

Sept. 13, 1927.

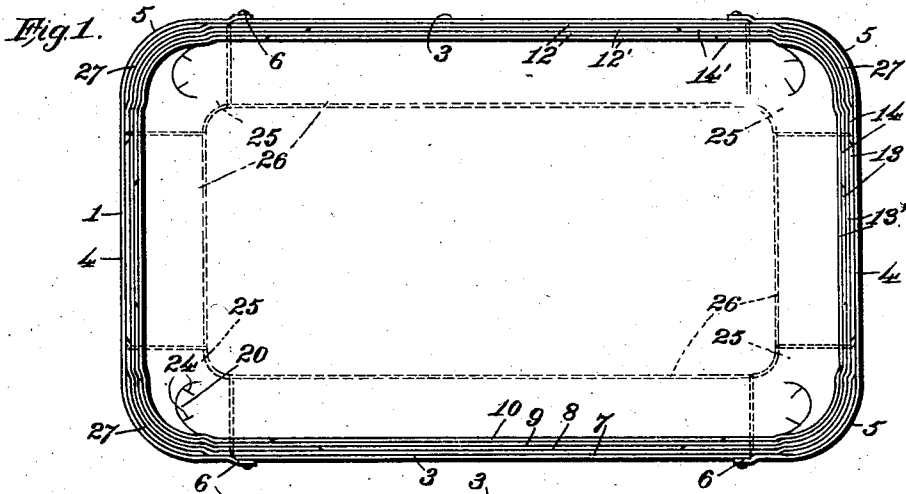
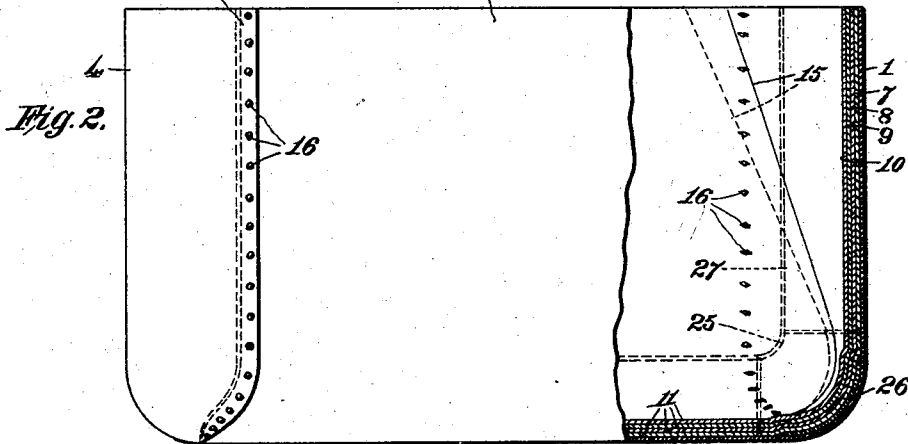
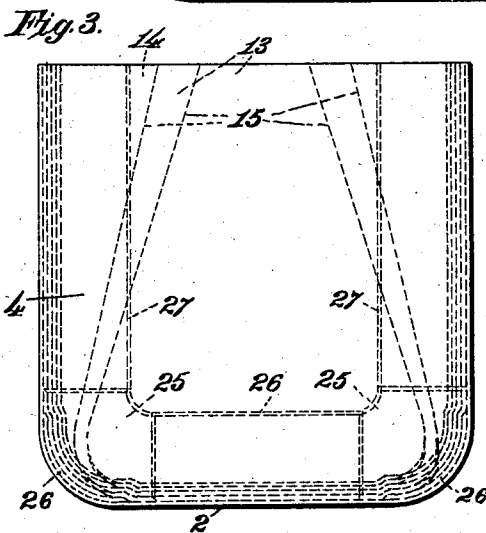
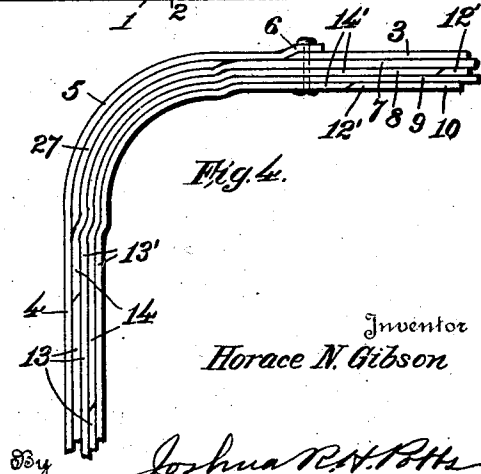
1,642,066

