(No Model.) 2 Sheets—Sheet 1.

E. W. STEWART.

MACHINE FOR FORMING VEHICLE SEAT BARS.

No. 373,698. Patented Nov. 22, 1887.

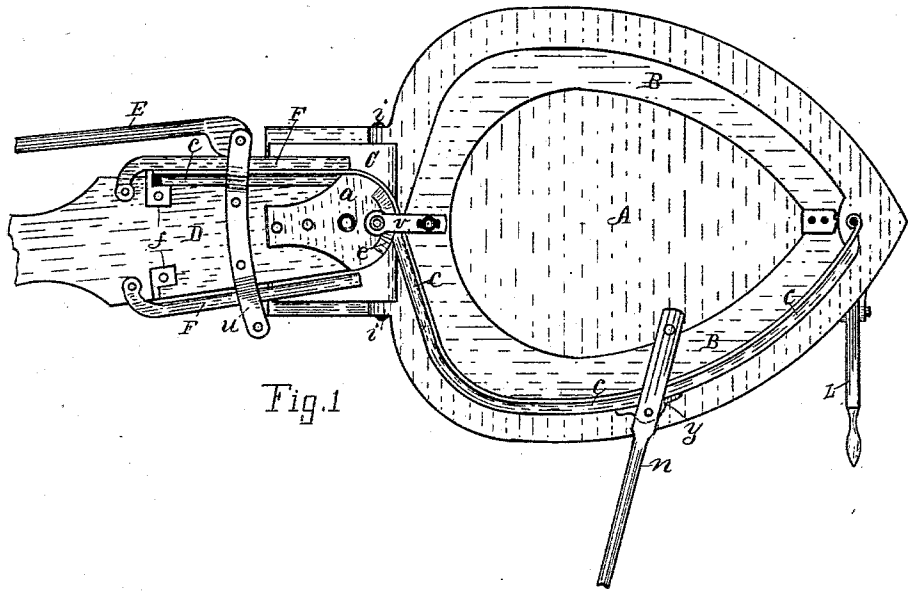

Fig. 1

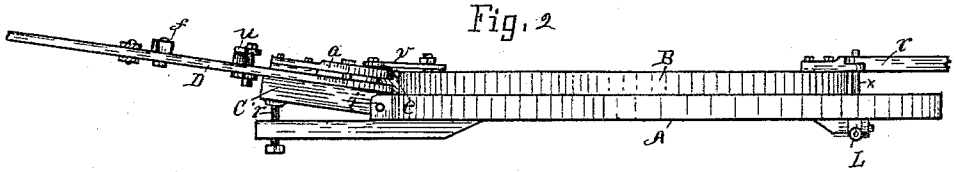

Fig. 2

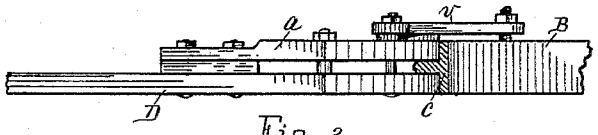

Fig. 3

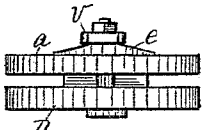

Fig. 4

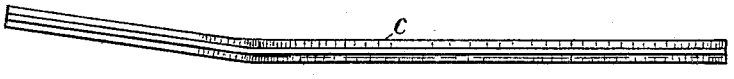

Fig. 5

Witnesses.
John C. Perkins
Thomas N. Stewart

Inventor.
Enos W. Stewart
By Lucius C. West
atty.

(No Model.) 2 Sheets—Sheet 2.

E. W. STEWART.

MACHINE FOR FORMING VEHICLE SEAT BARS.

