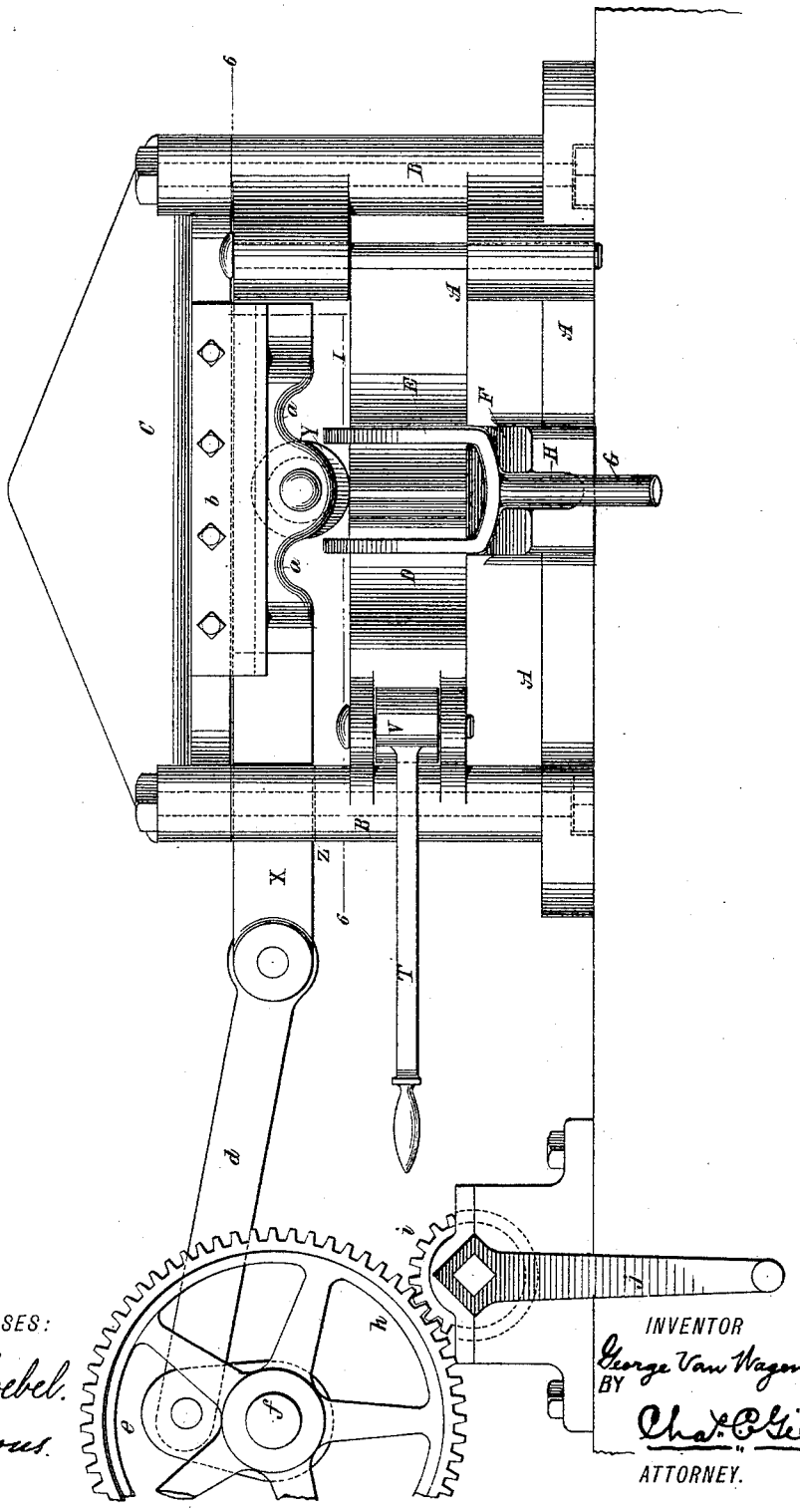
(No Model.) 4 Sheets—Sheet 1.

G. VAN WAGENEN.

MACHINE FOR THE MANUFACTURE OF WROUGHT METAI SWIVELS.

No. 453,751. Patented June 9, 1891.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

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MACHINE FOR THE MANUFACTURE OF WROUGHT METAL SWIVELS.

