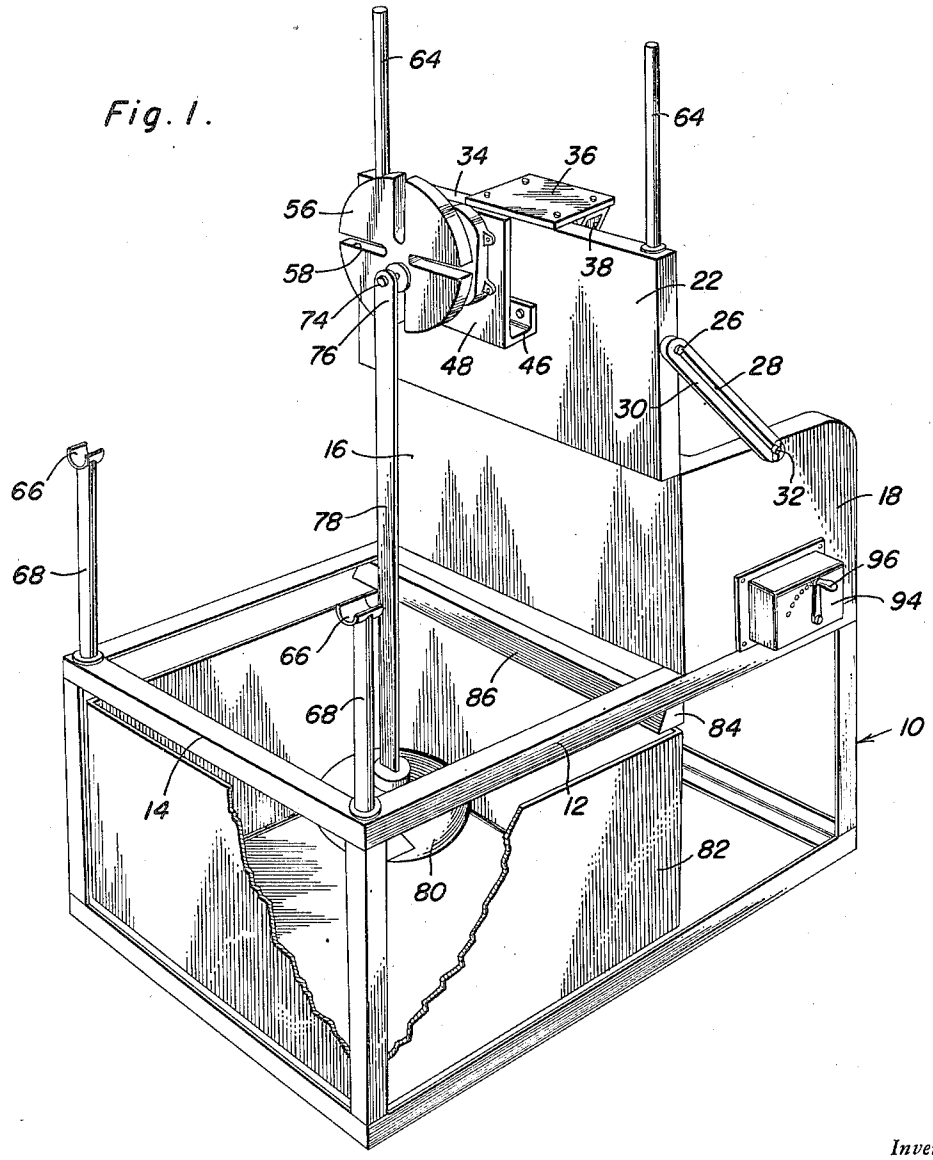
May 30, 1950 F. M. ULASICH 2,509,848

APPARATUS FOR WHIRLING AND ETCHING PHOTOENGRAVING PLATES

Filed May 13, 1948 3 Sheets-Sheet 1

Fig. 1.



