

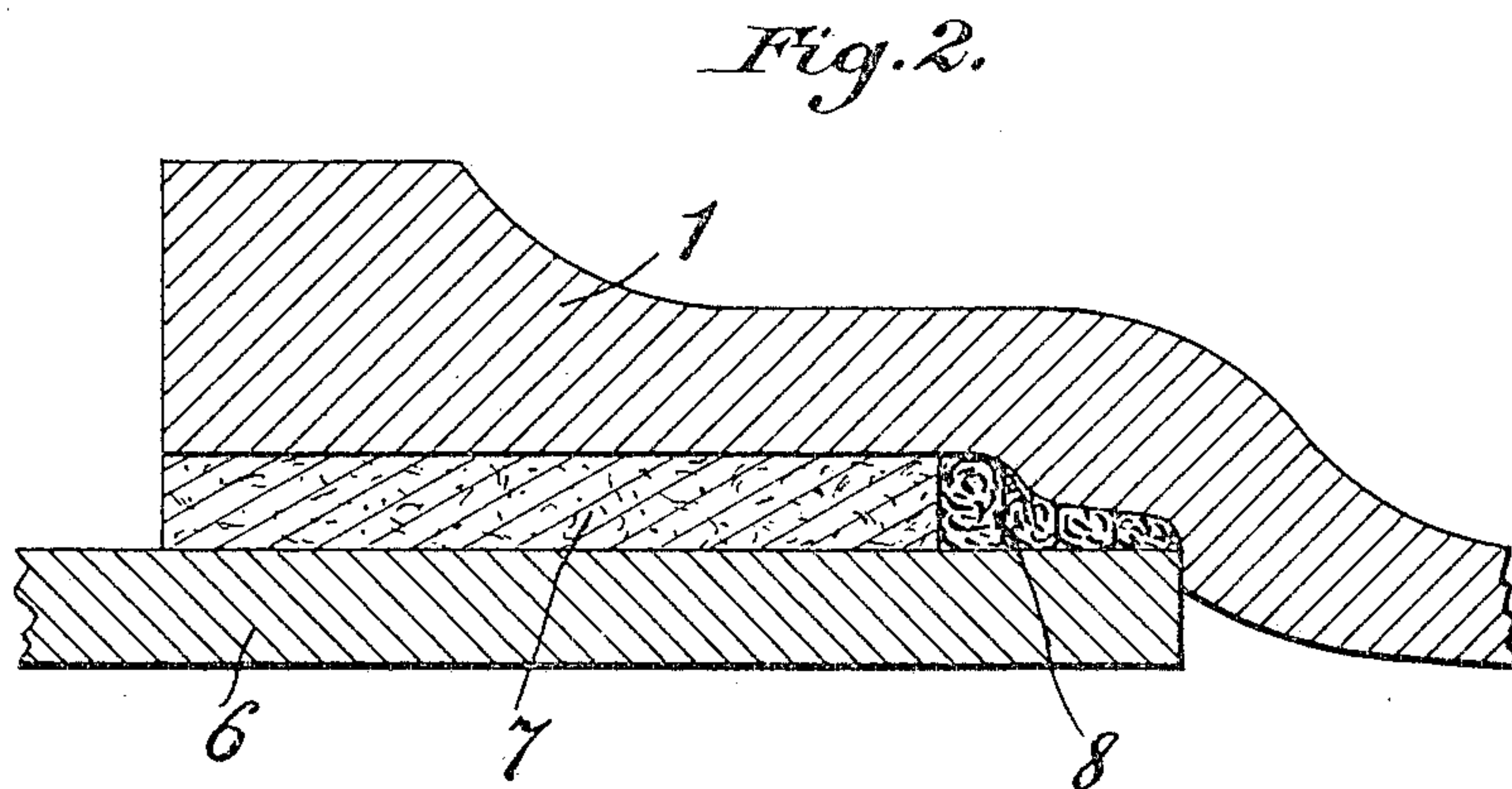
