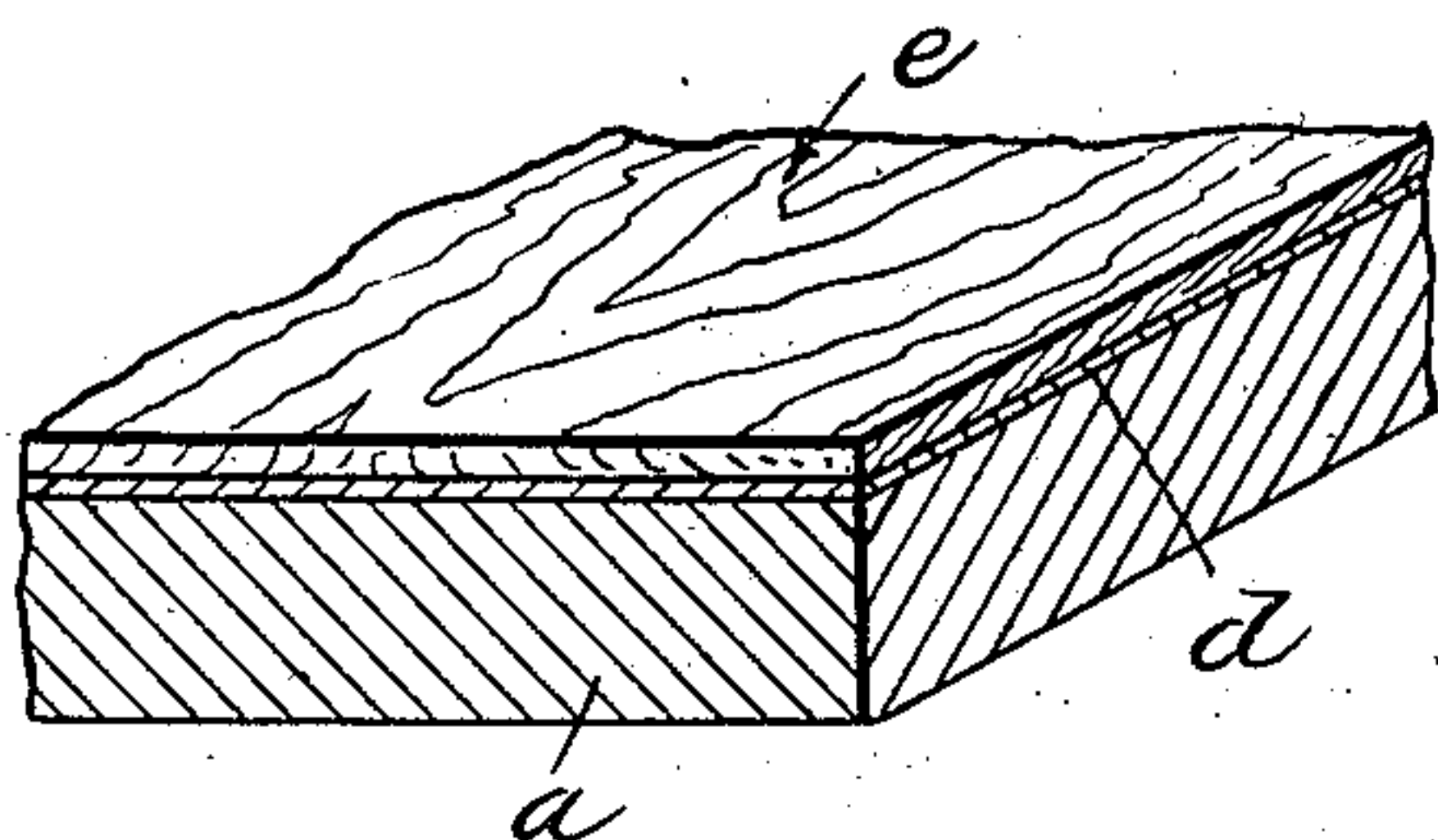


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