April 29, 1930. F. W. KREMNEC 1,756,293

WORK TRUING MEANS

Filed March 14, 1927

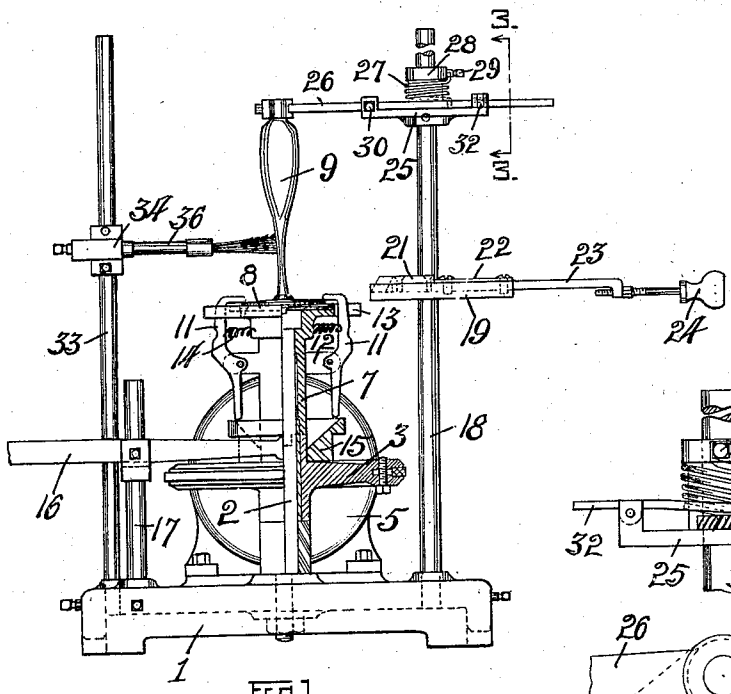


Fig. 1.

Fig. 3.

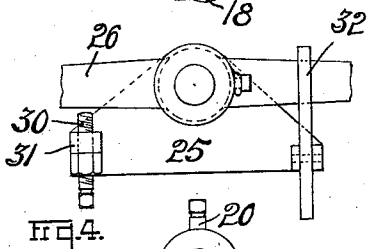


Fig. 4.

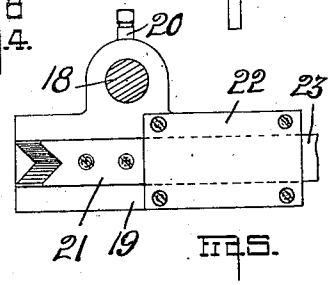


Fig. 5.

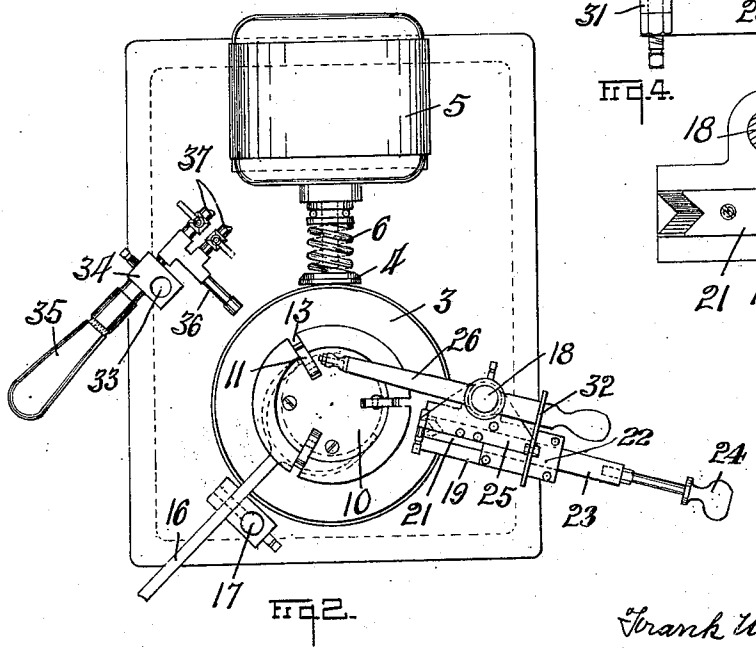


Fig. 2.

