

R. M. C. BROAS.
PIPE.

No. 169,674.

Patented Nov. 9, 1875.

Fig 1

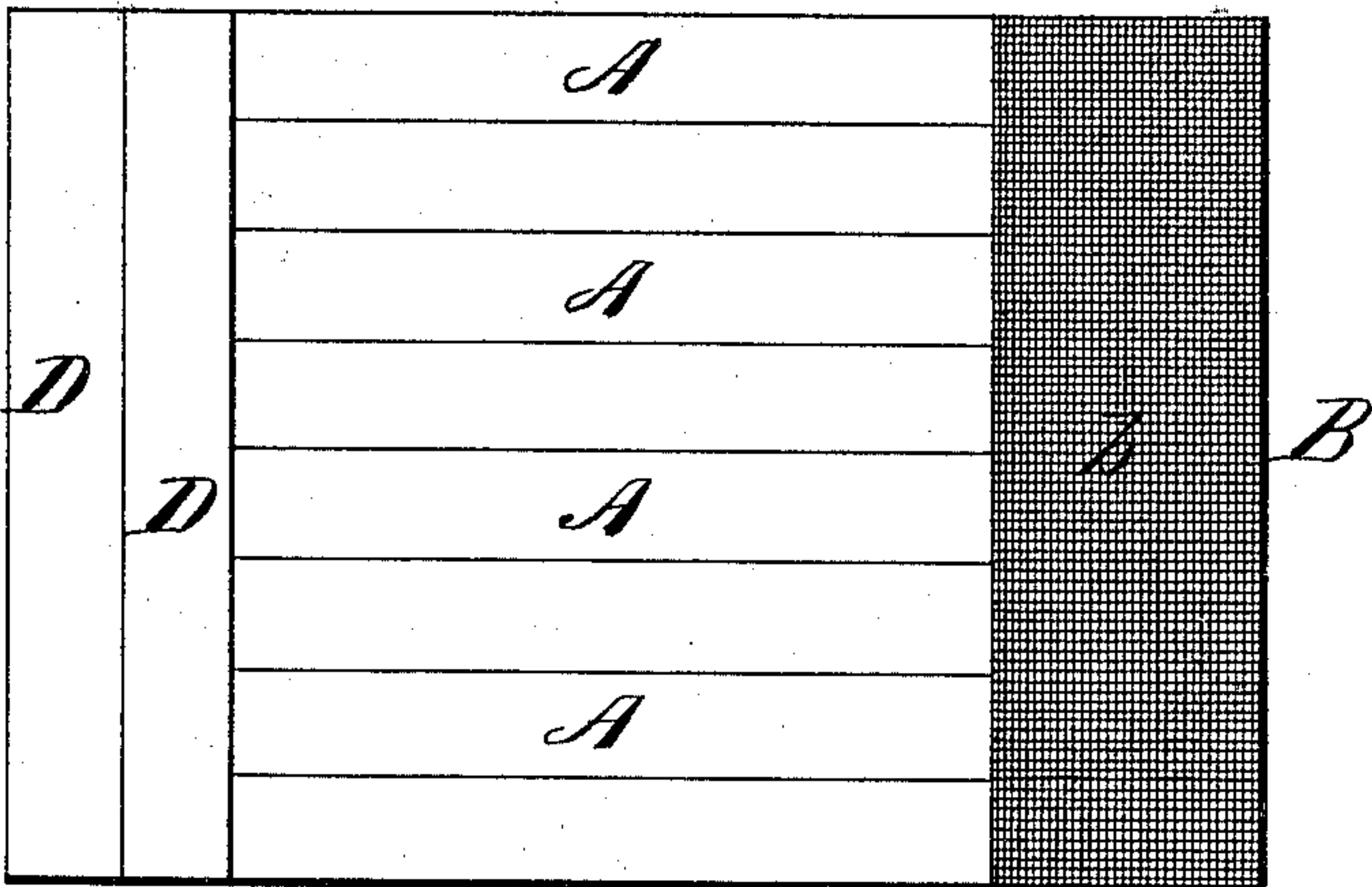