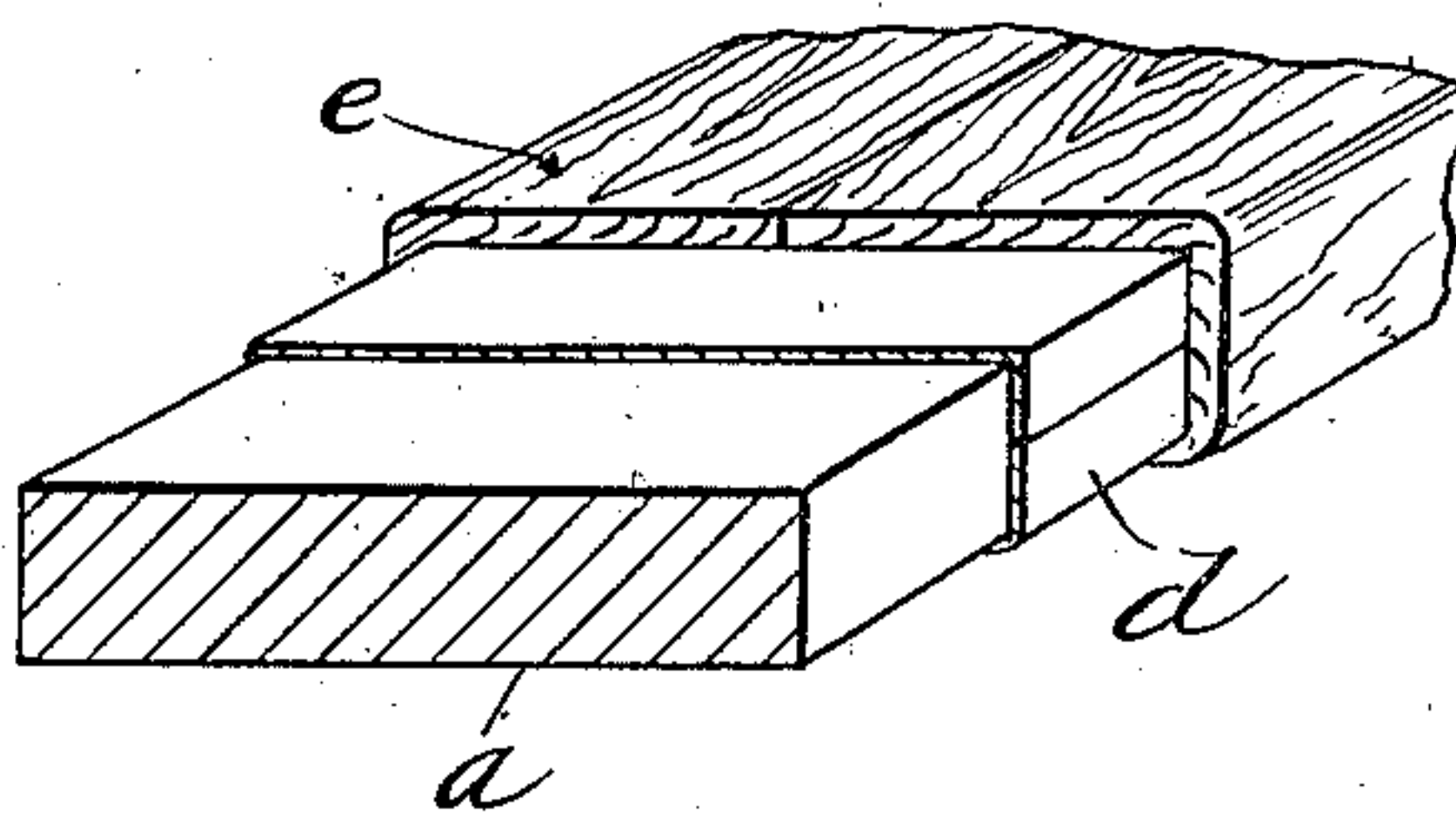
PATENTED FEB. 20, 1906.

