J. C. REED.

COVERING FOR STEAM-BOILER AND PIPE.

No. 171,425. Patented Dec. 21, 1875.

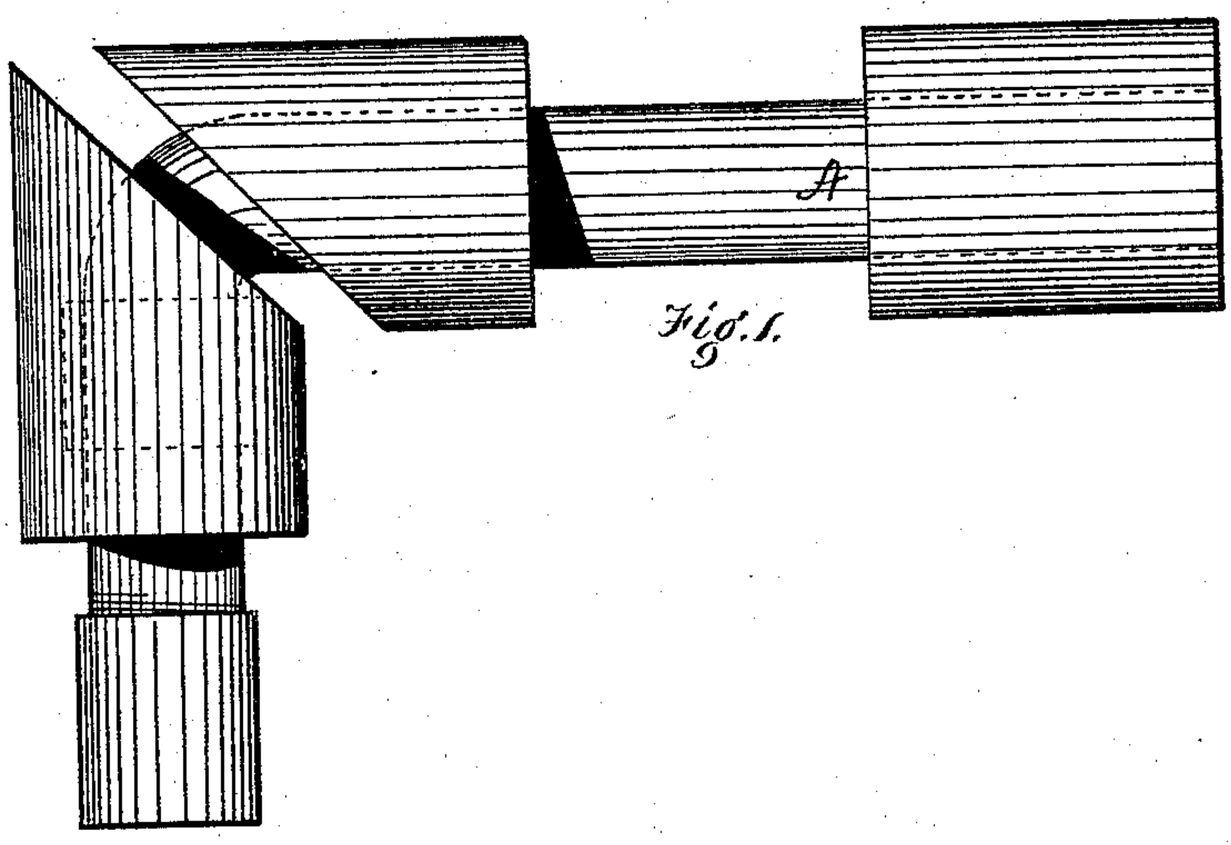

Fig. 1.

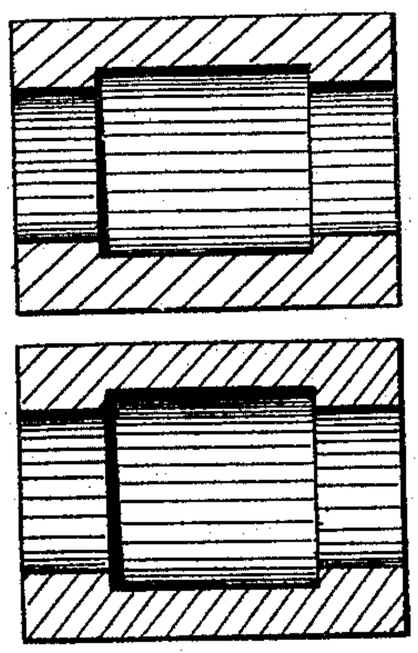

Fig. 3.

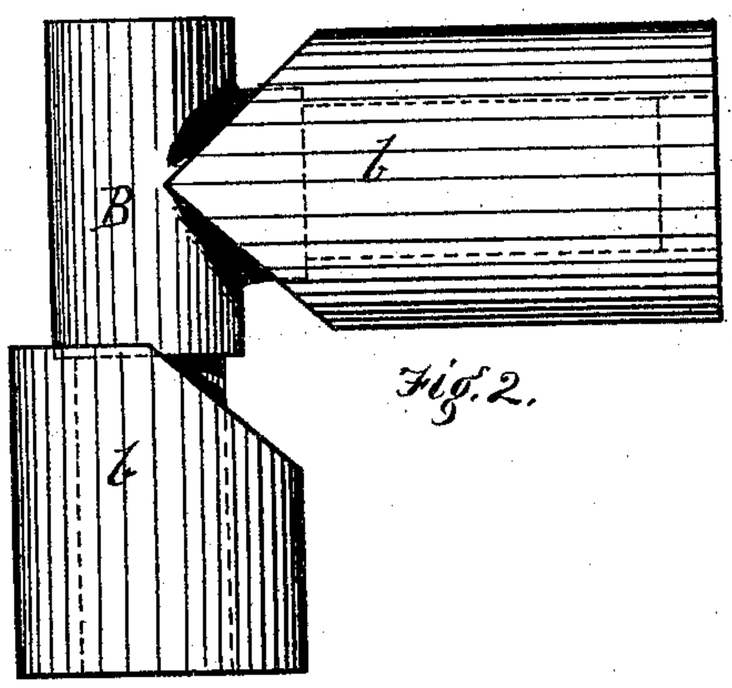

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN C. REED, OF MILLVALE, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM YAGLE AND ANDREW JOHNSTON, OF PITTSBURG, PA.

