

No. 766,462.

PATENTED AUG. 2, 1904.

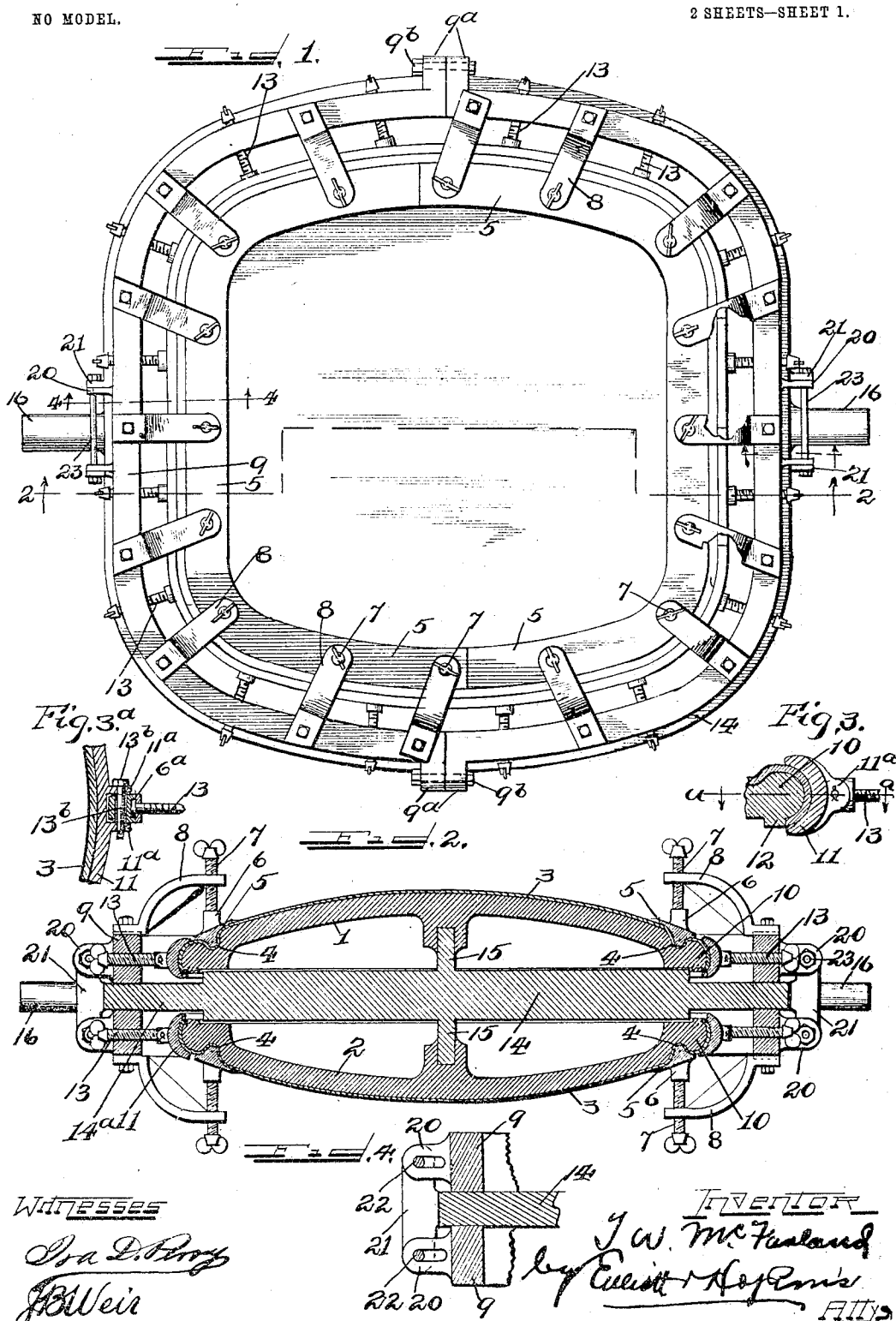
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OR PAPER.

