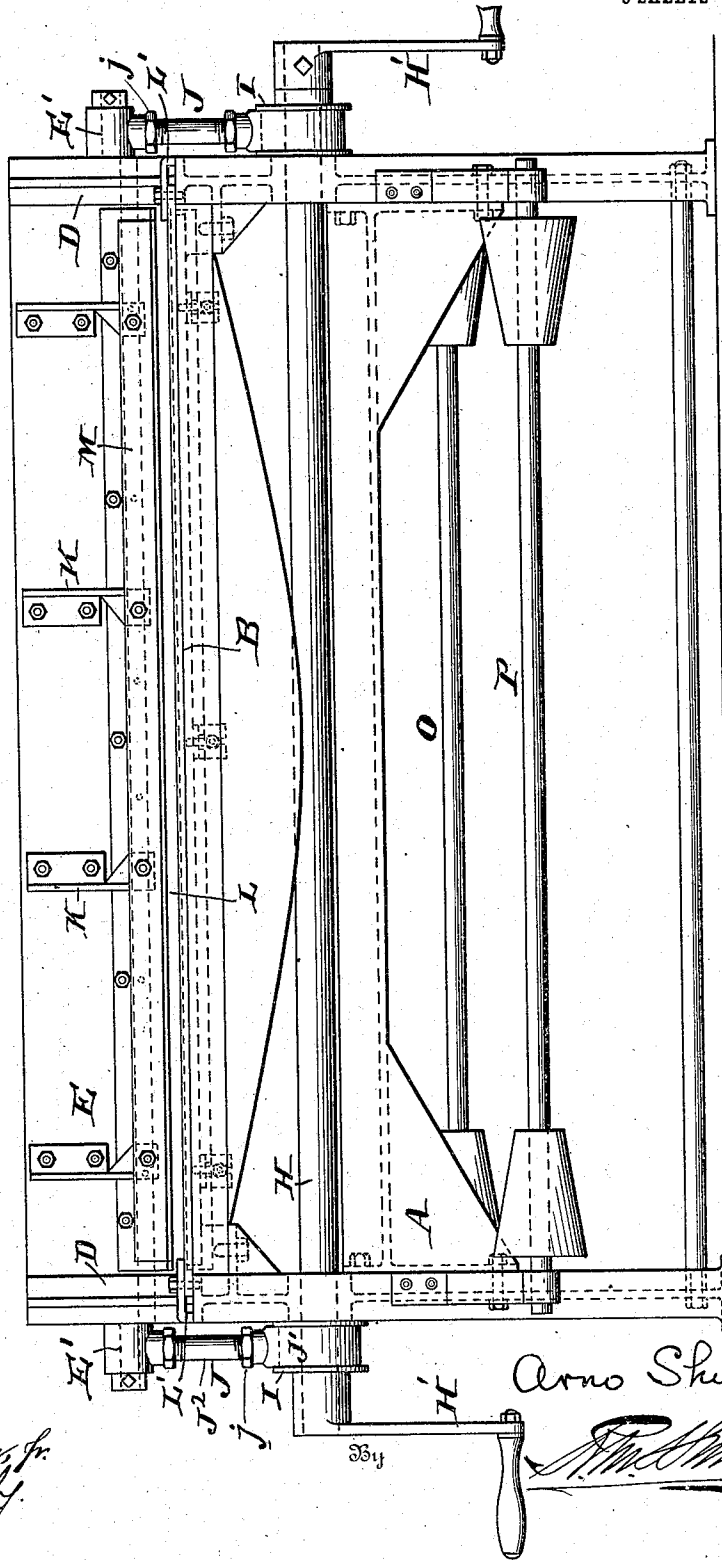


A. SHUMAN.
MACHINE FOR CRIMPING MESHED WIRE.
APPLICATION FILED FEB. 25, 1907.

936,673.

Patented Oct. 12, 1909.
3 SHEETS—SHEET 1.

FIG. 1



Witnesses
D. Webster, Jr.
P. M. Kelly.

