

(No Model.)

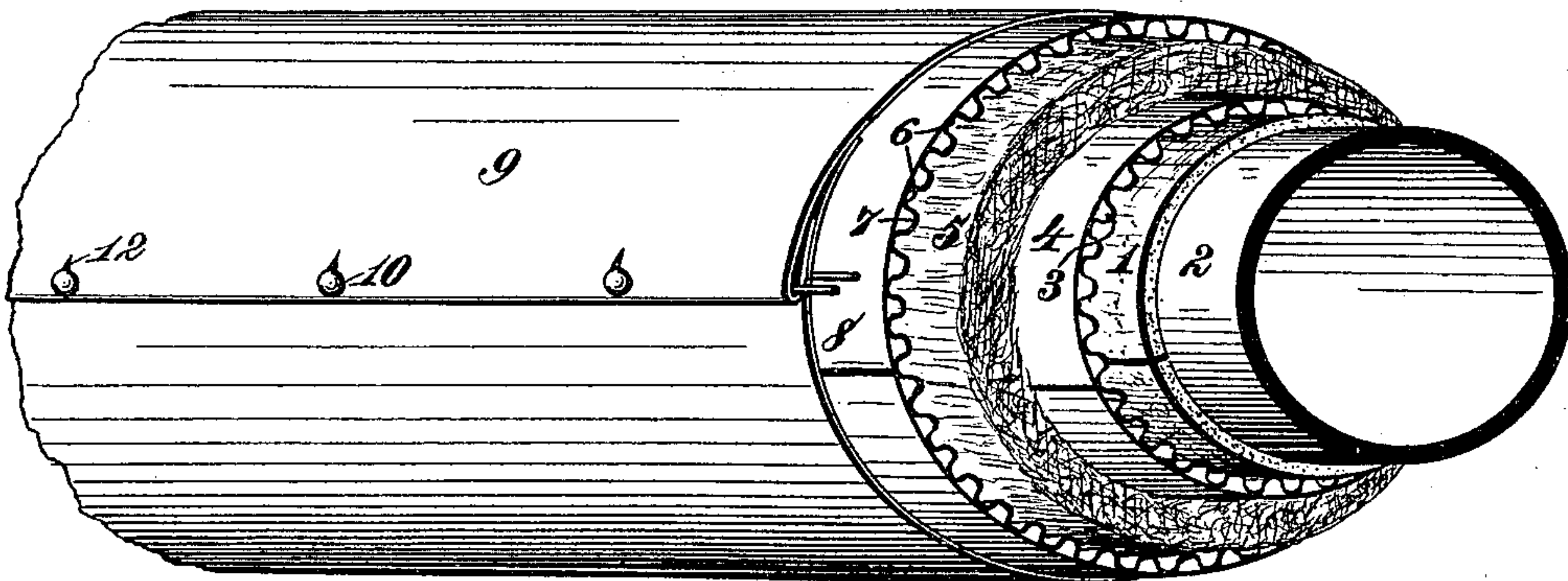
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J. RILEY.  
NON-CONDUCTING JACKET.