APPLICATION FILED FEB. 3, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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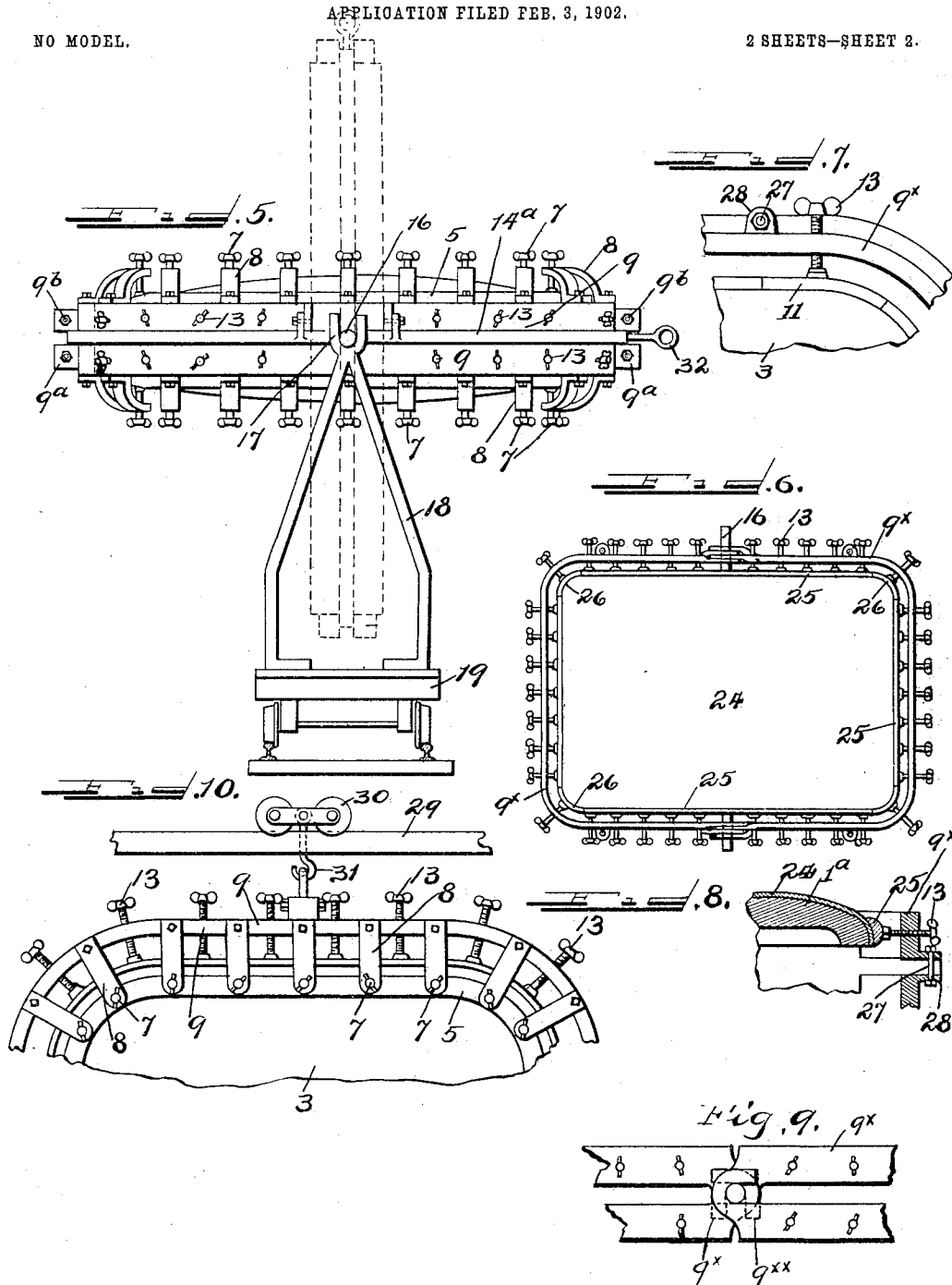
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WITNESSES

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MEANS FOR PRODUCING VEHICLE-TOP MEMBERS OF PLASTIC MATERIAL OR PAPER.

SPECIFICATION forming part of Letters Patent No. 766,462, dated August 2, 1904.

Application filed February 3, 1902. Serial No. 92,263. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. McFARLAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Producing Vehicle-Top Members of Plastic Material or Paper, of which the following is a full, clear, and exact specification.