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VENEER CONSTRUCTION AND METHOD OF MAKING THE SAME

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3 Sheets-Sheet 1



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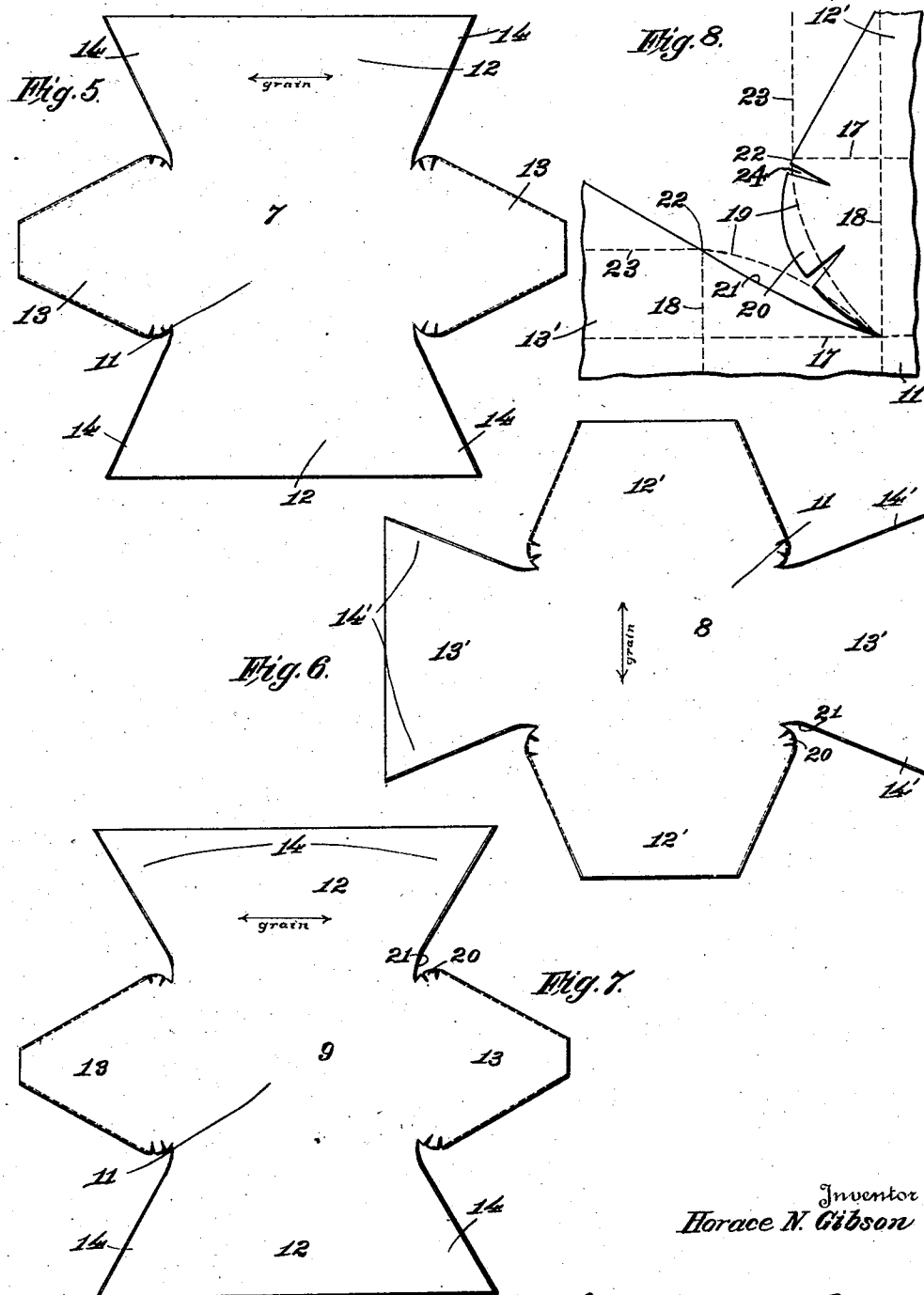
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3 Sheets-Sheet 2