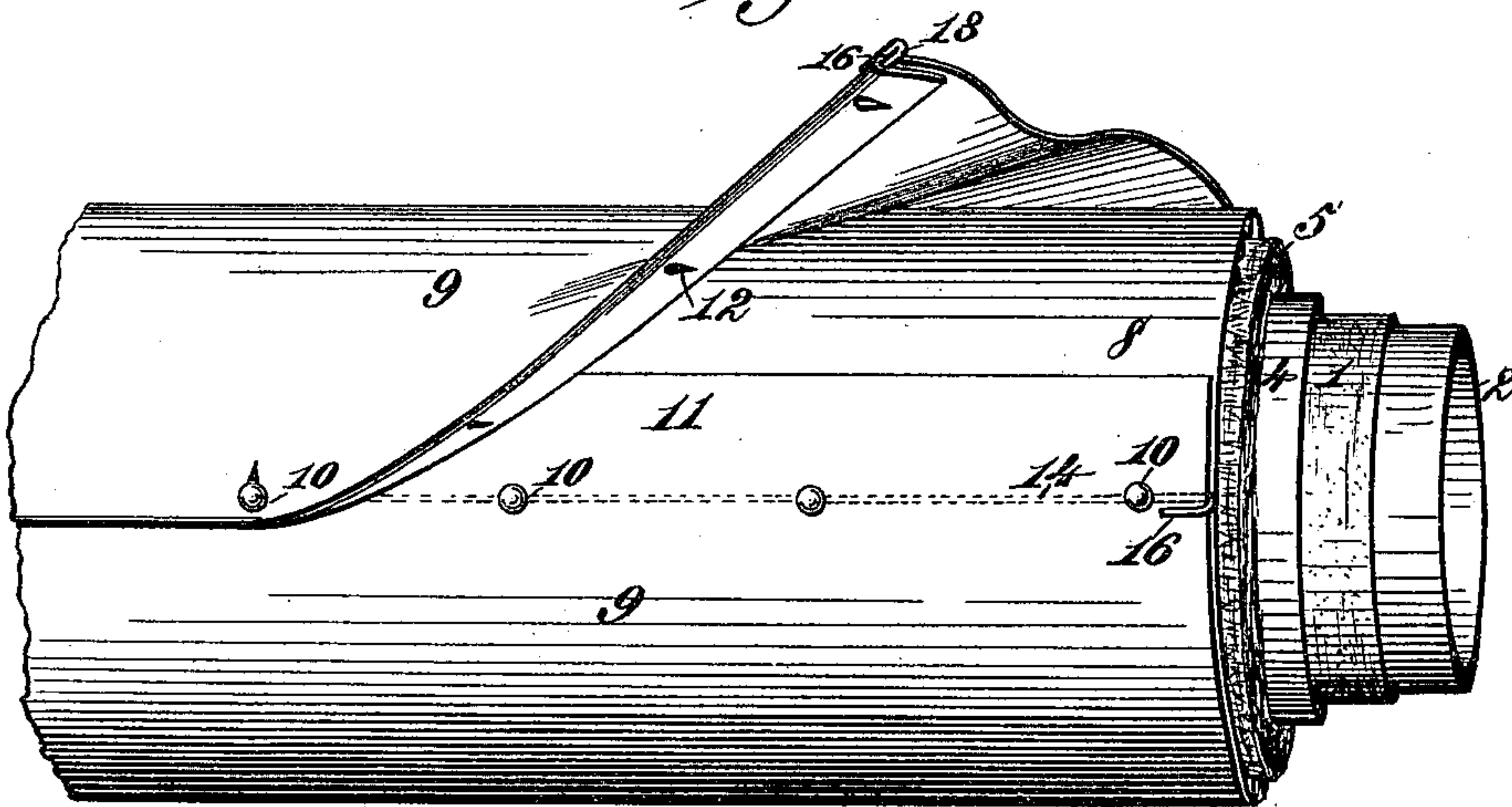
No. 403,700.

Patented May 21 1889.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*  
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*Dennis Sundry*

*Inventor:*  
*John Riley.*  
*By*

*James L. Norris*  
*Atty.*

(No Model.)