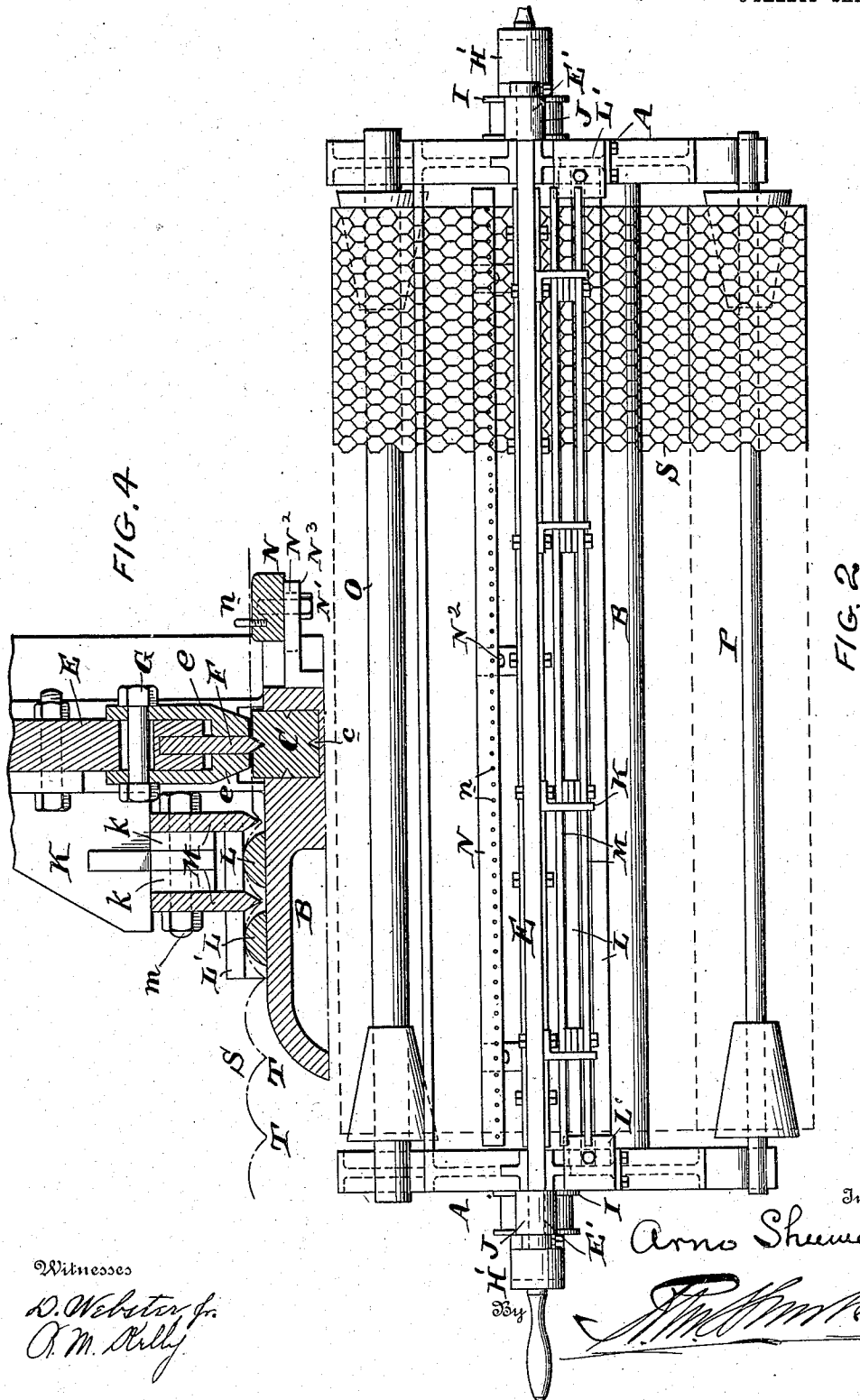
Inventor
Arno Shuman
Attorney

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Witnesses

D. Webster Jr.
O. M. Kelly

Inventor

Arno Shuman

[Signature]
Attorney

UNITED STATES PATENT OFFICE.

ARNO SHUMAN, OF CONNELLSVILLE, PENNSYLVANIA, ASSIGNOR TO THE CONTINUOUS GLASS PRESS COMPANY, A CORPORATION OF PENNSYLVANIA.

MACHINE FOR CRIMPING MESHED WIRE.

936,673.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed February 25, 1907. Serial No. 359,170.

To all whom it may concern:

Be it known that I, ARNO SHUMAN, of Connellsville, Fayette county, and State of Pennsylvania, have invented an Improvement in Machines for Crimping Meshed Wire, of which the following is a specification.

