(No Model.)

A. A. BROOKS.

FLEXIBLE METALLIC COVERING OR ENVELOP.

No. 559,968. Patented May 12, 1896.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

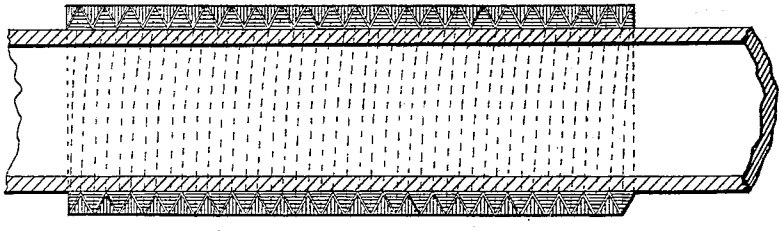


Fig. 6.

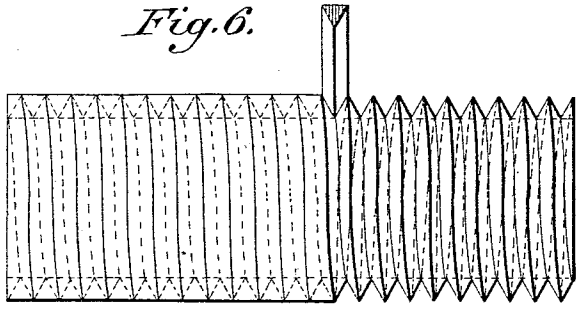
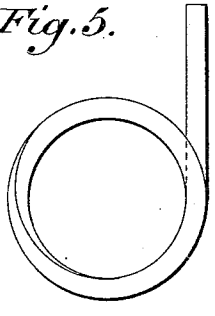


Fig. 5.



Attest:

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UNITED STATES PATENT OFFICE.

ALFRED A. BROOKS, OF MEDFORD, MASSACHUSETTS.

FLEXIBLE METALLIC COVERING OR ENVELOP.

SPECIFICATION forming part of Letters Patent No. 559,968, dated May 12, 1896.

Application filed June 10, 1895. Serial No. 552,265. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. BROOKS, a citizen of the United States, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Flexible Metallic Coverings or Envelops, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates principally to the enveloping of such constructions as require an envelop which shall at all times be flexible, but shall not be rendered less invulnerable by reason of this flexibility; and this covering is designed to be of such a nature that it may not be readily pierced by other hard substances, and may be enabled to stand and resist a great amount of abrasion, shearing strain, and other destructive action or attack.

Figure 1 is a cross-section showing a preferable form of the material used; but I do not confine myself to this particular form, as any triangular form of cross-section may be employed with equally good results. Figs. 2 and 3 show some of the other forms of cross-section which may be employed. Fig. 4 is a cross-section of this form of covering when employed in a cylindrical shape and enveloping a tubular core; but it may also be wound so as to envelop other shapes. Fig. 5 is an end view, and Fig. 6 is a side elevation view, of this style of covering when used in a cylindrical shape.

It will be seen that one of the helices is wound with the base of the triangular cross-section parallel to its axis, and so that this base shall form the inner periphery of the circumvolution with the edges formed by its adjacent angles in close proximity to those of the next preceding and succeeding convolution. The other helix is wound with the base of the triangular cross-section also parallel to its axis, but so that this base shall form the outer periphery of the circumvolution, and these two helices are so placed, one to the other, that a circumvolution of one helix lies next adjacent to a corresponding circumvolution of the other helix, and so that the apex of the triangular cross-section of that helix which has its base forming the outer periphery is next adjacent to the base of the other helix, which base forms the inner periphery of the circumvolution, so that these two helices mesh together and lie in alternate convolutions one to the other.

While I consider this to be the most desirable form of my invention, I do not intend to limit its scope to a covering made of two helices only, as described, as it will be readily perceived that any number of helices may be so placed in relation to each other as to form the desired covering.

The objects of my invention are to produce a metallic flexible covering or envelop for any and all materials of any and all shapes which may require such enveloping to protect them from undue wear, abrasion, or attack of whatsoever name or nature, and while this form of covering is preferably designed to envelop long cylindrical forms—such as steam-hose, tubular conductors, insulated wire, or other similar forms—yet I do not wish to limit my invention to a covering for these forms only, as it will be readily seen that the same type of construction may be used to cover irregular forms and shapes of any length, and may be as useful as a means of protection to a rigid form as a flexible one, because of its adaptability to be readily applied after the form itself has been constructed.

Having fully shown and described my invention, what I desire to cover and secure by Letters Patent, and what I claim as new and useful, is—

1. A flexible metallic covering or envelop, composed of rods or wires of triangular cross-section, and wound in alternate helices to form a flexible cylindrical body having smooth interior and exterior peripheries parallel to the axis of the helices, substantially as described.

2. A flexible metallic covering or envelop, composed of rods or wires of equilateral triangular cross-section, and wound in alternate helices with the base of the triangular cross-section of one rod or wire in juxtaposition with the apex of the next adjacent cross-section of rod or wire so as to form a flexible cylindrical body having smooth interior and exterior peripheries parallel to the axis of the helices, substantially as described.

3. A flexible metallic covering or envelop, composed of rods or wires of triangular cross-section, and wound in alternate helices, so

that the internal and external diameter of one of said coils or helices is equal to the external and internal diameter of the alternate or next adjacent coil or helix and having no intervals or spaces between the adjoining helices whereby a continuous smooth surface is formed to the interior and exterior peripheries of said covering or envelop, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of June, A. D. 1895.

ALFRED A. BROOKS.

Witnesses:
GORDON A. CAIN,
M. T. DENHAM.