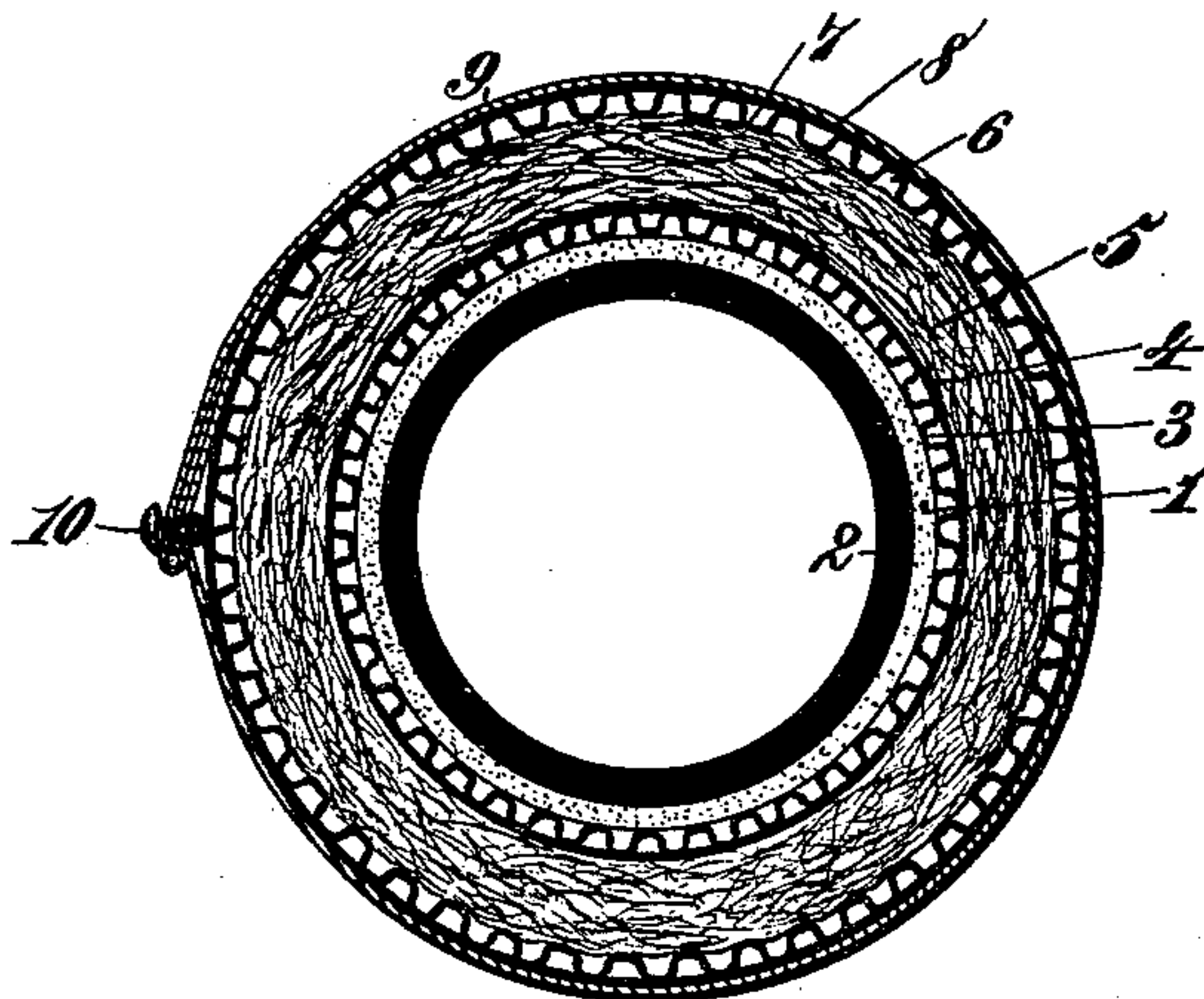
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J. RILEY.  
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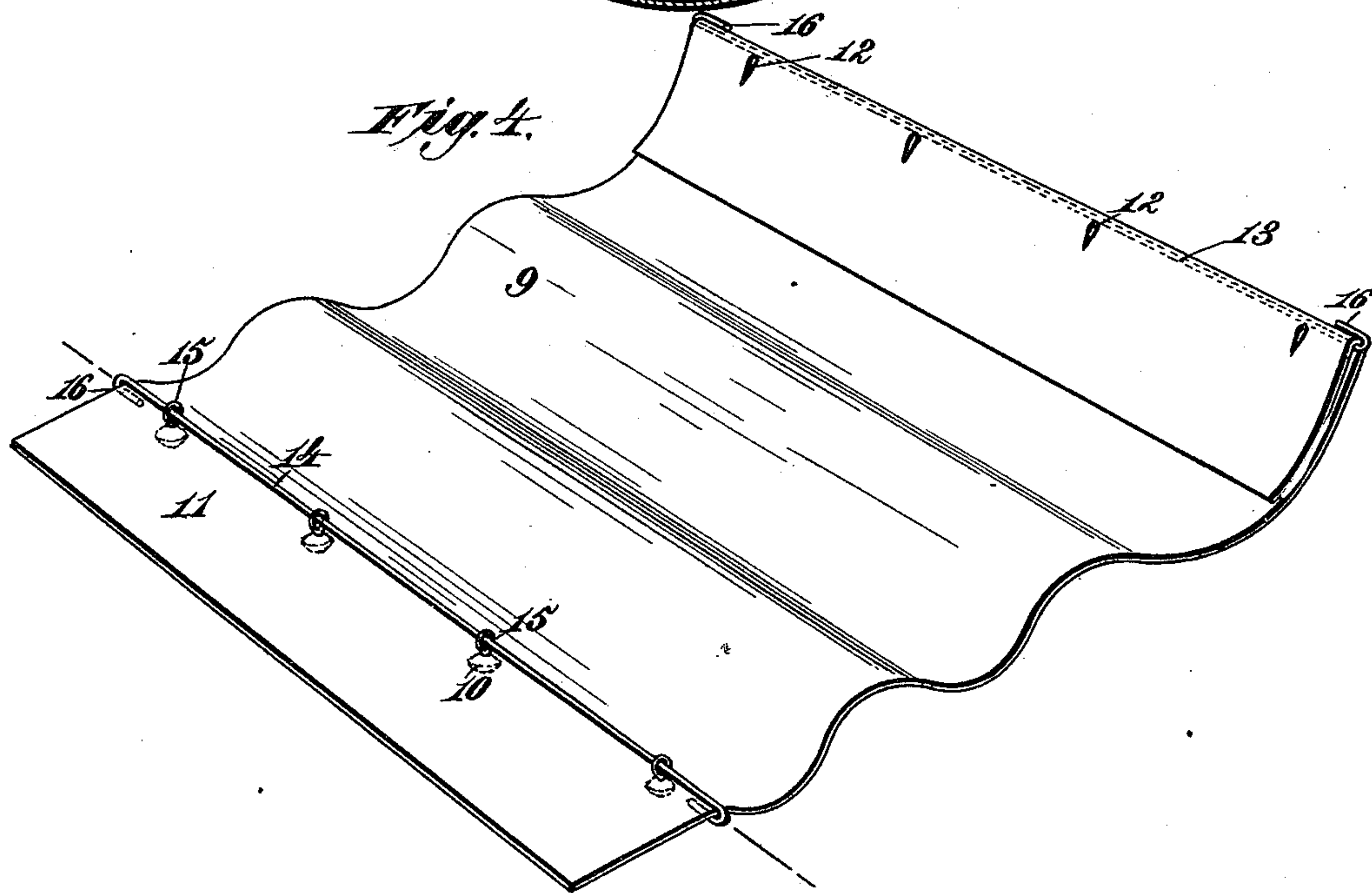
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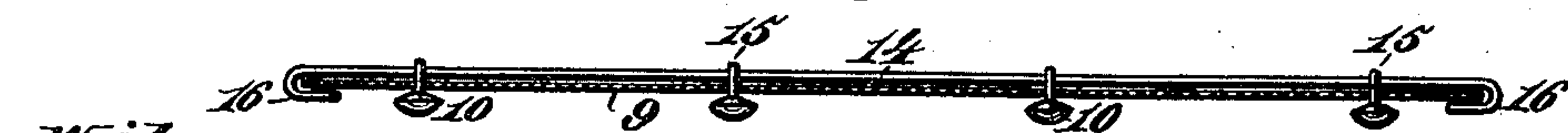
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

