

No. 804,647.

PATENTED NOV. 14, 1905.

R. ZEILLER.
PIPE COVERING.

APPLICATION FILED AUG. 16, 1905.

Fig. 1.

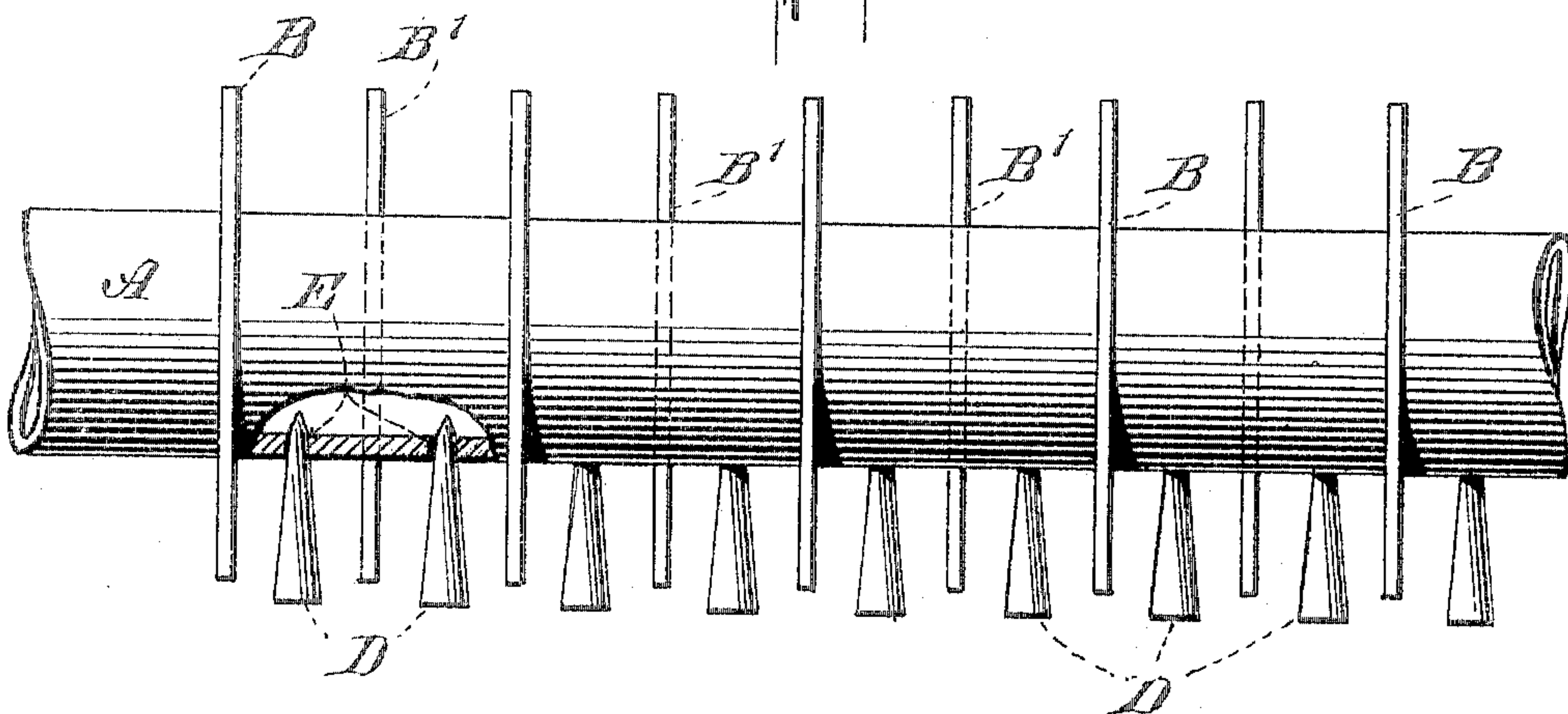


Fig. 2.