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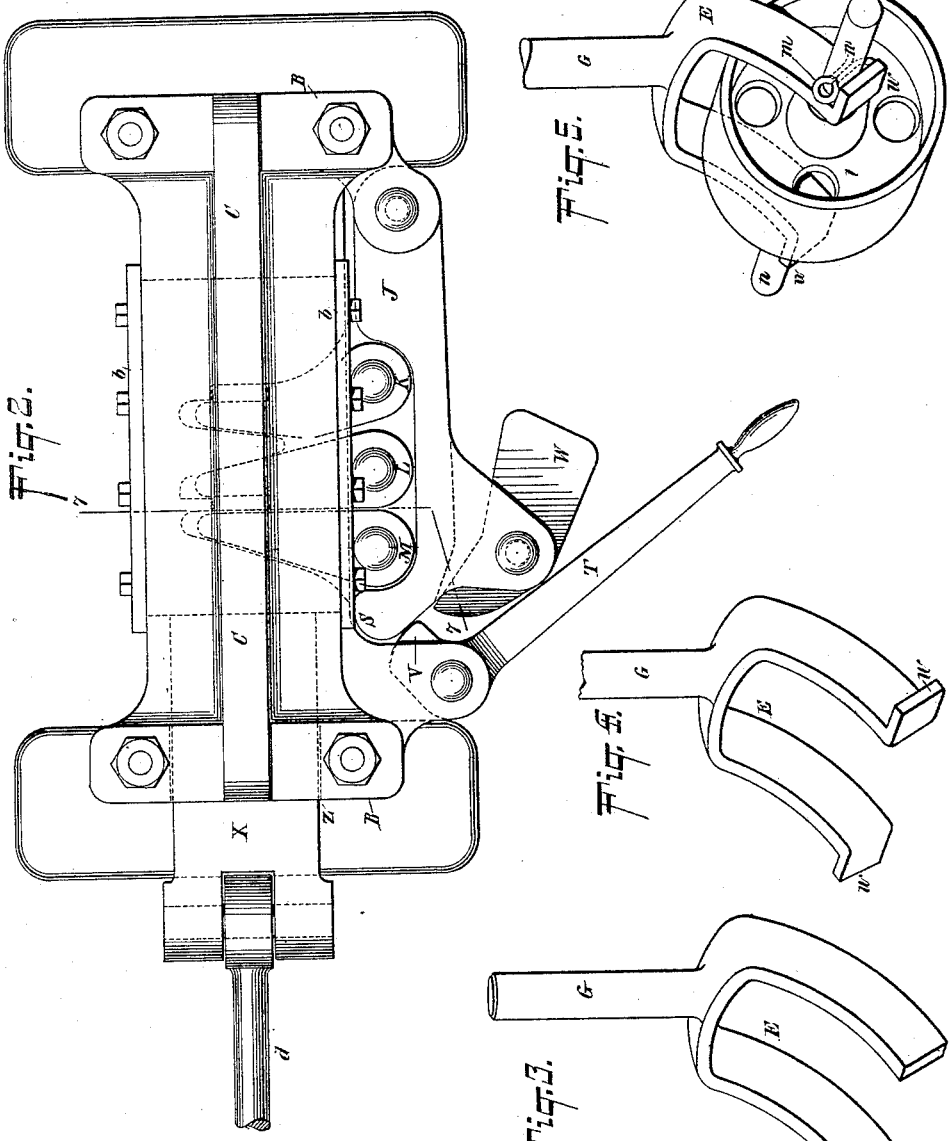

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G. VAN WAGENEN.

MACHINE FOR THE MANUFACTURE OF WROUGHT METAL SWIVELS.

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Fig. 8.