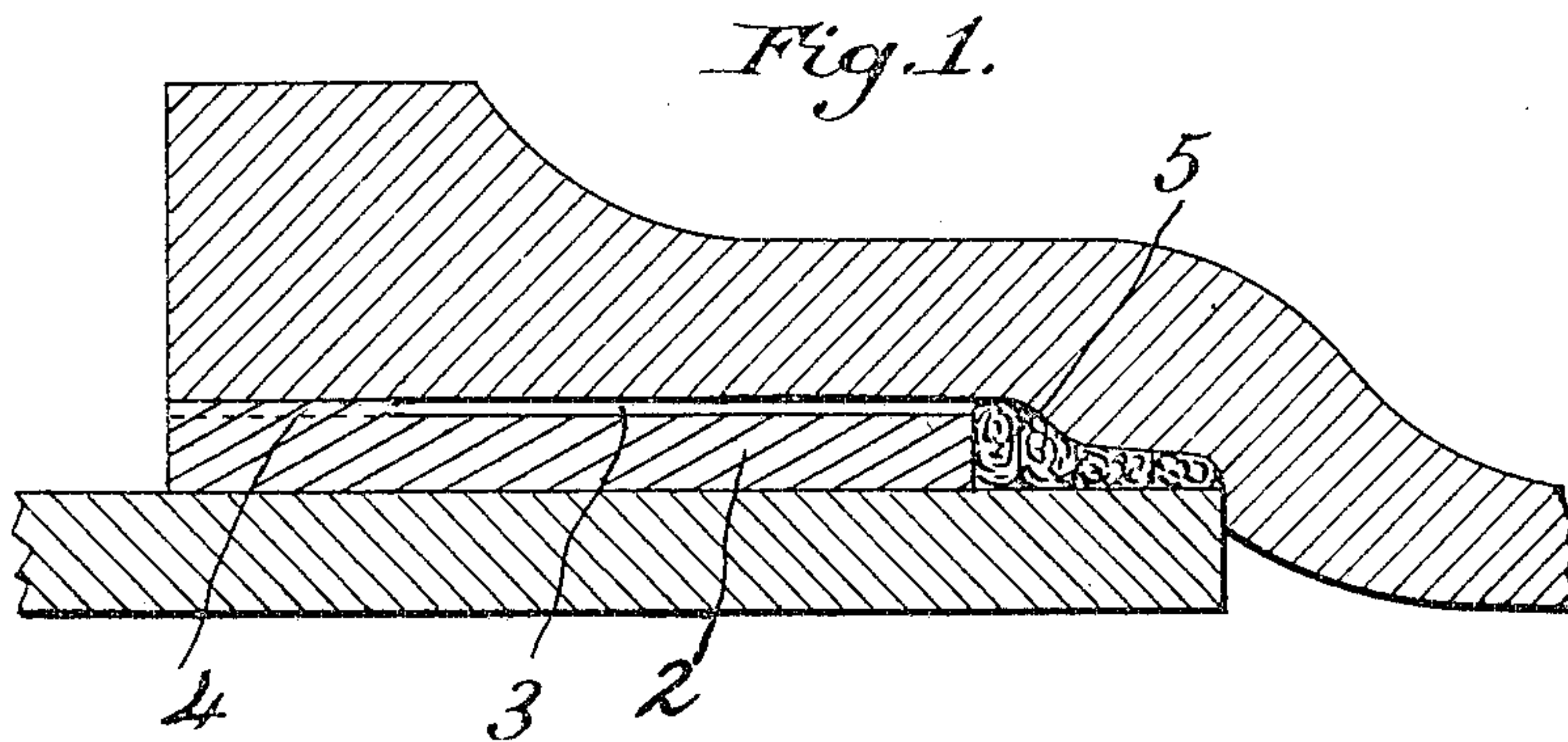
No. 787,074.