JOHN RILEY, OF TROY, NEW YORK.

## NON-CONDUCTING JACKET.

SPECIFICATION forming part of Letters Patent No. 403,700, dated May 21, 1889.

Application filed February 11, 1889. Serial No. 299,444. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN RILEY, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Non-Conducting Jackets for Steam-Pipes and other Radiating-Surfaces, of which the following is a specification.

This invention has for its objects to provide a novel, efficient, and desirable jacket or covering for steam-pipes and other radiating-surfaces; to provide a non-conducting jacket wherein a series of parallel separated dead-air channels extend longitudinally within the jacket and are formed of corrugated paper; to provide a non-conducting jacket wherein an inner set and an outer set of parallel separated dead-air channels extend longitudinally to largely increase the efficiency of the structure in preventing the radiation of heat and prevent the burning or charring of the hair that may be used; to provide a novel external envelope of textile material for binding and retaining a sectional non-conducting jacket on a steam-pipe or other radiating-surface, which can be buttoned and unbuttoned; to provide a novel external binding-envelope of textile fabric having continuously-wired opposite edges for keeping the latter stretched or distended and producing a smooth surface when the parts are buttoned together, and to provide the external envelope with wires at the edges, that while they stretch or distend the latter one of them subserves the function of securing and holding the buttons or similar fastening devices and the other braces the button-holes, all in such manner that when the parts are buttoned or similarly fastened the two wires distribute the strain along the opposite edges of the textile fabric to prevent the latter tearing out and provide a close union of the parts and a smooth and symmetrical casing.

The objects of my invention I accomplish by the features of construction and combination and arrangement of devices hereinafter described, and set forth in the claims, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional perspective view showing the invention applied to a pipe. Fig. 2 is a similar view showing a portion of the

external binding-envelope unbuttoned. Fig. 3 is a transverse sectional view. Fig. 4 is a perspective view of the external binding-envelope, looking at the inside thereof; and Fig. 5 is a longitudinal sectional view of the binding-envelope, taken through the buttons.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates an internal layer or sheet of asbestos or other material prepared, preferably, as a fire-proof paper and adapted to rest directly in contact with a steam-pipe, 2, or other radiating-surface to be covered and protected. A layer or sheet of paper formed with parallel corrugations 3 running lengthwise is arranged around the internal layer or sheet with the alternate corrugations resting thereupon, while the other alternate corrugations are cemented or otherwise secured to a sheet, 4, of paper, which constitutes a supporting-back for the corrugated paper sheet.