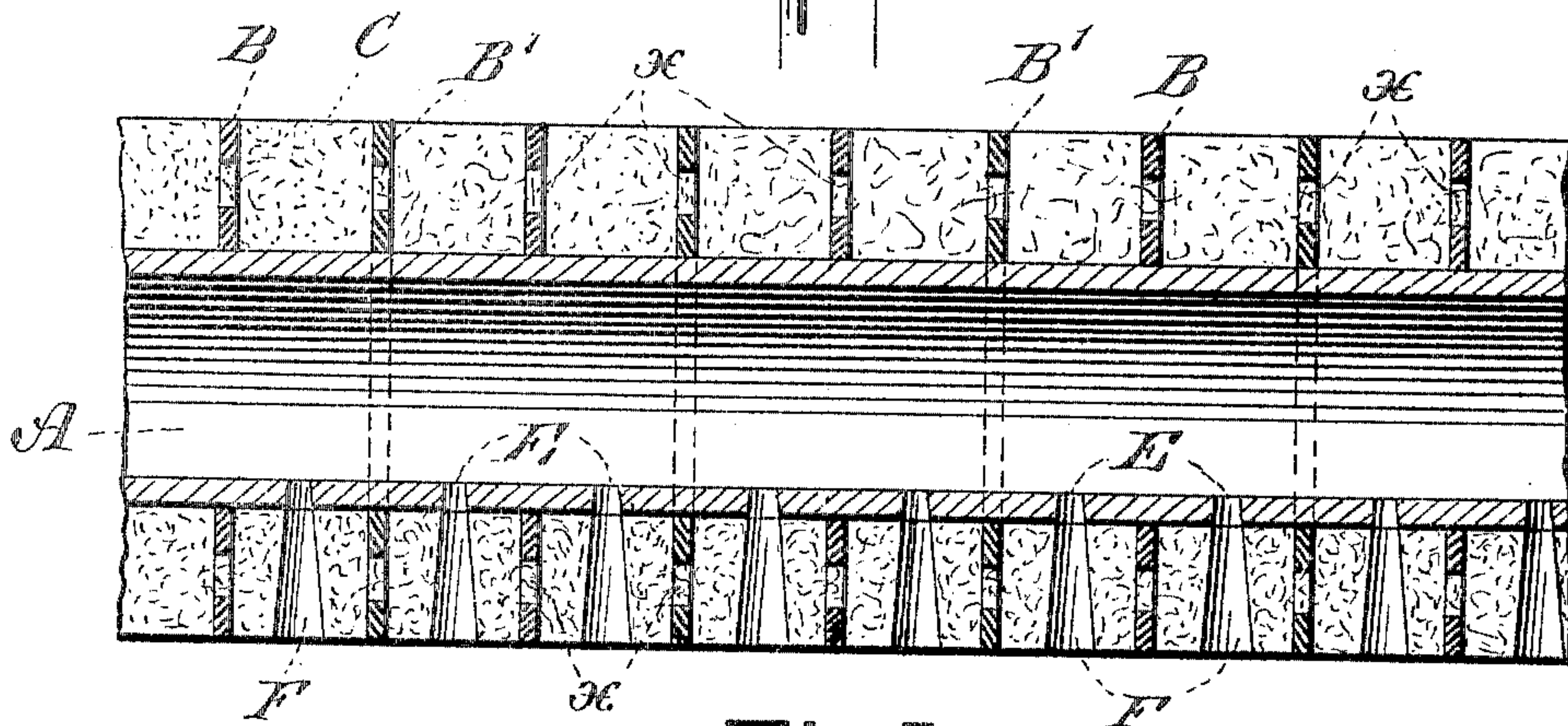