Fig 2

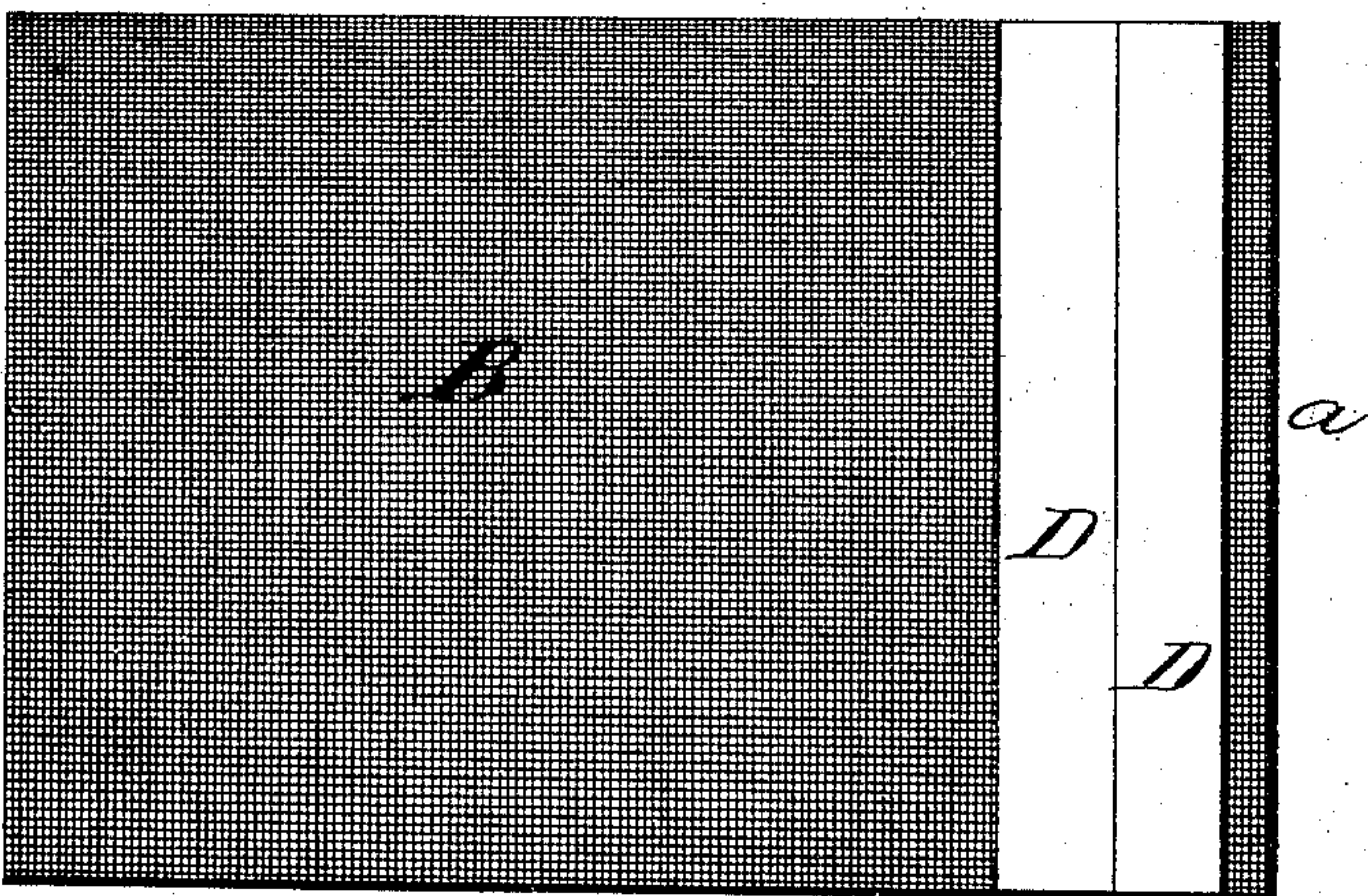
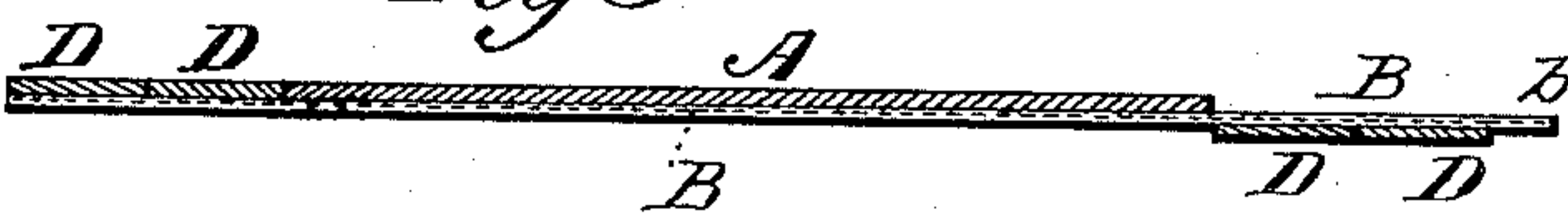


