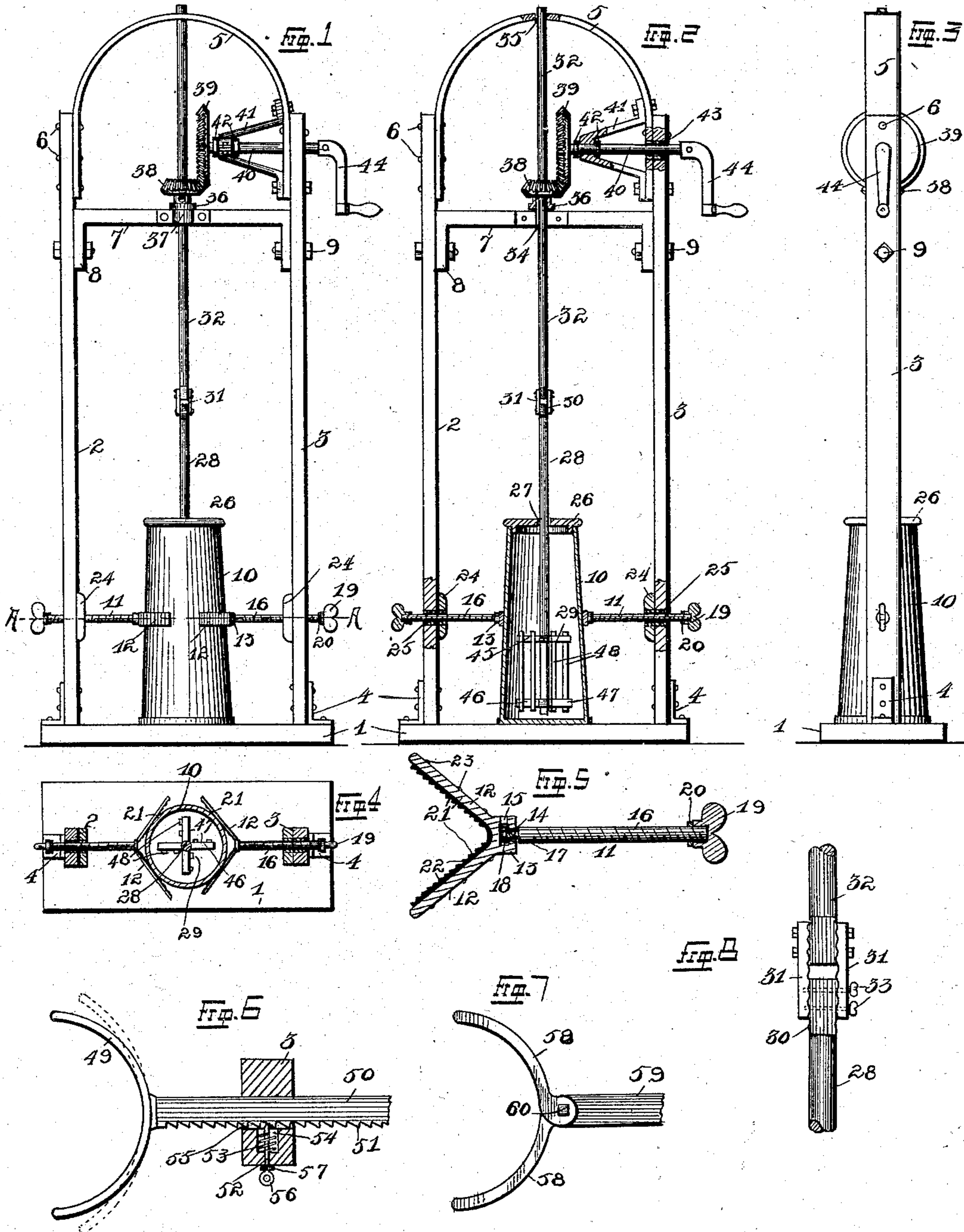


(No Model.)

E. W. SETTLE.
CHURN.

No. 504,893.

Patented Sept. 12, 1893.



WITNESSES

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UNITED STATES PATENT OFFICE.

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CHURN.

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Application filed December 12, 1892. Serial No. 454,872. (No model.)

To all whom it may concern:

Be it known that I, EMMETTE W. SETTLE, of the city of Slater, Saline county, State of Missouri, have invented certain new and useful Improvements in Churns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in "churns" and consists in the novel arrangement and combination of parts, as will be more fully hereinafter described and designated in the claims.

The object of my invention is to provide a simple and improved churn possessing the advantages in point of inexpensiveness, durability and general efficiency.

