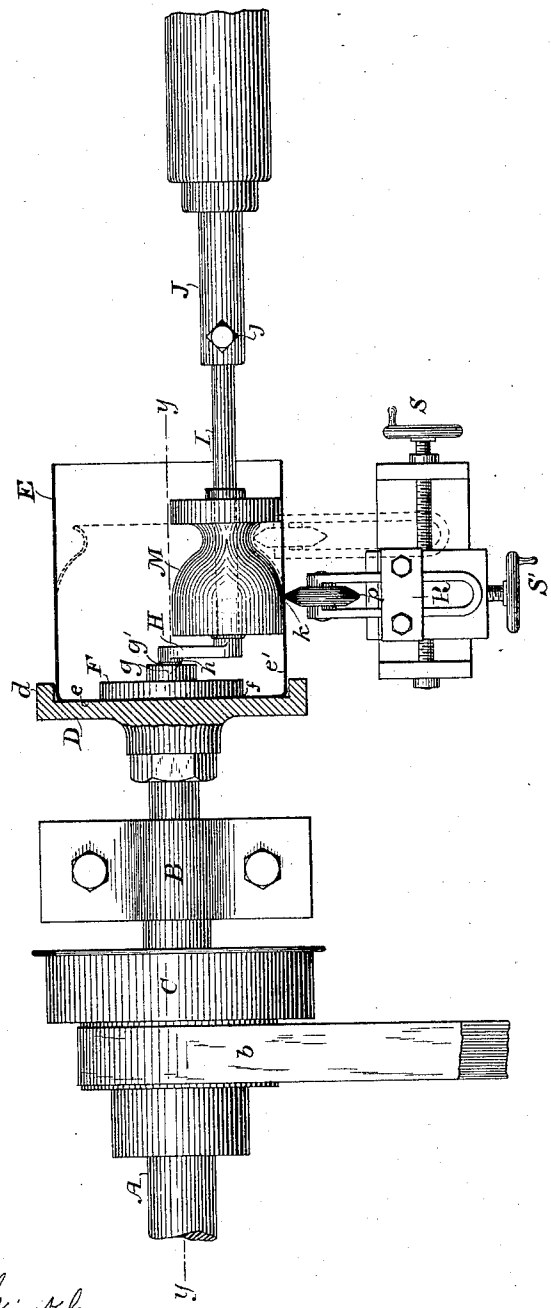
(No Model.)

J. CHAUMONT.

MACHINERY FOR SHEET METAL SPINNING.

No. 286,115. Patented Oct. 2, 1883.



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UNITED STATES PATENT OFFICE

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MACHINERY FOR SHEET-METAL SPINNING.

SPECIFICATION forming part of Letters Patent No. 286,115, dated October 2, 1883.

Application filed February 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JULES CHAUMONT, a citizen of the United States, residing at Woodhaven, in the county of Queens and State of New York, have invented certain new and useful Improvements in Machinery for Sheet-Metal Spinning, of which the following is a specification.

In an application for Letters Patent filed by me April 4, 1882, I have shown and described a sheet-metal vessel formed without seam by spinning, having a greater diameter at its base than at its mouth; and my present invention relates to machinery or apparatus for producing vessels having the forms above referred to, as well as sheet-metal vessels of the ordinary character and forms.

My invention consists in certain improvements in machinery for spinning sheet-metal vessels, whereby vessels of various forms and sizes may be produced upon one machine, said improved machinery being particularly applicable to the production of vessels of the character forming the subject-matter of my said former application.

My improvements are hereinafter particularly described, and pointed out in my claims.

The accompanying drawing illustrates my invention, giving a view in elevation (partly in section) of a blank of sheet metal as mounted upon a lathe before the operation of spinning the same has been commenced, the dotted lines showing the shape it assumes after the operation of spinning.

Referring to the drawing, A is a spindle mounted in suitable bearings, B, which latter may be mounted upon the frame-work of the lathe. A stepped or cone pulley, C, for changing the speed of the spindle, is keyed or otherwise rigidly mounted upon the spindle A. This spindle and pulley are designed to be rotated in the usual manner by means of a belt, *p*, communicating motion from a shaft situated in proximity to the lathe.

A head-stock, D, constructed in the form of a socket, having a rim or flange, *d*, is rigidly secured to one extremity of the spindle A and revolves therewith. The cylindrical blank or piece of sheet metal E may be previously formed by stamping or by the ordinary methods of spinning. This blank is placed, with its flat portion *e* against the corresponding plane surface of the head-stock D, within the rim *d*, and is held firmly in place, as hereinafter described. A metallic plate or piece, F, is next placed with its plane surface *f* against the interior surface of the flat portion *e* of the blank E, and is held in position by the pressure of the other parts of the mechanism, as hereinafter explained. A bearing, *g*, is formed within the plate F, and is designed to receive the extremity *g'*, formed upon the projection *h* of the arm H. The arm H is preferably rigidly, although it may be adjustably attached at right angles to the rod I, which latter is in turn rigidly secured to the extremity of the bar J by means of the set-screw *j*, or by other convenient means. The bar J is secured to the lathe in any desirable manner, it being only essential that it be rigidly held in place while the lathe is in operation, and made to exert sufficient longitudinal pressure upon the rod I to hold the metallic blank securely against the head-stock while the latter revolves. The bar should be capable of being readily detached when the process of forming the vessel is completed. A roller or mold-chuck, M, is so mounted as to be capable of freely revolving upon the rod I. The circumference of this mold-chuck is configured in the form which it is desired shall characterize the corresponding portion of the vessel when completed. The attachment of the rod I to the arm H may preferably be made, if desired, so that the former may be secured at a greater or less distance from the axis of rotation of the blank E.

