

(No Model.)

A. HARVEY.
CONDUIT FOR STEAM OR HOT WATER.

No. 534,473.

Patented Feb. 19, 1895.

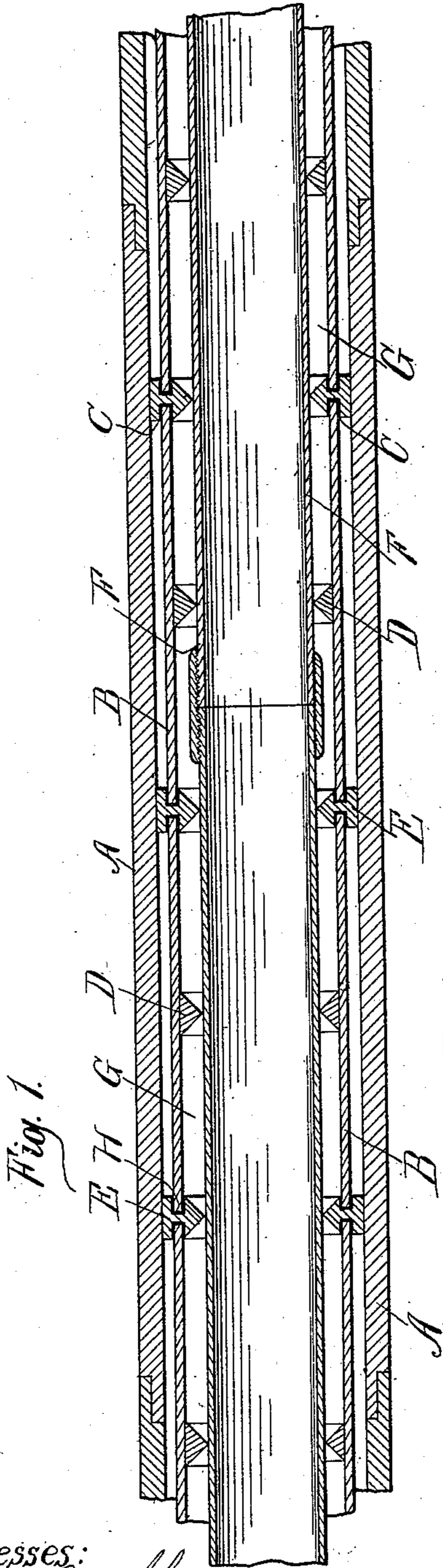
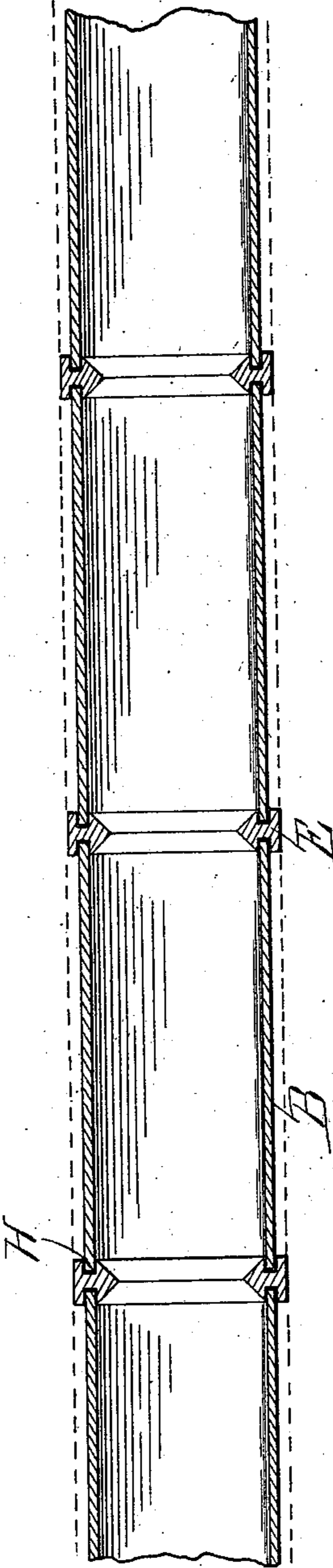


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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CONDUIT FOR STEAM OR HOT WATER.