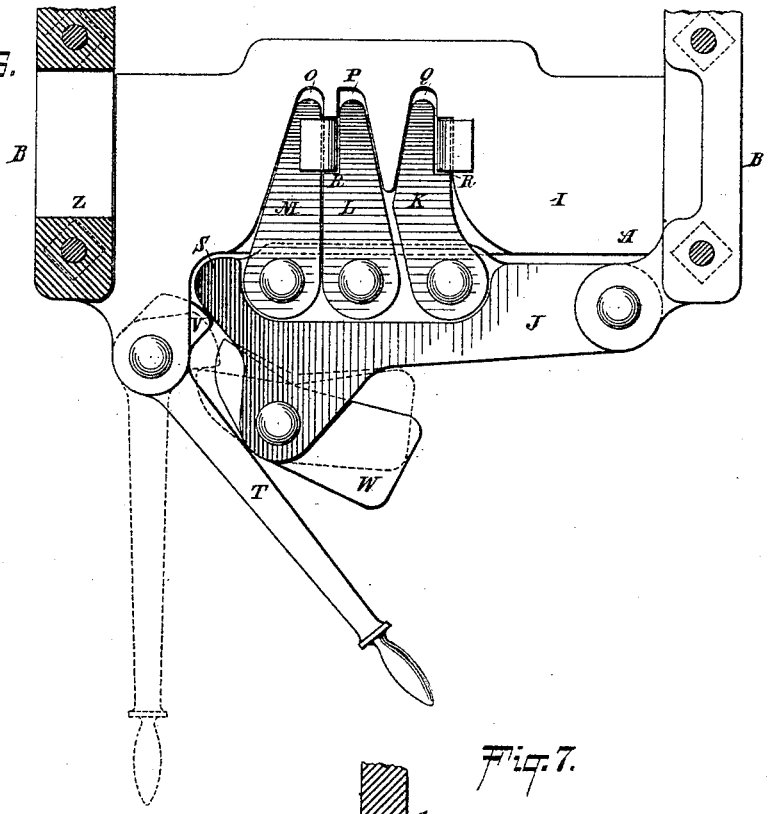
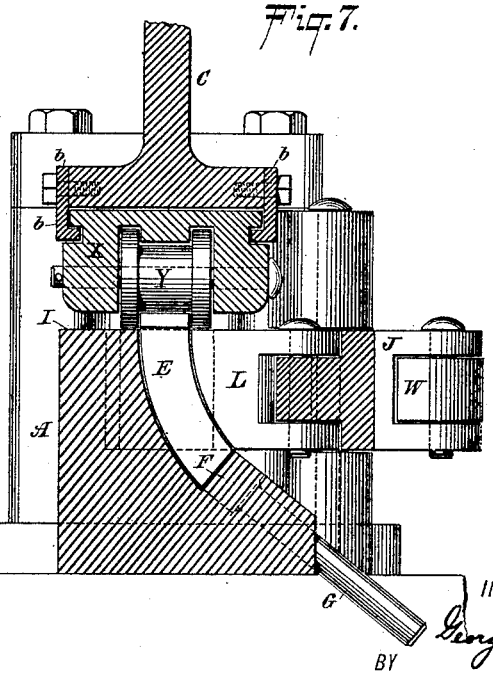


Fig. 7.



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(No Model.) 4 Sheets—Sheet 4.

G. VAN WAGENEN.

MACHINE FOR THE MANUFACTURE OF WROUGHT METAL SWIVELS.

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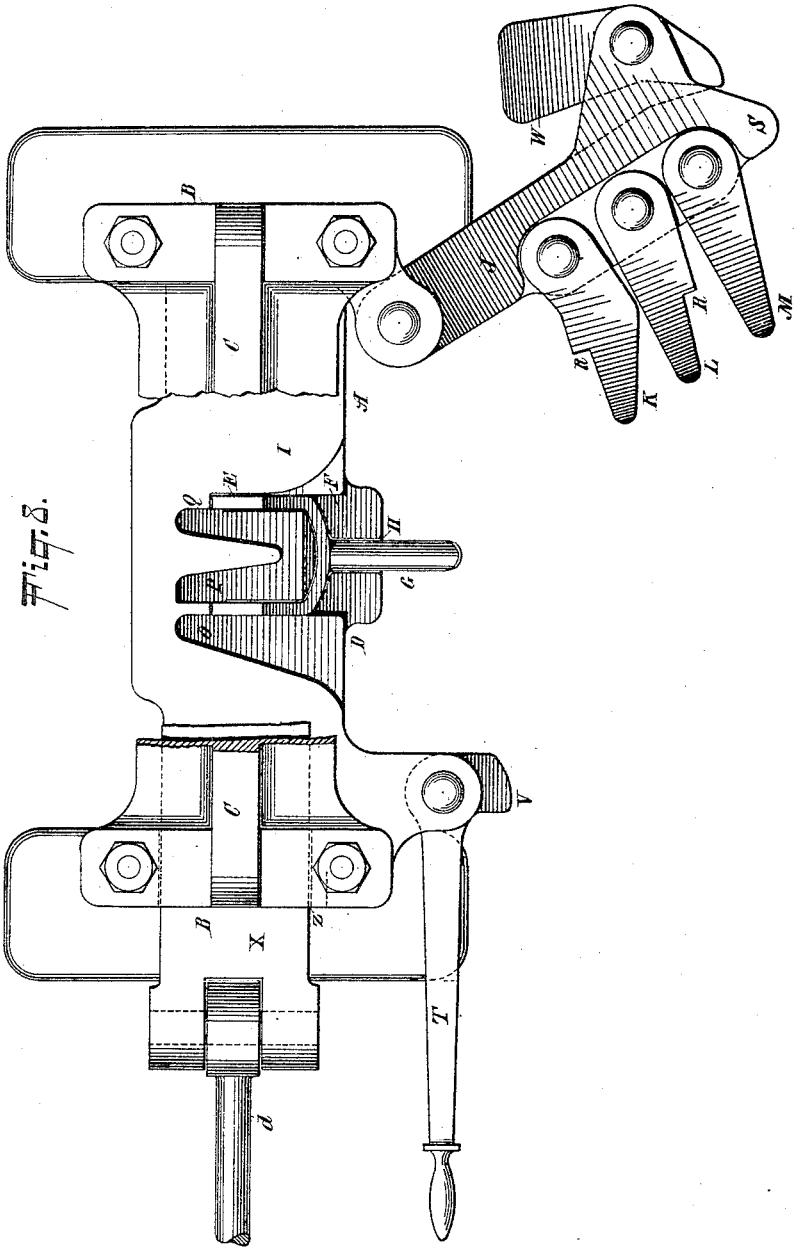