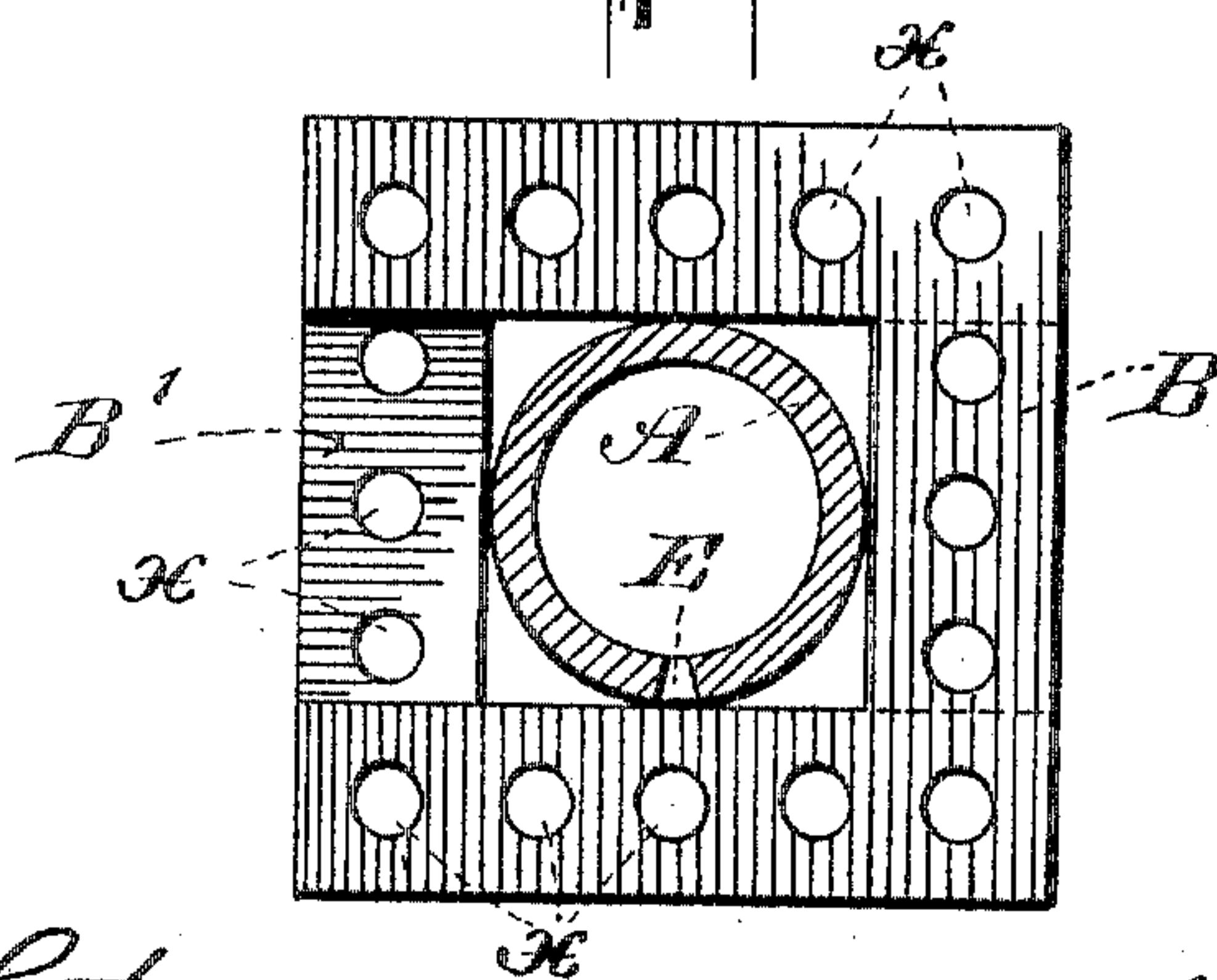


