No. 664,779. Patented Dec. 25, 1900.

R. G. & E. H. RABIGER.

COMBINED EGG BEATER AND MIXER.

(Application filed Apr. 16, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

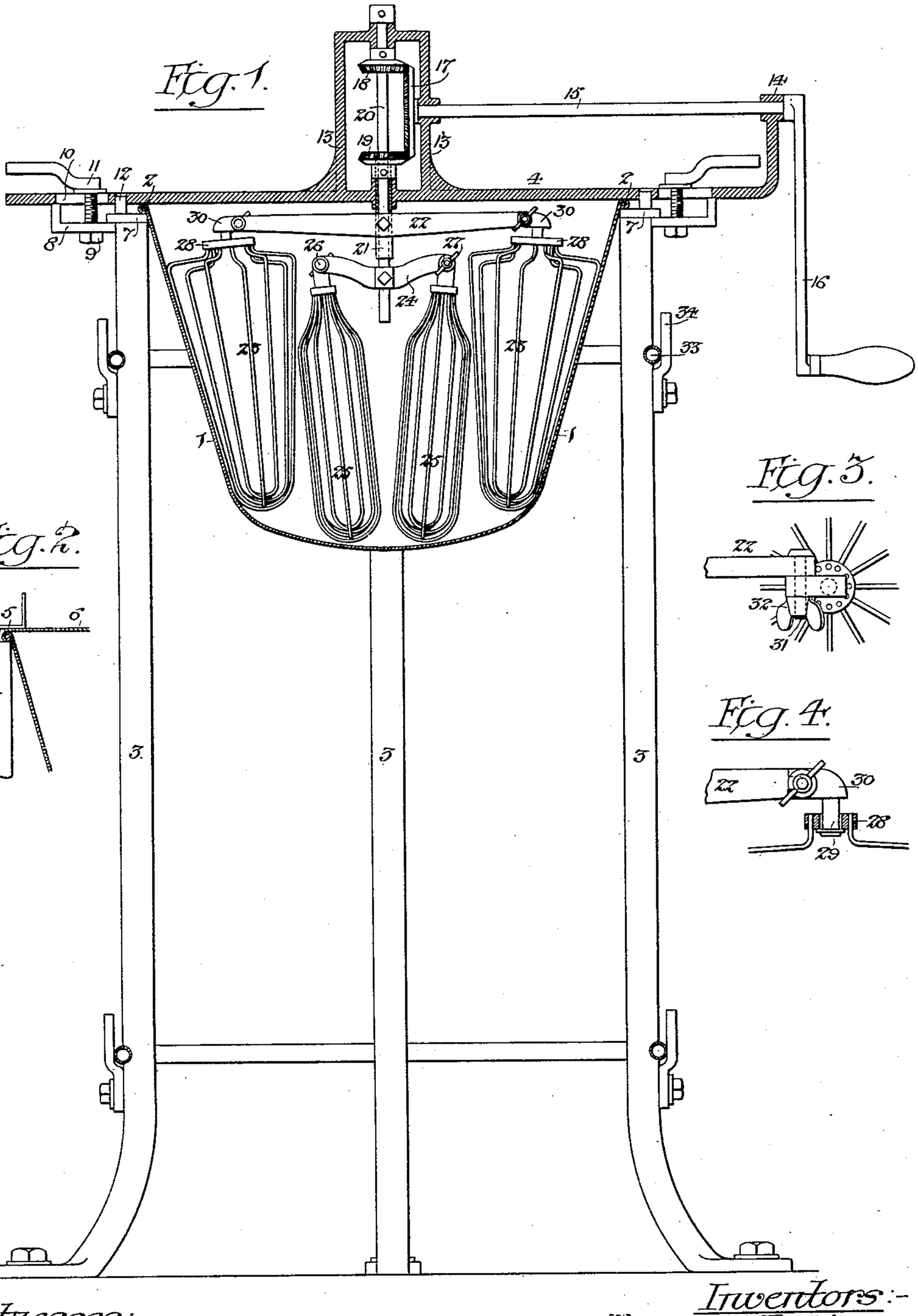

Fig. 2.

Fig. 3.

Fig. 4.

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Fig. 6.

