(No Model.) 2 Sheets—Sheet 1.

F. HABERMAN.

MACHINERY FOR SHEET METAL SPINNING.

No. 517,382. Patented Mar. 27, 1894.

Fig. 1.

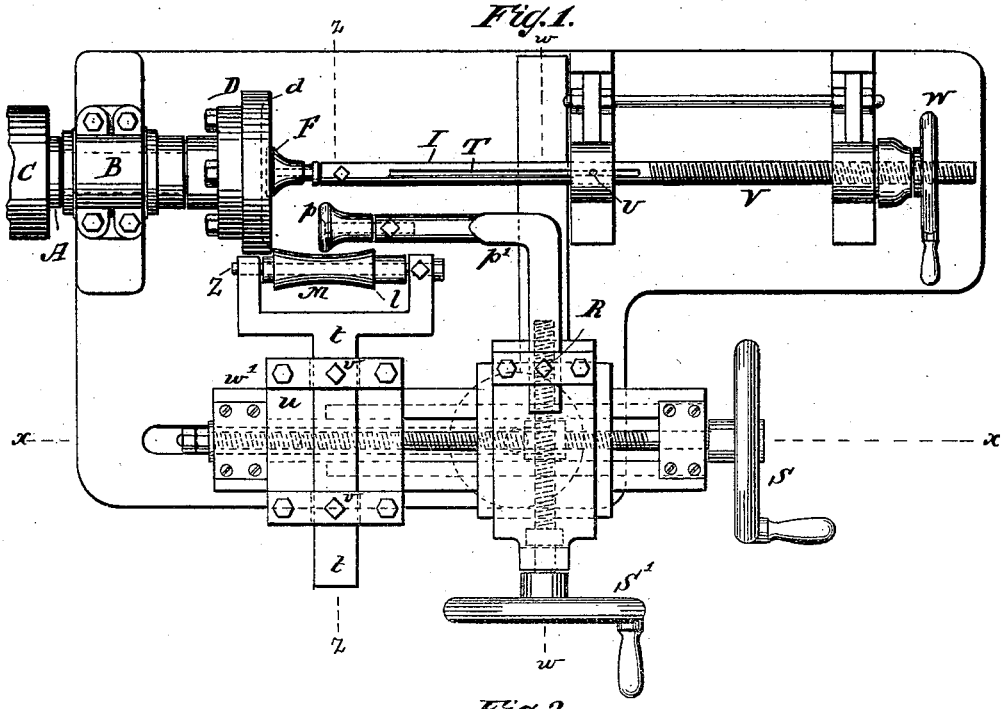


Fig. 2.

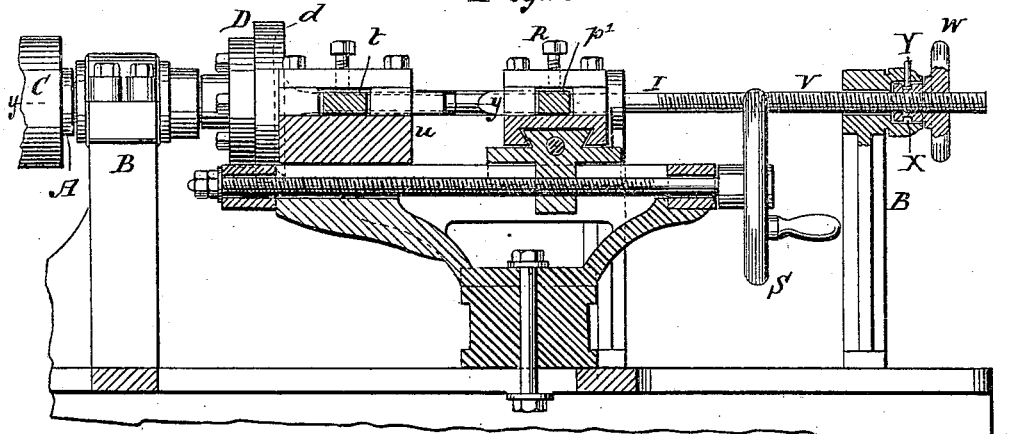


Fig. 3.

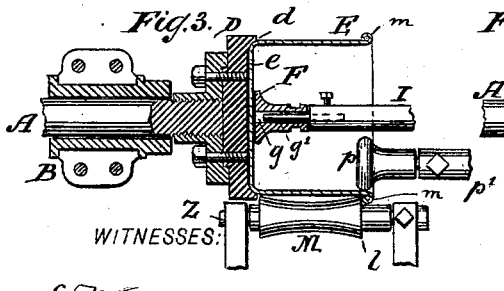
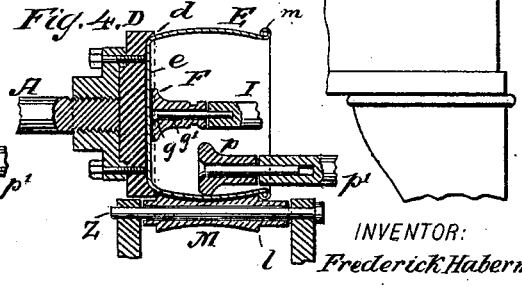


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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MACHINERY FOR SHEET METAL SPINNING.

