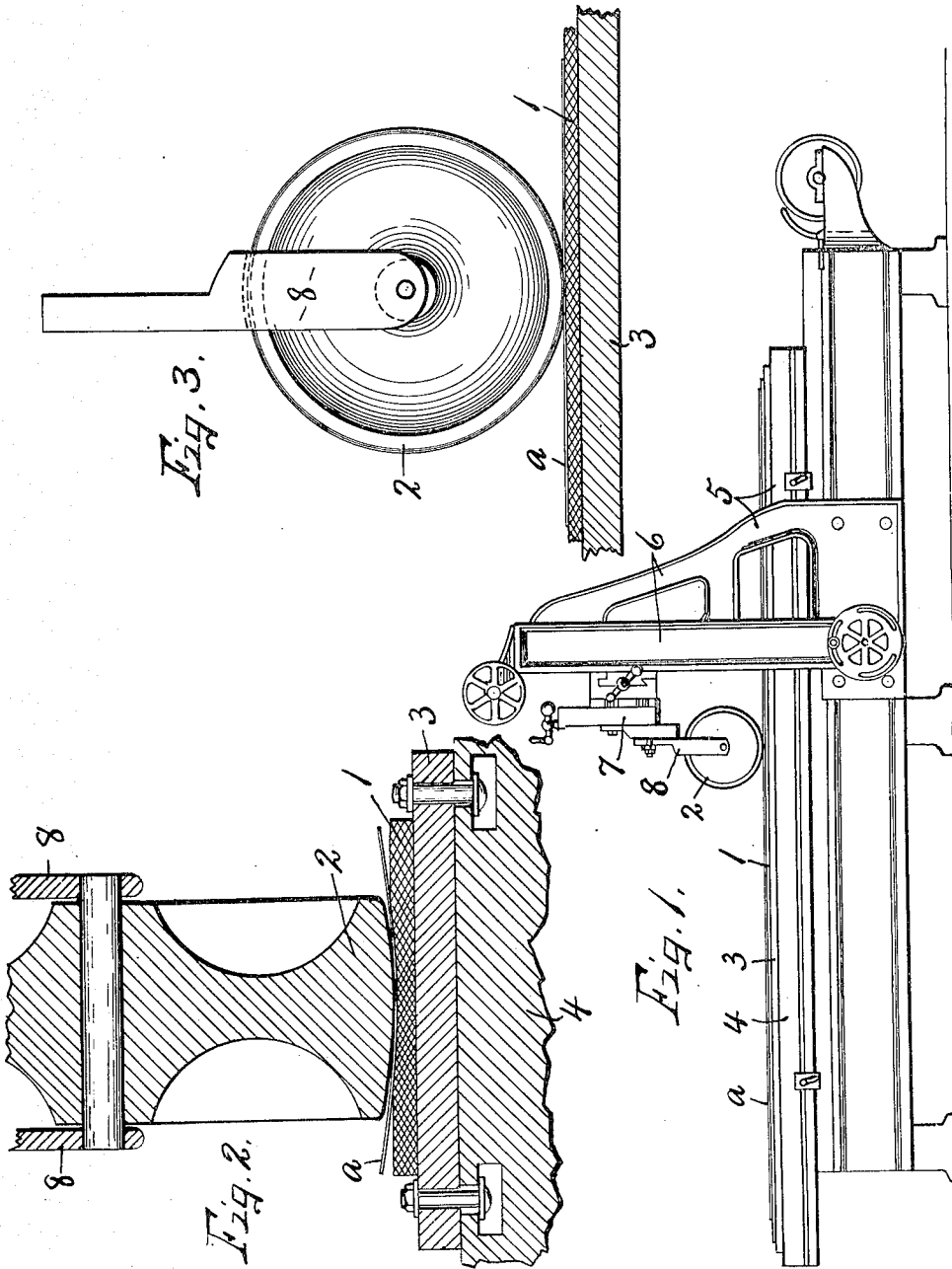


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 APPARATUS FOR DEFORMING SHEET METAL PLATES.
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926,253.

Patented June 29, 1909.



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APPARATUS FOR DEFORMING SHEET-METAL PLATES.

No. 926,253.

Specification of Letters Patent.

Patented June 29, 1909.

Application filed March 15, 1909. Serial No. 483,512.

To all whom it may concern:

Be it known that I, GEORGE H. HYDE, of Watertown, in the county of Jefferson, State of New York, have invented new and useful Improvements in Apparatus for De-

forming Sheet-Metal Plates, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in apparatus for deforming sheet metal plates, forming the subject matter of my pending application No. 477,701, filed February 13, 1909.

My object is to provide a simple and effective means for rapidly deforming these plates so as to assume approximately the contour or outline of the portion of the boat to which it is adapted to be applied, thereby enabling said plates to be expeditiously assembled without liability of buckling or other distortion.

