

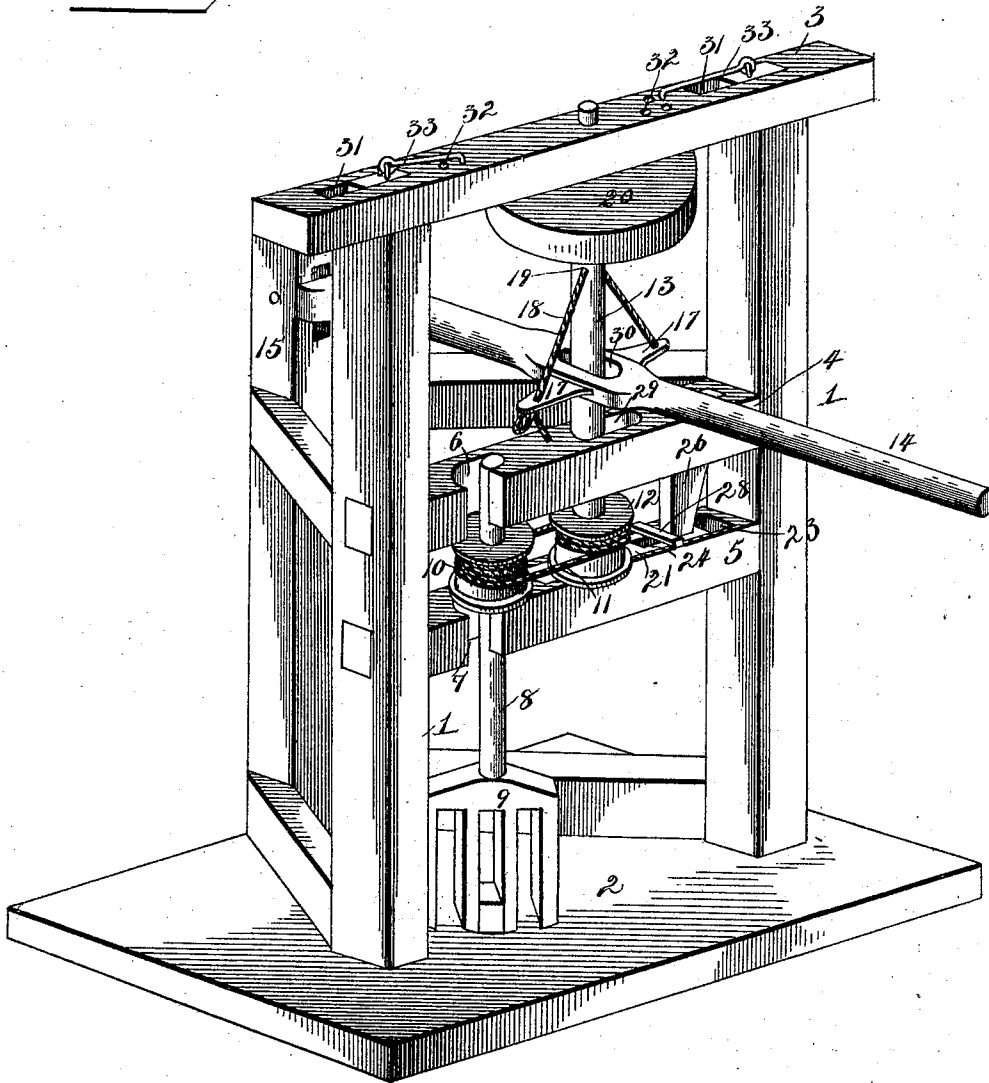
(No Model.)

2 Sheets—Sheet 1.

J. WYLIE.
CHURN.

No. 501,984.

Patented July 25, 1893.



Witnesses

W. C. Schneider.
W. H. Riley

Inventor

Josephus Wylie

By his Attorneys.