In the drawings:—Figure 1, is a front detail elevation of my complete invention. Fig. 2, is a front sectional elevation showing parts sectioned to show the position of other parts. Fig. 3 is a side elevation looking from the right hand of Fig. 1. Fig. 4, is a transverse sectional view taken on the line A—A in Fig. 1. Fig. 5 is a detail plan sectional view of one of the clamps and adjusting rods used to hold the churn in position. Fig. 6, is a modified construction of the churn clamp. Fig. 7 is an additional modification of the same. Fig. 8 is a detail view showing the manner of securing the dasher rod to the driving-shaft.

Referring to the drawings: 1 indicates a base platform, surmounted at each side by longitudinal uprights, 2 and 3, secured to said base by angle irons 4. The upper ends of said uprights 2 and 3 are connected by a curvilinear strip 5, the highest point of same being above and intermediate of the two uprights. Said connecting strip 5 is secured upon the inner side of said uprights 2 and 3 by rivets 6 and connecting said uprights at a point below that to which the piece 5 is connected is secured a cross-piece 7 having downwardly projecting lugs 8 upon its ends and by means of which it is secured to the inner sides of the uprights 2 and 3 by bolts 9.

The churn 10 is adapted to be placed upon the base 1, intermediate of the two uprights 2 and 3 and held in the stationary position by means of clamps 11.

As shown in Figs. 1, 2, 4 and 5, the clamp 11 consists of two distending arms 12, pro-

vided with a rearwardly projecting lug portion 13, which is provided at its rear center with a circular opening 14. A vertical slot 15 projects into the lug portion 13 and is wide enough for the placing therein of a nut. The adjusting screw threaded rod 16 is provided upon one end with a screw threaded portion 17, the same being of less diameter than the main portion of the rod. The nut 18 is dropped into the slot 15 and the portion 17 of the rod 16 is inserted through the opening 14 and screwed into the said nut 18, said nut being jammed thereon to allow of the turning of said rod 16 independent of the clamp 12. The outer end of the rod 16 is screw threaded similar to the remainder of its length and provided with an adjusting thumb nut 19, which is jammed thereon by means of a nut 20. The arms 12 upon their inner sides are provided with flexible strips 21, preferably made of rubber and having teeth 22 which project outwardly. Said strips are secured to said arm by rivets 23 and are adapted to clamp and hold the churn in position by the adjustment of the rod 16. The uprights 2 and 3 are provided upon their inner sides with supporting blocks 24, and through which and the uprights 2 and 3, are placed metallic interially screw threaded bushings 25, said bushings being in horizontal alignment and adapted to receive the adjusting rod 16. By the adjustment of the clamp rod 16 in the bushings 25, the arms 12 are either pushed toward each other or the opposite said arms 12 remaining in the stationary horizontal position independent of the movement of the rods 16.

The churn cover 26 is provided with an opening 27 through which the dasher rod 28 projects, with the dasher 29 located on the lower end of same. The upper end of the dasher rod 28 is squared and upon two sides are provided corrugations 30 which are adapted to be engaged by two plates 31 provided upon the inner sides with corrugations. Said plates are bolted upon the lower squared end of the driving shaft 32, which is also provided with corrugations adapted to be engaged by those upon the inner sides of the plates 31. The dasher rod 28 is removed from between the plates 31 from the side, and when in position, is held by thumb screws 33, as shown in detail in Fig. 8. The rod 32 or rather driving

shaft, is mounted vertically in a bearing 34 in the cross piece 7 and a bearing 35 in the curvilinear strip 5, both of said bearings being in alignment and a downward movement of said shaft 32 is prevented by a flange 36 which revolves upon the top of the cross piece 7. The bearing 34 is provided by a partial circular opening in said cross piece 7 and by a partial opening in a cap 37, which is secured in said cross piece 7, so that its ends are flush with the edge of said cross piece. Mounted upon the shaft 32 above the flange 36 is a pinion 38, the teeth of which are engaged by those upon a driving gear 39 mounted upon a horizontal shaft 40. A V-shaped bracket 41 is secured upon the inner side and near one end of the strips 5 and projects inwardly toward the shaft 32, and in its apex is provided a bearing for said shaft 40 having flanges 42 located thereon to prevent any horizontal longitudinal movement of the shaft, 40. The shaft is also mounted in a bearing provided by a metallic bushing 43 located in the uprights 3 and strip 5 and in alignment with the bearing in the apical bracket. The shaft 40 projects outwardly from the uprights 3 and upon the end of same is secured a crank 44 by means of which the shaft is revolved by hand. If desired to run the churn by water or other power the same could be transmitted to the shaft 40 and in this case a pulley would be provided thereon in the place of the crank 44. To allow for wear on the lower side of the flange 36 the same is made adjustable in order that the rod can be raised to compensate for the wear in order to keep the pinion 38 and the gear wheel 39 in operative order.