Fig. 8.

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UNITED STATES PATENT OFFICE.

GEORGE VAN WAGENEN, OF NEW YORK, N. Y.

MACHINE FOR THE MANUFACTURE OF WROUGHT-METAL SWIVELS.

SPECIFICATION forming part of Letters Patent No. 453,751, dated June 9, 1891.

Application filed February 25, 1891. Serial No. 382,756. (No model.)

To all whom it may concern:

Be it known that I, GEORGE VAN WAGENEN, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for the Manufacture of Wrought-Metal Swivels, of which the following is a specification.

The invention relates to improvements in machines for use in the manufacture of wrought-metal swivels and other articles; and it consists in the novel elements and combination of parts described hereinafter, and particularly pointed out in the claims.

The machine which is the subject of this application is to accompany the machine described and claimed in Letters Patent of the United States, No. 443,807, issued to George Van Wagenen, December 30, 1890, for improvements in machines for manufacturing wrought-metal swivels. The machine of the Patent No. 443,807 transforms a blank of wrought metal into a swivel-frame having curved sides ready to receive a swivel-wheel and to be applied to a sugar-wagon—such, for instance, as that shown and described in Letters Patent No. 441,264, granted to George Van Wagenen, November 25, 1890. In the arrangement of the swivel frame and wheel, the latter is loosely mounted on an axle or shaft which passes through the lower ends of the sides of the swivel-frame and is there held by split pins passing through the ends of said axle or shaft. The split pins and shaft have been prevented from rotating with the wheel by lips or flanges turned outward in opposite directions from the lower extremities of the swivel-frame in position to afford a bearing or contact for the ends of said split pins, which, being thus held, prevent the rotation of the axle during movement of the wheel.

The present invention relates solely to those lips or flanges at the lower end of the swivel-frame for preventing the rotation of the split pins and axle, and consists in a novel machine which will receive the swivel-frame from the machine shown in the said patent, No. 443,807, and bend the extremities of its sides outward in opposite directions to form the aforesaid lips or flanges. The manufacture of the swivel-frame is thus completed by machinery with the minimum amount of labor and expense.

Referring to the accompanying drawings, Figure 1 is a front elevation of a machine constructed in accordance with the invention, the element for locking the swivel-blank in position being omitted for clearness of illustration. Fig. 2 is a top view of same, the said element for locking the swivel-blank in position being in this figure represented in its closed position. Fig. 3 is a perspective view of the swivel-frame prior to its introduction to the machine which is made the subject of this application. Fig. 4 is a like view of same, illustrating the swivel-frame after its ends have been rolled outward by the said machine. Fig. 5 is a perspective view of the completed swivel ready for application to the sugar-wagon or other article and illustrating the relation of the outwardly-folded ends of the swivel-frame to the split pins which retain the axle for the swivel-wheel in position. Fig. 6 is a horizontal transverse section on the dotted line 6 6 of Fig. 1; Fig. 7, a central vertical section on the dotted line 7 7 of Fig. 2; and Fig. 8 is a plan view of the base of the machine, illustrating the position of the swivel-frame when introduced therein and showing the means for locking said frame while its ends are being rolled outwardly as thrown away from the machine, the upper portion of the machine being shown broken away in this figure. Fig. 8 illustrates the position of the means for locking the swivel-frame in position prior to the swinging of the same into position around said frame, while Fig. 6 represents the means for locking the swivel-frame in position when closed inward around said frame and forming with the adjacent surfaces of the base of the machine a table upon which the ends of the swivel-frame may be rolled outward from each other.