A course or layer, 5, composed of asbestos and hair felted together, of considerable bulk or thickness, is placed upon the inner corrugated paper sheet, and upon this felted course is an outer sheet, 6, of paper formed with parallel corrugations 7, running lengthwise and alternately bearing upon the felted course, while the other alternate corrugations are cemented or otherwise secured to a supporting-back, 8, composed of paper.

The inner corrugated sheet, 3, and the outer corrugated sheet, 6, constitute within the jacket two sets of parallel separated dead-air channels or spaces which extend longitudinally, the inner set being at the inside of the felted course or layer 5 and the outer set at the outside of the said course or layer, whereby the jacket in its capacity to prevent the radiation of heat is rendered very efficient, desirable, and suitable for the purpose designed.

The backing-sheets 4 and 8 serve to support and preserve the corrugated shape of the paper sheets and prevent the corrugations from being crushed in when binding the jacket upon a steam-pipe or other radiating-surface.

The several layers or sheets described are



prepared of substantially-equal dimensions to form a jacket-section, and they are then bent around the steam-pipe or other object and brought into cylindrical form, in which position the jacket is secured by an external binding-envelope, 9, of suitably-prepared duck, canvas, cotton cloth, or other textile fabric suitable for the conditions required. This canvas or other textile sheet is designed to be detachably secured, and for this purpose it is provided remote from one longitudinal edge with a row of buttons, 10, leaving a projecting extension-flap, 11, to underlie the opposite longitudinal edge, which latter is supplied with a row of button-holes, 12, coinciding with the buttons and adapted to be engaged therewith. The width of the external envelope is such that when placed around the non-conducting jacket it binds the latter closely and crowds it upon the pipe or other object in such manner that when the parts are buttoned together the whole presents a smooth appearance.

The edge of the envelope having the button-holes is retained in a stretched or distended condition by an inserted wire, 13, located directly at and along the outer ends of the button-holes, so that the latter are braced and prevented from tearing out. The opposite edge portion where the buttons are placed is retained in a stretched and distended condition by a wire, 14, which also subserves the function of securing and holding the buttons, this being effected by providing the latter with shanks having eyes 15, which are passed through the envelope, so that the stretching or distending wire extends through such eyes at the inside of the envelope.

The wires 13 and 14 are preferably flexible or bendable to facilitate the application of the envelope to a non-conducting jacket, but they are sufficiently strong and substantial that while they stretch and distend the edge portions of the fabric they also distribute the strain on the buttons and button-holes longitudinally along the envelope, and thus effectually prevent the latter from tearing out and permit it to be secured in as taut condition as occasion may demand.

By the construction set forth the jacket or covering can be made in sections of any desired length, and the external envelope may in its application be made to constitute a practically-continuous casing by extending the end of one section so as to overlap and be buttoned upon the end of an adjacent section. The wired edges of the envelope render the same durable and materially increase its efficiency and enable it to be applied smoothly and symmetrically. The extension-flap 11 to underlie the button-hole edge is very desirable in connection with the buttoning of the parts together, and the envelope as an article is very useful, since it can be used in connection with various non-conducting jackets or coverings. The envelope being capable of general application and being a separate and

independent part from the jacket, adapted to be removed and replaced at will without disturbing the jacket or covering to which applied, is more useful and desirable than those structures wherein the body of the jacket itself is supplied at the edges with hooks to receive a lacing-cord for drawing the edges of the jacket together, so that they abut one against the other.

In practice the non-conducting jacket is fashioned and fitted to the pipe or other object, and subsequently the external binding-envelope is applied around the jacket, drawn closely thereupon, and then buttoned, with the extension-flap of the button edge underlying the button-hole edge, thus making a close joint without employing cement, cords, annular bands, or stitching.

I do not confine myself to the backing-sheet of paper on the corrugation, though this construction will give the most satisfactory results. The wires at the edge portions of the envelope should be held against longitudinal displacement or movement, and since economy in this type of articles is desired, any undue longitudinal movement is prevented, as here shown, by simply bending the extremities of the wires into hooks 16, which engage or interlock with the end edges of the envelope. If desired, the hooks may be further secured by sewing them to the envelope.