L. COBURN.  
WOOD VENEERED METAL OBJECT.  
APPLICATION FILED JUNE 22, 1905.

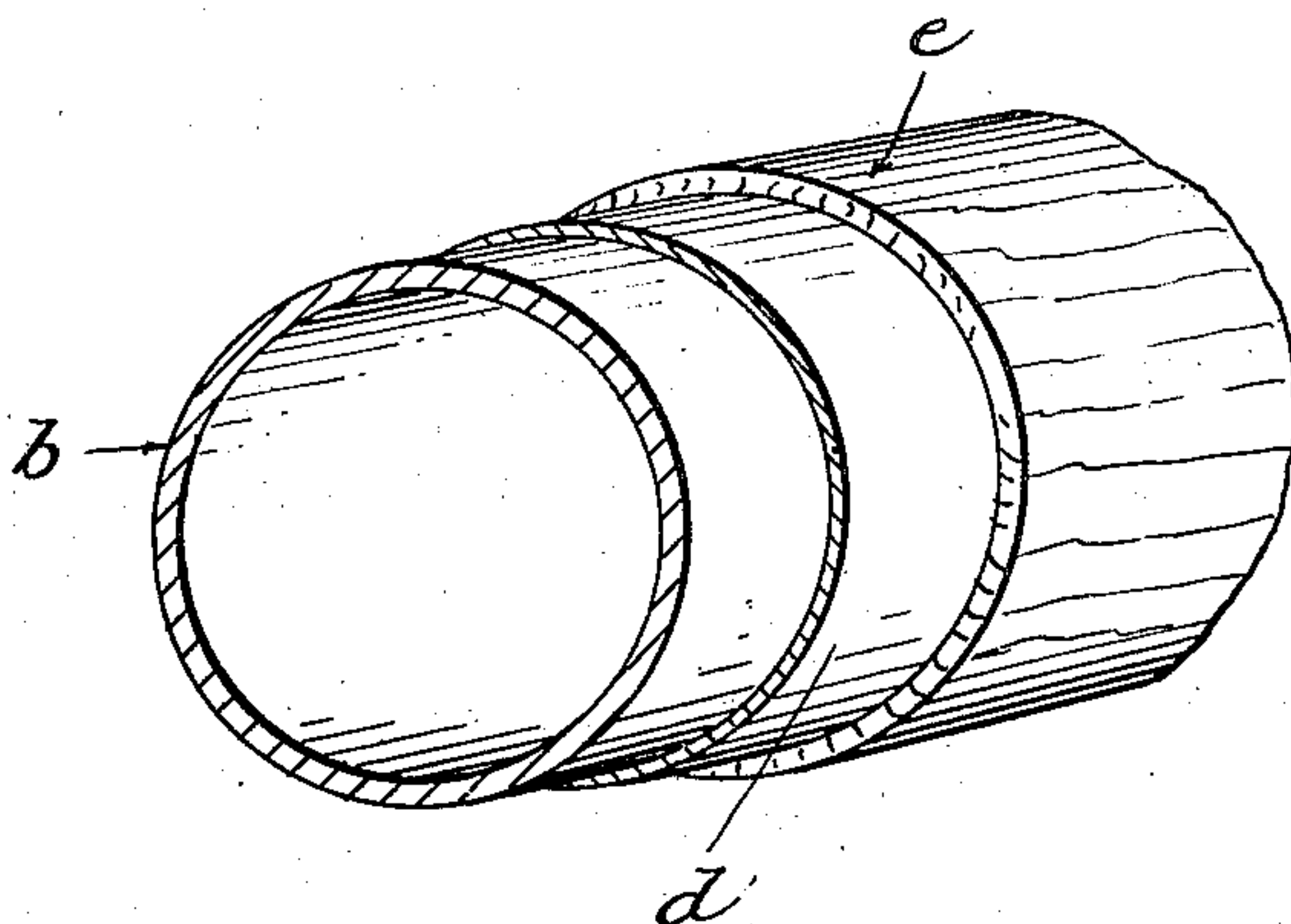
*Fig. 1.*



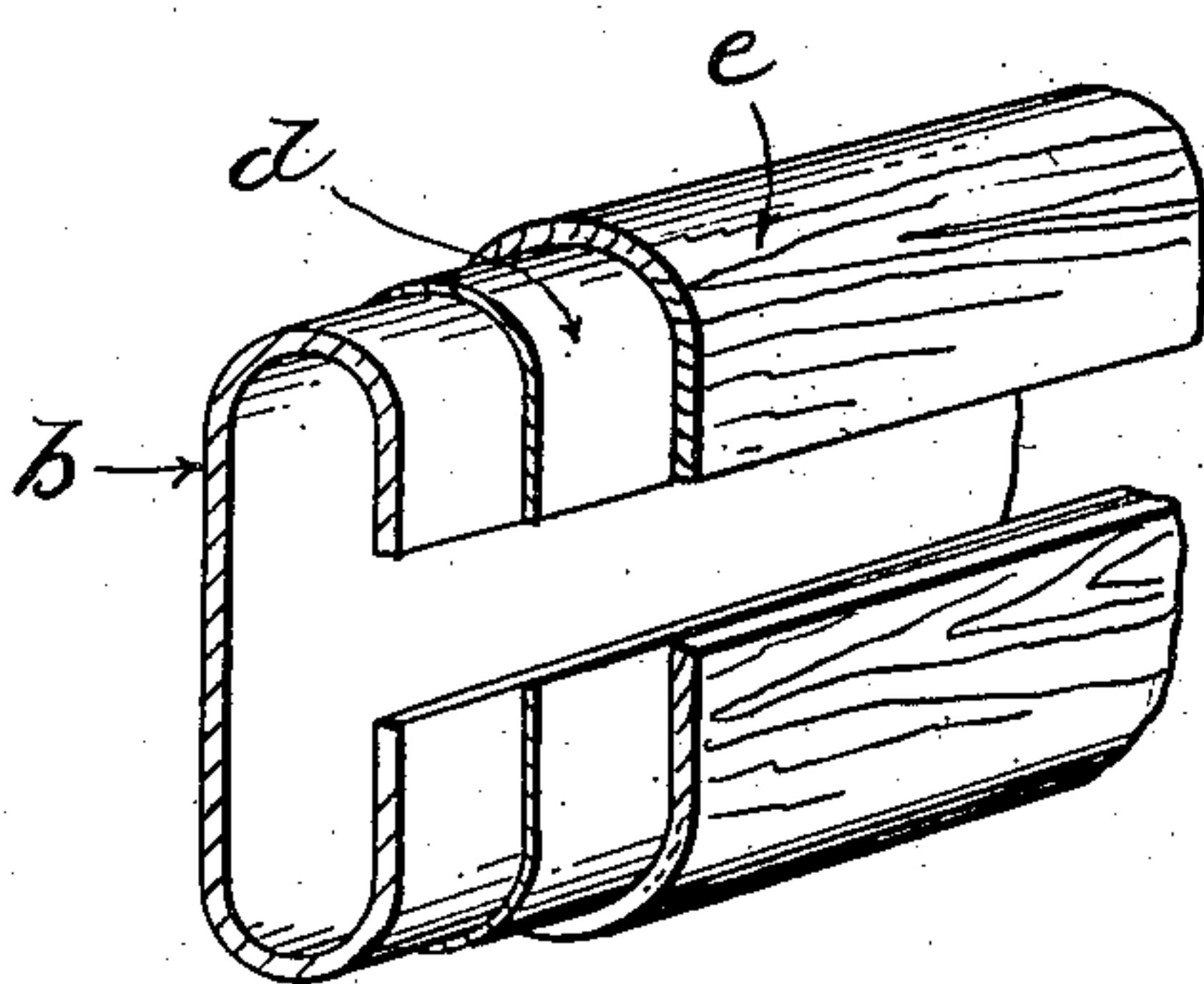
*Fig. 2.*



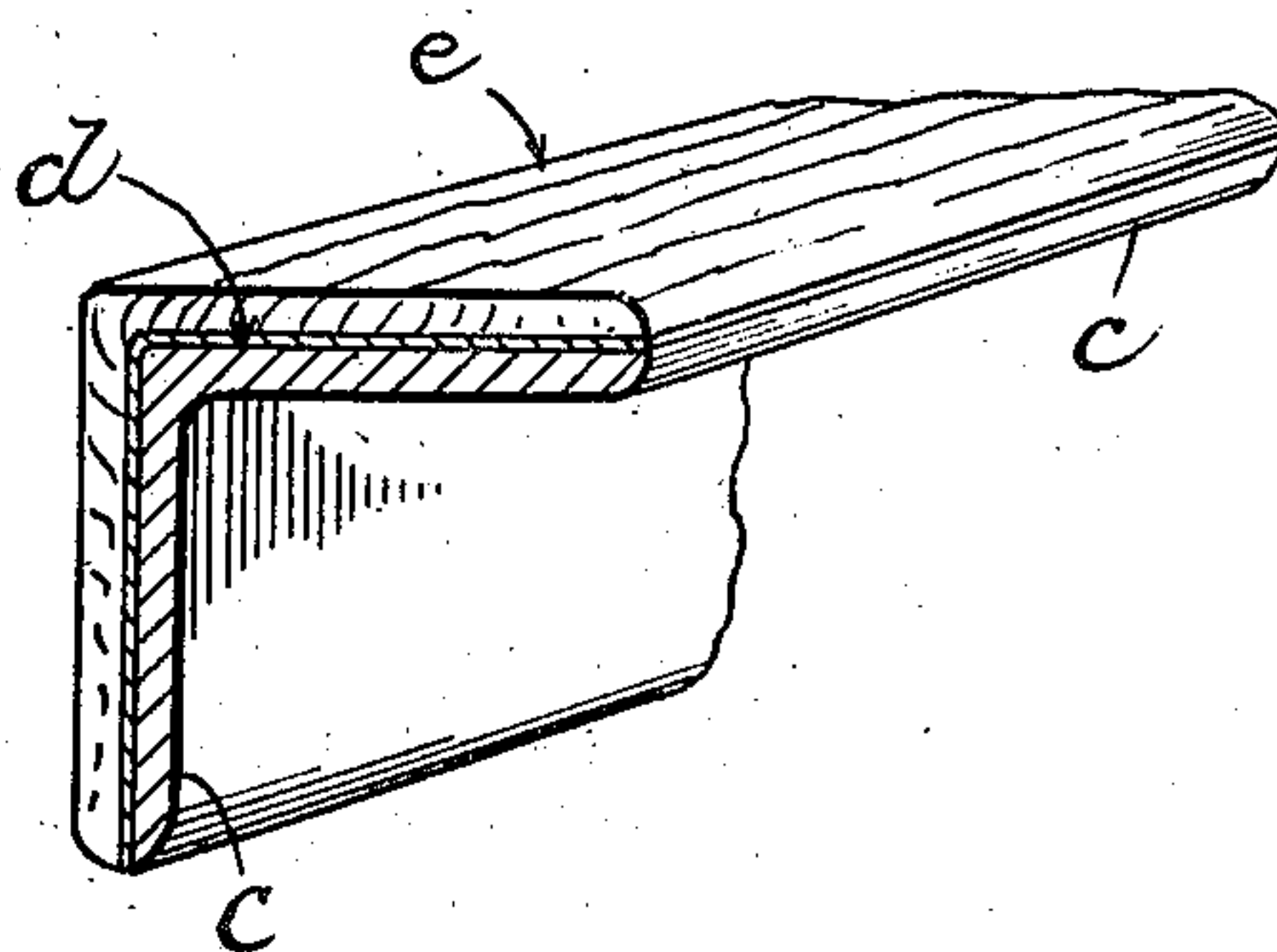
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

LEMUEL COBURN, OF HOLYOKE, MASSACHUSETTS.

## WOOD-VENEERED METAL OBJECT.

No. 812,824.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed June 22, 1905. Serial No. 266,516.

*To all whom it may concern:*

Be it known that I, LEMUEL COBURN, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Wood-Veneered Metal Objects, of which the following is a specification.

This invention relates to structural material, and especially to material from which articles having an external appearance of wood may be made, the body of the material, however, being of metal, the object of the invention being to provide a structural material consisting of a metal body having a covering or coating of wood veneer secured thereto in a manner to make it closely and permanently adherent to the metal, but of such a nature as to provide for the differences in expansion and contraction which are very marked, because of the fact that the metal is affected by changes in temperature alone, whereas the wood is practically only effected by hygrometric conditions.

Having these ends in view, the invention consists in providing a metal body, as a plate, bar, or tube, with a layer of a practically non-absorbent material secured thereto by a suitable adhesive and a covering of wood veneer laid over this material and secured to it by an adhesive substance, said non-absorbent body consisting of paper or a substance or material having similar characteristics which, while its opposite surfaces may be closely united with the metal and with the veneer, that portion thereof between these surfaces may be unaffected by the adhesive, and thus remain free to yield more or less to accommodate itself to the variations of the relative positions of the metal and the wood veneer. Without the interposition of a yielding body the wide differences in expansion and contraction between the wood and the metal would eventually cause the veneer to crack away from the metal, producing a sort of a blister, which would permit of the easy fracture of the veneer at that point; but the interposition of a tough yielding body between the veneer and the metal and to which both are adherent provides working room for both of these materials under the strains due to their contraction and expansion. As illustrating this point and showing the necessity of providing for the relative movement of these two materials if a piece of metal to

