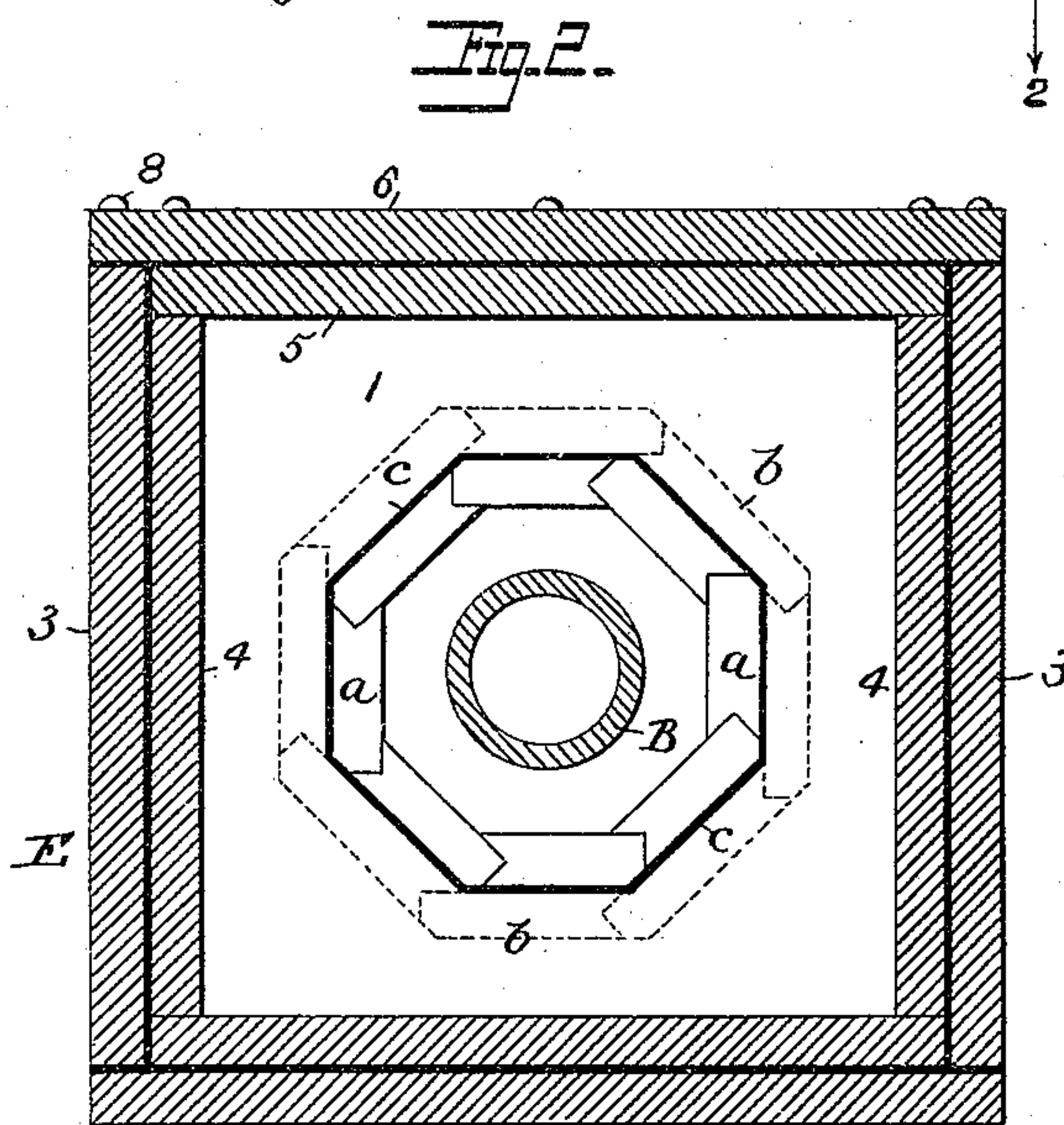