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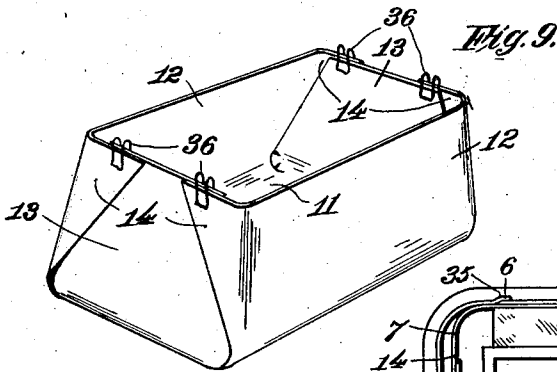
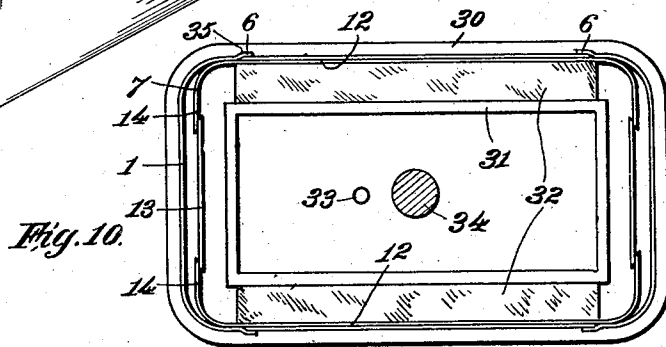
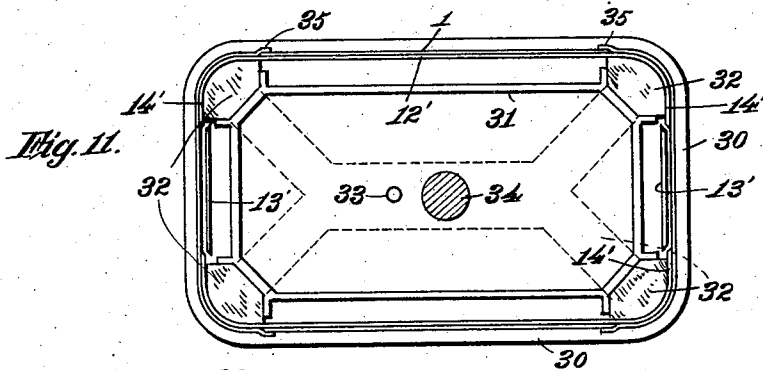
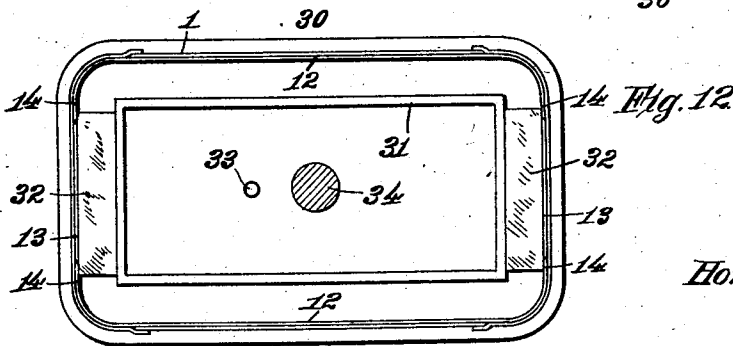
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3 Sheets-Sheet 3



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VENEER CONSTRUCTION AND METHOD OF MAKING THE SAME.

Application filed September 12, 1921. Serial No. 500,208.