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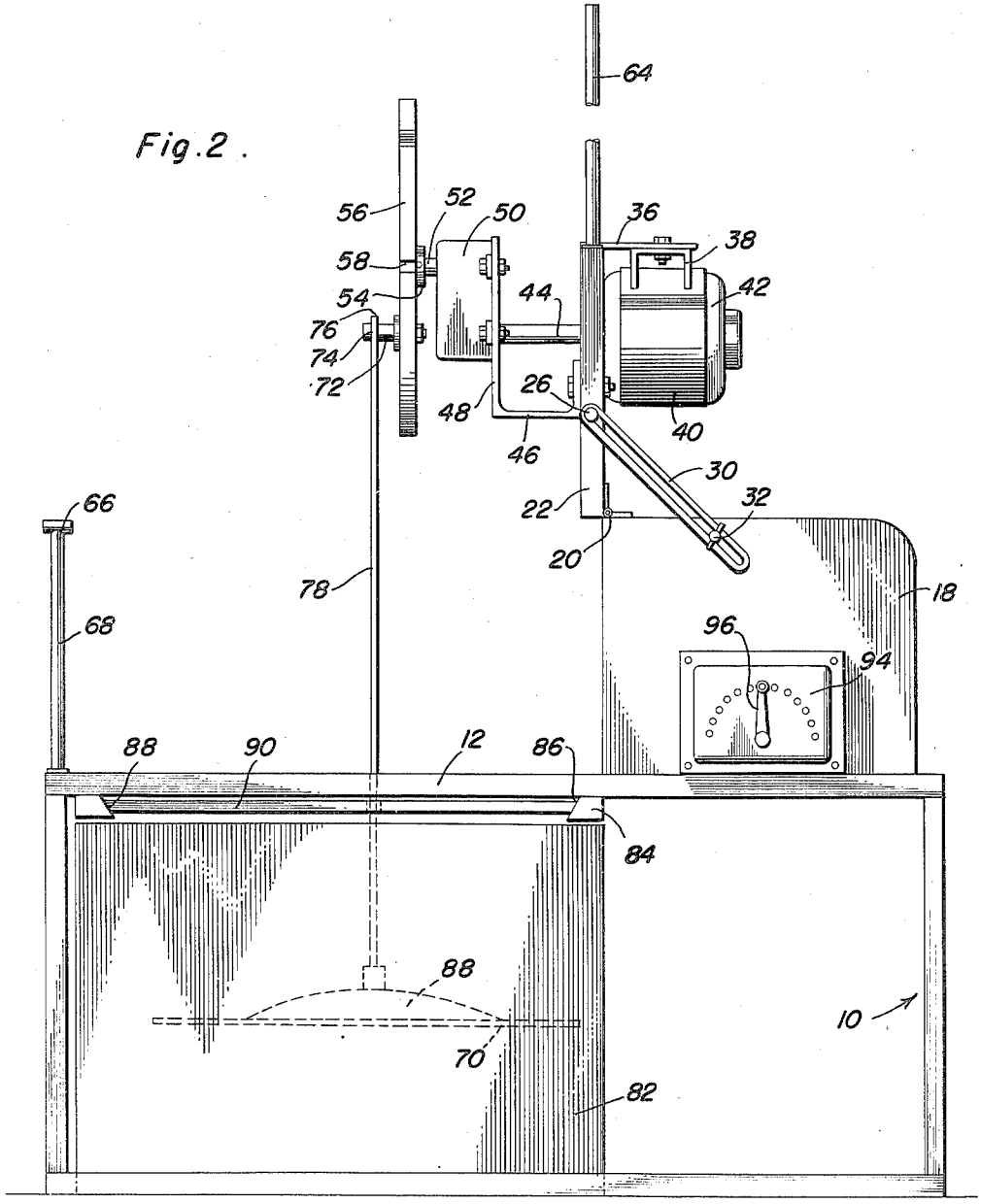
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APPARATUS FOR WHIRLING AND ETCHING PHOTOENGRAVING PLATES

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Fig. 2.



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APPARATUS FOR WHIRLING AND ETCHING PHOTOENGRAVING PLATES

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Fig. 3.