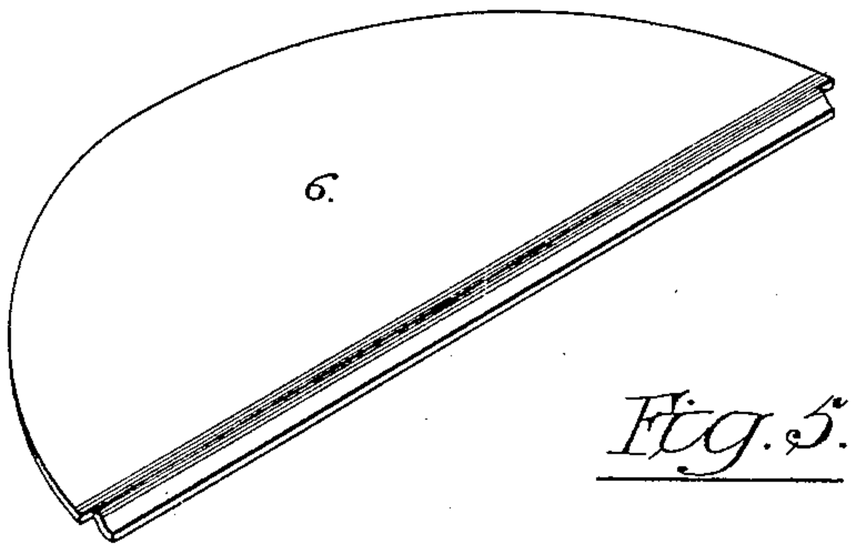
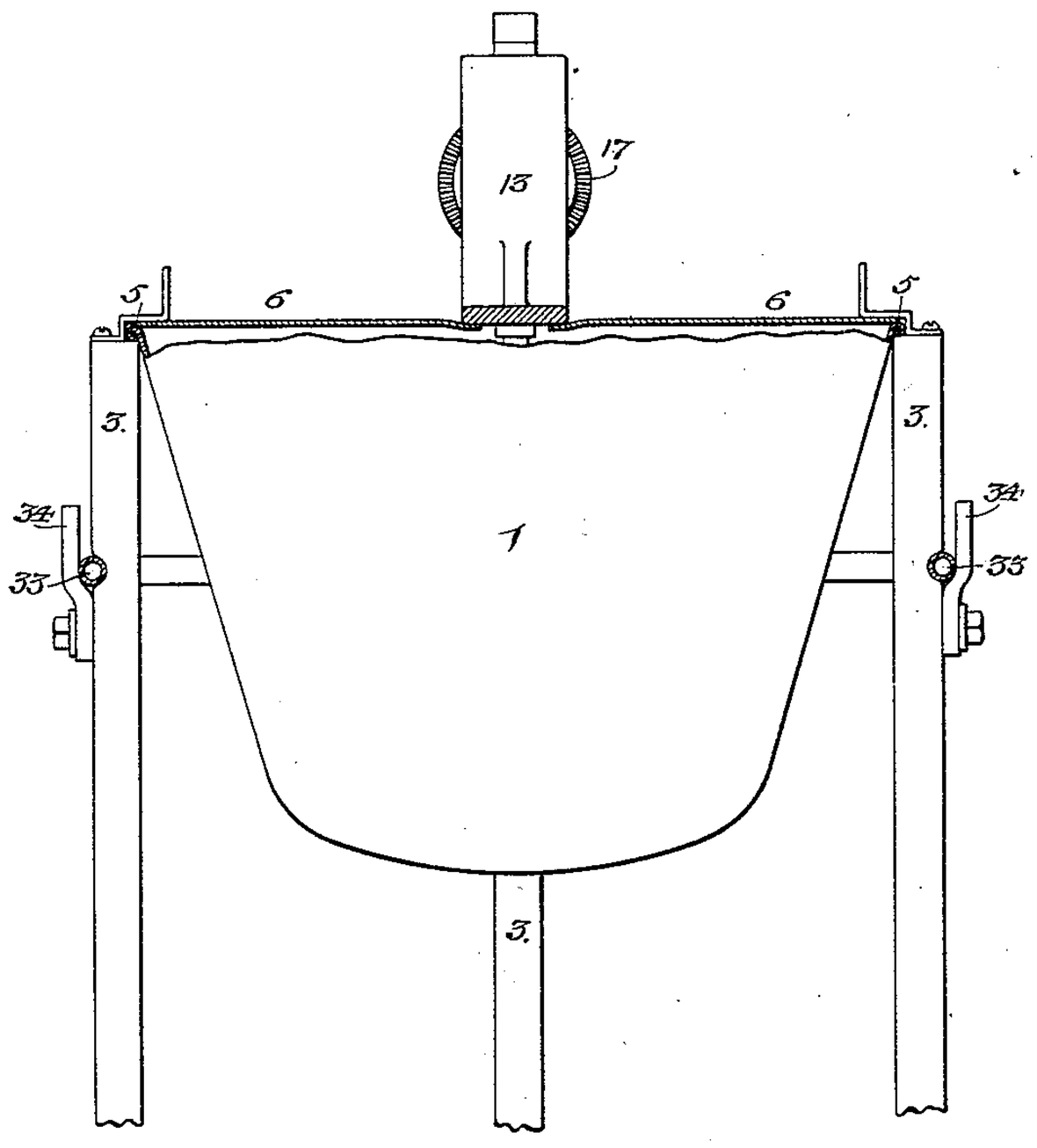


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT G. RABIGER AND EMIL H. RABIGER, OF PHILADELPHIA, PENNSYLVANIA.

