

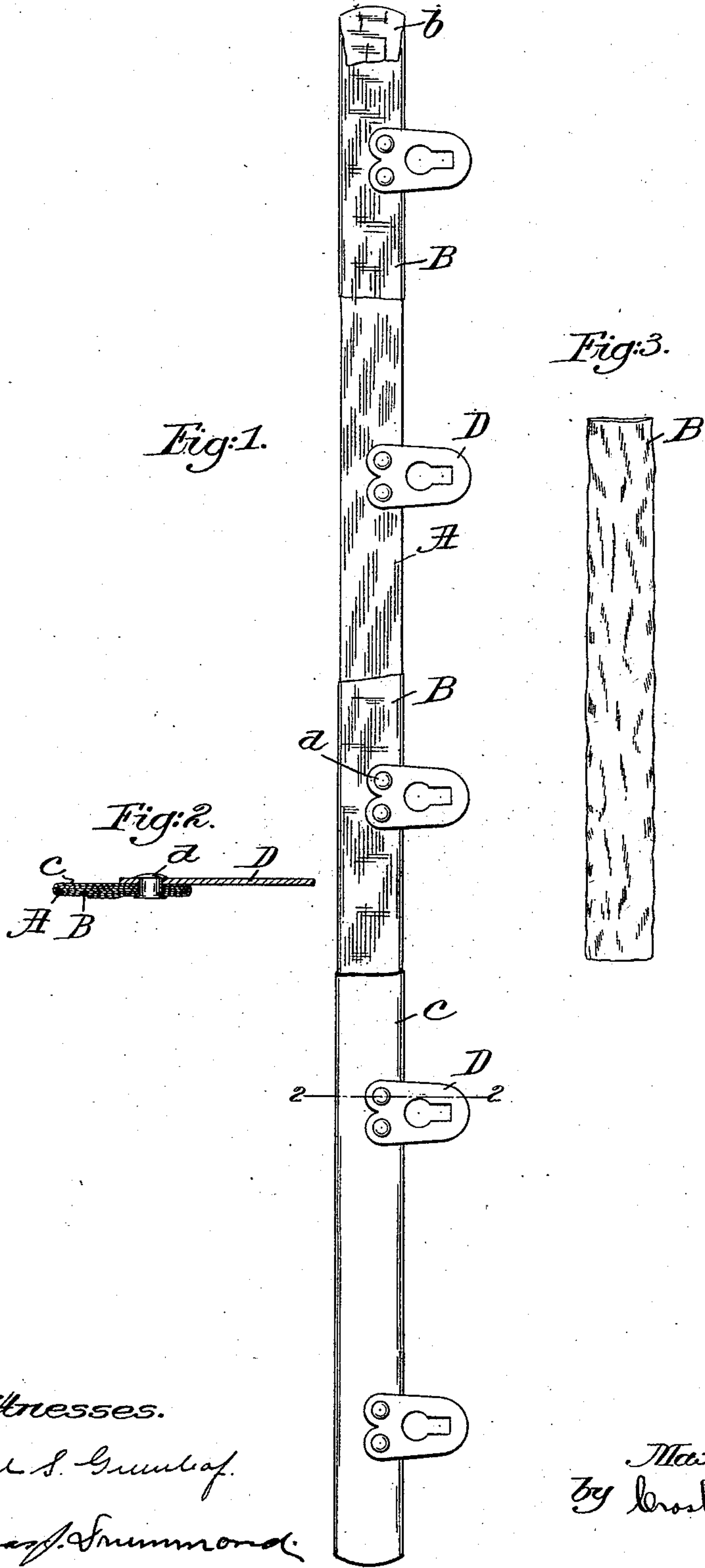
(No Model.)

M. W. HENIUS.

MEANS FOR AND METHOD OF PREVENTING CORROSION OF METALS.

No. 572,678.

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MEANS FOR AND METHOD OF PREVENTING CORROSION OF METALS.

SPECIFICATION forming part of Letters Patent No. 572,678, dated December 8, 1896.

Application filed October 2, 1895. Serial No. 564,401. (No model.)

To all whom it may concern:

Be it known that I, MAX W. HENIUS, of Brooklyn, county of Kings, and State of New York, have invented an Improvement in Means for and Methods of Preventing the Corrosion of Metals, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to improved means for protecting the surface of metal from corrosion, and it relates more particularly to the protection of corset-steels from the corrosion which is at present a very decided objection to the use of steel as a material in the manufacture of corsets.

Various materials have been used as stiffening means in the construction of garments, such as whalebone, reed, and steel, but the latter, because of its constant resiliency, is much to be preferred, and is, as a matter of fact, in general use. The one great objection, however, to steel is that it is extremely liable to rust, and thereby not only become weakened and brittle itself, but destroy and discolor the fabric contiguous thereto. Many ingenious devices have been put forth to effectually cover the steel, and inventors have for a long time been seeking improved means to that end, but all results have thus far proved imperfect. The steels have been covered with a plastic and textile material. They have been varnished and japanned, but sooner or later the constant flexure of the steel would crack the integral covering or rupture the woven covering, so as to make a point of access for moisture, with the usual resulting rust and its dire consequences, or the moisture would work through the covering and rust the steel, notwithstanding the covering.

My invention provides a material and a method of securing the same which meets this popular want in an effectual and perfect manner. I prepare animal membrane, particularly that of the intestines, and secure the same by special process in intimate contact with the steel, and this yields to any flexure of the steel without tendency to rupture, inasmuch as it is extremely tough in itself and sufficiently elastic; also, this membrane is not liable to be attacked by any of the acids of the perspiration of the body.

My invention also contemplates further covering and various details, all as hereinafter fully set forth by description and more particularly defined in the claims.