In the drawings, A designates the base of the machine, B B the ends thereof, and C a cap connecting said ends B.

The base A of the machine is provided in its front portion with the receiving-cavity D for the reception of the swivel-frame E, said frame resting upon the shoulder F and having its swivel-rod G extending downward along the

groove H, formed in said base A. As may be seen in Figs. 1, 7, and 8, the two arms of the swivel-frame E are securely inclosed on opposite sides while resting upon the shoulder, and the upper ends of said arms extend a definite distance above the table I, formed by the upper surfaces of the base A. The swivel-frame is thus securely held in position, and is there locked by the pivoted bar or frame J, carrying the pivoted arms K L M, which arms, when the bar or frame J is closed against the base A, enter the pockets O P Q, which surround the upper portions of the swivel-frame E, the arms K L having shoulders R, which at such time have a bearing against the edges of the sides of said swivel-frame, as illustrated in Figs. 6 and 8. When the bar or frame J is closed inward against the base A and the arms K L M are within the pockets O P Q, as shown in Fig. 6, the upper surface of said arms and the adjoining upper surface of the base A constitute a smooth table I, upon which the upwardly-projecting ends of the swivel-frame E may be properly rolled outward from each other. The outer end of the bar or frame J is provided with the extension S, and upon the left-hand portion of the base A is pivoted the lever T, having the extension V, which, upon the bar or frame J being closed against the base A, may be brought to bear against the extension S, as illustrated in Fig. 6, and thereby lock said bar or frame J in its closed position. The bar or frame J is also provided with the pivoted block W adjacent to its outer end, which is utilized, in connection with the lever T, for aiding the release of the frame J from the base A after the ends of the swivel-frame have been rolled outward from each other. Upon the frame J being closed against the base A and the lever T caused to lock the same in position the outer end of the block W will close against the adjacent surfaces of the frame J, as illustrated in Fig. 6, and in that position be substantially clear of the extension V on said lever T; but when it may be desired to free the bar or frame J from the base A and swivel-frame E the block W will have its inner end pressed inward and its outer end thereby thrown outward to the position represented by dotted lines in Fig. 6, whereupon the lever T, when turned outward from the machine, as illustrated by dotted lines in Fig. 6, will bring its extension V against the end of said block W, and thereby is afforded a means for forcing the frame J from the base A and swivel-frame E. It may not at all times be necessary to make use of the lever T for forcing the frame J from the base A; but it is evident that there will be times when the arms K L M will stick to the swivel-frame E and have to be forced therefrom, and at such times the lever T and block W will be found of great advantage. When the swivel-frame E is placed within the receiving-cavity D, it is in a heated condition, and this fact renders the sticking of the arms K L M to the said frame possible under the action of the roller hereinafter referred to. Upon the closing of the bar or frame J against the base A the arms K L M fit snugly within their receiving-pockets O P Q; but should for any reason the said arms not pass entirely home easily, the frame J may be driven close against the base A by a blow of a swage directed against the outer enlarged end of the block W. Usually a swage will not have to be employed for driving the frame J into its closed position around the swivel-frame E; but in view of the fact that the metal of the frame E is in a heated condition when within its receiving-cavity D there may be times when the frame will not snugly close against the base A; but at such times the blow of a swage against the block W will always have the effect of closing the bar or frame J firmly against the base A and around the swivel-frame E.

Over the table I and base A is placed the reciprocating bar X, which carries the roller Y, and is guided in the opening Z, formed in the end of the machine, as illustrated in Figs. 1 and 8. The reciprocating bar X is provided in its under surface with the recesses *a a*, which cause the said bar X to free the upper extending ends of the swivel-frame E and afford a means whereby the roller Y may freely act upon the exposed ends of said swivel-frame.

Upon opposite sides of the cap C of the machine are secured the guide-plates *b*, as illustrated in Figs. 1 and 7, which aid in directing a due longitudinal movement in the bar X. The outer end of the bar X is connected by a rod *d* with the crank-arm *e*, and this in turn is mounted upon the shaft *f*, provided with the spur gear-wheel *h*, which receives its movement from the pinion *i* and crank *j*, the the effect of which is that upon the crank *j* being rotated the bar X will have imparted to it a reciprocating movement, carrying the roller Y along the upper surface of the table I.