COMBINED EGG BEATER AND MIXER.

SPECIFICATION forming part of Letters Patent No. 664,779, dated December 25, 1900.

Application filed April 16, 1900. Serial No. 13,071. (No model.)

To all whom it may concern:

Be it known that we, ROBERT G. RABIGER and EMIL H. RABIGER, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in a Combined Egg Beater and Mixer, of which the following is a specification.

One object of our invention is to so construct a beating or mixing device as to effect thorough and rapid agitation of the contents of the vessel containing the material under treatment, further objects being to provide for the ready cleansing of all parts of the beater or vessel, for the ready inserting of the beaters or mixers into and the equally ready removal of said beaters or mixers from the vessel, and the ready setting up or taking apart of the supporting structure, as well as the compact packing of the same for transportation or storage. These objects we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a mixing or beating device in accordance with our invention. Fig. 2 is a sectional view of part of the machine, taken on a line at right angles to Fig. 1. Fig. 3 is a plan view of part of one of the beater-bars and one of the beaters, showing the means employed for connecting the two. Fig. 4 is a side view, partly in section, of that portion of the structure which is represented in Fig. 3. Fig. 5 is a view of the upper portion of the machine, partly in side elevation and partly in transverse section, taken on a line at right angles to that of Fig. 1; and Fig. 6 is a perspective view of one of the cover-plates of the mixing or beating vessel.

The mixing or beating vessel is represented at 1 and may be composed of sheet metal or of any available material, the upper edge of said vessel being by preference beaded, as shown at 2, so as to form a projecting rib or flange whereby the vessel is supported upon the tops of the posts 3 of the supporting-framework, the vessel being normally confined to these posts by means of the cross-bar 4, passing over the tops of two of the posts, as shown in Fig. 1, and by swinging clips 5, applied to the tops of the other two posts, as shown in Fig. 2, the latter clips also serving to secure in place the lid 6 of the vessel, which is made in halves, one on each side of the central bar 4, so that either half can be readily removed in order to permit of an inspection of the contents of the vessel. Two of the posts 3 have at the top caps 7, which project beyond the posts and form shoulders for engagement with angular clamp-bars 8, through which pass bolts 9, the latter also passing through slots 10 in the cross-bar 4 and being provided with lever-nuts 11, whereby the cross-bar can be securely clamped in place or as readily released when it is desired to remove the cross-bar and the parts carried thereby from the vessel and its supporting-framework. Dowel-pins 12 project upwardly from the cap 7 and enter corresponding openings in the cross-bar 4, so as to hold the same rigidly in its proper transverse position and prevent any twisting or turning of the same on the supporting-frame.

Projecting upwardly from the center of the cross-bar 4 is a rectangular frame 13, and in this frame and in the upturned end 14 of the cross-bar 4 are formed bearings for the horizontal driving-shaft 15, which may have an operating-crank 16 or may be provided with suitable belt-pulleys if the device is to be driven by power. The inner end of the shaft 15 is provided with a bevel-wheel 17, which meshes with two bevel-pinions 18 and 19, the uppermost of these pinions being secured to a vertical shaft 20, and the lower pinion being secured to a sleeve 21, through which said shaft 20 passes, the sleeve having its bearing in the central portion of the cross-bar 4 and the upper end of the shaft 20 having its bearing in the upper portion of the frame 13. When, therefore, the shaft 15 is turned, the shaft 20 and sleeve 21 will be rotated in opposite directions. The sleeve 21 has secured to it a cross-bar 22, and the outer ends of this cross-bar are provided with depending beaters 23, preferably composed of bent wires, although any desired form of beater may be used. The shaft 20 projects below the sleeve 21 and is likewise provided with a cross-bar 24, having depending beaters 25 at its outer ends, the cross-bar 24 being shorter than the cross-bar 22, so that the beaters 25 will hang

