

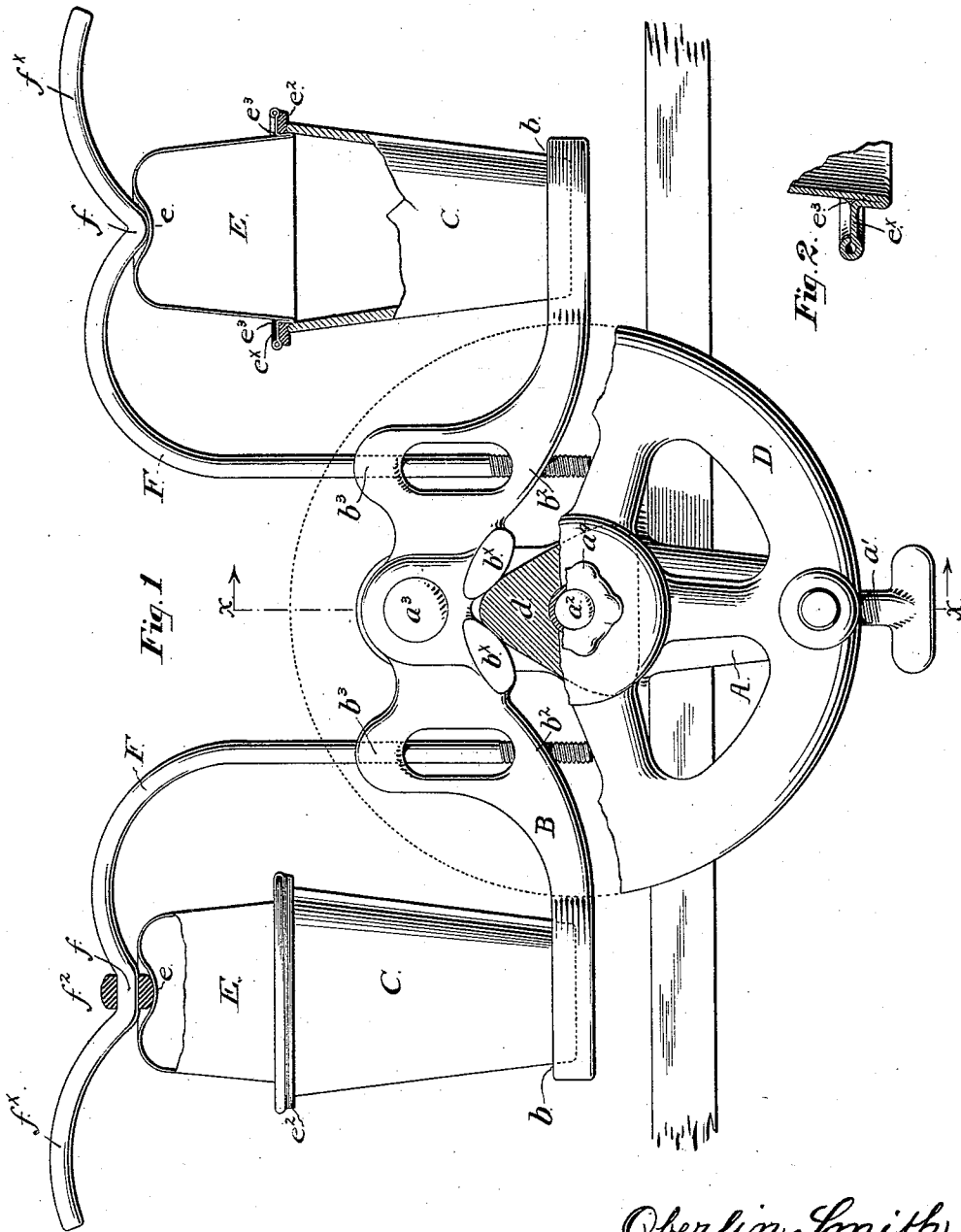
(No Model.)

2 Sheets—Sheet 1.

O. SMITH.
DRINK MIXER.

No. 423,706.

Patented Mar. 18, 1890.



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UNITED STATES PATENT OFFICE.

OBERLIN SMITH, OF BRIDGETON, NEW JERSEY.

DRINK-MIXER.

SPECIFICATION forming part of Letters Patent No. 423,706, dated March 18, 1890.

Application filed July 17, 1889. Serial No. 317,829. (No model.)

To all whom it may concern:

Be it known that I, OBERLIN SMITH, a citizen of the United States, residing at Bridgeton, New Jersey, have invented certain new and useful Improvements in Drink Mixers, of which the following is a specification.

The object of my invention is the construction out of the fewest parts possible of a very simple, durable, and inexpensive machine for agitating or mixing the liquid contents of tumblers.