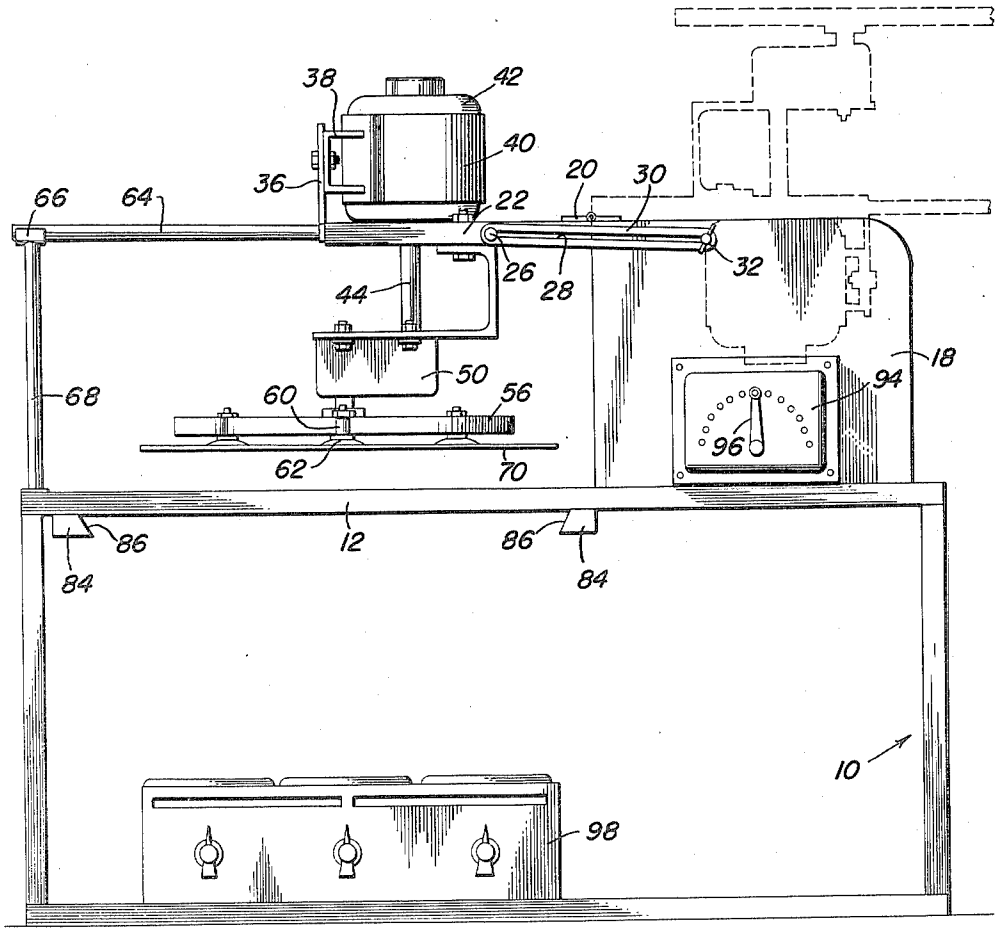
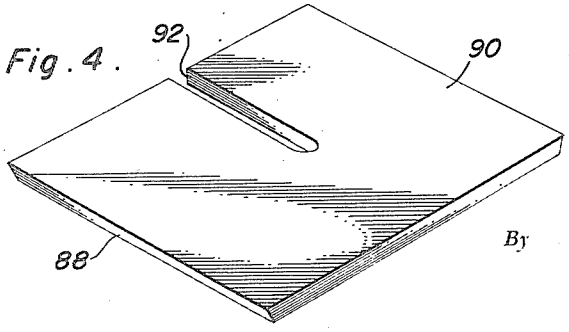


Fig. 4.



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APPARATUS FOR WHIRLING AND ETCHING PHOTOENGRAVING PLATES

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Application May 13, 1948, Serial No. 26,877

10 Claims. (Cl. 41—9)

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This invention relates to new and useful improvements in devices for treating photo-engraving plates and the primary object of the present invention is to provide an apparatus for both whirling and etching photo-engraving plates, such as copper or zinc plates, in a photo-engraving plant.

Another important object of the present invention is to provide an apparatus for whirling and etching photo-engraving plates including a plate holder extendable into an acid bath and embodying novel and improved means for reciprocating and agitating the holder so that the plate held thereby will engage and contact the acid in the bath during the treating of the plate.