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UNITED STATES PATENT OFFICE

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WORK-TRUING MEANS

Application filed March 14, 1927. Serial No. 175,174.

In the making of glassware of elongate form, and particularly stemware, the articles frequently become warped or distorted in passing through the annealing leer or in handling before they have become fully set.

The object of this invention is to provide a simple and efficient means for truing or straightening distorted ware of this character in an easy and rapid manner.

The invention is fully described in the following specification, and one embodiment thereof illustrated in the accompanying drawing, in which,—

Figure 1 is a side elevation of an apparatus embodying the invention with parts broken away and with a work-piece in position thereon. Fig. 2 is a top plan view thereof with a part broken away and the work-piece removed. Fig. 3 is an enlarged sectional detail on the line 3—3 in Fig. 1. Fig. 4 is an enlarged plan view of the parts shown in Fig. 3 with the lever member fragmentarily shown, and Fig. 5 is an enlarged top plan view of the work centering means with a part broken away.

Referring to the drawings, 1 designates the base frame of the machine from which rises a stationary shaft 2. A wheel 3 is mounted for rotation on the shaft 2 and, in the present instance, is frictionally driven by the engagement with its periphery of a drive disc 4 mounted for axial shifting movements on the shaft of a motor 5 and caused by a spring 6 to have yielding driving engagement with the wheel. The upper hub end of the wheel 3 forms an extended sleeve 7, and the upper end of this is flanged to form a work supporting table 8.

The work 9 to be straightened or trued, which is usually of the stem type with an enlarged flaring or flanged base and illustrated, in the present instance, as being a bottle, such as is commonly used in connection with perfume atomizers, is mounted in centered relation on the top of the table 8 with its base seating on a pad 10 on the table top, being held thereto by the engagement therewith of clamping levers 11. The levers 11, three in number in the present case, are distributed around the table, being fulcrumed to ears 12 projecting from the sleeve 7 and having their upper ends projecting up through radial slots 13 in the table and angled to engage over the base of a work-piece. The levers are normally held in work-holding relation by springs 14. A collar 15 having a top conical face is mounted for vertical shifting movements on the sleeve 7 below the levers 11, and upon an upward movement thereof its conical face engages the lower ends of the levers and effects a rocking of the levers to release the work-piece. The collar is raised by the operation of a shipper-lever 16, which has its inner end in forked engagement with the collar. This lever is fulcrumed to a post 17 rising from the base 1.

A standard 18 rises from the base 1 at one side of the wheel 3 and, at a point substantially on a level with the top of the table 8, is provided with a bracket 19, which is held in adjusted position on the standard both vertically and horizontally by a set-screw 20. This bracket has a grooved upper surface in which a work centering tool 21 is mounted for horizontal reciprocatory movements, being slidably held to the bracket by a cover plate 22. The bracket 19 is adjusted on the standard 18, so that when the tool 21 is projected over the top of the table 8 its end will have centering engagement with the stem or other registering portion of the work-piece 9. To facilitate such engagement and the desired centering action of the work-piece on the table, the inner end of the centering tool is formed with a V-notch for receiving the registering portion of the work. The shank 23 of the centering tool projects outwardly from the outer end of the bracket and has threaded engagement with the stem portion of a handle 24, which is intended to have stop engagement at its inner end with the outer end of the bracket when the tool is moved inward to work centering position. When the extent of inward centering movement of the tool 21 has been determined for any particular article, the handle 24 is adjusted with respect to the shank 23 so that the inward movement of the tool will be stopped at such point for successive work-pieces.

When a work-piece has been set on the ro-

tating table 8, the levers 11 will be held free from holding engagement therewith until after the centering tool has been moved inward and effected a centering of the work-piece with respect to the table. This having been accomplished, the levers 11 are permitted to engage and hold the work due to the lowering of the conical collar 15.