In the accompanying drawings, illustrative of my invention, Figure 1 is a front elevation of my invention as applied to the busk or steel clasp of a corset. Fig. 2 is a cross-section thereof on the line 2 2, and Fig. 3 is a detail view of a portion of sheep-gut adapted to cover a corset-steel.

The present embodiment of my invention, by way of illustration, shows the same in connection with a corset-steel.

Referring to the various details by reference-letters, A designates the long thin strip of steel, the same as is ordinarily employed in corsets.

B designates the covering of animal membrane.

C designates a protecting-wrapper for the membrane, and D designates the eye-clasp.

Any suitable animal membrane for the covering B may be employed within the scope of my invention, but I have found it preferable to use the tough membraneous tissue of the intestines, and for the particular purpose of covering corset-steels the intestine of the sheep has been found to be the most suitable.

The intestine or gut is carefully cleaned in any well-known manner and dried, in which state it presents the appearance of ordinary translucent tissue-paper, the texture being extremely fine and delicate and of a width when flattened out approximately that of the ordinary corset-steel. After cleaning, the membrane in drying is preferably allowed to shrink somewhat in order to toughen it and allow it to become more dense in fiber. This tubular ribbon of membrane is cut into lengths slightly greater than that of the steels which are to be covered. When a steel is to be covered, one of these lengths of membrane is dampened and is stretched over the steel to be covered, and in the process it accommodates itself to the width of the steel by reason of its elasticity; also, the membrane itself contains a sufficient albuminous adhesive constituent in its own composition to cause the same to closely adhere to the surface of the steel, so that simply by the process of drawing the membrane over the steel

it is attached to the same in intimate union. In order, however, to render this union perfect and cause the translucent membrane to adhere to the steel almost as an integral part of the same, I employ means, such as the finger, a roller, or other suitable implement, to smooth out all wrinkles from the same, to remove all air-bubbles, and to cause the same to unite to the steel at every point. The result is that in a completed covering the membrane is not apparent at all. Its translucent and almost transparent quality produces such effect by reason of the manner in which it is put on, as stated above.

The ends of the steel are protected in any desired manner, either by the membrane or otherwise.

The length of membrane may be allowed to project slightly at either end of the steel. The projecting wet ends are neatly bent over, as at *b*, and pressed down tightly back on itself against the adjacent face of the steel. By reason, as before stated, of the adhesive nature of the gut these ends cover up the end of the steel in an effectual air-tight manner without other means. The completed covering is now allowed to dry.

The steel may now be flexed in any manner, even to an extreme degree, without in the least affecting the membrane covering. It is as intimate in its relation to the steel body as though it were part of the steel itself. It is likewise sufficiently tough to endure considerable abrasion, but in order to fully protect it against possible disruption in use by reason of the adjoining garments I provide an additional covering *C*, of cloth, paper, or any ordinary covering, preferably tough paper, which may be pasted over the membrane-covered steel, or in the case of a textile covering it may be woven around the steel. However, I do not limit myself in any way in regard to this outside protector.

The clasps or eyes *D* are secured to the covered and protected steel by means of rivets *d*, preferably as shown in Fig. 2.

I have described my invention as applied to a corset-steel, but I do not wish to be understood as limiting my invention at all to such application, as it may be employed in a great variety of different articles, nor do I limit myself to the use of sheep-gut, nor to the use of gut, because any suitable untanned or internal animal membrane may be employed. It is not essential, moreover, that the membrane shall be in such a shape as to be drawn over the article to be protected, as it may be applied in a sheet by wrapping around the article or by covering over any superficial area of any configuration.

Having described my invention and a way in which it may be used, what I claim is—

1. A metal body having its surface covered with thin animal membrane placed thereover and secured thereto by means of the inherent adhesive property of the membrane, to

form an air-tight covering for the same for the purpose of preventing the corrosion of the metal, substantially as described.

2. The combination with a metal body, of a tubular animal membrane drawn thereover, and integrally secured to the surface thereof to form an air-tight covering for the same, substantially as described.

3. As an article of manufacture, a corset-steel covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, substantially as described.

4. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and a protector of suitable material snugly secured around said membrane covering, substantially as described.

5. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and a protector of paper wrapped around and cemented to said membrane covering, substantially as described.

6. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and the fastening-clasps secured by rivets passed through said steel and membrane, substantially as described.

7. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, a protector of suitable material snugly secured around said membrane covering, and the fastening-clasps secured by rivets passing through said steel and through the intervening covering and protector, substantially as described.

8. As an article of manufacture, a corset-steel having a tubular covering of gut drawn thereover and secured directly thereto, the end of the tube beyond the ends of the steel being closed, thereby completely enveloping the inclosed steel for the exclusion of air and moisture, substantially as described.

9. As an article of manufacture, a corset-steel having a tubular covering of gut drawn thereover and secured thereto by means of the inherent adhesive constituent of the gut, the said gut being wrapped over upon itself at the ends of the steel to thus completely inclose the steel at every point, substantially as described.

10. As an article of manufacture, a corset-steel having a tubular covering of gut integrally secured thereto in its normal state by means of the constituent adhesive property of the gut, substantially as described.

11. The method of securing animal membrane to metal, consisting of first wetting the membrane, spreading the same directly on the

metal, and pressing the same into intimate contact therewith, whereby the adhesive constituents of the membrane are dissolved somewhat and brought into close relation with the surface of the metal so as to cement the membrane thereto, substantially as described.

12. The method herein set forth, consisting of cleaning the animal membrane, wetting the same and allowing it to dry, again wetting it, pressing it into intimate contact with the sur-

face of the metal to be covered, and allowing it to dry thereon, substantially as described.

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

MAX W. HENIUS.

Witnesses:

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