My invention relates to hollow bodies or receptacles formed of built up or laminated construction, and to a method of making the same. While my invention has reference particularly to the construction of shells from which trunk bodies are made, it is to be understood that my invention is not to be limited to such use, as it may be employed in the construction of various articles comprising laminated walls. With this understood, the invention will be described in particular as relating to the construction of trunk bodies. The object of my invention is to provide a device of the class mentioned formed of a plurality of layers or laminations and each layer or lamination being formed of an integral member or blank. A further object of my invention is to provide a device of this character which shall be strong and durable, and which will not be readily affected by moisture. A further object of my invention is to provide a device of the character mentioned which shall have but few joints in both the outer and inner layers, and of such construction that the joints in the several layers shall not register one above the other. A further object of my invention is to provide a device of the character mentioned of such construction that a minimum amount of nailing or riveting may be employed to produce a strong and substantial structure. Further objects of my invention are to provide a device of the class mentioned having full rounded corners and edges, a smooth outer surface, and internal reinforcements. Further objects of my invention are to provide a device of this character which shall be light in weight and strong and durable in use. A further object of my invention is to provide an improved method whereby devices of the character mentioned may be readily made or built up of a plurality of layers of veneer or other material by forcing the same into position in successive parts thereby securing a complete and firm contact throughout the surfaces of the adjacent layers, and which will not rupture the veneers. Other objects will appear hereinafter.

A device forming the subject matter of my invention consists of an outer layer formed of fibre or similar material which is preferably made of a single blank pressed into shape, and a plurality of inner layers, preferably formed of wood veneer forced into firm contact and cemented to the outer fibre layer and to each other. Each of the veneer layers is formed of a single blank, and the edges of the sides and ends thereof abut, when in position. The edges of the fibre blank overlap and are secured together by nails or rivets, which also preferably extend through the several layers of veneer. The grain of the veneer layers are alternately arranged to extend at substantial right angles to the grain of the adjacent layers and the blanks are so formed that the portions thereof constituting the rounded edges and corners are longitudinal of the grain. My invention further consists in portioning the blanks of the successive layers so that the joints of the edges thereof shall be staggered with relation to each other to form a more rigid construction. My invention further contemplates the provision of internal corner and edge reinforcements which are preferably arranged between the fibre layer and the adjacent veneer layer. My invention further consists in the method of assembling the parts to form the shell so as to secure a firm adhesion between every part of the surfaces of the adjacent layers, without danger of breaking or rupturing the veneers. This method consists broadly in pressing the outer fibre layer into shape within a suitable form, then initially forming and inserting the veneer layers successively after having first coated the preceding layer or veneer with suitable glue or cement, and pressing each successive veneer into position by means of a flexible, inflatable pressure device which shall press successive portions of the veneer into position. My invention further consists in various details of construction and arrangements of parts, and in the several steps of the method all as will fully appear hereinafter and be particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification and in which—

Fig. 1 is a plan view of a trunk body shell embodying my invention,

Fig. 2 is a side elevation thereof, partly in section,

Fig. 3 is an end elevation of the device,

Fig. 4 is an enlarged diagrammatic plan view of one corner of the device,

Figs. 5, 6 and 7 are plan views of several of the veneer layers,

Fig. 8 is a detail of a portion of one of said blanks,

Fig. 9 is a perspective view of one of the blanks as folded for insertion in the form, and

Figs. 10, 11 and 12 are diagrammatic plan views illustrating the several steps in the method.

