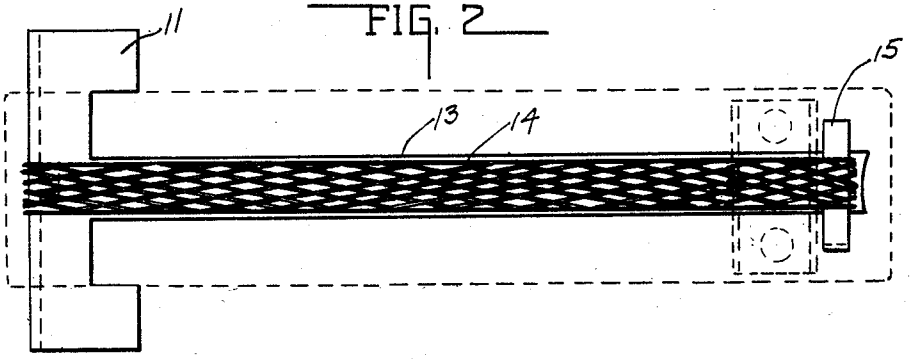


FIG. 3

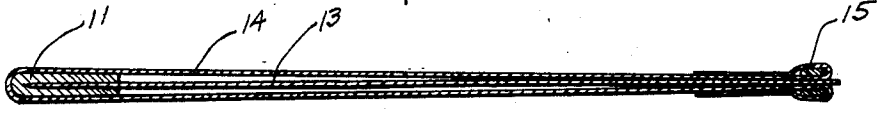
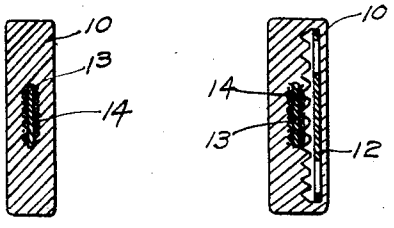


FIG. 4 FIG. 5



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FIG. 6

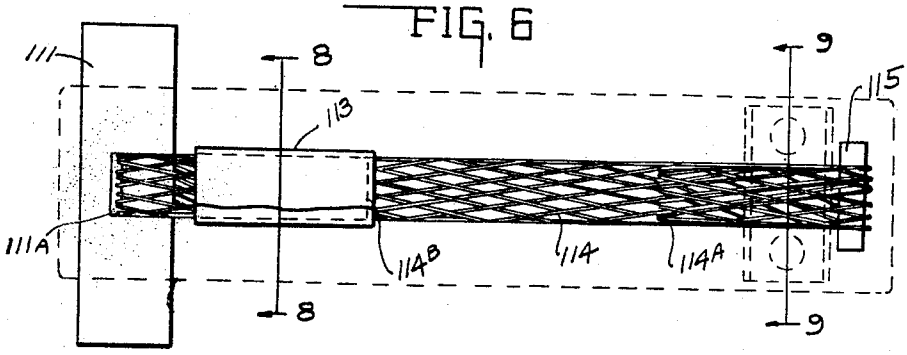


FIG. 7

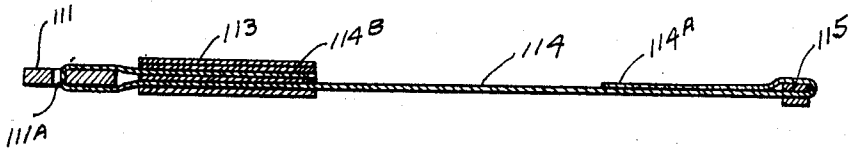


FIG. 8

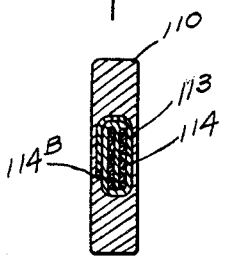
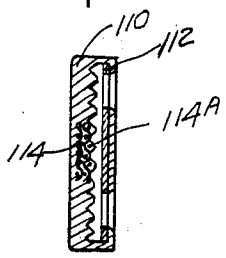


FIG. 9



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UNITED STATES PATENT OFFICE

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DOORCHECK

Application filed September 2, 1927. Serial No. 217,089.

This invention relates to an improvement in door checks of the character shown and described in my co-pending applications, Serial No. 104,081, filed April 23, 1926, Serial No. 120,009, filed July 2, 1926 and Serial No. 138,236, filed September 28, 1926.

The principal object of this invention resides in the provision of a wire fabric strap which is so woven as to leave substantial interstices between the strands of wire so as to permit the fabric strap to yield longitudinally by drawing the wire strands inwardly toward each other tending to close up such interstices. This permits of a flexible and yielding fabric strap formed of wire strands which greatly increases the tensile strength of the check without impairing its flexibilty and yielding qualities.