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Fig. 6

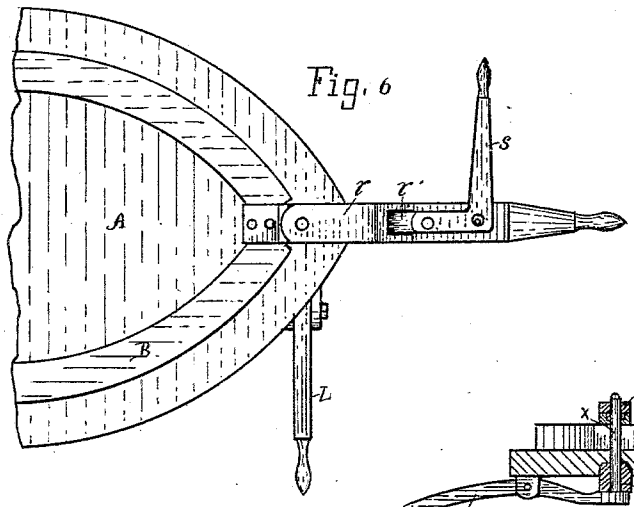
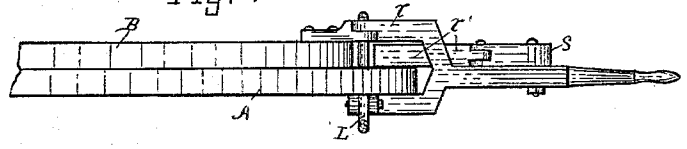


Fig. 8

Fig. 7



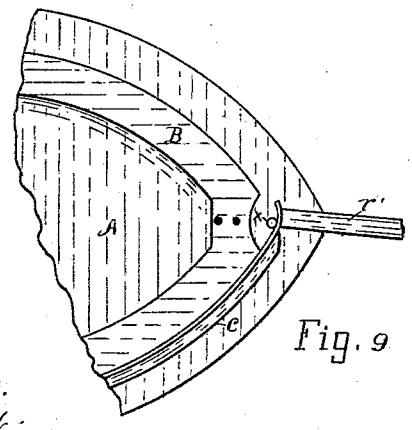


Fig. 9

Witnesses.
John C. Perkins
Thomas K. Stewart

Inventor.
Enos W. Stewart
By Lucius C. West
Atty.

UNITED STATES PATENT OFFICE.

ENOS W. STEWART, OF KALAMAZOO, MICHIGAN.

MACHINE FOR FORMING VEHICLE-SEAT BARS.

SPECIFICATION forming part of Letters Patent No. 373,698, dated November 22, 1887.

Application filed August 16, 1887. Serial No. 247,078. (No model.)

To all whom it may concern:

Be it known that I, ENOS W. STEWART, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Machine for Forming Vehicle-Seat Bars, of which the following is a specification.

This invention relates to machines used in forming the T-rail seat-bars of two-wheeled vehicles, in which use the lower flange of the T-rail is bent upon or toward itself.

The objects of the invention will appear in the following description and claims.

In the drawings forming a part of this specification, Figure 1 is a plan view; Fig. 2, a side elevation; Fig. 3, enlarged lettered details from Fig. 2; Fig. 4, an end view of parts, looking from a point at the right of Fig. 3; Fig. 5, a bottom view of seat-bar; Fig. 6, an enlarged plan of part of Fig. 1, showing other features; Fig. 7, a side elevation of Fig. 6; Fig. 8, a section of Fig. 6 near lever L; and Fig. 9 is a plan with parts removed, showing the operation.

Referring to the letters of reference on the drawings, A is the bed-plate, having raised portions B for bending the body part of the rail *c* around, as heretofore, except that the raised part here shown is on both sides for right and left hand bending; but so far as bending the end of the rail upon its under flange is concerned only one raised portion B is needed.

At D is a lever having a clamp, *a*, at its pivoted end, and F F are pivoted bars which in operation are clamped against the flat part of the rail *c*, which supports the seat when in use. The bar F is held firm against the rail by the eccentric-dog E, pivoted in the end of strap *v*.

The advantage of employing the bar F instead of allowing the dog E to contact directly with the rail *c* is that the latter is firmly held from bulging or springing off at points each side of the dog. In the operation that portion only of the lower flange of the rail which is bent toward itself enters the clamp *a*.