A machine embodying my improvements and adapted for operation in connection with two tumblers simultaneously, is represented in the accompanying drawings and hereinafter described, the particular subject matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a view in front elevation of a machine embodying my improvements, a portion of the fly wheel being broken away to exhibit the contact of its cam with the cam lugs upon the tumbler carrier, the pivoting of such tumbler carrier, and the application thereto of the clamps for retaining the tumblers and tumbler caps, of which the right hand tumbler and tumbler cap are shown in central, vertical, sectional elevation. Fig. 2 is a fragmentary sectional detail of a construction of tumbler cap to which I prefer to resort. Fig. 3 is a central, transverse, sectional elevation through the machine of Fig. 1 in the plane of the dotted line xx upon said figure, and sight being taken in the direction of the arrows upon said line. Figs. 4 and 5 are fragmentary sectional details illustrative of the contact of the cam of the machine of Fig. 1 with the cam lugs upon the tumbler carrier of said machine. Figs. 6 and 7 are similar views of another construction of cam and cam lug to which in practice I resort.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a standard or frame, formed with a horizontally rearwardly projecting foot adapted to rest upon a table or counter surface, and with a depending rearwardly intumed bracket a^x through which is threaded a clamp screw a' for the purpose of securing the standard as an entirety to the table or counter to which it is to be applied, all as clearly shown in Fig. 3.

From the front face of the standard projects a horizontal shaft a^2 , and also, in vertical alignment above and in axial parallelism with said shaft, a fulcrum pin a^3 . Upon the fulcrum pin is mounted a double armed tumbler-carrier B, being a lever of the first order conveniently in the form represented in Fig. 1. This tumbler carrier is at its extremities provided with sockets which I term the tumbler cups b , and which are respectively conformed to receive the basal portions of the tumblers C or other vessels in which the liquids to be mixed are contained. Upon the shaft is mounted a fly wheel D, upon the rear face of which is formed or applied a, in the construction shown in the drawings, triangular rearwardly extending cam d having rounded corners, which, in the mounting of the parts, is adapted as to two constant but, of course, in its rotary movement constantly shifting, surfaces of its working face, to be in contact with a pair of cylindrical cam lugs b^x formed upon the tumbler carrier below and at equal distances to the sides of the fulcrum pin socket of said carrier. The fly wheel and its cam are conveniently, as shown, cast in one piece, and are retained in position upon the shaft by a wheel nut a^4 which maintains the rear surface of the cam, or hub of the wheel, against or approximately against the front face of the standard.

E are tumbler caps conformed to the chines of the tumblers so as to cover and inclose their throats or upper openings. These caps are conveniently formed of sheet metal struck to the form shown in Figs. 1 and 2 of the drawings, that is to say, formed with central depressions or clamp seats e in their crown portions, and with basal radially-projecting circumferential flanges e^x which are slightly above the lower edges of the caps, and which serve to bear down upon the rims or chines of the tumblers, conveniently through the intervention of circular washers e^2 of rubber, leather, or other preferred material.

Caps of the foregoing construction, which, of course, is only a type of other constructions which may, if preferred, be employed, are conveniently formed from a blank of sheet metal first drawn in a press to the general form of the cap, then partly turned inside out and upset in a press and die to form the flange

shown in Fig. 2. A fillet of solder e^3 can be applied around the edge of the intumed and upset portion to render the annular crevice necessarily formed in the bending back of the metal tight against the entrance of liquids.

5 F are a pair of clamps, conveniently formed of wire bent to the shape shown; as to their lower portions threaded and passed through threaded lower bearings b^2 formed in the tumbler carrier, above which bearings they pass snugly but freely through unthreaded bearings b^3 likewise formed in said tumbler carrier. The upper portions of these clamps are curved over and bent to form clamp-bearings f adapted to be sprung into the clamp seats e in the tumbler caps. Beyond these bearings the clamps are extended to form clamp handles f^x . If preferred, the clamp-bearings may be provided with rubber, or other, rollers f^2 to engage the clamp seats in the caps, as shown in the case of the left hand clamp of Fig. 1. It is obvious that the rotation of the fly wheel will, through the engagement of its cam with the cam lugs on the tumbler carrier, occasion the constant reciprocation of said carrier about its pivot, the carrier, in the construction shown in which the cam is triangular, making three double strokes with each revolution of the wheel.

30 The advantages inherent in a machine of the foregoing construction are many and obvious:—The simplicity of the construction and the small number of parts, permit of the machine being built at small cost and of its being easily kept clean; while the removal of the single wheel nut permits of its being taken apart for cleaning. Although it is of course possible to use a cam having two, four, or more, contact points, the construction represented in which there are three contact points always engaged with two curved surfaces such as the cam lugs, insures, as represented in Figs. 4 and 5, the constant contact of two surfaces of the cam with said lugs, and also insures the driving of the lever without lost motion, and with a movement similar to that imparted by a crank, that is to say, with the most rapid motion at the middle of the stroke and with a slowing up at each end of the stroke to a speed sufficiently small to prevent the jerking due to momentum. The connection of the clamps with the tumbler carrier by a single screw thread, not only renders the clamps vertically adjustable up and down for tumblers of different heights and with varying degrees of pressure upon the caps, but also permits of the swinging of the clamps laterally into position over or away from the tumbler caps. The double bearings for the clamps, moreover, the upper one of each pair of which is unthreaded, obviates the bringing of the strain produced by the springing of the clamps on to the clamps at a point where the clamp is threaded and consequently weaker. It is proper to remark that in connection with the tumbler carrier and cam-provided fly wheel operative for the