Another feature resides in the embedding of rubber in the fabric strap so that the rubber or similar material is yieldingly compressed between the strands of wire upon stretching, while at the same time causing the fabric strap to be attached to and form a substantial part of the vulcanized rubber covering.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a plan view of the strap with a portion of one end thereof broken away. Fig. 2 is the same as Fig. 1 with the rubber removed but indicated by dotted lines. Fig. 3 is a view looking down on the top edge of Fig. 2. Fig. 4 is a section taken on the lines 4—4 of Fig. 1. Fig. 5 is a section taken on the line 5—5 of Fig. 1. Fig. 6 is a plan view of a modified form of strap with the rubber covering removed but indicated by the dotted lines. Fig. 7 is a view looking down on the top edge of the strap shown in Fig. 6. Fig. 8 is a section taken on line 8—8 of Fig. 6. Fig. 9 is a section taken on line 9—9 of Fig. 6.

As shown, Figs. 1 to 5 inclusive, in the drawings, the door check comprises an outer vulcanized rubber strap 10 having a cross-head embedded in one end thereof and an anchor plate 12 embedded in the other end thereof. Formed within the vulcanized rubber strap, the rubber acting as an outer protection and finishing coat, there is provided a spring steel strip 13 having one end mounted upon the cross-head 11 and freely movable relative thereto. Embracing the strip 13 and running longitudinally thereof from one end to the other, there is a wire fabric strap 14, said strap being folded about the cross-head 11 and extending on each side of the strip 13 to the free end thereof. Adjacent the free end of the strip 13 there is provided a U-shaped clip 15 which embraces the strip 13 and clamps the strap 14 on each side thereof. The free ends of the strap 14 are folded back about the clip 15, as best illustrated in Figs. 2 and 3.

It will be noted from this construction, and particularly with respect to the formation of the wire fabric strap 14, that it is capable of stretching by reason of the substantial interstices provided in the weaving thereof, the wire threads being drawn laterally upon stretching the strap longitudinally. In applying the vulcanized rubber coating as indicated by numeral 10 in Fig. 1, the rubber will penetrate into the interstices so that the strap 14 will be secured thereto, but without materially affecting the stretching qualities of the strap since the rubber embedded therein will be capable of compression.

The anchor plate 12 is provided with a plurality of sharp projecting teeth, as best shown in Fig. 5, and is so positioned on the strap as to cause the teeth to engage in the wire mesh of the fabric strap 14 and about the clip 15 which is held by the fold, in the free ends of said strap. The plate 13 as shown herein is embedded in the vulcanized rubber 10 so as to be held firmly in place. By means of the screw holes provided in said plate, a suitable anchor for the strap is provided which can not pull out or rip owing to its being held in place by the rubber coating, and by reason of the teeth engaging in the wire mesh and abutting the clip 15.

In Figs. 6 to 9, inclusive, there is illustrated a modified and simplified form of the invention. The woven wire fabric strip 114 is embedded and partially covered with rubber

and one end is turned angularly as at 114—A to receive the U-shaped clip 115 at the end thereof. The opposite end of the wire fabric is turned as at 114—B forming a loop which passes thru a slip 111—A in the plate 111. A suitable wrapping of vulcanizable material serves as a spacer between the adjacent portions 114 and 114—B and is indicated by the numeral 113. The completed strap is formed as shown in Fig. 1 but using the modification shown in Fig. 6 in place of the modification shown in Fig. 2. This last mentioned type of construction discloses a cheaper type of cross bar, requiring the use of less woven wire and eliminating the flexible spring or strip. This permits greater flexibility, and by reason of the use for which this device is intended, the construction is such that it has ample strength to perform its work.

From the above, it will be observed that without sacrificing the stretching and resilient qualities of the strap, a substantial increase in tensile strength and anchoring facilities is obtained over the prior use of cloth fabric.

The invention claimed is:

1. A check strap for limiting the opening movement of a door comprising a wire fabric strap formed of a plurality of diagonally disposed wires arranged to permit longitudinal resiliency thereof, a cross head secured at one end thereof, an anchor plate engaging the other end thereof, and a rubber covering therefor adapted to protect said strap while permitting of its longitudinal resiliency.

2. A check strap for limiting the opening movement of a door comprising a wire fabric strap formed of a plurality of diagonally disposed wires arranged to permit of longitudinal resiliency thereof, a crosshead about which said strap is adapted to be looped, an anchor plate engaging the opposite end of said strap, and a rubber covering therefor imbedded in the interstices of said strap for protecting the same without substantial interference with its longitudinal resiliency.

3. A check strap for limiting the opening movement of a door comprising a wire fabric strap formed of a plurality of diagonally disposed wires arranged to permit of longitudinal resiliency thereof, a rubber protective covering for said strap adapted to be imbedded in the interstices thereof without substantial interference with its longitudinal resiliency, a crosshead secured to one end of said check, and an anchor plate secured to the other end thereof, whereby the longitudinal resiliency of said check will absorb a shock upon the opening of the door being checked thereby.

In witness whereof, I have hereunto affixed my signature.

FLOYD K. EASTMAN.