A further object is to enable each plate to be thus deformed throughout its entire length in a single operation.

Other objects and uses will appear in the following description:

In the drawing; Figure 1 is a side elevation of a metal press showing my invention as applied thereto for deforming the plates. Fig. 2 is an enlarged transverse vertical sectional view of a portion of the sliding carriage for supporting the yielding bed plate, and also showing in section a portion of the deforming roller coacting with said plate. Fig. 3 is a side elevation of the detached roller and its supporting yoke showing a portion of the underlying yielding bed and its supporting plate.

The invention consists primarily in the use of an elongated flat resilient bed plate —1— and a pressure roller —2—, one of which parts, as the bed plate —1—, is adapted to be moved lengthwise relatively to the other part, the bed plate —1— being preferably made of pliable rubber or of alternate layers of rubber and canvas, such as is commonly used for packing, although rubber belting may be equally efficient, said resilient plate being mounted in this instance upon a stiff underlying backing —3—, which in this instance is at least coextensive with, if not of greater area than, the plate —1— so as to support the resilient bed at all points throughout its area and is mounted upon, and preferably secured to, a reciprocatory

sliding carriage —4— of an iron planer —5—. This planer is provided with the usual upright guideway or bracket —6— upon which is mounted a vertically movable tool-head —7—, to which is secured the supporting yoke, as —8—, for the pressure roller —2—.

The yielding or resilient bed plate —1— may be of any desired width or length, and is adapted to support upon its upper surface the plate, as "a" which is to be deformed, the surface area of the bed plate —1— depending somewhat upon the dimensions of the plate "a". This plate "a" is first cut to the desired outline according to the position which it is to assume on the boat, and is laid flatwise upon the resilient bed plate —1—, after which the roller —2— is adjusted by the usual means for adjusting the tool-head —7— for pressing the roller —2— with sufficient force against the upper face of the plate "a" to depress the underlying portions of the latter into the upper surface of the yielding bed plate —1—, it being understood that the latter yields under such pressure. In the present instance I have shown the face of the roller —2— as curved or convexed transversely, so that when it is firmly pressed against the surface of said plate, the portion in contact with the roller will be correspondingly concaved so that when the plate "a" has been traversed by the roller —2— it will assume a cross sectional concavo-convex form and will also assume a similar but less exaggerated lengthwise concavo-convex form, the degree of curvature of the plate depending somewhat upon the radius of the arc of the face of the roller, and also upon the degree of pressure with which the roller is forced against the plate, and it is clearly evident that this transverse and lengthwise curvature of the plate may be varied at different points in its length during the deforming process by simply increasing or diminishing the pressure of the roller thereon, and that if necessary the rolling operation may be repeated to permanently fix such curvature or deformation.

Another feature of advantage of this method of treating the metal plates is that it removes all uneven contours or buckling effects and when deformed to the desired degree may be readily placed on the boat without excessive straining or tendency to buckle. Although I have shown and described the yielding bed plate —1— as mounted upon a

carriage movable back and forth relatively to the pressure roller —2—, it is evident that the invention contemplates any reversal of this action and also variation in the degree of transverse curvature in the face of the roller to give varying deformations to the plate operated upon.

In operation the plate to be deformed is placed upon the yielding rubber bed —1— flatwise and moved with the carriage under the pressure roller —2—, the latter being pressed with the desired degree of force against the surface of the plate, thereby flexing or depressing the underlying portion of the yielding bed, which, together with the pressure of the roller, produces the desired curvature or deformation, the degree of such deformation being regulated by the degree of pressure exerted by the pressure roller —2—, and this pressure may be varied at will during the movement of the carriage to give greater or less curvature to the plate at different points as may be necessary.

What I claim is:—

1. In a deforming device for sheet metal plates, a flat elastic bed upon which the plate is mounted, a stiff backing underlying said elastic bed a pressure roller for pressing the

plate against the bed, and means for moving one of the parts relatively to the other.

2. In an apparatus for deforming sheet metal plates, an elastic bed and movable carriage therefor having a stiff flat backing for the elastic bed, and a pressure roller adjustable toward and from the bed for depressing the portion of the plate engaged by the roller.

3. In a device for deforming flat sheet metal plates, an elastic bed having a flat upper face, a supporting carriage for the elastic bed having a stiff flat backing engaging the under side of the bed directly under the roller, and a pressure roller having a transversely curved presser face.

4. In a device for deforming sheet metal plates, a flat elastic bed for supporting the plate to be deformed, a movable carriage having a stiff flat backing for the bed, and a roller having a convex face adapted to engage the plate on the bed, said roller being adjustable toward and from the bed.

In witness whereof I have hereunto set my hand this 8 day of March 1909.

GEORGE H. HYDE.

Witnesses:

L. R. WASHBURN,
G. L. JONES.