On top of the clamp *a* is an incline raised portion, *e*, which, when the lever D is swung to the position in Fig. 1, wedges beneath the iron strap *v*, and thus compresses the clamp, causing it to tightly pinch the flange of the rail *c*, which is being bent. The advantages of this over a grooved rigid lever is that in the latter the flange of the rails, in an effort to pucker laterally, wedges so tightly in the groove that it is difficult to remove the rail without the use of a hammer to drive it out, while with the clamp the flange of the rail cannot pucker, and when the lever is swung back, releasing the clamp, the rail is loose therein and easily removed.

At C is an inclined block beneath the lever D, by which means, when the lever is swung to the position in Fig. 1, causes said lever to tilt upward, thus bending the seat portion of the rail *c* laterally, as in Fig. 5, at the left hand, and this during the same operation that bends the rail toward its under flange. Of course the object is to bring the rear end of the rails *c* a proper distance apart to correspond to the width of the seat. To vary this width the block C may be hinged at *i* and adjusted higher or lower with a set-screw, *r*, or inclined blocks of varying pitch may be employed. When the block C is used, it is necessary to make right and left hand seat-bars, and for this reason the machine is made with both sides alike, so that the rails *c* may be put in either side and the lever D swung in either direction. In this case the incline *e* will be on both sides, as in Fig. 4; but in cases where the block C is not employed the machine may be made single—that is, constructed for the clamp-lever to swing only one way in bending the rail. The dog E may be changed from one side to the other, or there may be one on both sides.

At *f* are shoulders on the lever D for the rail *c* to abut against; but they may be employed or not, as desired.

At the right-hand end of the bed-plate is a construction for turning the hinge-eye in the forward end of the seat-bar *c*. The raised portion B is cut away or concaved at this point. The lever *r* is fulcrumed to the bed-plate A. S is a right-angled lever pivoted to the lever *r*. To the angled end of the lever *r* is pivoted a sliding block, *r'*, which block is concaved at the end, Fig. 9.

At *x* is a vertically-playing pin, Fig. 8, operated by lever L. This pin forms the pivot of the lever *r*. In the operation the block *r'* is forced against the end of the seat bar or rail *c* by means of lever S, and the operator, with one hand on lever *r* and the other on lever S, swings the levers around, which action bends the end of the rail around the pin *x* and forms the eye. By means of the lever L the pin is drawn down out of the eye, so as to release the seat bar or rail *c*. The lever *r* is lugged up into the bed-plate, as in Fig. 8, to prevent it from displacement when the pin *x* is lowered.

The pinch-bar *n*, used in bending the body of the seat-bar around the form B, is provided with a centrally-pivoted leaf, *y*, to engage the bar *c*, thus causing it to better conform to the contour of the form, Fig. 1.

It should be observed that the strap *v*, as shown in Fig. 1, has an elongated slot in the end to readily allow the lever D to tilt upward.

Having thus described my invention, what I claim is—

1. In a machine for bending seat bars or rails, a lever having a clamp in the pivoted end and means for compressing the clamp, and a bar pivoted to the lever, and a dog to bind said bar to the rail, substantially as set forth.

2. The combination of the bed-plate, the pivoted lever having the end clamp, a raised incline on said clamp, a strap under which the incline wedges, and means for binding the rail to the lever, substantially as set forth.

3. The combination of the bed-plate having a raised form on each side, a pivoted lever for bending the rail, and an inclined block to cause the lever to tilt upward, substantially as set forth.

4. The combination of a bed-plate having a raised form on each side, a lever having the pivoted clamp end, the double incline on said clamp, the strap under which the incline wedges, and means for binding the rail to either side of the lever, and an inclined block to cause the lever to tilt upward, substantially as set forth, whereby the rail is bent laterally at its seat end by the same swing of the lever that bends the rail toward its lower flange.

5. In combination with a form, the pinch-bar provided with the centrally-pivoted leaf, substantially as set forth.

6. The combination of a bed-plate, a lever pivoted thereto, a lever pivoted to the former lever and carrying a sliding block, and a pin, around which the metal is bent to form the end eye, substantially as set forth.

7. The combination of a lever provided with a lever carrying a sliding block, the bed-plate, a pin adapted to play through said bed-plate, and a lever for raising and lowering said pin, substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in presence of two witnesses.

ENOS W. STEWART.

Witnesses:
THOMAS W. STEWART,
SAMUEL FOLZ.