down inside of the beaters 23 and will approach closely to the center of the vessel 1. The heads of the beaters 25 are slotted for the reception of the securing-bolts 26, whereby they are secured to the arms of the cross-bar 24, said bolts being provided with thumb-nuts 27, in order that the heads of the beaters may be readily released from connection with the cross-bar when it is desired to remove the beaters for any purpose. The heads of the beaters 25 are by preference rigidly secured to the cross-bar 24, so that said beaters will occupy a fixed position in the vessel; but the outer beaters 23 are mounted upon their heads, so as to have a limited amount of swinging motion, whereby when they swing inwardly they will engage the beaters 25, and owing to the fact that said beaters 23 and 25 are being carried in opposite directions around a common axis will consequently have a rapid whirling motion imparted to them and when they swing outwardly will strike the sides of the vessel 1, so as to scrape or clean the same. In order to provide for this limited amount of play of the outer beaters, each of the latter is provided at its upper end with a ring 28, having a central opening somewhat larger in diameter than the diameter of the stem 29, which depends from the head 30, whereby the beater is secured to the cross-bar 22, a washer or other enlargement at the lower end of the stem 29 serving to support the ring 28 vertically thereon. Each of the heads 30 is slotted and secured to the cross-bar 22 by means of a bolt 31 and thumb-nut 32, as shown in Figs. 3 and 4. Hence the beaters 23 are removable with the same facility as the beaters 25.

When the eggs or other material to be beaten or mixed have been deposited in the vessel 1, the latter is applied to the supporting-frame 3, and the cross-bar 4 is then secured in place, so as to introduce the beaters into the vessel and retain the latter in position. The lids 6 are then applied and the shaft 15 rotated, so as to cause rapid rotation in opposite directions around a common axis of the beaters 23 and 25, thereby subjecting all portions of the material in the vessel 1 to violent agitation, which is increased by the whirling motion imparted to the outer beaters 23 whenever the same swing into engagement with the inner beaters 25. Hence the proper beating or mixing of the contents of the vessel 1 can be effected in a much shorter time than with any other form of beater or mixer with which we are familiar. When the operation has been concluded, the cross-bar can be released by removing the clamp-levers 10, and the beaters can then be withdrawn from the vessel and the matter adhering thereto can be removed and the vessel then taken away to the point at which its contents is to be used, another vessel being inserted in its place, and the beating or mixing operation proceeded with as before, so that the same beating or mixing device can be used with any desired number of vessels and the operation can be carried on continuously.

The legs 3 of the supporting-framework are braced and held in their proper relative positions by means of rings 33, preferably tubular in cross-section, as shown in Fig. 1, these rings fitting into segmental recesses or seats in the outer sides of the posts and being confined in position by swinging clamps or turnbuckles 34, hung to the posts, as shown in Fig. 1. Hence when it is desired to knock down the frame for storage or transportation the rings can be readily released from connection with the legs by simply swinging the clamp-levers or turnbuckles out of engaging position.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination of the supporting-framework with the vessel having a rib or flange resting thereupon, a cross-bar whereby said rib or flange is confined to the supporting-framework, and clamping devices for detachably securing said cross-bar in position, substantially as specified.

2. The combination of the posts of the supporting-framework, with the vessel having a rib or flange resting on said post, a sectional lid, and swinging clamps or turnbuckles whereby said sectional lid is confined to the vessel and the latter to the posts, substantially as specified.

3. The combination of the vessel, the supporting-framework having posts with projecting caps, a slotted cross-bar and securing devices therefor comprising angle-clamps engaging with the projecting caps of the posts, screw-bolts passing through the slots of the cross-bar, and nuts engaging with said bolts, substantially as specified.

4. The combination of the vessel with a supporting-framework having posts with projecting dowel-pins at their upper ends, a cross-bar having openings for the reception of said dowel-pins, and clamps for vertically confining the cross-bar to the posts, substantially as specified.

5. The combination of the vessel and its support, with the inner and outer beaters or mixers mounted so as to revolve in opposite directions around a common axis, some of the beaters being rotatably mounted on their individual axes and having a limited amount of play whereby they may come into engagement with the oppositely-moving beaters and receive a whirling motion therefrom, substantially as specified.

6. The combination of the vessel and its support, with a rotating arm or cross-bar, a slotted beater-head, and a transverse bolt and nut for securing said slotted beater-head to the arm or cross-bar whereby the beater can be readily removed or replaced when the nut is slackened without removing the nut or bolt, substantially as specified.

7. The combination of the rotating arm or

cross-bar, a beater-head secured thereto and having a depending stem with enlarged lower end, and a beater having a top ring supported upon said enlarged lower end of the stem but having an opening somewhat greater in diameter than the stem, whereby a limited amount of lateral play of the beater on the stem is permitted, substantially as specified.

8. The combination of the legs of the supporting-framework, with the encircling rings bearing upon the outer sides of said legs and swinging clamp-levers or turnbuckles on the legs whereby the rings are confined thereto, substantially as specified.

9. The combination of the legs of the supporting structure having recesses in their outer sides with the rings fitted in said recesses and swinging clamp-levers or turnbuckles hung to the legs and serving to secure said rings thereto, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ROBERT G. RABIGER.
EMIL H. RABIGER.

Witnesses:
JOHN W. TAGGART,
F. E. BECHTOLD.