Another object of the present invention is to provide a device for treating photo-engraving plates including a rotary or whirling member driven by a motor, and novel and improved means carried by said whirling member for supporting a plate in position thereto so that the said plate may be dried in a convenient manner.

Another object of the present invention is to provide a machine for use in treating photo-engraving plates including a support and a hinged panel which may be adjusted relative to the support in a horizontal position for whirling a plate or in a vertical position for agitating a plate in an acid bath.

A further object of the present invention is to provide a combination photo-engraving plate whirling and etching machine that is extremely small and compact in structure.

A still further aim of the present invention is to provide a device for treating photo-engraving plates that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present apparatus in position for agitating a photo-engraving plate in a bath vat, and with parts of the vat broken away and shown in section, and with the splash shield removed therefrom;

Figure 2 is a front elevational view of the present invention in operation for agitating a plate in a bath vat;

Figure 3 is a front elevational view of the

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present invention for use in whirling a photo-engraving plate, and showing the bath vat removed therefrom, and with dotted lines showing the motor supporting panel in an inactive position; and

Figure 4 is a perspective view of the splash shield that is used in conjunction with the present invention.

Referring now to the drawings in detail, wherein, for the purpose of illustration, there is disclosed the preferred embodiment of the present invention, the numeral 10 represents the support generally that is used in conjunction with the present photo-engraving plate treating apparatus. This support includes an upper, substantially rectangular frame having spaced side rails 12 and end rails 14.

Fixed to the support 10 at one end thereof is a vertical wall 16 and a pair of upstanding side walls 18 (one of which is not shown).

Hinged, as at 20, to the upper edge of wall 16 is a pivotal panel or section 22, one edge 24 of which supports an outwardly projecting, headed pin 26 that pivotally engages a longitudinal slot 28 provided in a brace 30. A bolt and nut 32 secured to one of the side walls 18 slidably and adjustably engages the slot 28 for selective adjustment of the panel 22 relative to the wall 16.

Fixed to one longitudinal edge 34 of the panel 22 is an anchor plate 36 that supports a mounting 38 including a band 40 which embraces an electric motor 42. The motor 42 is provided with the usual drive shaft 44 that extends through an aperture (not shown) in the panel 22.

Removably secured to the panel 22 is a substantially channel shaped bracket 46 having an elongated leg portion 48 that is spaced parallel to the panel 22 and which supports a gear housing 50 from which there projects a driven shaft 52.

Mounted within the gear housing 50 and operatively connecting the drive shaft 44 to the driven shaft 52 are suitable gears which are so arranged that the shaft 52 will rotate at a lower rate of speed than the drive shaft 44. These gears are not shown, as it is obvious that many such arrangements may be employed such as a large gear on the shaft 52 and a reduced gear on the shaft 44, whereby the shaft 52 will rotate at a speed less than the speed at which the shaft 44 is rotating.

Removably secured to the driven shaft 52 for rotation thereby is the central hub portion 54 of an annular whirling member 56, the outer edge of which is formed with a plurality of cir-

cumferentially spaced, radial slots 58 that removably engage the shank portion or base portion 60 of suction cup 62.

Fixed to and projecting outwardly from the longitudinal edge 34 of the panel 22 is a pair of spaced parallel support arms 64 that bear upon concavo convex bearing plates 66 that are fixed to the upper ends of a pair of standards or uprights 68 mounted on the support 10 when the panel 22 is disposed in a horizontal position, as shown in Figure 3 of the drawings.

When in the above described position, the device is applicable for whirling a photo-engraving plate 70 which is applied to the suction cup 62 so that the plate may be dried in a convenient manner.

Reference is now directed to Figures 1 and 2, wherein the present invention is set up for use in etching the photo-engraving plates. In use of the present apparatus in this capacity, the suction cups 62 and their bases 60 are preferably removed from the member 56 and a shaft 72 is removably secured in a selected one of the slots 58 and disposed eccentrically with respect to the shaft 52.

The shaft 72 is provided with an annular recess 74 adjacent its outer end that rotatably engages the apertured end 76 of a reciprocable arm or plunger 78. It is noted that as the member 56 rotates, the same will impart a reciprocable motion to the plunger 78.

Secured to the lower end of the plunger 78 is an enlarged suction cup 80 that engages the plate 70 that is to be etched or agitated in an acid bath.

