R. M. BISSELL.

COATED METAL WIRE RUBBER FABRIC.

APPLICATION FILED APR. 13, 1911.

1,036,428. Patented Aug. 20, 1912.

Fig. 1.

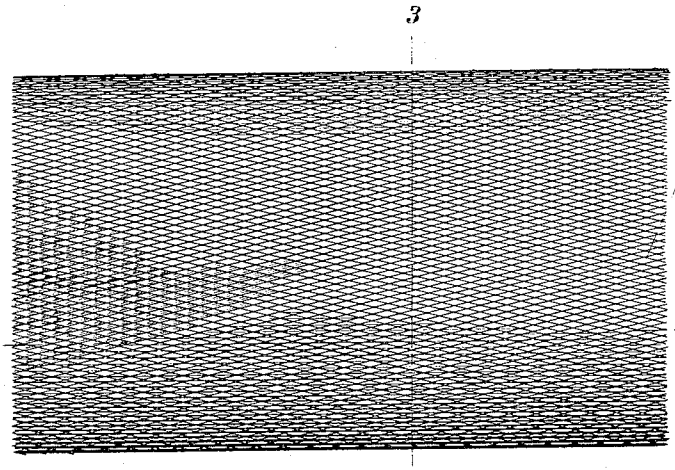


Fig. 2.

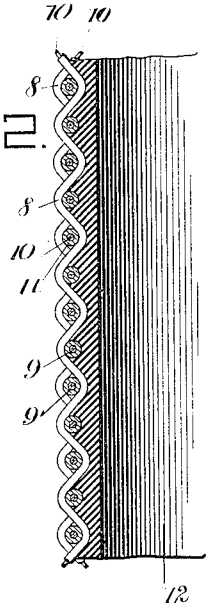
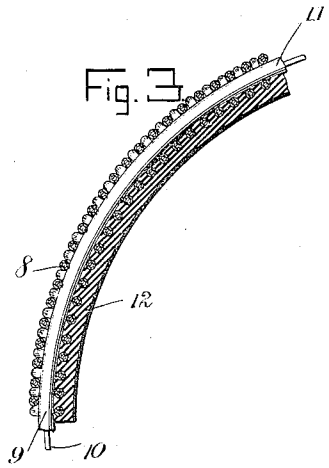


Fig. 3.



WITNESSES:

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COATED-METAL-WIRE RUBBER FABRIC.

1,036,428. Specification of Letters Patent. Patented Aug. 20, 1912.

Application filed April 13, 1911. Serial No. 620,768.

To all whom it may concern:

Be it known that I, RANDALL M. BISSELL, a citizen of the United States, and a resident of Valcour, in the county of Clinton and State of New York, have invented a new and Improved Coated-Metal-Wire Rubber Fabric, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide an air and water proof fabric having a reinforcing metal structure; and to provide in a fabric of the character mentioned a metal puncture resisting surface.

With these objects in view the invention consists in weaving fabric coated flexible metal wire to form a fabric and embedding the same in a rubber body.

It further consists in coating or pouring upon a fabric formed of fabric coated flexible wire a body of rubber or rubber composition molded or cast in form in such manner that the material of the body flows intimately about the strands of the woven fabric.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side view of a fragment of hose pipe formed from fabric constructed in accordance with the present invention; Fig. 2 is an enlarged detail view showing in section the arrangement of the woven metal fabric and the rubber body therefor, the section being taken on the line 2—2 in Fig. 1; and Fig. 3 is a detail view in section of a fragment of the hose shown in Fig. 1, the section being taken on the line 3—3 in Fig. 1.

It will be understood that the woven fabric herein employed is constructed from thread or fabric coated wire. The wire preferably used is copper strand wire such as is employed in the manufacture of electric bell cord. The number of strands or gage thereof constituting the wire used in the present fabric is a matter of judgment or of need to fit the requirements for which the particular fabric may be constructed. It will also be understood that the fabric may be woven about a core to form, as shown in the drawings, a hose or other suitable structure. The particular employment by me of the fabric thus constructed is for the manufacture of fire hose and wearing shoes or tires for automobiles.

Fig. 1 represents a fragment of fire hose when constructed in accordance with the present invention. The woven fabric is composed of the warp threads 8 and the woof threads 9. When weaving the fabric for hose pipe or similar structures the method usually employed in cylindrical weaving is employed by me. The woof and warp threads are each composed of flexible copper centers 10 which are independently covered by a coating 11 similar in construction to that known as thread insulation for wires used in electric installation. When the fabric is formed to the proper shape the same is placed in a suitable mold, when the rubber body 12 is poured into the mold, the molten rubber flowing in and about the strands of the metal wire fabric and intimately adhering to each and every part of the coating of said wires. The bond formed by the rubber upon the coating it will be understood is of a character much closer and more adhesive than that which is formed between rubber and bare wire. When the body 12 is properly cooled or set the hose section is removed from the mold, when it will be found that an article such as a hose has been formed which will hold either air or water, and which will, by reason of the reinforcing wire fabric, successfully resist all dilating internal pressures.

I find it is best in hose structure to place the wire fabric adjacent the outer surface, thereby forming a wire resisting surface for the hose, increasing materially the effective life thereof.

In manufacturing wearing shoes for automobile tires the fabric is woven much in the same manner as would be thread fabric, a suitable width to fit the tread of the shoe being provided. The rubber body portion such as 12 would be cast or molded upon the fabric strip thus constructed, forming thereby a durable puncture proof wearing surface adjacent the tread of the said shoe.

It will be understood that while I have shown a fabric having a thickened rubber body 12—see Figs. 2 and 3 of the drawings—the body portion may be such as would permit the exposure from both sides of the

fabric of the threads thereof, the rubber extending into and between the interstices of the said fabric. Also, it will be understood that the rubber could be thickened so as to extend over and cover the fabric on both sides thereof.

I am well aware that metal wire fabrics have been constructed from woven wire, or held within rubber or flexible composition, and such construction is not broadly herein claimed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A fabric, comprising a tube constructed from woven thread covered wire; and a rubber body portion connected to said tube by being adhered thereto when in a molten condition.

2. As an article of manufacture, a fabric having a cast rubber body, and a wearing surface connected thereto by being adhered thereto while in a molten condition, said wearing surface composed of woven metal wire, said wire being preliminarily covered with thread.

3. As an article of manufacture, a fabric having a cast rubber body, and a wearing surface adhered thereto while in a molten condition, said wearing surface composed of woven metal wire, said wire being preliminarily coated with a heat insulating material.

4. As an article of manufacture, a fabric having a cast rubber body, and a wearing surface adhered thereto while in a molten condition, said wearing surface composed of woven metal wire, said wire being preliminarily provided with a loose coating of non-adhesive material.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RANDALL M. BISSELL.

Witnesses:
HERBERT A. STUTCBURY,
GEO. M. COLES.