SPECIFICATION forming part of Letters Patent No. 534,473, dated February 19, 1895.

Application filed April 27, 1894. Serial No. 509,279. (No model.)

To all whom it may concern:

Be it known that I, ANDREW HARVEY, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Conduits for Steam or Hot Water, of which the following is as pecification, reference being had therein to the accompanying drawings.

My invention is for the purpose of retaining the heat in steam or hot water in conveying it under ground for the purpose of supplying heat or power or of returning the water of condensation from steam heating apparatus to boiler or any other purpose that may be necessary to carry steam or hot water in pipes.

My invention consists in the combination of certain devices and appliances hereinafter described and specifically pointed out in the claims.

My invention also consists in providing a natural means for the free expansion and contraction of a steam or hot water pipe and for dispensing with the necessity of covering said pipe with any other kind of non-conducting material.

In the drawings Figure 1 is a longitudinal central section of the conduit. Fig. 2 is a detached longitudinal section of the inner casing.

A is an outside casing of wood or tile.

B is an inside casing of glazed or non porous crocks.

C represents fire clay or cement filled in between the joints of the inside casing to make the same water tight.

D are metal expansion rests which loosely fit the inner casing.

E are combined expansion rests and socket rings which fit into the outer casing and have socket H to receive the ends of the inner casing.

F is the steam or hot water pipe and G are non circulating air pockets formed between the inner casing and pipe F, and between the fixed and movable rings.

The glazed or non-porous crock with the confined air pockets retains the heat around the outside of steam or hot water conductor pipe and as said pipe rests simply at points on the movable and stationary expansion

rings it is held in the perfect center of the crock and out of all contact therewith. Thus the loss of heat by conduction is reduced to a minimum. It will also be seen that in my construction, there are stationary and loose expansion rests alternating with each other and as the heated pipe expands or contracts the loose or movable expansion ring automatically slides to accomodate the expansion or contraction leaving no strain on the joints of the heat conducting pipe, whereas if the heated pipe were resting on the inner casing, the expansion and contraction would be so great as to strain the joints and cause leaks.

The outer casing may be a bored wooden log, or a wooden box may be used to inclose the glazed crock, or another outside sewer crock might be used filling the space between the crock and sewer pipe with saw dust or tan bark or any other non-conducting material.

In my construction all circulation of air around the heated inner pipe is prevented as the spaces between the expansion rests are dead air pockets which in a large measure prevent the loss of heat.

The sockets formed in the stationary expansion rests support the inner casing and by filling therewith fire clay or cement in the work of construction, it makes a casing entirely impervious to moisture and forming a complete and hermetically sealed envelope which makes it possible to convey steam or heat to a greater distance with much less loss of heat, than attained heretofore.

I am aware that wood tubing lined with metal, and pipes covered with asbestos or other supposed non-conducting material has been used for the protecting of steam heating pipes; but it is well known that the great difference of the temperature between the inside of the casing and the outside causes the wood to split and allows the water or moisture from the ground to get to the inside of the casing thus destroying its utility. This I have entirely overcome with my construction.

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

1. The combination with the outer casing, of the inside casing B of glazed non porous crock, the steam pipe F the expansion rests

supporting said pipe in the inside casing and forming non-circulating air spaces between said steam pipe and inside casing, and loosely fitting movable rings between the rests substantially as described.

2. The combination with the outer casing A, of a stationary combined expansion rest E provided with sockets H, an inner casing of glazed or non porous crock B, a steam or hot water pipe F and movable expansion ring D forming non-circulating air spaces C, substantially as and for the purpose set forth.

3. The combination with the outer casing

A, of a stationary combined expansion rest E provided with sockets H, an inner casing of glazed or non-porous crock B, a steam or hot water pipe F and non-circulating air spaces C, substantially as and for the purpose set forth.

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

ANDREW HARVEY.

Witnesses:

M. B. O'DOGHERTY,
O. F. BARTHEL.