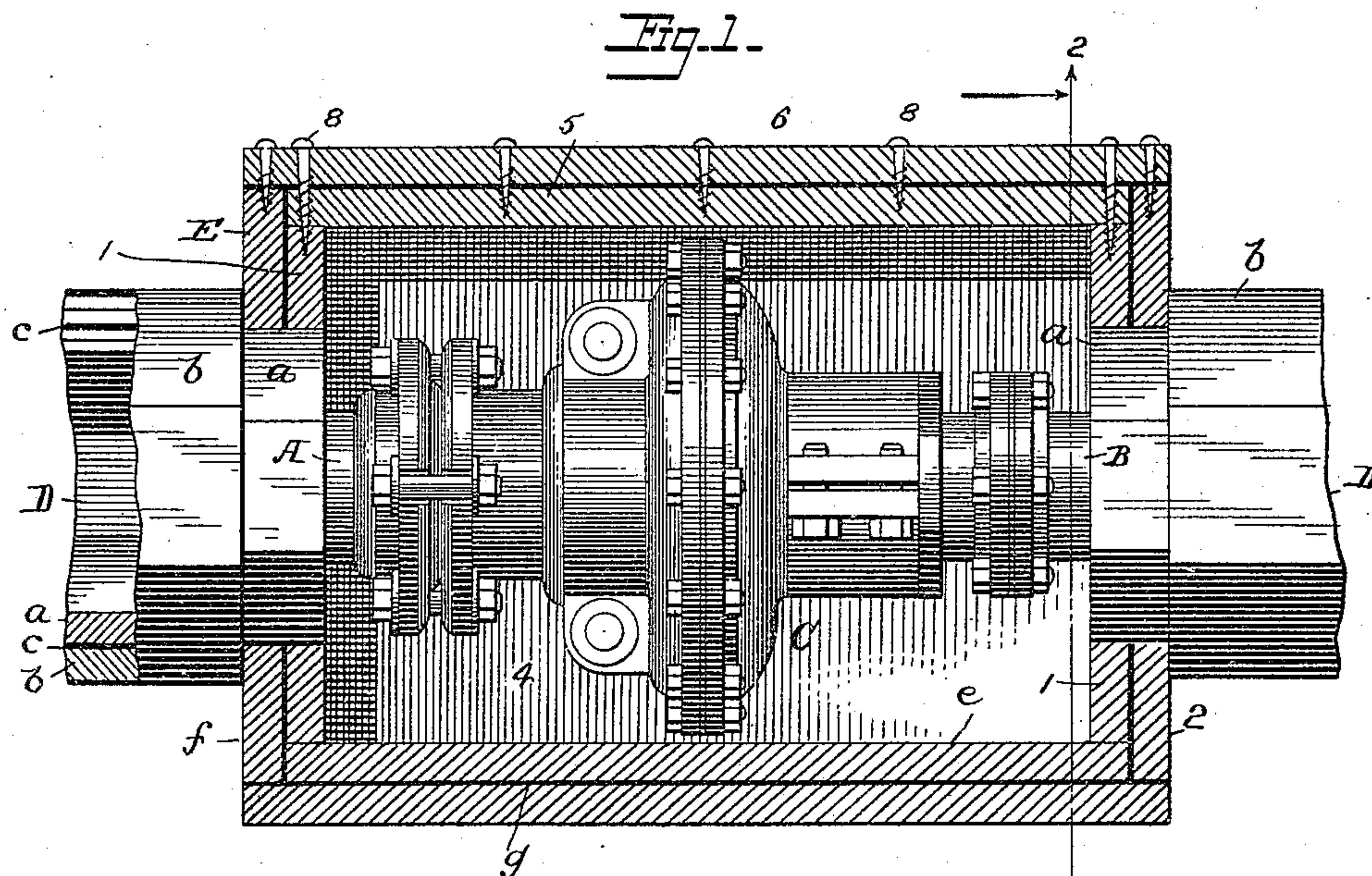