Fig 3



WITNESSES

Robert Everett
Walter Q. Masi

INVENTOR

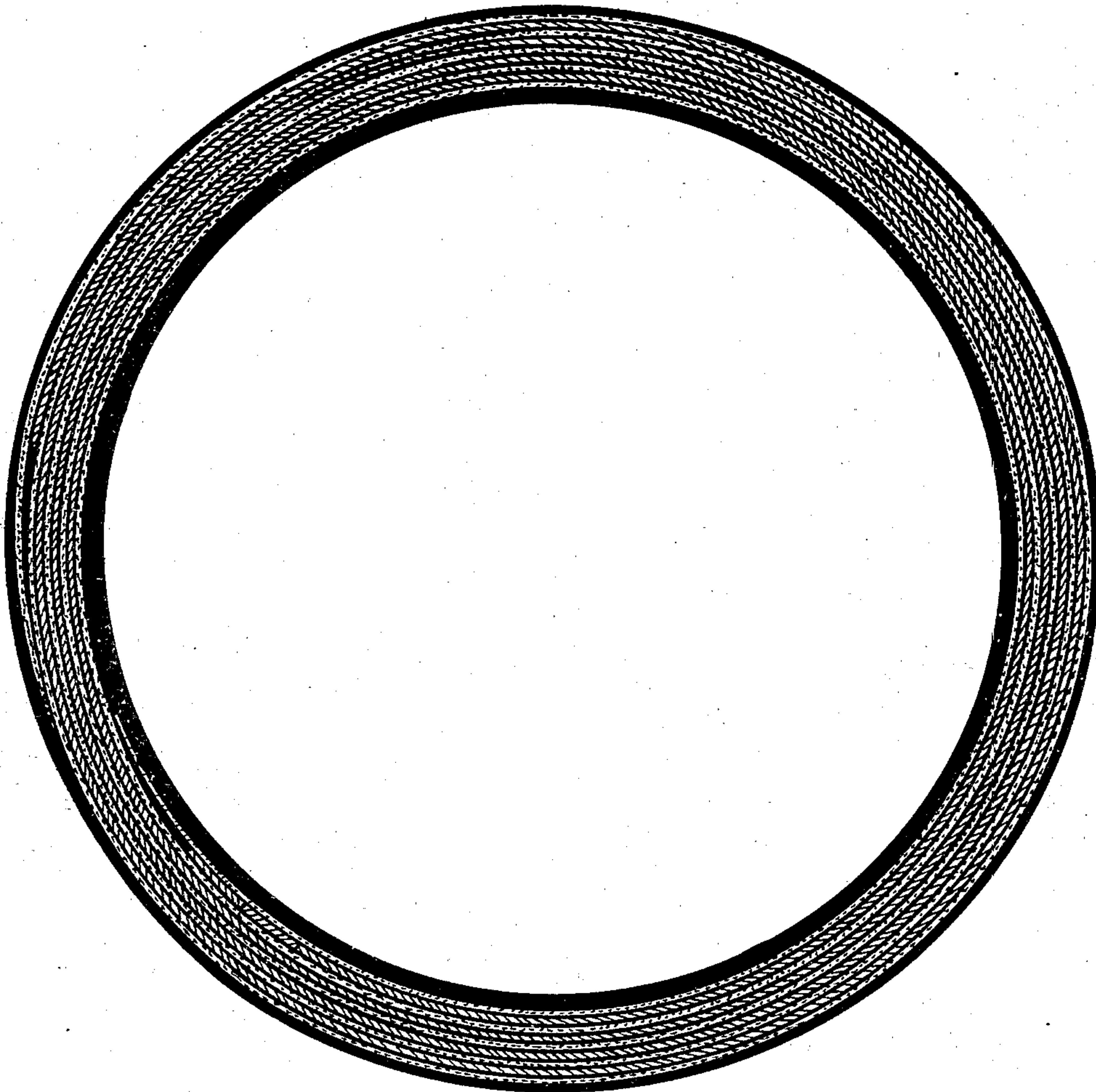
Richard M. C. Broas.
Chipman Hosmer & Co.
ATTORNEYS

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Fig 4



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UNITED STATES PATENT OFFICE.

