

## Draftsmen's Mixing-Cup.

Patented June 8, 1875.

Fig. 1.

A diagram showing a bolt (A) passing through a plate (B) and a nut (E). The bolt head is labeled 'a' and the nut is labeled 'e'.

A perspective view of a machine for drawing a wire. The machine consists of a heavy base with two large rollers at the bottom, labeled  $a^2$  and  $a^3$ . A vertical frame supports several horizontal rollers. On the left, a wire is being drawn from a spool labeled  $E$  and passes through rollers  $a$  and  $b$ . On the right, the wire is wound onto a spool labeled  $F$ , passing through rollers  $d$  and  $e$ . A winding mechanism is shown at the top right, with a handle labeled  $C$  and a spool labeled  $D$ . Various other parts are labeled with letters like  $x$ ,  $e^2$ ,  $a^1$ ,  $b^1$ ,  $c$ ,  $d^1$ ,  $e^1$ ,  $f$ ,  $g$ ,  $h$ ,  $i$ ,  $j$ ,  $k$ ,  $l$ ,  $m$ ,  $n$ ,  $o$ ,  $p$ ,  $q$ ,  $r$ ,  $s$ ,  $t$ ,  $u$ ,  $v$ ,  $w$ ,  $x$ ,  $y$ ,  $z$ .

Fig. 4. A perspective view of a mechanical assembly, possibly a valve or pump component. The assembly features a central vertical shaft or piston rod labeled 'A' and a lower cylindrical component labeled 'B'. The main body of the assembly is shown in cross-section with diagonal hatching. Various parts are labeled with letters: 'a' and 'b' on the left side, 'a' and 'b' on the right side, and 'a'' and 'a'' at the bottom. Dashed lines indicate the internal structure and the position of a top cover or cap.

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Fig. 6. A perspective view of a mechanical assembly. It shows a base plate with a central circular feature. A curved, hinged component, labeled 'F', is shown in a raised position. Various parts are labeled with letters: 'A' for the base plate, 'B' for the curved component, 'C' for a central circular feature, 'D' for a small circular feature, 'E' for a small rectangular feature, 'F' for the main curved component, 'G' for a small circular feature, 'H' for a small rectangular feature, 'I' for a small circular feature, 'J' for a small rectangular feature, 'K' for a small circular feature, 'L' for a small rectangular feature, 'M' for a small circular feature, 'N' for a small rectangular feature, 'O' for a small circular feature, 'P' for a small rectangular feature, 'Q' for a small circular feature, 'R' for a small rectangular feature, 'S' for a small circular feature, 'T' for a small rectangular feature, 'U' for a small circular feature, 'V' for a small rectangular feature, 'W' for a small circular feature, 'X' for a small rectangular feature, 'Y' for a small circular feature, 'Z' for a small rectangular feature, 'a' for a small circular feature, 'b' for a small rectangular feature, 'c' for a small circular feature, 'd' for a small rectangular feature, 'e' for a small circular feature, 'f' for a small rectangular feature, 'g' for a small circular feature, 'h' for a small rectangular feature, 'i' for a small circular feature, 'j' for a small rectangular feature, 'k' for a small circular feature, 'l' for a small rectangular feature, 'm' for a small circular feature, 'n' for a small rectangular feature, 'o' for a small circular feature, 'p' for a small rectangular feature, 'q' for a small circular feature, 'r' for a small rectangular feature, 's' for a small circular feature, 't' for a small rectangular feature, 'u' for a small circular feature, 'v' for a small rectangular feature, 'w' for a small circular feature, 'x' for a small rectangular feature, 'y' for a small circular feature, 'z' for a small rectangular feature.

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## IMPROVEMENT IN DRAFTSMEN'S MIXING-CUPS.

Specification forming part of Letters Patent No. **164,308**, dated June 8, 1875; application filed April 1, 1875.

*To all whom it may concern:*

Be it known that I, HARRY KING, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Draftsman's Mixing-Cups, of which the following is a specification:

My invention relates to cups made adjustable for the purpose of puddling the ink, and also provided with mechanism for the purpose of facilitating the removal of the top from, and the replacement of the same on, the cup; and consists in, first, a frame bisected in a transverse oblique plane, the two parts being so connected with a swivel or pivot that when one of the parts is turned or rotated upon the pivot, the top surface of the frame bearing the cup will assume any oblique plane desired, thus tilting the cup and puddling the ink; second, the combination of a tilting frame and lever mechanism, whereby the top of the cup is raised by means of the weight of the draftsman's pen-hand upon the lever, and is allowed to replace itself upon the withdrawing of the hand from the lever; third, the combination of the tilting frame, lever mechanism, and a stop, so constructed as to prevent the top of the cup from passing over the center of the fulcrum of the arm carrying the top, so as to allow of the top falling again on the cup by its own weight when the raising power is withdrawn, or by means of an adjustment of said stop to clear the projection against which it would otherwise abut, and thus allow the top of the cup to pass over the center of the arm-fulcrum, and remain in such position, in the manner and for the purpose as will be hereinafter more fully set forth.