which the veneer has been applied without the interposition of a yielding body be subjected to a relatively high temperature and then be suddenly shifted to a lower or falling temperature in the presence of moisture it will be seen that while the metal would be subject to contraction, owing to the reduction of temperature, the wood, on the contrary, would be more or less expanded, owing to the presence of moisture, thereby subjecting the binding material between the wood veneer and the metal to a very great strain, and as demonstrated in practice this eventually becomes a destructive strain.

I am aware that a woven fabric has been used as a binder between the metal and the wood because of the fact that it would absorb the liquid adhesive and would for this reason prove more adherent to the metal and wood, respectively; but in practice this proves unsuccessful, for the reason that the hardening of the adhesive absorbed by the textile material formed a relatively brittle body which under the strains of varying degrees of expansion and contraction would break away from the metal in precisely the same manner as does the veneer alone.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a metal plate having a wood veneer applied to one surface thereof according to this invention. Fig. 2 is a perspective view of a metal bar having a wood veneer applied to the two sides and edges thereof according to this invention. Fig. 3 is a perspective view of a piece of metal tubing having the wood veneer applied to its outer surface. Fig. 4 shows another form of metal tubing to which the veneer has been applied, this tube being open on one side. Fig. 5 is a piece of angle-iron having its two outer surfaces covered with the wood veneer.

These various illustrations are provided merely to show several applications of the invention to well-known structural forms of metal among the very many to which it is applicable, and in the drawings *a* indicates the metal plate or bar shown in Figs. 1 and 2. *b* indicates the metal tube in the forms shown in Figs. 3 and 4, and *c* indicates the piece of angle-iron which is the metal body shown in Fig. 5. In each of the figures *d* indicates the layer or body of the more or less flexible non-absorbent material which is interposed be-



tween the metal body and the wood veneer, which latter in all of the figures is indicated by *e*.

In carrying this invention into practice the surface of the metal body to which the wood veneer is to be applied has applied thereto a layer or body of non-absorbent flexible material *d*, which is attached to the metal by means of a suitable adhesive. Preferably this non-absorbent body consists of a sheet of relatively thick long-fibered paper suitably sized to the end that the adhesive substance, which is generally in liquid form, may not penetrate the fibers constituting the body of the material between its two surfaces, which would operate upon the hardening of the adhesive to make this body a hard and unyielding sheet of material. Other material than paper might be used, providing it had the same qualities whereby the surfaces thereof might be glued to the metal and to the wood veneer without destroying the slightly-yielding nature of the material between these surfaces. After this non-absorbent body has been secured to the surface of the metal body and the adhesive has become dry the wood veneer *e* is applied to the outer surface of the non-absorbent material and secured thereto by means of a suitable glue or cement, the veneer being pressed closely to the surface to which it is applied until the glue or cement has become set.

By means of the invention described herein a structural material is provided which is applicable to the construction of a great many articles in which the strength of the metal body is required and in which a metal surface is either inappropriate or the finishing of which is too expensive to permit it to

be used; but when covered with the wood veneer it is not open to these objections.

The invention is especially adapted to the construction of bedsteads or bookcases or articles of like nature in which strength and beauty of finish are required and which permits of the adaptation of the finish of these articles to the general tone or finish of the room in which they are located; and the invention is also applicable for the same reason to the construction of door-casings, window-casings, and the like, whereby every appearance of wood may be obtained, together with the fireproof qualities resultant from the use of metal.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A new article of manufacture consisting of a metal body with a surface finish of wood veneer applied thereto, and a binding element of practically non-absorbent material located between the metal and the veneer and adherent to both.

2. A structural material consisting of a metal body, a coating of wood veneer for the body, and a layer of non-absorbent flexible material interposed between the metal and the veneer and to which both metal and veneer are adherent.

3. A structural material consisting of a metal body, a coating of wood veneer therefor, and a layer of non-absorbent paper interposed between the metal and the veneer, and to which both metal and veneer are adherent.

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Witnesses:

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