Referring now to the drawings 1 indicates the outer layer of the shell which is preferably formed of fibre. This is formed of a single sheet of material and comprises a bottom 2, sides 3 and ends 4. The blank is so cut that the ends 4 extend around the full rounded edges 5 and slightly overlap as at 6 at the ends of the sides 3. The vertical edges of the sides 3 are beveled as shown in the drawings to form a neat compact joint. Arranged within the fibre shell thus formed are a plurality of veneer layers 7, 8, 9 and 10, the blanks of which three of them are formed are shown in Figs. 5, 6 and 7. Each veneer layer is formed of a single blank, such as illustrated, and comprises a bottom portion 11, sides 12 and ends 13. By the term "bottom portion" I refer to the body portion which is the bottom when in the form in which it is made, and does not refer necessarily to the bottom of the finished article, as it may be the top. Alternate layers, such as shown in Figs. 5 and 7 are similarly cut but with the portions 12 and 13 differently proportioned so that the seams formed by the abutting edges of said portions will not come directly above each other, but will be staggered so as to form a stronger construction. In these layers, the ends 13 are tapered upwardly and the ends of the sides 12 are extended as at 14 so as to extend around the corners 5 and abut the beveled edges of the portions 13. In the first layer 7, the ends 13 are comparatively broad, whereas in the layer 9 they are much narrower and the portions 12 are correspondingly extended to meet the edges of the portion 13. This will give a staggered relation of the joints or seams between these portions at the ends of the shell as indicated in dotted lines 15 in Fig. 3. In the other layers 8 and 10 the sides 12' are tapered upwardly and the ends 13' are correspondingly extended as at 14' similar to the extensions 14 of the sides 12. With this construction it is obvious that the abutting joints 15 of the layers will be staggered so that no two of them will come directly one above the other. Furthermore, the joints in alternate layers are on the ends of the shell whereas

the joints of the other layers are on the sides of the shell. This forms a stronger, rigid construction which will not open at the seams. The edges of the sides and ends are beveled as shown, which prevents buckling of the layers due to expansion or contraction. Securing devices 16 such as nails or rivets are driven through the joints 6 of the outer fibre layer, and preferably through the veneer layers as shown clearly in Fig. 4. This is all of the nailing or riveting required in the device.

The several veneer layers are cut in a peculiar manner so as to bring the seams 15 in the desired positions and in Fig. 8, I have illustrated this feature. As shown therein the portions between the dotted lines 17—17 and 18—18 are in the curved edges or corners of the device. Should the seams between the sides and ends be arranged directly in the corners, the blanks would be cut as indicated by the dotted lines 19. But, in order to stagger the seams as above mentioned, and throughout their extent, the portion of the tapered side or end, between the lines 17 is provided with a crescent shaped extension 20, and the adjacent portion of the adjacent side or end is correspondingly cut away as at 21, the curve of the portion 20 and 21 intersecting the normal corner lines 23 at the base of the sides or ends where they merge into the rounded bottom, and from this point the sides or ends taper or flare as illustrated and described. The portion 20 is provided with notches 24 so that the blank can accommodate itself to the curve at the corners without bulging or buckling. In order to secure the maximum strength of the device, the grain of the wood from which the several veneers are made are positioned in the direction of the double arrows on Figs. 5, 6 and 7, that is, so that the grain would extend longitudinally around the corners into the portions 14 or 14'.

To reinforce the corners and edges suitable reinforcing members are inserted, preferably between the outer fibre layer 1 and the first veneer layer 7. These may be of any desired material such as fibre, and comprises corner pieces 25, edge piece 26 extending along the lower edges between the corners, and vertical edge pieces 27 extending from the corner pieces upwardly to the top of the shell. The free edges of the members 25, 26 and 27 as well as their adjacent edges, are beveled as illustrated for the same purpose as described in regard to the seams 15. A trunk shell of the above description is light in weight, strong and durable, and is substantially impervious to moisture.

In making the device, I prefer to use a special mold or form, and this mold is fully described in my co-pending application Serial No. 500,209 filed September 12, 1921. In Figs. 10, 11 and 12, I have illustrated

this mold in the several steps in its operation, but have shown the same diagrammatically only, many features of the mold being omitted to avoid confusion in the present application. Broadly, said mold comprises an outer form 30, the inner surface of which conforms to the size and shape of the outer face of the device to be formed, and an inner form comprising a rigid core 31 and flexible inflatable portions 32. These latter comprise suitable air tight bags or bladders which are inflated as through 33. 34 indicates a plunger or suitable means for inserting the inner form within the outer form. It will be noted that I use a series of three forms which are similar except that the inflatable bags 32 are arranged at different positions on the core so that pressure may be applied to the device under construction at the desired points as hereinafter described. The outer form 30 is provided with grooves 35 on its inner face to accommodate the seams or joints 6 of the outer fibre layer of the shell.