reciprocation of said carrier I may, of course, employ other forms of clamp than the spring clamps described and represented. The latter are however to be preferred. The fact that the clamps represented can be made of ordinary wire bent to the desired form, that they form in themselves springs of sufficient strength to impart the requisite retaining pressure upon both the cap and the tumbler, and that they can be rotated without interfering with each other both for adjustment as to height, as to degree of pressure, and with respect to the caps, renders them a most desirable device for the purpose. The standard, its foot, bracket, fulcrum pin, and shaft, may be cast as an integral whole, which may also be the case with respect to the fly wheel and cam, and with respect to the tumbler carrier its tumbler-sockets clamp-bearings and cam-lugs. While in the foregoing description I have set forth, and while in the first five figures of the drawings I have shown, the cam as a rearwardly projecting hub, so to speak, of the fly wheel, that is to say, of the construction represented in Figs. 1, 3, 4, and 5, it is of course apparent that the cam may be formed by providing the rear face of a fly wheel the hub of which is not prolonged in to abut against the front face of the standard, with a cam groove d^x , as shown in Figs. 6 and 7, and by providing, for engagement within such groove, a roller-provided lug b^4 , supported conveniently by an arm b^5 springing from the tumbler carrier, and which, in the rotation of said cam groove with the fly wheel, is caused to describe a path such as to impart to the tumbler carrier a movement of reciprocation correspondent to the path of the groove within which it travels.

The gist of the invention resides in the reciprocation of a tumbler-carrying lever by a cam actuated by or from a hand, or power driven, fly wheel.

Having thus described my invention, I claim—

1. In combination, a supporting standard or frame, a tumbler-carrier pivoted with respect to said frame and provided with sockets for the bases of the tumblers, retaining caps for said tumblers, clamps for said retaining caps threaded into sockets formed in the tumbler carrier, and mechanism, substantially such as set forth, for effecting the oscillation of the tumbler carrier upon its pivot.

2. In a drink mixer, in combination, a supporting standard or frame, a tumbler-carrier pivoted with respect to the said frame and provided with sockets for the bases of the tumblers, tumbler-retaining caps embodying clamp seats, and clamps for said retaining caps, formed of bent wire, threaded into sockets formed in the tumbler carrier to render said clamps vertically adjustable, and provided with clamp bearings, substantially as set forth.

3. In a drink mixer, in combination, a sup-

porting standard or frame, a tumbler-carrier pivoted with respect to the said frame, and provided with sockets for the bases of the tumblers, tumbler-retaining caps embodying
 5 clamp seats, and clamps for said retaining caps, formed of bent wire, provided with clamp bearings, and each as to its lower portion passed freely through an upper un-
 10 threaded socket and through a lower threaded socket, substantially as set forth.

4. In a drink mixer, in combination, a supporting standard or frame, a tumbler-carrier pivoted with respect to the said frame, bent wire clamps threaded into bearings in the
 15 said carrier and embodying roller bearings, rollers upon said clamps, and tumbler-retaining caps embodying roller seats, substantially as set forth.

5. In a drink mixer, in combination,—a supporting standard or frame provided with a
 20 foot a bracket, and a clamp screw,—a fulcrum pin supported in said standard,—a wheel shaft also supported in said standard,—a tumbler carrier pivoted upon the fulcrum pin,—means
 25 for securing in place tumblers applied to said tumbler carrier,—and a cam provided fly wheel mounted upon the wheel shaft,—substantially as set forth.

6. In a drink mixer, in combination,—a supporting standard or frame provided with a
 30 foot a bracket and a clamp screw,—a fulcrum pin supported in said standard,—a wheel shaft also supported in said standard,—a tumbler carrier pivoted upon the fulcrum pin,—a cam-

provided fly wheel mounted on the wheel
 35 shaft,—tumbler-retaining caps,—and clamps supported upon the tumbler-carrier and adapted to bear upon the caps,—substantially as set forth.

7. In a drink mixer, in combination, a sup-
 40 porting standard or frame, a cam provided fly wheel, a tumbler carrier pivotally mounted upon said standard, means for connecting the cam with the tumbler carrier, tumbler caps,
 45 bent wire clamps threaded with respect to bearings in the tumbler carrier and having projecting clamp handles, substantially as set forth.

8. In a drink mixer, in combination, a stand-
 50 ard or frame, a fly wheel formed with a cam groove, and a pivoted tumbler carrier provided with a lug adapted to said cam groove, and also provided with tumbler retaining devices, substantially as set forth.

9. In a drink mixer, in combination, a stand-
 55 ard or frame, a fly wheel formed with a cam groove, a pivoted tumbler-carrier provided with a lug adapted to said cam groove, tumbler-retaining caps, and clamps for said caps, threaded into bearings in the tumbler carrier,
 60 substantially as set forth.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 23d day of May, A. D. 1889.

OBERLIN SMITH.

In presence of—

J. BONSALL TAYLOR,

WM. C. STRAWBRIDGE.