No. 517,382. Patented Mar. 27, 1894.

Fig. 5.

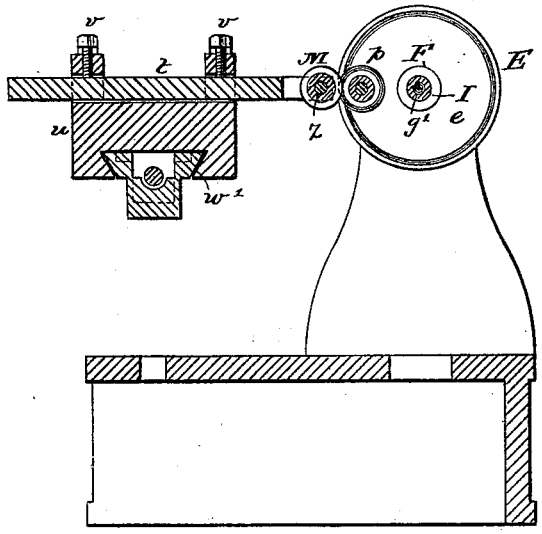
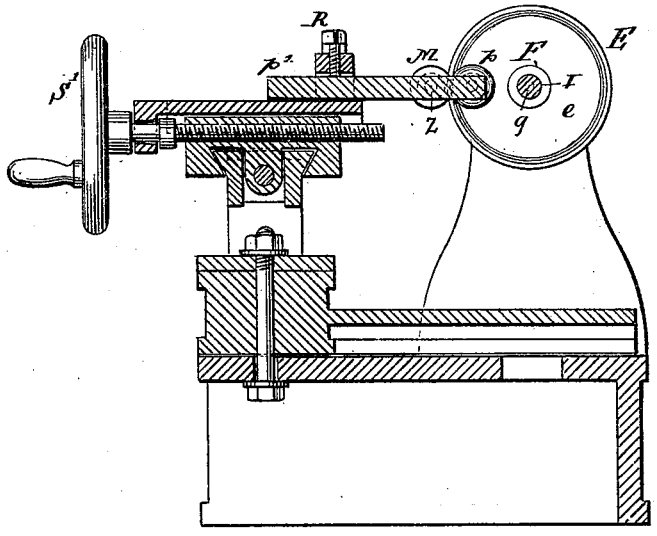


Fig. 6.



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MACHINERY FOR SHEET-METAL SPINNING.

SPECIFICATION forming part of Letters Patent No. 517,382, dated March 27, 1894.

Application filed December 21, 1893. Serial No. 494,326. (No model.)

To all whom it may concern:

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

This invention relates to improvements in machinery for sheet metal spinning and the invention consists in certain novel features pointed out in the following specification and claims, and illustrated in the annexed drawings in which—

Figure 1 is a plan view of the spinning machine. Fig. 2 is a section along *x x* Fig. 1. Fig. 3 is a section along *y y* Fig. 2. Fig. 4 is a section similar to Fig. 3 with parts in a different position. Fig. 5 is a section along *z z* Fig. 1. Fig. 6 is a section along *w w* Fig. 1.

In the drawings the letter A indicates a spindle suitably mounted in a frame or support B which may also support other parts of the apparatus. A driver or pulley C is secured to the spindle. A head stock or chuck D which may be provided with a rim or flange *d* is secured to the spindle A to revolve therewith. The cylindrical blank or piece of sheet metal for forming the vessel or article E may be previously formed by stamping or other well known method. This blank is placed with its flat portion *e* against the corresponding plane surface of the head stock D and is held firmly in place by the metallic clamping head F. This clamping head F is placed against the interior surface of the flat portion *e* of the blank and firmly held in position as presently described. It has a bearing or socket *g* for the lug or extremity *g'* extending from rod I. The rod I has a groove T engaged by a lug or spline V on the frame or fixed part of the machine so that the rod I can move longitudinally but cannot turn. The rod I has a screw thread V engaged by a hand wheel W which is free to turn but cannot move longitudinally by reason of the groove X engaged by pin Y. By turning the wheel W in one direction or another the clamping head F is moved to clamp or release the article E.