My invention relates more particularly to means for holding paper board or pulp in form while being dried or cured, so that a part of a carriage or car top may be produced therefrom; and my invention has for its primary object to provide improved and simple clamping devices capable of thus holding the pulp or paper in such a manner that it may be readily handled during the curing operation.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a plan view of my improved apparatus removed from the car or truck. Fig. 2 is a transverse section on line 2 2, Fig. 3. Fig. 3 is an enlarged detail transverse section of one edge of one of the forms and the edge clamp. Fig. 3^a is a detail section taken on the line *a a*, Fig. 3. Fig. 4 is a transverse section taken on the line 4 4, Fig. 1. Fig. 5 is a front elevation of my improved apparatus, showing the form supported on a truck and illustrating by dotted lines the position in which the form is held when the truck is run into the drying-kiln. Fig. 6 is a view similar to Fig. 1, showing a slight modification. Fig. 7 is an enlarged detail view of one part of the clamping mechanism shown in Fig. 6. Fig. 8 is a detail transverse section thereof. Fig. 9 is a detail of the same shown in Fig. 6; and Fig. 10 illustrates a modification in the manner of supporting the form in the kiln, consisting in the use of a trolley instead of a truck.

In the example of my invention shown in the drawings the apparatus is designed for making either an entire carriage-top or other vehicle-top or the two ends of a car-top and at the same time pressing into said car-top ends a groove or gutter, if desired, for carrying off rain-water.

1 2 are two convexed forms arranged face to face with their convexed sides turned outwardly and each having the contour of the article to be produced. In Figs. 1 to 5, inclusive, the article shown is a concavo-convexed member 3, having a surrounding groove or gutter 4 and being of sufficient dimensions to constitute the two ends of a car-top when cut in half transversely of the gutter 4. These forms 1 2 consequently are also provided with a surrounding groove or gutter complementary in shape to the gutter 4, and the paper or material 3 of which the member is to be composed, which material usually consists of a green paper-board, is pressed down into the groove of the forms 1 2 by means of clamps 5, which extend around the edges of the forms, as illustrated in Fig. 1, and which clamps are provided with bosses 6, in which are loosely secured the lower ends of clamping-screws 7, threaded in arms 8, secured to a surrounding ring or frame 9 and projecting over the edges of the clamps 5, as illustrated in Figs. 1 and 2. Thus it will be seen that after the green board is laid upon the form and properly smoothed out to conform therewith it may be securely clamped by means of the clamps 5 and held from shrinking during the drying operation, it being understood that by thus fixing the edges of the board while it is wet and holding the same while being cured the tendency of the board to shrink will stretch it against the form with great power and result in a cured board possessing great rigidity and firmness and having the exact shape or contour of the form.

After the edges of the board are pressed down into the groove 4 the extreme edges are carried around the rounded edges 10 of the form and are there securely clamped by clamping members 11, surrounding the edge of each of the forms and each partaking of its out-

line, so that when all of the clamping members are forced inwardly against the overhanging edge of the board they will conform accurately to the outline of the form and squeeze the board thereagainst with sufficient pressure to hold it and impart the desired shape thereto. As more clearly illustrated in Fig. 3, the inner edges or faces of the forms 1 2 are provided with shoulders 12, against which the extreme edge of the board 3 abuts when it is forced inwardly by the clamp 11, and consequently the pressure of the clamp in conjunction with the shoulder 12 finishes the edge of the board, and thus avoids the necessity of subsequently trimming it, and as a result when the board is taken from the form after it is cured it possesses the shape of a finished car-top member without further treatment.

The clamping members 11 are supported and actuated by a number of clamping-screws 13, passing through the rings 9 and having their inner ends suitably connected with the members 11, so as to allow the latter more or less universal movement. To accomplish this, the clamp members 11 are provided with ears 11^a, between which are loosely pivoted sockets 13^a on pivots 13^b, which sockets hold the headed ends of the screws 13, the sides of the sockets being slightly rounded and the pivot being smaller than the passage through which it passes.

The forms 1 2 are arranged on opposite sides of a board or block 14, having central brace or reinforce 15 supporting the central portions of the forms, and the edges of this block are somewhat reduced at 14^a and carried outwardly between the rings or frames 9, and thereby constitute a support for such frames, and the edges of the block 14 are provided with diametrically opposite trunnions 16, projecting therefrom, so that the entire form may be supported in suitable bearings 17 (see Fig. 5) on standards 18, carried by a truck 19, and thus conducted into the drying or curing kiln, (not shown,) the advantage of said trunnions 16 being that the form may be turned on edge, as illustrated in Fig. 5, so that by making the truck of unusually-narrow gage a large number of the forms may be cured at one time in a comparatively small space.