The interior corrugated paper sheet by providing the separated channels to form dead-air spaces effectually avoids charring or burning of the hair or other material in the course or layer 5 resting thereupon.

I do not broadly claim dead-air spaces in a non-conducting jacket or covering, nor do I broadly claim an external binding-envelope; but,

Having thus described my invention, what I claim is—

1. A non-conducting jacket for radiating-surfaces, consisting of a base-layer, 1, the inner sheet, 3, of corrugated paper, the course or layer 5 on said corrugated paper, the outer sheet of corrugated paper on the said course or layer, and an external binding-envelope, 9, on the outer sheet of corrugated paper, substantially as described.

2. A non-conducting jacket for radiating-surfaces, comprising a fire-proof base-layer, 1, an inner corrugated sheet, 3, of non-conducting material, an outer corrugated sheet, 6, of non-conducting material, a course or layer, 5, interposed between the two corrugated sheets, and an external binding-envelope, 9, said sheets constituting an inner set and an outer set of dead-air channels or spaces, substantially as described.

3. A non-conducting jacket for radiating-surfaces, consisting of a fire-proof base-layer, an inner corrugated sheet and an outer corrugated sheet, forming, respectively, a set of inner and a set of outer dead-air channels, a course or layer interposed between the two corrugated sheets, and a removable and re-



placeable textile binding-envelope buttoned in position on the jacket, substantially as described.

4. The combination, in a non-conducting jacket for radiating-surfaces, of an internal layer or sheet, 1, a course or layer, 5, an interposed corrugated sheet of paper having the alternating corrugations resting on the internal layer or sheet and the other alternating corrugations secured to a paper backing-sheet, and an external textile binding-envelope, substantially as described.

5. The combination, in a non-conducting jacket for radiating-surfaces, of an inner and an outer corrugated sheet of paper, each forming a set of separated dead-air channels, and an interposed course or layer between the corrugations of the respective paper sheets, substantially as described.

6. The combination, in a non-conducting jacket for radiating-surfaces, of an inner and outer corrugated sheet, each having an attached backing-sheet and forming a set of separated dead-air channels, and an interposed course or layer of non-conducting material, substantially as described.

7. The combination, in a non-conducting jacket for radiating-surfaces, of an inner and outer corrugated sheet of paper forming separated dead-air channels, an interposed course or layer of asbestos and hair, and an external binding-envelope, substantially as described.

8. A non-conducting jacket for radiating-surfaces, consisting of an internal layer or sheet, an inner and an outer corrugated sheet, each forming a set of separated dead-air channels, a course or layer of felted asbestos and hair interposed between the two corrugated sheets, and an external textile binding-envelope, substantially as described.

9. The combination, with a non-conducting jacket for radiating-surfaces, of a removable and replaceable external textile binding-envelope separate and independent of the jacket and provided with a pair of longitudinal stretching-wires, and buttons and button-holes, respectively, braced by said wires, substantially as described.

10. The combination, with a non-conducting jacket for radiating-surfaces, of a removable and replaceable external binding-cover

having near each longitudinal edge a stretching or distending wire, and engaging and disengaging fastening devices adjacent to and respectively braced by said wires, substantially as described.

11. The combination, with a non-conducting jacket for radiating-surfaces, of an external binding-envelope having fastening-buttons and longitudinal stretching or distending wires, one securing and holding the buttons and the other bracing the parts that engage the buttons, substantially as described.

12. The combination, with a non-conducting jacket for radiating-surfaces, of a textile binding-envelope wholly independent of the jacket and removable and replaceable at will, said envelope having at one edge a line of button-holes and at the opposite edge an extension-flap and a line of buttons, substantially as described.

13. An external binding-envelope for the non-conducting jacket of a radiating-surface, composed of a sheet of fabric having at one edge portion a row of buttons, a stretching or distending wire engaging and securing the buttons, and an extension-flap, and at the other edge a stretching or distending wire and means to engage and disengage the buttons, substantially as described.

14. The combination, with a non-conducting jacket for radiating-surfaces, of an external binding-envelope composed of a sheet of fabric having wired longitudinal edges for keeping the latter stretched or distended, and means, substantially as described, for detachably connecting the wired edges, substantially as described.

15. An external binding-envelope for a non-conducting jacket, composed of a sheet of fabric having at or near each longitudinal edge a stretching or distending wire provided with hooked ends engaging the sheet, and fastening-buttons for securing the envelope, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHN RILEY.

Witnesses:

J. N. COLLINS,  
GEORGE W. POWERS.