I do not of course limit the invention to the mechanism presented for reciprocating the bar X, since there are various well-known mechanical movements for accomplishing such purpose.

The normal position of the bar X is that illustrated in Fig. 1, the roller Y being between the upwardly-projecting ends of the swivel-frame E. Upon the reciprocation of the bar X it will first move toward one end of the table I, and in so doing roll the exposed end of the swivel-frame E downward, as indicated in Fig. 6, and then upon the movement of the bar X toward the opposite end of table I the other exposed end of the swivel-frame E will be rolled downward in a direction opposite to that of the first-mentioned end of said swivel-frame. The bar X carries the roller Y first toward one end of the table I and then back beyond its central position, and finally returning to the central position illustrated in Fig. 1. The lower surface of the cap C is close against the upper surface

of the reciprocating bar X, and hence the roller Y is kept in firm contact with the upper surface of the table I. The roller Y is provided with an annular groove, as shown in Fig. 7, which is of a depth and width equal to the depth and width of the folded ends of the swivel-frame E, and hence the ends of said swivel-frame, when brought under the action of the roller Y, are not flattened or disfigured, but are simply rolled over in opposite directions at right angles to the main portion of the frame E, in which position they serve to prevent the rotation of the split pins *m*, passing through the ends of the axle *n*, when the wheel *t* is mounted upon said axle between the sides of the swivel-frame, as illustrated in Fig. 5. The entire purpose of the outwardly-turned ends of the swivel-frame is to prevent the rotation of the split pins *m* and axle *n* with the wheel *t* when the sugar-wagon or other article to which the swivel may be applied is in use. The wheel *t* is mounted loosely upon the axle *n*, and hence may freely rotate when in use independently of the said axle.

As above indicated, after the swivel-frame E has been subjected to the action of the machine described and claimed in Letters Patent of the United States, No. 443,807, issued to me December 30, 1890, for an improved machine for manufacturing wrought-metal swivels, the said swivel-frame is again heated and dropped into the receiving-cavity provided in the base A, whereupon the bar or frame J is closed and locked against it and motion imparted to the reciprocating bar X, whereby the roller Y is caused to turn the exposed ends of said swivel-frame outward in opposite directions. The bar or frame J is then opened from the base A, the swivel-frame E withdrawn, and a further swivel-frame introduced to the cavity D for treatment. It will thus be observed that the formation of the ends *w* on the swivel-frame E may be quickly accomplished and without any hand labor. Upon the swivel-frame leaving the machine it is ready to receive the wheel *t* and be applied to the sugar-wagon or other article.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The base having the cavity to receive the swivel-frame, and means for locking said frame in position, combined with the reciprocating bar carrying the roller for rolling the extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

2. The base having the cavity to receive the swivel-frame, with the extremities of said frame projecting beyond the surface of said base, which constitutes a table, combined with the reciprocating bar carrying the grooved roller over said table for rolling the said exposed extremities of said frame outward in opposite directions, substantially as and for the purposes set forth.

3. The base having the cavity to receive the swivel-frame and the bar for closing in against said frame to secure it, combined with the reciprocating bar carrying the roller for bending the exposed extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

4. The base having the cavity to receive the swivel-frame, the extremities of the latter being exposed beyond the surface of said base, and the bar carrying arms which close in about and hold said frame, combined with the reciprocating bar carrying the roller for bending the exposed extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

5. The base having the cavity to receive the swivel-frame, the extremities of the latter being exposed beyond the surface of said base, the pivoted bar for closing in against said frame to secure it, and the lever having an extension for locking said pivoted bar in its closed position, combined with the reciprocating bar carrying the roller for bending the exposed extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

6. The base having the cavity to receive the swivel-frame, the extremities of the latter being exposed beyond the surface of said base, the pivoted bar for closing in against said frame to secure it, the block pivoted on the outer side of said bar, and the lever having an extension for co-operation with said pivoted bar and block, combined with the reciprocating bar carrying the roller for bending the exposed extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

7. The support for the swivel-frame, the extremities of the latter being exposed beyond the surface of said support, combined with the recessed reciprocating bar carrying the roller for bending the exposed extremities of said frame outward in opposite directions to form lips or flanges, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of February, A. D. 1891.

GEORGE VAN WAGENEN.

Witnesses:

CHAS. C. GILL,

ED. D. MILLER.