RICHARD M. C. BROAS, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO JACOB KOHLBERG AND THADDEUS H. WALSH, OF NEW YORK CITY, AND JOHN P. CULVER, OF JERSEY CITY, N. J.

IMPROVEMENT IN PIPES.

Specification forming part of Letters Patent No. 169,674, dated November 9, 1875; application filed October 29, 1875.

To all whom it may concern:

Be it known that I, RICHARD M. C. BROAS, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and valuable Improvement in Pipes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a bottom view of my form. Fig. 2 is a top view of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a transverse sectional view of my improved pipe.

This invention has relation to improvements in means for the manufacture of pipes for pneumatic, hydraulic, and other purposes; and it consists in veneers of wood of a length, breadth, and thickness proportionate to the length and diameter of the tube to be made, and the pressure to which it is to be subjected, in combination with a web of woven fabric, upon which the said veneers are laid, and to which they are cemented or attached, under pressure, by means of asphalt, applied in a fluid state, as will be hereinafter more fully explained.

In the annexed drawings, the letters A A designate strips of veneer, made of any suitable wood, which are laid side by side upon a web of woven fabric, B. Strips or veneers A A are first treated by immersion into asphaltum in a fluid state, and then placed upon the cloth or woven material, to which they will closely adhere upon pressure being applied, through the medium of rollers, or through other devices. D represents other veneers, of wood, equal in length to that of the pipe to be formed, which, like veneers A, are treated with asphalt, and applied, under pressure, to web B.

As shown in Fig. 1, veneers D are transverse to veneers A and to the length of the cloth, and they are applied at the ends of veneers A, alternately on one side and on the other of the fabric. In practice, the latter will be slightly longer than the veneers A D. Consequently, an excess of the fabric will re-

main uncovered at one end, forming a flap, *a*, the use of which will hereinafter appear.

In the drawings, Fig. 1 shows the outer face of the form thus constructed, showing a part, *b*, of the fabric uncovered by the veneers, which, together with flap *a* above mentioned on the other side of uncovered part *b* of the said fabric, contains sufficient material to form an outer envelope or sheathing for the pipe when formed, and an overlapping portion equal to the width of flap *a*, the uncovered part *b* being always sufficient to cover the outer surface of the pipe.

In forming my pipe the pipe-blank is passed—the fabric B being upward, and the veneers D D, shown in Fig. 1, foremost and under—between the mandrel and a forming or bending roller, and is rolled in a spiral coil around the former until the entire blank is taken up. By this means the pipe will be composed of alternating layers of wood and cloth, arranged in spirals, as shown in Fig. 4, and the inner and outer surfaces of the pipe will be covered with cloth, which will prevent the veneers of wood from scaling or chipping off while being handled or transported from place to place.

In practice, a stream of liquid asphalt will be poured upon the cloth or fabric during the rolling of the form around the mandrel, and the strong pressure to which the said form will be subjected during such rolling will rigidly cement the spiral folds of cloth and veneers together.

The machine whereby this pipe is made, and the process as well, forming, as they do, subject-matter for separate Letters Patent, a further description is not herein deemed necessary.

The pipe above described may be tapped at any point without splintering, owing to the interposed layers of cloth. It may also be threaded after being tapped for the reception of feed-water pipes.

In practice, these pipes may be of any desired size, and, while very light and durable, will sustain a very great and continuous strain.

What I claim as new, and desire to secure by Letters Patent, is—

1. The cylindrical tubes composed of alter-

nating spiral layers of wood and cloth cemented together by asphalt, substantially as specified.

2. The form for tubes consisting of a woven fabric, B, the longitudinal veneers A, and the transverse veneers D, alternately on one side and on the other of the fabric, cemented together by asphaltum, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

RICHARD M. C. BROAS.

Witnesses:

WALTER C. MASI,
BRYAN H. MORSE.