The process of forming the shell is as follows:—The blank for the fibre layer, after being suitably softened, as by soaking or steaming, is initially folded and placed within the form 30. The inner form as shown in Fig. 12 is then inserted and the members 32 thereof inflated until the bottom and ends of the blank are forced into position. The inner form is then removed and the form such as shown in Fig. 11 is inserted and the members 32 inflated to press the corners of the blank into position. This form is removed and the form shown in Fig. 10 is inserted and its members 32 are inflated to press the sides into position; and this inner form is then removed. Glue or suitable cement is then applied to the inner face of the fibre layer at the rounded corners and edges, and the reinforcing elements 25, 26 and 27 are placed into position. The inner surface of the fibre layer and of these reinforcing elements are then coated with glue or cement and the first veneer layer 7, is, after being softened, folded into the position, shown in Fig. 9, being held in said position temporarily as by suitable clips 36. This is then inserted within the fibre layer which remains in the form 30, and the form shown in Fig. 10 is inserted and inflated as shown in said figure. This presses the bottom and sides of the veneer layer firmly into contact at all points with the fibre layer. This inner form is then removed and the one shown in Fig. 11 inserted and inflated which presses the corners of the veneer into position as illustrated in said figure. This inner form is then removed and the one shown in Fig. 12 is inserted and inflated which presses the ends of the layer into position as shown in Fig. 12. The inner surface of the veneer layer is then coated with glue or cement and

the process repeated by inserting the next veneer blank and pressing the same into position in a similar manner as above described, except that the process is reversed in regard to the sequence of pressing the several parts, it being understood that the sides or ends having the extensions 14 are first pressed into position, then the extensions 14 and afterwards the remaining sides or ends. By this method, rupturing of the veneer layers, especially at the corners, is prevented; and also by pressing the parts into position by means of the flexible bags 32, an equal pressure is applied to all parts of the device, and the veneer being positioned is compelled to conform to the surface beneath throughout its extent. This is particularly valuable in making tight joints between the several layers when the reinforcing elements 25 to 27 are employed.

I claim:—

1. A device of the class described, formed of a plurality of layers, each layer being formed of a single blank and cemented to the adjacent layers, each blank comprising a bottom and laterally projecting side and end members, said side and end members of the different blanks being differently proportioned to stagger the joints between said edges, substantially as described.

2. A device as set forth in claim 1 in which said blanks are formed of veneer and each comprising a bottom and laterally projecting side and end portions, certain of said sides and ends being tapered and the adjacent sides and ends being provided with compensating projections, substantially as described.

3. A device as set forth in claim 1 in which the blanks are formed of veneers in which the grain of the veneers run longitudinally of the members provided with said lateral projections, as and for the purpose specified.

4. A device as set forth in claim 1 in combination with reinforcing elements arranged at the edges and corners between certain of said layers, substantially as described.

5. A device as set forth in claim 1 in which the outer layer is formed of a single blank comprising a bottom and laterally projecting side and end portions, the adjacent edges of the sides and ends overlapping and securing devices driven through said overlapping edges, substantially as described.

6. A device of the class described formed of a plurality of layers, each layer being formed of a single blank and cemented to the adjacent layers, and each blank comprising a bottom and laterally projecting side and end members, certain of said sides and ends being tapered and the adjacent sides and ends being provided with compensating projections, said side and end members of the different blanks being differently proportioned to stagger the joints between the edges, and the edges of the tapered members

adjacent their base being provided with curved extensions, and the corresponding edge of the adjacent member being correspondingly recessed, substantially as described.

5 7. A device as set forth in claim 1 in which all of said blanks comprises a bottom, sides and ends, the edges of said sides and ends

abutting, and said abutting edges of alternate layers being arranged at the end of the device and those of the other layers at the side of the device, substantially as described. 10

In testimony whereof I have signed my name to this specification.

HORACE NAPOLEON GIBSON.