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT ZEILLER, OF MUNICH, GERMANY.

PIPE-COVERING.

No. 804,647.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed August 16, 1905. Serial No. 274,382.

To all whom it may concern:

Be it known that I, ROBERT ZEILLER, a resident of Munich, in the Kingdom of Bavaria, Empire of Germany, and temporarily residing in the city, county, and State of New York, have invented certain new and useful Improvements in Pipe-Coverings, of which the following is a specification.

My invention has for its object the covering of pipes, tubes, or bars with plastic material, which is afterward hardened by drying or baking in order to form a covering for such pipes, tubes, or bars.

While the invention may be employed for a great many purposes, I have particularly designed it to be used with iron pipes or tubes which are to be covered with fireproof or fire-resisting material or material which is a non-conductor of heat and are to be used for architectural purposes or in connection with steam-boilers.

As a particular illustration I have shown my invention as applied to the covering of an iron tube which forms part of the combustion-chamber of a furnace, as it is often convenient or necessary to put such tubes or pipes in place before covering them with fire-resisting material.

In the accompanying drawings, Figure 1 represents an iron pipe provided with U-pieces preparatory to putting the fire-resisting material in place and also plugs adapted to form apertures in such material. Fig. 2 is a longitudinal cross-section of the structure shown in Fig. 1, the fire-resisting material having been put in place and the plugs removed. Fig. 3 is a transverse cross-section of Fig. 1.

A is an iron pipe or tube which may or may not be provided with air-holes E to permit air, steam, liquid fuel, or other combustible or combustion-furthering substances to be sprayed into the interior of the furnace-chamber.

B B' are U-shaped pieces of metal, preferably sheet-iron, provided with a series of holes α , Fig. 3. The U-shaped openings are of a breadth from arm to arm equal to the diameter of the outside of the iron pipe. These metal U-pieces are slipped over the iron pipe at intervals, as shown, for instance, in Fig. 1, and are preferably so arranged that the open ends point alternately in opposite directions. Plugs D are inserted in the apertures E in the tube A. Fire-clay or other

fire-resisting material C in a plastic condition is then placed around the pipe within the spaces formed between the various metal U-pieces and pressed or tamped down so that some of the material is pressed through the holes α to form a tie or binder. The plastic material is thus held by the U-pieces and is further held by the material which has been pressed through the apertures α . As the open ends alternate with the bases of the U-pieces, the material will be held with equal firmness at the front and back of the tube. After the material is in place the plugs D may be carefully removed, so as to leave openings F for the purpose already explained. The fire-resisting material is then baked by placing the tube carrying the metal U-pieces and the fire-resisting material into any convenient baking-chamber.

When this invention is applied to iron tubes forming part of furnace-chambers, it is preferable to cover the tube in the manner explained just before the first firing and to permit the fire-clay or other fire-resisting material to be baked when the tube is in place.

The metal U-pieces not only hold the fire-clay in place during the baking, but also continue to hold it and prevent it from crumbling or breaking down. They also assist in protecting it against the blows of stoking-irons or slide-bars. The metal U-pieces have the further function of cooling the fire-resisting material by assisting in carrying the heat of the outer portion thereof to the iron pipe, where it is carried away by the air or other substance which may circulate through the pipe.

Of course the procedure may be varied in details without departing from the spirit of my invention. For instance, the fire-resisting or other plastic material may be applied partly in an already hardened or baked condition, only the material immediately in contact with the tube and the U-pieces being in a plastic condition.

The U-pieces may be of any form to fit the particular outline of the tube or bar to be covered and may be varied in outline. The U-pieces may also be closed at their ends, so that it may become necessary to slip them over the ends of the tube or bar to be covered and to push them down into proper position.

When referring in the claims to "metal disks," I intend to refer to any thin metal

piece which may be slipped over an iron tube or bar and is adapted to hold the fire-resisting material in place.

I claim as my invention—

5 1. A heat-resisting covering for metal tubes, comprising a series of metal disks surrounding said tube and extending in a direction transverse to its length, and hardened fire-resisting material filling the spaces between such
10 metal disks.

2. A heat-resisting covering for metal tubes comprising a series of metal disks provided with transverse openings, said metal disks surrounding said tube in a direction trans-
15 verse to its length, and a mass of hardened fire-resisting material filling the spaces between the said metal disks and also the apertures in said metal disks.

3. A covering for tubes comprising a series
20 of disks surrounding said tube and extending in a direction transverse to its length, and plastic material filling spaces between such disks.

4. A covering for tubes comprising a series
25 of disks provided with transverse openings, said disks surrounding said tube in a direction transverse to its length, and a mass of plastic

material filling the spaces between the said disks and also the apertures in said disks.

5. A covering for tubes, comprising a series 30 of spaced U-shaped members adapted to be slipped on the tube sidewise, and fire-resisting material filling the spaces between said members.

6. A covering for tubes, comprising a series 35 of spaced U-shaped members adapted to be slipped on the tube sidewise and having their openings facing in different directions, and a fire-resisting material filling the spaces between said members. 40

7. A covering for tubes, comprising a series of spaced U-shaped members adapted to be slipped on the tube sidewise and having their openings facing alternately in opposite direc-
45 tions, and a fire-resisting material filling the spaces between said members.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT ZEILLER.

Witnesses:

FRITZ V. BRIESEN,
JOHN A. KOHLENBECK.