In the drawings, Figure 1 represents a perspective view of my improved cup. Fig. 2 is a vertical longitudinal section through the same, showing lever mechanism. Fig. 3 is a transverse horizontal section through line *x x* of Fig. 2. Fig. 4 is a vertical longitudinal section through the frame, the tilt given to the cup being shown in dotted lines. Fig. 5 is a side elevation, partly in section, of a modified form of tilting device; and Fig. 6 is an enlarged side view, in vertical longitudinal section, of the stop mechanism. Fig. 7 is a vertical section through the joint of the frame, enlarged.

The frame of the cup is formed in two parts, A and B, which are joined together on a horizontally oblique plane, movable upon a vertically oblique axis, at right angles to the plane of movement. One of the parts has an annular tongue, *a*, formed upon or near the edge of the oblique surface, while a corresponding annular groove, *b*, is formed in the face of the other surface, for the purpose of guiding the two parts in their movement, as shown in Figs. 2 and 4. This tongue and groove can be omitted in modified form shown in Fig. 5, a sufficient guiding-surface being formed in the joint. A swivel-joint is formed by means of a lug or projection, *a'*, cast upon the upper part A, which passes through and projects outside of an aperture, *b'*, cast in the lower part B of the frame. This projecting end is provided with an eye, *a''*, and by means of a pin, *a'''*, which passes through the eye, the two parts are secured together, as shown in Figs. 2, 4, and 5.

It is obvious that the lug can be cast upon the part B and the aperture in the part A.

Assuming the top of the frame to be in a horizontal position, wherein the cup will lie in a horizontal plane, any movement or rotation either to the right or left of either of the parts A or B will cause the cup to assume an inclined or oblique position, such as shown by dotted lines in Fig. 4, said dotted lines indicating the greatest possible incline to be attained with oblique surface, as shown in Figs. 2 and 4. The same principle of oblique axial revolution is embodied in modified form shown in Fig. 5.

The top of the cup is secured to a screw-clamp, C, which is pivoted at *c* to brackets *a''* cast on the upper part of the frame.

It is obvious that a spring-clamp may be substituted for screw *c'*. (Shown in Fig. 1.) This clamp and the upper face of the part A are so constructed as to accommodate various sizes of mixing-cups.

The cup proper is secured in its place on the upper face of the frame A by means of a screw, *a''*, or a spring, as in the case of the cup-top clamp. A link, D, is secured at its upper end to the clamp C by means of a pivot, *d*, and at its lower end to the rear end *e* of the hand-lever E by means of pivot *d'*. This le-

ver has its fulcrum either on the inside of the case, as shown at  $e^1$   $e^1$ , Figs. 2 and 3, or on the lug  $a^1$ , and is counterweighted on its front end  $e^2$ , for the purpose of balancing the working parts, and preventing the top of the cup from falling too heavily when the pressure of the hand on the front end of the lever is withdrawn.

It is obvious that the brackets  $a^4$  may be formed immediately upon the cup, and the fulcrum of the hand-lever E may also be placed upon the sides of the cup, thus obviating the necessity of a frame, so far as the lid-lifting mechanism is concerned. It is also obvious that a projection may be formed on the edge of the cup-top, by which the top is pivoted to the brackets  $a^4$ , in lieu of the clamp-projection C.

Upon the pivot  $d^1$  is swung a stop or dog, F, the under edge of the front end  $f$  of this dog resting upon a lug,  $d^2$ , formed either on the link D or rear end of the lever E.

When the hand is placed on the front end of the lever, the rear end rises until the front end  $f$  of the dog comes in contact with the shoulder  $a^6$ , formed on the part A of the frame, thus limiting the movement of the lid, and preventing its passing on over its fulcrum.

When required, the stop can be rendered inoperative by swinging it around on the pivot  $d^1$ , so that the outer projection  $f'$  rests upon the under sides of the lug  $d^2$ , as shown in dotted lines, Fig. 6. In this position it sweeps clear of the shoulder  $a^6$ , and allows the lid of the cup to pass on over its fulcrum, where it will remain out of the way during the mixing of the ink.

It is obvious that this stop may be pivoted

to the clamp C, and abut against the rear extended end of one of the brackets; or it may be pivoted to the link D, and abut either against the clamp, the bracket, or the pivot  $c$ . The motion of the lid may also be limited by means of adjustable mechanism, operating upon the forward end  $e^2$  of the hand-lever.

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

1. In a draftsman's mixing-cup, the combination, substantially as set forth, of a two-part frame, which is diagonally divided, and puddles the ink by rotation of one part on the other, and a compound lever mechanism, which lifts the top by depressing the end of the lever.

2. In a draftsman's mixing-cup, the combination, substantially as described, of the cup-frame, the top clamp, the link, and the hand-lever, these members being constructed and operating so as to lift the top from the cup by means of pressure of the hand on the lever, in the manner set forth.

3. In a draftsman's mixing-cup, the combination, substantially as described, of the lid-lifting mechanism and adjustable stop, whereby the opening sweep of the lid may be limited.

4. In a draftsman's mixing-cup, the combination, substantially as described, of the lid-lifting mechanism and adjustable clamps, whereby cups of various diameters may be used, in the manner set forth.

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Witnesses:

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