When the present device is employed as an etching machine, the panel 22 is adjusted to a vertical position by the bolt and nut 32 and a bath vat 82 is disposed beneath the rails 12.

Fixed to the under surfaces of the side rails 12 is a pair of spaced parallel guide bars 84 having downwardly and inwardly sloping bearing faces 86 that slidably engage the inclined side edges 88 of a substantially rectangular splash shield 90. This splash shield 90 is provided with a transverse slot 92 that loosely engages the plunger 78 to permit the said plunger to reciprocate in the vat 82 without splashing the bath outwardly from the vat.

Mounted on one of the side walls 18 and electrically connected to the motor 40 and a source of electric current is a suitable transformer 94 having an actuating lever 96 for controlling the speed rotation of the motor, or more particularly the drive shaft 44 of the motor 40.

Disposed beneath the rail 12, when the device is in operation for whirling a plate 70, is an electric hot plate 98 which will aid the drying of the plate 70. This hot plate is connected to any suitable source of electric current and may or may not be employed during the operation of whirling a plate. However, it has been noted that by the application of such a hot plate, disposed beneath the plate which is applied to member 56, the said plate will dry in a more convenient manner than would be possible should only the member rotate to air-dry the same.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even

though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A device for whirling and etching plates comprising a support, a hinged panel carried by said support and selectively movable to horizontal and vertical positions, means for retaining said panel in a selected pivoted position to said support, a driven member carried by said panel, means carried by said support for holding the panel in either a vertical or horizontal position, and means carried by said driven member for supporting a plate.

2. A device for treating photo-engraving plates comprising a support, a hinged panel carried by the support and selectively movable to horizontal and vertical positions, a motor carried by the panel and including a drive shaft, a rotary member carried by the drive shaft, means carried by said member for engaging a plate, means for retaining said hinged panel in either a vertical or horizontal position relative to the support, and means for holding the panel when the latter is disposed in a horizontal position.

3. The combination of claim 2 wherein said means carried by said member for engaging a plate includes a plurality of suction cups removably carried by said member.

4. The combination of claim 2 wherein said panel includes a plurality of outwardly projecting arms carried by said panel, and said means for holding the panel in a horizontal position include a plurality of standards carried by said support, and bearing plates carried by said standards engaging said arms.

5. The combination of claim 4 wherein said bearing plates include concaved bearing surfaces engaging said arms to prevent sidewise movement of said arms relative to said standards.

6. A device for treating photo-engraving plates comprising a support, a hinged section carried by said support and selectively movable to horizontal or vertical positions, means for supporting said hinged section when the same is disposed in a horizontal position, a motor carried by said hinged section and having a drive shaft, a rotary member carried by the drive shaft, an eccentrically mounted shaft carried by said member, a depending reciprocable member carried by the eccentrically mounted shaft, and means carried by said reciprocable member for engaging and holding a plate.

7. The combination of claim 6 wherein said support includes an upper open frame, a splash shield, and means carried by said frame slidably engaging and holding the splash shield, said shield having a slot therein for engaging said reciprocable member.

8. The combination of claim 7 wherein said means slidably engaging and holding said shield includes a pair of spaced parallel holding bars having downwardly and inwardly inclined bearing faces.

9. A device for treating photo-engraving plates comprising a support, a hinged section carried by said support and selectively movable to horizontal or vertical positions, a motor carried by said section and having a drive shaft, a rotary member, reduction gearing operatively connecting the rotary member to the driven shaft, a further

shaft eccentrically mounted on said member, a reciprocable member carried by the further shaft for agitating a plate in a bath, and brace means for retaining said panel in either a vertical or a horizontal position.

10. A machine for drying etching plates comprising a support, a panel hinged to the support, uprights mounted on the support and having seats at their upper ends, arms carried by the panel and received in said seats, a motor mounted on said panel and having a drive shaft, a rotary member carried by the drive shaft, means for securing a plate relative to the rotary member, and a heating plate disposed beneath said rotary member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
962,839	Holt	June 28, 1910
1,152,435	Page	Sept. 7, 1915
1,839,511	Townsend	Jan. 5, 1932