

(No Model.)

J. A. MATHIEU.

PIPE COUPLING FOR WOODEN TANKS.

No. 332,096.

Patented Dec. 8, 1885.

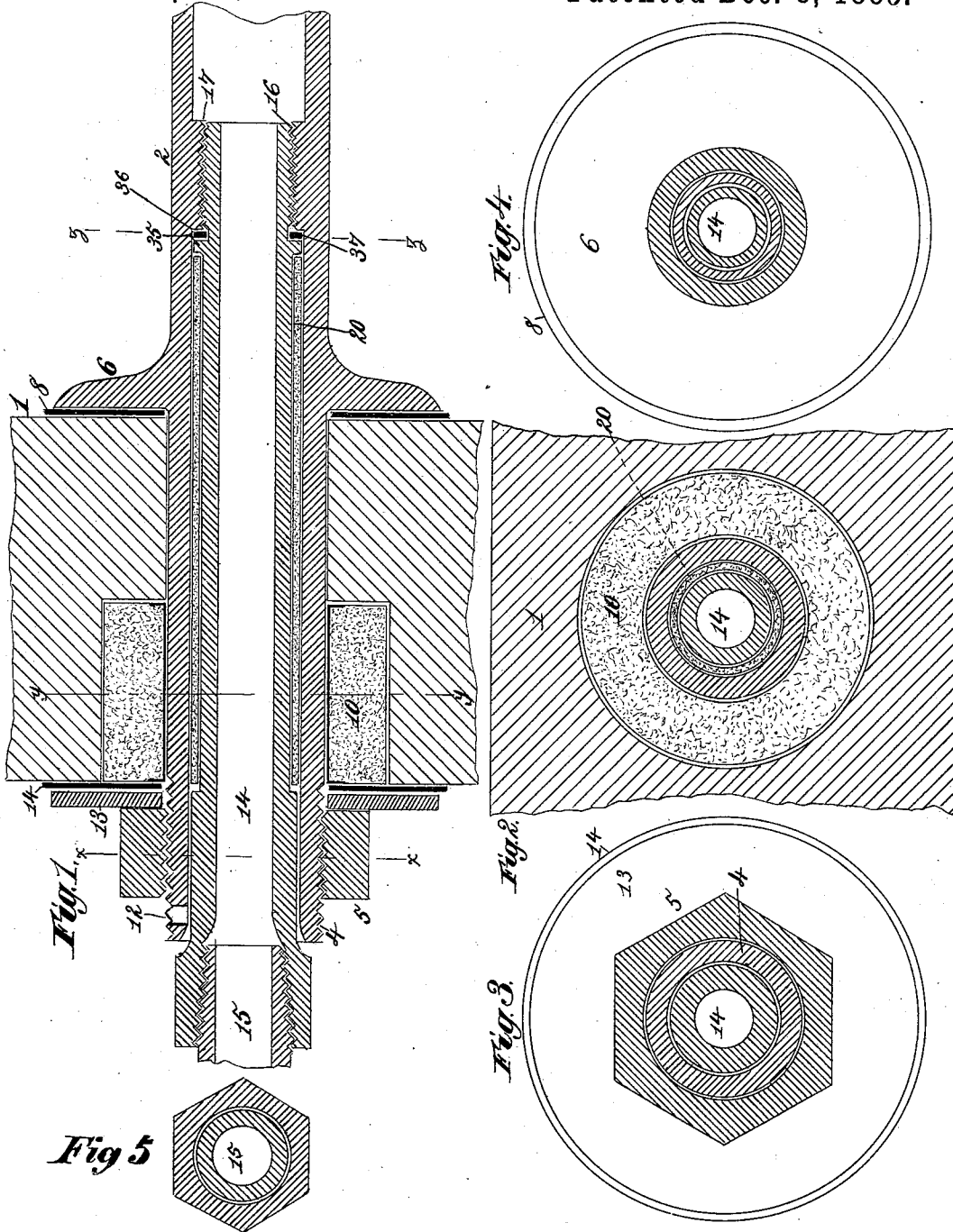


Fig 5

Witnesses

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UNITED STATES PATENT OFFICE.

JEAN A. MATHIEU, OF DETROIT, MICHIGAN.

PIPE-COUPLING FOR WOODEN TANKS.

SPECIFICATION forming part of Letters Patent No. 332,096, dated December 8, 1885.

Application filed May 4, 1885. Serial No. 164,364. (No model.)

To all whom it may concern:

Be it known that I, JEAN A. MATHIEU, a citizen of France, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Apparatus for Distilling Pyroligneous Acid, of which the following is a specification.

This invention relates to vats or vessels employed in the manufacture of pyroligneous acid and other chemical and manufacturing operations, and provided with steam-coils for boiling or heating the contents of said vats.