The churn dasher 29 consists of two sets 45 of 45 and 46 of extending bars 47 which project toward the quadrantal points of a square, said sets of bars are located in a horizontal position and some distance apart and upon the dasher rod 28, and each of the four bars 47 in both sets are connected by a vertical strip 48 which when the churn dasher is rotating agitates the contents of the churn.

In Fig. 4 the arms 12 of the clamp are shown without the rubber teeth 22 and it will be readily seen that owing to the shape of these arms that any size of churn can be accommodated.

In Fig. 6 is shown a construction wherein the clamping arms 49 are made curvilinear in form and of spring material in order that they will adjust themselves to any size of churn. In order that they will be held secure in any desired position, the adjusting bar 50 is made rectangular in form and provided upon one side with backwardly projecting teeth 51. These teeth are adapted to be engaged by a spring controlled rod 52, the spring 53 being located in an opening 54 in the uprights 3 and which opens into the opening 55 through which the rod 50 is adapted to reciprocate. The spring 53 has one end secured in said rod 52 and the other engages

the end of the opening 54 and normally keeps said rod in engagement with the teeth 51. The rod 52 is provided upon its outer end with a knob 56 by means of which it is pulled outwardly to allow the adjustment of the rod 50, and a collar 57 is secured between said knob 56 and the edge of the uprights 3, to limit the inward movement of said rod.

In Fig. 7 is shown a modification embodying two circular and adjustable arms 58, which are pivoted upon the end of a rod 59, the operation of which is similar to that of the rod 50 as shown in Fig. 6. A bolt 60 passes through said arms 58 and the rod 59 and by the loosening of same the arms may be adjusted in any desired position.

My invention is extremely simple in its operation and by the revolving of the shaft 40 by means of the crank 44, the gear 39 is revolved and owing to its engagement with the pinion 38 upon the shaft 32 said shaft is revolved and also the churn dasher upon the lower end of the rod 28, thus carrying out the function of the churn. The clamps 11 enable adjustment to suit different sizes of churns and are adapted to hold the same in a rigid position.

The clamp as shown in Fig. 5 is especially designed for holding the churn in the stationary position, as the engagement of the teeth with the churn prevents any turning of the same.

Having fully described my invention, what I claim is—

1. An improved churn adapted to be mounted upon a base having two upwardly projecting uprights, metallic interiorly screw threaded bushings located in alignment in said uprights screw threaded rods adjustable in said bushings, a V-shaped clamp located upon the inner end of each of said adjusting rods, said rods adjustable independent of any movement of the clamping jaw, and said arms comprising said jaw provided upon their inner sides with projecting teeth made of flexible material substantially as set forth.

2. An improved churn adapted to be held upon a base having two upright standards connected by a curvilinear strip at the upper end, and intermediately by a horizontal cross piece, said strip and cross piece providing bearings for a vertically mounted shaft, means for revolving said shaft, the lower end of said shaft squared and provided upon two sides with corrugations, plates having inner corrugated sides secured to the lower end of said shaft, a churn dasher secured to a vertical dasher-rod the upper end of said rod squared and corrugated and adapted to be held between the corrugated plates secured to the lower end of the driving shaft and held therein by removable thumb screws, substantially as set forth.

3. An improved churn adapted to be held upon and removable from a base construction, two upright rectangular standards secured at the ends of said base intermediate

of its width, the upper end of said standards
connected by a curvilinear strip secured upon
the inner sides of said standards, a cross-
piece secured to the inner sides of said stand-
ards below the curvilinear strip by its down-
wardly projecting lugs bolted to said stand-
ards, bearings provided in said curvilinear
strip and cross-piece for a vertical-shaft car-
rying a horizontal pinion, a collar secured
upon said shaft adjustable to prevent any
downward movement of the shaft and to com-
pensate for its wear and the wear upon the
pinion, a vertical horizontally mounted driv-
ing-gear adapted to engage said pinion, said
gear mounted upon a horizontal shaft secured
in bearings provided by a V-shaped bracket
secured to the curvilinear strip, and by a me-
tallic bushing projecting through said strip
and one of the upright standards, a crank se-
cured upon the projecting end of said shaft,
the said upright standards having interiorly

screw threaded metallic bushings located in
alignment within same, screw threaded ad-
justing rods having mounted on their inner
ends V-shaped arms, provided upon their in-
ner sides with projecting teeth made of yield-
ing material, said adjusting-rod adjustable in
said metallic bushings and the adjustment
of same adapted to hold the churn upon said
base, a churn-dasher located in said churn,
an upwardly projecting dasher-rod, said
dasher-rod removably secured to the lower
end of the vertical driving-shaft, and the re-
volving of the crank adapted to revolve the
churn-dasher, substantially as set forth.

In testimony whereof I affix my signature in
presence of two witnesses.

EMMETTE W. SETTLE.

Witnesses:

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HERBERT S. ROBINSON.