PATENTED APR. 11, 1905.

F. W. BÜHNE.
PIPE OR LIKE JOINT.

SPECIMENS.

APPLICATION FILED JUNE 15, 1904.



Witnesses

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PIPE OR LIKE JOINT.

SPECIFICATION forming part of Letters Patent No. 787,074, dated April 11, 1905.

Application filed June 15, 1904. Serial No. 212,712. (Specimens.)

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM BÜHNE, a subject of the Grand Duke of Baden, residing at Freiburg, Duchy of Baden, Empire of Germany, have invented certain new and useful Improvements in or Relating to Pipe or Like Joints, of which the following is a specification.

My invention relates to improvements in packing for joints; and it has for its object to provide a packing which can be readily applied and yet is more efficient than the usual packing means now generally employed.

My invention will first be described in connection with the accompanying drawings and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal section of a pipe-joint provided with the old form of cast-lead joint; Fig. 2, a similar view intended to illustrate a pipe-joint packed in accordance with my invention; Fig. 3, a detail view intended to illustrate a portion of the packing material employed by me.

Hitherto the joints of pipes for gas, water, and liquids of all kinds have been effected by first inserting in the joint-opening, as shown in Fig. 1 of the accompanying drawings, a gasket of hemp or tow 5 and then filling up the remaining space with lead 2. Such a joint, however, is not completely filled with lead, as, on cooling, the lead 2 contracts, and thus there is produced between the lead and the walls of the parts to be joined a space 3. It is usual then to endeavor to close up the empty space by ramming or beating the lead; but this only takes place in the front at 4, and then only to the depth of one or two centimeters at the outside. The result is that the joint is defective, for in reality it exists only to the short extent 4, and the greater portion of the lead filling 2 does not act as a packing and is therefore useless and superfluous. When it is considered, besides, that filling the joint with lead under normal conditions requires careful and troublesome work—such as surrounding the edge of the joint with clay, lighting and keeping alight the melting-furnace, and removing the clay jacket after pouring in the lead, and this under diffi-

cult circumstances—for instance, when there is water to be dealt with it is first necessary to get the parts perfectly dry by pumping, &c.—it will be seen that the old method of joint-making is not only difficult and defective, but also takes up much time and is very expensive.

The new packing for joints consists of metal wires, preferably lead wires or wires made of some suitable metallic alloy. With this material it is possible not only to obtain a perfect joint along the whole depth of the joint, but also to effect the joining up of pipes under the most difficult conditions—for instance, during rain or when there is water on the ground or in the conduit—without any difficulty and without having to pump the conduit dry.

In Fig. 3 I have illustrated a portion of the material which is employed by me as a packing.

The method of applying the new packing is effected by putting metal wires into the joint-opening, either loosely or in the shape of a plait or rope, these wires thus arranged constituting a mass of interlaced malleable metallic wires, and then pressing it by means of a suitable instrument against the tow-rope, the wires being thus pressed into a homogeneous mass. Metal wires are forced in until the space is filled partially or completely, according as is required by the pressure to which the packing may be subjected.

As shown in Fig. 2, the joint between the pipes or pipe 6 and socket 1 is filled with metal wires 7 along the whole of the depth of the joint, so that the joint is a reliable and permanent one.

The metal-wire joint can also be effected without using the tow rope 8, or several tow ropes can be used, and also several tow ropes and several layers of metal wires can be forced in alternately. In some cases the metal wires can be first mixed or twisted up with tow or similar ropes and then forced in.

Experience has shown that pipes with sockets four hundred and fifty millimeters inside diameter can withstand permanently a pressure of twenty atmospheres.

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

1. The combination, with a pipe end, and a socket end into which said pipe end enters,
5 of a packing between said ends and formed of a coherent substantially homogeneous mass of compressed interlaced malleable metallic fibers or wires.
2. The combination, with a pipe end, and
10 a socket end into which said pipe end enters, of a gasket of fibrous material surrounding the pipe end and within the socket end, and a packing adjacent said gasket and formed

of a coherent substantially homogeneous mass of compressed interlaced malleable metallic fibers or wires. 15

3. A packing for joints, consisting of a homogeneous matted mass of interlaced lead fibers or wires.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses. 20

FRIEDRICH WILHELM BÜHNE.

Witnesses:

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