IMPROVEMENT IN COVERINGS FOR STEAM BOILERS AND PIPES.

Specification forming part of Letters Patent No. **171,425**, dated December 21, 1875; application filed October 15, 1875.

To all whom it may concern:

Be it known that I, JOHN C. REED, of Millvale, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Non-Conducting Covering for Boilers, Pipes, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, illustrating the manner of applying my invention, in which—

Figure 1 is a view of a piece of pipe with my non-conducting covering applied thereto. Fig. 2 is a view of a T-joint and pipe with the covering partly removed; and Fig. 3 is a view of the non-conducting covering detached.

Like letters refer to like parts wherever they occur.

My invention relates to that class of articles known as boiler-coverings or non-conducting coverings for boilers, steam, water, and other pipes; and it consists in a non-conducting covering, composed of layers or wrappings of paper, preferably roofing-paper, saturated with adhesive material, and compressed while being formed into tubular sections of one-half inch or more in thickness.

I will now proceed to describe my invention, so that others skilled in the art may apply the same.

In the drawing, A indicates a pipe covered with a non-conducting covering of paper applied directly or formed on the pipe, or which may be formed as a sleeve upon a separate mandrel, and then slipped upon the pipe. B indicates a T-joint, the covering *b* of which has been previously formed upon a separate mandrel, and cut in sections for convenience in transportation and application to the tubing.

The sections, after being placed in position upon the tubing, may be secured by wires. In covering a pipe, where the non-conductor is applied directly to and remains upon the tubing, a free space is left near the threaded ends sufficiently large to give purchase for the pipe-tongs, in order that sections of tubing may be readily coupled and uncoupled. This free space, together with the socket, may be covered by applying and securing in place a short section of covering.

I prepare the non-conducting covering from paper, for which purpose I prefer and generally employ what is termed roofing-paper, though other kinds of paper may be used.

Upon a revolving mandrel of suitable size, regulated for the purpose for which the covering is intended, and generally a section of pipe of the same diameter as the pipe to which the covering is to be applied, I wind or wrap the roofing or other paper, at the same time applying some adhesive mixture to the layers to cause adhesion, and making traction on the free end of the paper, so as to lay the wrappings firmly and smoothly. In addition to the traction which will compact the covering, I make use of pressure by means of weighted friction bar or plate, or in other suitable manner, so as to insure a dense, firm structure throughout. This operation is continued until a covering of sufficient thickness has been applied to the pipe, when, if the covering has been formed on the pipe (taking the place of a mandrel) upon which it is to remain, the covering may be finished by applying a suitable coat of paint, which can be readily and rapidly done by revolving the pipe before its removal; but if the covering has been formed on a mandrel or pipe with which it is not intended to use it, it may be coated with paint at the time, and then withdrawn from the mandrel, to be afterward slipped upon the tubing upon which it is to remain, or it can be cut in sections and applied as illustrated in the drawings, and coated with paint afterward.

Instead of using adhesive or mucilaginous substances to bind the layers together, wires, wire-mesh, and like filaments, may be employed, being wound in with the layers at the time of forming the covering; but they can be used to advantage only where the covering is to remain upon the pipe upon which it is formed, or where it is to be slipped upon another piece of tubing. Where the covering-cylinder is to be cut longitudinally, adhesive material must be employed as a binder.

Where very high heats are to be guarded against, a wash or paste of fire or other clay may be applied next to the pipe, and within the inner folds or wrappings of the covering.

The advantages of my covering are, that it may be removed and replaced at will for the

examination and repair of tubing; entire sections of tubing may be taken down, transported, and set up in different places and positions without disturbing the non-conducting covering, except at the joints; the covering can be made and transported to the place where it is to be applied, thus avoiding the delay and disadvantages arising from the manufacture of the covering at the place where used; it is, in fact, an article of manufacture, a covering which can be sold as such in market—one which is neat in appearance, will not soil or damage the finest machinery or tubing to which it may be applied; is a thorough non-conductor, a covering of one and a half inch thick, giving better results than a three-inch thickness of any other non-conducting covering known to me; and, finally, can be produced at one-half of the cost of the usual fire-clay, lime, asbestus, and similar coverings. I have tested it on steam-tubing at eighty to one hundred pounds pressure, giving a heat of 300° Fahrenheit, or more, and after a thorough trial have found the covering unaffected by the heat, and effective as a non-conductor.

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

As a new article of manufacture, a non-conducting covering composed of layers or wrappings of paper saturated with adhesive material, and compressed while being formed into tubular sections of a thickness of one-half inch, or more, substantially as shown and described.

In testimony whereof I, the said JOHN C. REED, have hereunto set my hand.

JOHN C. REED.

Witnesses:

WM. YAGLE,

F. W. RITTER, Jr.,

H. J. SCHLUTZ.