In the vats heretofore known great difficulty is experienced in preserving a liquid-tight joint at the point of entrance of the steam-coil with the vat, and as the latter must, for the treatment of certain chemical substances, be made of wood, it follows that the heat of the return-pipe will cause a charring or disintegration of the wood and allow a leakage to take place by reason of the enlargement of the opening through which the steam-pipe passes. The present invention avoids such objections by providing means for insuring a liquid and steam tight joint and preventing the injurious action of the steam heat upon the wood surrounding the steam-pipe.

The invention will first be fully described, and then clearly set forth in the claims.

In the drawings, Figure 1 is a longitudinal sectional view of part of a vat or partition wall and a steam-pipe fitted into the same. Fig. 2 is a transverse section taken through the vat, the non-conducting packing, and the steam-pipe. Figs. 3, 4, and 5 are cross-sections taken, respectively, through the lines *x*, *y*, and *z* of Fig. 1.

The reference-numeral 1 designates part of a vat or vessel; or it may represent a partition-wall, in which a steam-pipe is to be held in a liquid-tight manner.

The invention being particularly designed for use in connection with vats used in chemical and manufacturing operations, I may cite, as an exemplification of such a vat, my Patent No. 234,998, granted November 30, 1880, for improvements in apparatus for the purification of the products resulting from the distillation of wood. It is to be understood, however, that the invention is applicable to all vessels,

cisterns, or tanks adapted for heating liquids or materials by means of steam-coil located in said tank and extending through the walls thereof. A steam-pipe, 2, represented in the present instance as the outer termination of a steam coil or pipe traversing vat 1, extends through an opening made in the latter, and is provided with a screw-threaded end, 4, for the reception of a nut or collar, 5. The pipe 2 is formed with a flange or collar, 6, which is disposed on the inside of the tank and bears against the inner face of the wall of said tank, as is seen in Fig. 1, a washer, 8, of mineral wool, asbestos, or other suitable material, being generally interposed between the tank and the flange. The opening through which the steam-pipe 2 passes is lined in part or throughout its entire length with a packing, 10, of asbestos, carbon, or other material capable of withstanding heat, the object of said packing being to prevent the heated steam-pipe from charring or burning the material of the tank or other object.

To the outer screw-threaded end of the pipe 2 is applied a nut or movable screw-collar, 12, which bears against a washer or plate, 13, and presses the same against a packing-disk, 14, on the outer side of the vat. The interior or bore of the pipe 2 is traversed by a pipe, 14, which is in communication with a suitable steam-supply pipe, 15, screwed into the end of the pipe 14. The inner end of the pipe 14 is screw-threaded, as is shown at 16, and fits into screw-socket or screw-threaded portion 17 of the pipe 2, as is clearly seen in Fig. 1.

Between the two pipes 2 and 14 I apply a sleeve, 20, of asbestos, mineral wool, or other good non-conductor of heat. The object of said sleeve is to lessen or prevent radiation of heat from the steam-pipe 14; and hence it is apparent that what little heat passes through the pipe 2 will not exert an injurious action upon the wood-work surrounding the steam-pipes. Even should there be any considerable radiation of heat, the packing lying directly against the wood will guard against the burning or injury to the same.

At the inner termination of the screw-threaded portion 16 of the pipe 14 I form a collar or flange, 35, between which and a shoul-

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der, 36, on the pipe 2 is interposed a packing-gasket, 37, of india-rubber, leather, or other suitable material. The object of said packing is to prevent the passage of steam into the space occupied by the non-conducting sleeve 20, whereby I insure the maintenance of a steam-tight joint at the point of connection of the two pipes 2 and 14.

It is evident that I provide simple and effective means for insuring a liquid-tight joint in walls or partitions traversed by steam-pipes, and I also effectively guard against the injury of said walls or partitions by the special arrangement of the steam-pipes and non-conducting packing.

The exterior nut on the tube 2 serves to hold in position and tighten up said tube, and in order to facilitate the manipulation of said nut I provide the pipe 2 with an opening, 20, into which a prong-wrench can be inserted for holding said pipe stationary while the nut is being adjusted.

Having now described my invention, what I desire to secure by Letters Patent is—

1. In combination with a vat or partition-

wall, the outer steam-pipe having a screw-threaded end and a flange, the inner steam-pipe connected with said outer pipe, and the non-conducting packing arranged between the two pipes, and the screw-nut applied to the outer pipe, substantially as described.

2. The combination, with a vat or partition-wall, of an exterior steam-pipe, 2, an interior steam-pipe, 14, the non-conducting packing 10, encircling the exterior pipe, and a non-conducting packing interposed between the two pipes, substantially as described.

3. The combination of the inner steam-pipe having a collar or flange, 35, and a screw-threaded end, the outer steam-pipe having a shoulder and screw-threaded socket, and the packing-gasket, with a vat or partition-wall traversed by said steam-pipes, substantially as herein set forth.

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

JEAN A. MATHIEU.

Witnesses:

ALBERT H. NORRIS,
J. A. RUTHERFORD.