Adjustably mounted on the standard 18 above the bracket 19 is another bracket 25, and immediately above this on said standard is fulcrumed a pressure lever 26, which is engaged by one end of a tension spring 27, which is coiled about the standard 18 and has its other end fixed to a collar 28 that is rotatably adjustable on the standard and held in adjusted position by a set screw 29. The inner end of the lever 26 is adapted to bear laterally against the upper end of the work-piece 9 and exert a pressure thereagainst, by reason of the tension of the spring 27, which tends to effect a straightening of the work-piece, the pressure being exerted toward the axis of rotation of the work-piece. When the straightening of the work-piece has been effected, or the engaging end of the lever 26 has moved a predetermined distance toward the axis of rotation of the work-piece, its further movement in such direction will be stopped by the engagement of the lever with a stop screw 30 that is threaded through a lug 31 on the bracket 25. The lever 26 may be held in released position with respect to the work-piece by a latch member 32, which is fulcrumed to the outer end portion of the bracket 25. A standard 33 rises from the base 1, in the present instance at the opposite side of the table, to the standard 18, and carries a bracket 34 for vertical and rotatable adjustment. This bracket has a control handle 35 and carries a burner 36 in communication through tubes 37 with suitable sources of air and gas supply for feeding the burner. The burner is intended to direct its flame against the portion of the work-piece which is distorted so as to soften the same and permit the lateral pressure of the lever 26 thereagainst to correct the distortion.

It is apparent from the foregoing description that in the use of my machine the operator first operates the lever 16 to effect a raising of the collar 15 and a consequent outward movement of the upper ends of the work-holding levers 11 to released position. A work-piece 9 is then placed on the table 8 in as nearly centered relation thereto as can be conveniently accomplished, and before releasing the lever 16 to permit the levers 11 to have holding engagement with the work-piece the centering tool 21 is moved inward to engage the stem portion of the work-piece, in the present instance, and accurately center the work-piece with respect to the table. The latch 32 is then released from the pressure lever 26 to permit the latter to engage and exert a lateral pressure on the upper end of the rotating work-piece. The burner 36 is then adjusted to direct its flame against the distorted portion of the work-piece to effect a sufficient softening thereof to permit the work-piece to be straightened by the pressure of the lever 26 thereagainst. When this straightening has been effected, the pressure lever 26 will cease to act due to its stop engagement with the stop-screw 30.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

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

1. In a machine of the class described, a rotatable table means for clamping one end of a work-piece to the table in centered relation to the axis of rotation, means for applying a truing pressure to the opposite end portion of the work-piece transverse to its axis of rotation and in spaced relation to the table, and means for applying a softening heat to the work-piece intermediate the table and pressure applying means.

2. In a machine of the class described, means for holding and rotating a work-piece, a pressure arm yieldingly operable to exert pressure against the work-piece transverse to the axis of rotation thereof and in spaced relation to the holding means, means for adjustably limiting the extent of movement of the pressure arm toward the axis of rotation of the work-piece, and means for applying heat to the work-piece between said pressure arm and the holding means.

3. In a machine of the class described, means for holding and rotating a work-piece, means operable to effect a centering of the work-piece with respect to the holding means, and means for exerting pressure against a held work-piece in spaced relation to the holding means and transverse to its axis of rotation to correct distortion in a softened portion of the work-piece intermediate said holding and pressure means.

4. In a machine of the class described, means for holding and rotating a work-piece, means operable to effect a centering of the work-piece with respect to the holding means, and means for exerting pressure against the work-piece in spaced relation to the holding means and transverse to its axis of rotation to correct distortion in a softened portion of the work-piece intermediate said holding and pressure means, said pressure means having provisions for limiting the extent of its pressure applying movement to the work-piece.

5. In a machine of the class described, means for holding and rotating a work-piece,

means operable to effect a centering of the work-piece with respect to the holding means, and means for exerting pressure against the work-piece in spaced relation to the holding means and transverse to its axis of rotation to correct distortion in a heated portion of the work-piece intermediate said holding and pressure means, and means for rendering the pressure applying means inoperative.

6. In a machine of the class described, means for holding and rotating a work-piece, means including a vertically and horizontally adjustable spring-pressed pressure arm for bearing against a rotating work-piece transverse to its axis of rotation and in spaced relation to said first means, and a burner adjustably mounted at a side of the work-piece and adapted to direct its flame against a predetermined portion thereof.

In testimony whereof I have hereunto signed my name to this specification.

FRANK W. KREMNEC.