When, now, it is desired to construct a vessel with the upper portion of its body corresponding to the configuration of the mold-chuck M, the parts of the lathe and appurtenances just described are assembled and arranged as shown in the figure. This having been done, the lathe is set in motion by the application of power to the spindle A, as described, and the head-stock or chuck D, plate F, (which by pressure firmly holds the blank E against the head-stock D,) and blank E are ro-

tated upon the axis represented by the dotted lines *y y*, the indentation *g* in the plate F revolving around the extremity *g'*. This motion causes the side *e'* of the blank E to continuously revolve in near proximity to the mold-chuck M. A roller, *p*, is mounted in bearings upon the forked frame *p'*, which is held firmly to the lathe-rest by the clamp R. The lathe-rest has the usual longitudinal and transverse motions by means of the hand-wheels S and S'. The operator holds both wheels in his hands, and, commencing at the point *k*, the roller *p* is firmly pressed against the revolving sides *e* of the blank E. By a gradual lateral movement of the roller *p* the revolving sides of the blank E are contracted and forced against the periphery of the mold-chuck M. The outline of the contracted portion of the sides of the blank E is thus made to correspond with the configuration forming the outline or profile of said mold-chuck, and to assume the shape shown in the dotted lines. It is preferable to form a bead upon the edge surrounding the mouth of the vessel, which may be done, in the usual and well-known manner, either before removing the vessel from the lathe or afterward, as found most desirable. The spinning of the vessel having now been completed, by releasing the bar J the rod I, with its arm H and projection *h*, the mold-chuck M, and the plate F may be withdrawn from the interior of the vessel, when the latter may be removed from the head-stock D, leaving the lathe in readiness for a repetition of the operation upon the reassemblage of the parts and the substitution of a new sheet-metal blank.

In utilizing my improved machinery for spinning vessels of different forms and diameters I employ head-stocks of different diameters, a different size of head-stock and mold-chuck being used for each different size of the bottom of vessel made.

My improvements are applicable to many different forms of vessels, the substitution of one form of mold-chuck for another being easily effected upon the separation of the bar J from rod I, and if such substitution necessitates the change of the diameter of the head-stock, the substitution of a head-stock of a different diameter may be easily effected.

I am aware that it is not new to spin sheet-metal vessels by revolving the blanks from which they are formed around an eccentrically-supported mold-chuck; but the combination of a rotary mold-chuck so supported with my improved form of head-stock I believe to be new, as well as the other specific combination of parts, as hereinafter claimed.

I do not claim herein means for adjusting the eccentricity of the axis of the mold-chuck with reference to the axis of the head-stock; but I reserve the right to hereafter claim it in another application for Letters Patent, if I so desire.

I claim as my invention—

1. In a machine for spinning sheet-metal vessels, the combination, substantially as hereinbefore set forth, with a head-stock or chuck mounted directly upon the spindle of the machine, and having a flat surface for supporting the base of the vessel, and a rim or guard laterally projecting from its periphery, of means for holding the vessel within or against said head-stock, and a rotating mold-chuck mounted eccentrically with respect to the axis of the head-stock.

2. In a machine for spinning sheet-metal vessels, the combination, substantially as hereinbefore set forth, with a head-stock or chuck mounted directly upon the spindle of the machine, and having a flat surface for supporting the base of the vessel, and a rim or guard laterally projecting from its periphery, of means for holding the vessel within or against said head-stock, a rotating mold-chuck mounted eccentrically with respect to the axis of the head-stock, and a roller mounted in proximity to said mold-chuck and blank, whereby the contour of the blank is forced to conform to that of said mold-chuck.

3. In a lathe or machine for spinning sheet-metal vessels, the combination, substantially as hereinbefore set forth, with the head-stock or chuck mounted directly upon the spindle of the machine, and having a flat surface for supporting the base of the vessel, and a rim or guard laterally projecting from its periphery, of the rotating mold-chuck, mounted eccentrically with respect to the axis of the head-stock, the rod or axis upon which said mold-chuck rotates, the arm angularly attached to said rod or axis, the projection of said arm, the plate F, and a bearing upon which said plate rotates, formed upon the extremity of said projection, said bearing being concentric with the axis of said head-stock.

4. In a lathe or machine for spinning sheet-metal vessels, the combination, substantially as hereinbefore set forth, with a head-stock or chuck mounted directly upon the spindle of the lathe and revolving therewith, and having a flat surface for supporting the base of the vessel, and a rim or guard laterally projecting from its periphery, of the mold-chuck mounted eccentrically with respect to the axis of the head-stock, the rod upon which said mold-chuck rotates, the rigid bar J, united to said rod, the plate F, the arm rigidly secured to the other extremity of said rod, and the bearing upon which said plate revolves.

In testimony whereof I have hereunto subscribed my name this 8th day of February, A. D. 1883.

JULES CHAUMONT.

Witnesses:
JAMES COCHRAN,
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