My invention has reference to machines for crimping meshed wire and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

The object of my invention is to form bent or crimped portions in open or meshed wire webs adapted for use as the metallic center in the manufacture of wire glass.

The general character of the crimped metal web and its use in the production of wire glass is shown in Letters Patent No. 727,004 and No. 727,005, dated May 5th, 1903, granted to Frank Shuman jointly with myself.

My present invention consists in a machine adapted to support and guide a meshed wire web and provided with dies for suitably crimping it at intervals in its surface.

More specifically, my invention embodies in a machine of the character above specified, two sets of dies, one set being to produce the sharp bends or crowns of the crimped portions and the other set being to bend the web intermediate of the sharp bends or crowns to increase the depth of the crimped portions and set the bends in the web.

My invention also comprehends details of construction which, together with the features above set forth, will be better understood by reference to the drawings, in which:

Figure 1 is an elevation of a crimping machine embodying my invention; Fig. 2 is a plan view of same; Fig. 3 is a cross sectional elevation of the same; and Fig. 4 is a cross section showing a modification of the dies.

A is the main frame, B is the bed and is provided with a longitudinal groove B' in which is fitted the bed die C. This die C is preferably square in cross section and has each of its faces provided with a longitudinal V-shaped groove *c*. These grooves may be of different depths to suit different webs having different thickness of wire. Thus for heavy wire web, the deepest groove *c* will be turned uppermost and inversely, for

the lightest wire web the smallest groove *c* will be directed upward. As shown in Fig. 3, the next to the largest groove is at the top. While I prefer to employ a bed die having more than one groove, I do not restrict myself thereto. It is also evident that the bed die may be formed and supported in other ways and its construction and manner of support are immaterial so long as it presents an upwardly directed face having a longitudinal groove with which the upper reciprocating die may cooperate.

D, D are upright guides, respectively at each end of the main frame for guiding the vertically reciprocating head E which carries at its lower part the longitudinal crimping die F having its lower edge made V-shaped and adapted to the grooves *c* in the bed die C. This die F is seated in a groove in the lower edge of the head E and is clamped in position by clamp bars *e e* drawn into clamping position by bolts G which pass through said bars and the head, as fully shown in Fig. 3.

H is a rotating shaft which is journaled in the main frame A below the bed and may be driven by cranks H' or suitable power devices if so preferred. This shaft is provided with eccentrics I I near each end.

J J are links, extending from the eccentrics and pivoted at E' to the journal pins at the ends of the head E. By rotating the shaft H, the head E is reciprocated vertically in its guides D D. The links J are preferably adjustable as to their length so as to insure the die F being properly adjusted to cooperate with the bed die C. This adjustment may be made by having the eccentric straps J' and head E' respectively screwed on to the intermediate rod J² by right and left hand screw joints, and held by lock nuts *j*. Any other manner of adjustment may be adopted in lieu of that shown.

Arranged to the rear of the bed die C and supported by the table are two forming die bars L L, said bars being clamped in place by clamps L' at each end. These clamps L' are bolted down to the bed B by bolts *l*. By having the bars L L clamped in this manner they may be adjusted relatively to the bed die C and also with respect to each other if so desired, to suit the mesh of the web and shape of the crimps desired.

Cooperating with the forming die bars L

L are two bending dies M M which are carried by brackets K attached to the head E, so that said bending dies M M are reciprocated vertically with the crimping die F. The bending dies M M are held to the brackets K by bolts *m* and spacing blocks *k* may be employed for properly spacing the said dies to suit the positions of the crimps and die bars L L therefor. Any other manner of adjusting the dies M M to or from each other and to or from the crimping die F may be employed in lieu of that shown. The lower edges of these dies M M are preferably made V-shaped to center themselves in the V crimps in the web previously made by dies C F.

Arranged in front of the bed die C and supported in the bed is a bar N having a series of upright pins *n*. This bar is clamped by bolts N' through slots N² in the brackets N³ and by which the bar is adjustable to or from the bed die C to suit webs having meshes of different sizes. The web S is placed over the pins *n* by hand and after each crimping operation by the dies, the web is advanced, being each time placed over the pins and pushed up against them to insure the proper extent of feeding of the web and the parallel alinement of the crimps.

The meshed wire S is supported upon a spindle O loosely journaled on the main frame and from which the web is fed to the dies. When the web is crimped as indicated at T, it is then fed downward and wound upon a second spindle P at the rear of the machine.