(No Model.)

A. & E. L. WYCKOFF.  
PIPE CASING.

No. 438,516.

Patented Oct. 14, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ARCALOUS WYCKOFF AND ERNEST L. WYCKOFF, OF ELMIRA, NEW YORK.

## PIPE-CASING.

SPECIFICATION forming part of Letters Patent No. 438,516, dated October 14, 1890.

Application filed February 27, 1890. Serial No. 341,961. (No model.)

*To all whom it may concern:*

Be it known that we, ARCALOUS WYCKOFF and ERNEST L. WYCKOFF, citizens of the United States, residing at Elmira, Chemung county, State of New York, have invented certain new and useful Improvements in Pipe-Casings, of which the following is a specification.

In laying the underground pipes of large steam plants it has been found essential to surround the pipes with a casing or coating which is a non-conductor of heat—as, for instance, with such a casing as is set forth in Letters Patent granted to us August 20, 1889, No. 409,265. In such systems, however, it is essential to make provision at different points for the expansion and contraction of the steam-pipes, for which purpose expansion-joints or “variators” are provided at such points, and it has been usual heretofore to extend the pipe-casings as far as the variators and to inclose the latter in chambers, the walls of which are built up of brick. This arrangement has resulted in a great loss of heat and corresponding waste of fuel and a serious diminution of pressure in some cases from the rapid condensation of the steam at the various joints. To obviate these objections we combine with the casing and with the variator a box of non-conducting material, which constitutes, substantially, a prolongation of the casing, so constructed as to receive the variator, and so as to be readily applied thereto, permitting ready access, and so as to effectually prevent the radiation of heat and the ingress of moisture.

In the accompanying drawings, Figure 1 is a longitudinal sectional view illustrating a part of a line of steam-pipe, the variator, pipe-casings, and variator-box. Fig. 2 is a section on the line 2 2, Fig. 1.

The sections A B of the steam-pipe are coupled, as usual, by the coupling or variator C, which permits the desired expansion and contraction, and which may be of any of the usual or approved constructions. Each pipe-section is surrounded by a non-conducting casing D of suitable construction—such, for instance, as shown in our patent, No. 409,265, and illustrated in the Fig. 1 of the drawings—the casing consisting of two wooden shells *a b*,

with an intervening layer *c* of paper, asbestos, or other non-conducting substance, the inner shell *a* projecting beyond the end of the outer shell *b*, as shown.

The variator is inclosed by a box E of wood, consisting of two shells *e f*, with an intervening layer *g* of paper, asbestos, or other suitable non-conducting material, which extends upon all sides of the casing around the inner shell and within the outer shell, so as to constitute a practically unbroken envelope, which, although of thin friable material, is strengthened in position by the inner and outer shells in which it is applied, and which in connection therewith effectually excludes the moisture and prevents the radiation of heat. By this means the variators are maintained at about the same degree of heat as the pipes, and condensation of lost heat is avoided.

In the construction shown each end of the box E is recessed to receive the projecting end of the inner shell *a* of the pipe-casing D, so that the end of the shell *b* can abut against the end of the box, forming a close joint, and intimate between the box and the tight joint. One side of the box, that which is most accessible, is made removable in order to facilitate access to the interior, and for such purpose the outer end and side pieces 2 3 of the outer shell extend beyond the inner end and side pieces 1 4 of the inner shell, so that the inner piece 5 of the detachable top or side will rest upon the edges of the inner pieces 1 and 4 and within the projecting pieces 2 and 3, while the outer piece 6 of the top will rest upon the edges of the pieces 2 and 3, and with the intervening paper or other envelope will overlap the joint between the pieces 5, 2, and 3 so as to effectually close the joint at all points. The pieces 5 and 6 are preferably connected together, and are secured to the other sections of the box by screws 8, as shown.

It will be evident that the construction of the box as regards its forms and proportions will vary under different circumstances.

Without limiting ourselves to the precise construction and arrangement of parts shown, we claim—

The combination, with the steam-pipes, variator, and pipe-casing, of a box inclosing the

variator consisting of an inner and an outer  
shell, one side of which is connected detach-  
ably to the other portion of the box, the in-  
ner section of said side extending over the  
5 edges of the inner shell of the box and the  
outer section and intervening sheet of said side  
extending over the edge of the outer shell  
and box, substantially as set forth.

In testimony whereof we have signed our  
names to this specification in the presence of 10  
two subscribing witnesses.

A. WYCKOFF.

ERNEST L. WYCKOFF.

Witnesses:

FRED. L. WOODRUFF,

FRANK E. D. WATERS.