A molding or shaping chuck M is so mounted as to be capable of freely revolving on the bearing or shaft Z. The surface of this mold chuck is made to correspond to the form desired for the corresponding portion of the article E when completed. The shaft Z is carried by the movable arm or fork *t* which can be slid or adjusted on block *u* and fixed in the adjusted position by fastening or screws *v*. The arm or support *t* enables the mold chuck M to be adjusted toward and from the clamping head F and rod I. The block *u* is also longitudinally adjustable by hand along the dove tail or support *w'* fixed to the machine or to its frame B, whereby the mold-chuck can be adjusted in a plane parallel with the axis of the rod I.

When it is desired to construct or form a vessel or article the loosely mounted or freely rotatable roller *p* is caused to start from any convenient point as for example that shown in Fig. 3 and gradually made to travel toward the face or bottom *e* continually pressing the side of article E toward roller chuck M to give the article the configuration as shown in Fig. 4. A roller *p* is preferably employed as the internal former; it is mounted on the arm or support *p'* held to the lathe rest by a fastening or screw R. The lathe rest has the usual longitudinal and transverse motions by means of the hand wheels S S' so that the operator holding both wheels in his hands can make the roller *p* follow the configuration of roller chuck M and thus properly shape the article E. When the article E is completed it is only necessary to remove the roller chuck M and roller *p* sufficiently far apart and to loosen the clamping head F when the article E can be removed and a fresh blank inserted without its being necessary to dismount any part of the machine thus saving time and labor.

It will be noticed especially in Fig. 4 that the interior of the rim *d* is rounded or curved so as to form an unbroken surface or continuation with the roller chuck M so that the roller chuck in connection with the rim *d* will give a neat and continuous curve or finish to the side and bottom edge or corner of the article.

The roller chuck M has an edge *l* which is engaged by a bead *m* on the blank (Fig. 3) and serves to keep the blank true or firm in position while being acted on by roller *p*.

By forming the bead *m* on the exterior of

the article said bead will be in finished condition for the article when completed so that no more bending or working at the bead will be required thus avoiding any liability of the metal being cracked or broken.

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

1. The combination with a rotary mold chuck mounted outside of the article to be operated on and provided with a shoulder adapted to form a rest for such article, of a roller mounted in proximity to said mold chuck and within the article to be operated on, so as to spin or form the article from the inside outward toward the mold chuck substantially as described.

2. The combination with a holder for the article to be shaped, and a rotary mold-chuck mounted outside of the article to be operated on and adjustable to and from the holder, of a freely rotatable roller mounted to operate inside the article and longitudinally movable as it rotates in a plane parallel with the axis of the rotary mold-chuck, and means for adjusting the mold-chuck toward and from the holder and causing the roller to move parallel with the axis of the chuck, substantially as described.

3. The combination with a holder for the article to be shaped, of a mold-chuck mounted outside the article to be operated on and adjustable toward and from the holder, and also in a plane parallel with the axis thereof, a freely rotatable roller mounted to operate within the article and adjustable toward and from the said holder and also longitudinally in a plane parallel with the axis thereof, and means for adjusting the mold-chuck and the holder, substantially as described.

4. The combination with a rotating spindle having a head stock and a clamping head for securing the article to be operated on to the head stock, of a rotary mold-chuck mounted outside of the article to be operated on, and a freely rotatable roller mounted in proximity to the mold-chuck to operate inside the article and longitudinally movable as it rotates in a plane parallel with the axes of the rotating spindle and clamping head, substantially as described.

5. The combination with a head stock or chuck mounted upon a spindle and having a flat surface for supporting the base of the vessel and a rim or guard laterally projecting from its periphery of means substantially as described for holding the vessel within or against said head stock, a rotating mold chuck mounted exteriorly to the vessel, and a roller mounted in proximity to said mold chuck and within the vessel or blank, whereby the contour of the blank is forced to conform to that of said mold chuck substantially as described.

6. The combination with head stock or chuck mounted upon a spindle and having a flat surface for supporting the base of the vessel and a rim or guard laterally projecting from its periphery, of means substantially as described for holding the vessel within or against said head stock, and a rotating mold chuck mounted exteriorly to the vessel said rim or guard being curved or formed to make an unbroken or continuous outline or surface with the mold chuck substantially as described.

7. The combination with a chuck mounted on a rotary spindle and a retaining piece or toe of a rotary mold chuck mounted outside of the article to be operated on and a roller mounted in proximity to said mold chuck said mold chuck having a rim or edge *l* for engaging a bead on the article for guiding and steadying the latter substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FREDERICK HABERMAN.

Witnesses:
WM. C. HAUFF,
E. F. KASTENHUBER.