The rings 9 are each shown as composed of two members having lugs 9^a secured together by bolts 9^b, and such rings are firmly secured together at both sides on opposite sides of block 14 by means of the connection shown in Fig. 4, which consists of a pair of slotted ears 20 upon each of the rings 9 and a pair of perpendicular lugs 21, formed on each side of block 14 and connected to the ears 20 of the lower ring by means of bolts 22 and to the ears 20 of the upper ring by bolts 23. As illustrated in Fig. 1, one of these connections is employed at each side of the device

adjacent to the trunnions 16, and consequently if one of the bolts 9^b should be withdrawn on each side of the same one of the frames 9 such connections may serve as a hinge, whereby either or both halves of either or both of the rings 9 may be turned upwardly or backwardly with relation to its form 1 2, and as the bracket-arms 8 and clamps 5 are connected to the rings 9, respectively, it follows that when the sections of either of the rings 9 are thus turned back these parts also will be lifted out of the way of the operator, rendering the entire surface of the form accessible for the reception of the board 3, which may be conveniently spread thereon while the apparatus is held in the position shown in full lines in Fig. 5, and when one side is supplied with the board and clamped securely in position the apparatus may be rotated on its trunnions 16 and a board applied to the other side after the bolts 9^b, which were removed for permitting the sections of the rings 9 to turn back, are replaced and the clamping-screws tightened up to their full extent.

The form of my invention shown in Figs. 6 to 8, inclusive, is more especially adapted for the manufacture of carriage or vehicle tops 24, in which the groove hereinbefore described is omitted, and consequently the clamps 5 not employed. In this form the forms upon which the board is molded may be held on trunnions 16, as before described with reference to the forms 1 2. One of these forms is shown at 1^a in Fig. 8, and the edge of the board or top 24 is securely clamped and molded by surrounding clamping members 25 26, which are similar to the members 11, before described, the members 25 being long straight members each provided with a plurality of clamping-screws 13, extending along the ends and sides of the form 1^a, while the members 26 are short curved members which conform to the corners and are each provided with one of the screws 13. In this form of the invention the surrounding frames or rings (shown at 9^x) are connected together by ordinary bolts 27, passing through flanges 28; but the construction described with reference to Fig. 1 may of course be employed, if desired. Each of the frames 9^x, however, is made in two sections, each provided with a perforated hinge member 9^{xx}, and these latter are overlapped and the trunnions 16 passed through all of them, so as to hinge the frame-sections together at the center. Hence when bolts 27 are withdrawn the frame-sections may be turned up, carrying the clamps away from the edge of the form to afford room for the operator to properly place the paper in position.

In Fig. 10 is shown an overhead wire 29, upon which runs a trolley 30, having a hook 31, whereby the entire form may be supported in the kiln through the agency of a ring or eye 32 should the truck for any reason be undesirable.

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

1. In an apparatus for the purpose described, the combination of two forms secured back to back, clamping means for holding a plastic board on said forms, and means for suspending said forms on edge while said board is drying or curing, substantially as set forth.

2. In an apparatus for the purpose described, the combination of two forms secured back to back, a surrounding frame, clamping means secured to said frame and adapted to impinge the edges of said forms respectively, and means secured to said surrounding frame, for suspending said forms on edge, substantially as set forth.

3. In an apparatus for the purpose described, the combination of two forms secured back to back, independent frames surrounding said forms respectively and being hinged together,

and clamping means secured to said frames respectively for engaging the edges of said forms, respectively, substantially as set forth.

4. In an apparatus for the purpose described, the combination of two forms secured together back to back, two rings or frames surrounding said forms respectively, means for hinging said rings or frames together, and clamping means carried by said rings or frames respectively, for engaging the edges of said forms, substantially as set forth.

5. In an apparatus for the purpose described, the combination of a form, a frame composed of two hinged members surrounding said form, and clamping means carried by said frame for engaging said form, substantially as set forth.

THOMAS W. McFARLAND.

Witnesses:

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W. D. CROSS.