In operating the machine, the meshed wire web S is placed between the dies C F by hand and adjusted against the pins *n*; the shaft H is then rotated one revolution, producing a crimp in the untwisted portion of the meshes of the web. This operation is repeated at equal distances apart, that is at each mesh or every other mesh as desired. As the web is fed forward it will come between the die bars L L and dies M M and will have the crimps extended and defined as indicated at T T.

By using die bars L L having rectangular corners the bends in the setting of the crimps will be sharp or angular adjacent to the twisted portions of the web, but if the said bars are made curved on top as indicated in Fig. 4, then the crimps will connect by arch shaped portions of the web intervening.

While I prefer the construction shown as being excellently adapted for the commercial use of my invention, I do not restrict myself to the details as they may be modified without departing from the spirit of the invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a crimping machine for meshed wire

web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with setting dies arranged parallel to the crimping dies for increasing the size of and setting the crimp.

2. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with setting dies for increasing the size of and setting the crimp and power devices for simultaneously operating both the crimping and setting dies, and means independent of the dies for regulating the feeding of the web between the dies.

3. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with setting dies for increasing the size and setting the crimp, and means for regulating the feeding of the web between the dies consisting of a series of pins arranged parallel to the dies.

4. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with setting dies for increasing the size and setting the crimp, and means for regulating the feeding of the web between the dies consisting of a bar having a series of upwardly directed pins and adjustably supported so as to be adjusted to or from the crimping dies.

5. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with setting dies for increasing the size and setting the crimp, and means for adjusting the setting dies to or from the crimping dies.

6. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with two setting dies for increasing the size and setting the crimp, and means for adjusting the setting dies to or from each other and to or from the crimping dies.

7. In a crimping machine for meshed wire web, the combination of a main frame, an adjustable bed die having two or more faces each provided with a longitudinal V-shaped groove the faces of which make the same angles in all of the grooves but the grooves being of different size, combined with a crimping die having a V-shaped edge of the same angle as and adapted to cooperate with the several grooves of the bed die.

8. In a crimping machine for a meshed wire web, the combination of a main frame having a fixedly supported and adjustable bed die therefor made with a series of faces each having a longitudinal V-shaped groove the faces of which make the same angles in all of the grooves of different size, a vertically reciprocating crimping die adapted to

coöperate with the several grooves of the bed die, and setting dies arranged parallel to the bed die.

9. In a crimping machine for a meshed wire web, the combination of a main frame having an adjustable bed die therefor made with a series of faces each having a longitudinal groove of different size, a vertically reciprocating crimping die adapted to coöperate with the bed die, and setting dies arranged parallel to the bed die consisting of two stationary parallel bars, and two vertically reciprocating dies movable with the crimping die.

10. In a crimping machine for a meshed wire web, the combination of a main frame having an adjustable bed die therefor made with a series of faces each having a longitudinal groove of different size, a vertically reciprocating crimping die adapted to coöperate with the bed die, a guide having pins for receiving and guiding the meshed wire web in its passage between the dies, and setting dies arranged parallel to the bed die.

11. In a machine for crimping meshed wire web, the combination of crimping dies with setting dies independent of the crimping dies and consisting of two stationary parallel bars and two vertically reciprocating dies coöperating with them to bend and form the crimped web.

12. In a machine for crimping meshed wire web, the combination of crimping dies with setting dies consisting of two stationary parallel bars and two vertically reciprocating dies coöperating with them to bend and form the crimped web the said bars and reciprocating dies being adjustable to or from the crimping dies.

13. In a machine for crimping meshed wire web, the combination of crimping dies with setting dies consisting of two stationary parallel bars and two vertically reciprocating dies coöperating with them to bend and form the crimped web the said bars being adjustable to or from each other and the reciprocating dies being also adjustable.

14. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with means for regulating the feeding of the web between the dies consisting of a series of pins arranged parallel to the dies.

15. In a crimping machine for meshed wire web, the combination of crimping dies for imparting a sharp crimp across the meshes of the web, with means for regulating the feeding of the web between the dies consisting of a bar having a series of upwardly directed pins and adjustably supported so as to be adjusted to or from the crimping dies.

In testimony of which invention, I have hereunto set my hand.

ARNO SHUMAN.

Witnesses:

P. BUFANO,
R. DE ANGELIN.