C. A. Snow & Co.

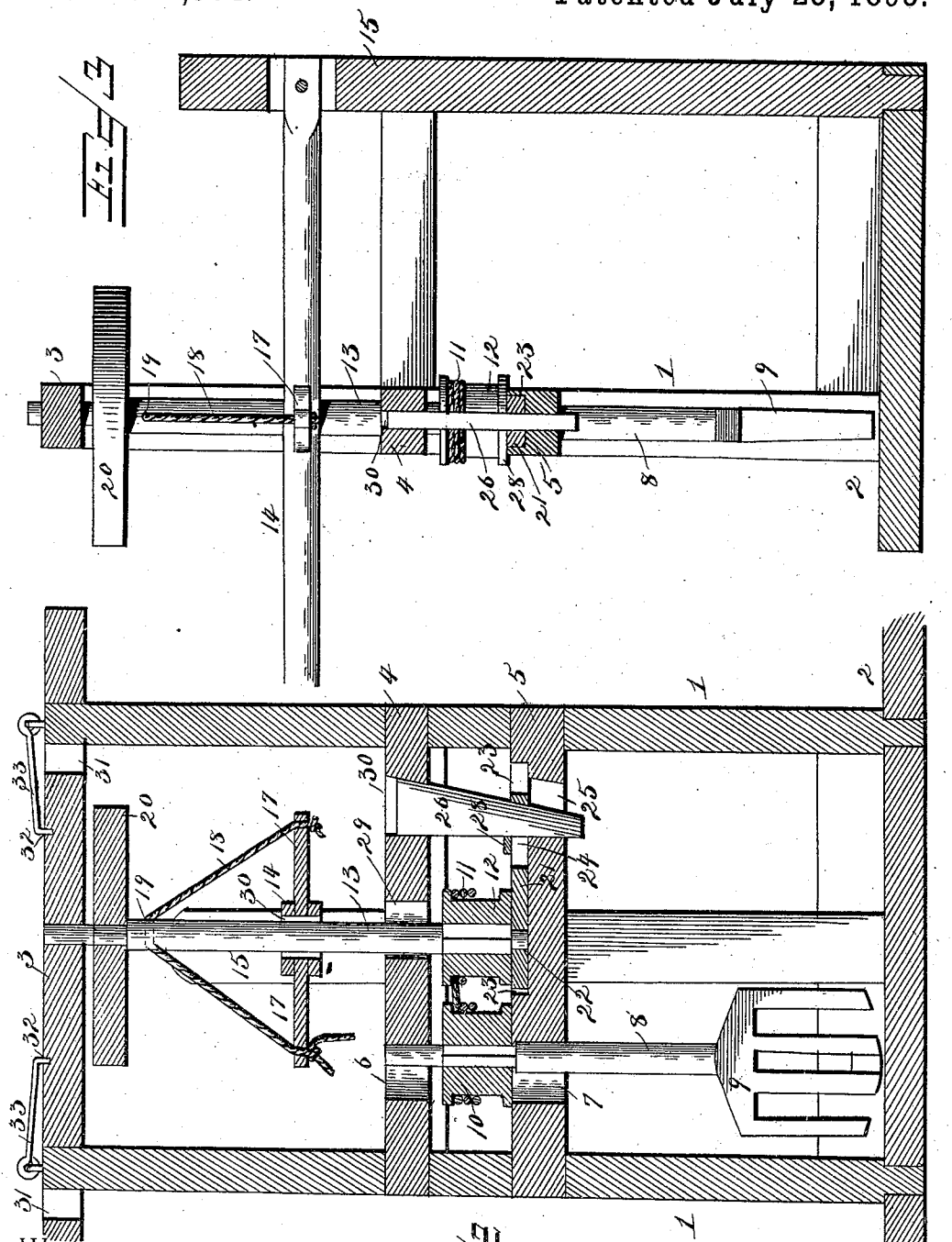
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UNITED STATES PATENT OFFICE.

JOSEPHUS WYLIE, OF IRELAND HILL, ALABAMA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 501,984, dated July 25, 1893.

Application filed May 12, 1893. Serial No. 474,010. (No model.)

To all whom it may concern:

Be it known that I, JOSEPHUS WYLIE, a citizen of the United States, residing at Ireland Hill, in the county of Marion and State of Alabama, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

The object of the present invention is to improve the construction of that class of churns which employ vibrating or reversely-rotating churn-dashers, and to enable any slack of the belt to be taken up and at the same time to maintain the vibrating shaft perfectly plumb.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings: Figure 1 is a perspective view of a churn constructed in accordance with this invention. Fig. 2 is a vertical transverse sectional view. Fig. 3 is a vertical longitudinal sectional view.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

1 designates vertical parallel uprights of a supporting frame, having their lower ends secured to a brace 2, and their upper ends connected by a longitudinally-adjustable top-bar 3. The uprights are connected at their centers by upper and lower intermediate horizontal bars 4 and 6, provided at one side of the frame with open bearing recesses 6 and 7, receiving a detachable dasher-shaft 8, which carries a dasher 9 at its lower end. The dasher-shaft has its upper end squared and is detachably secured to a pulley 10, which is connected by a belt 11, of stout cord, with a pulley 12, of a vibrating shaft 13. The vibrating drive shaft 13 is reversely rotated by an operating-lever 14, having its rear end fulcrumed on a post 15, and provided intermediate of its ends with an opening 16, and laterally-extending arms 17, arranged on opposite sides of the vibrating shaft and connected therewith by a cord 18, or its equivalent. The cord 18 passes through a perforation 19, of the vibrating shaft and has its ends secured to the arms 17; and as the operating-shaft is raised and

lowered the sides of the cord 18 are alternately wound and unwound around the vibrating shaft 13. A balance-wheel 20 is mounted on the vibrating shaft near the top thereof to render the motion continuous and to prevent the vibrating shaft stopping at the end of the stroke. The belt 11 is wound around each of the pulleys several times, in order to obtain a firm hold to prevent slipping, as the shafts are vibrated very rapidly to effect a rapid production of butter; and in order to take up any slack of the belt 11 to maintain the belt at the desired tension the lower end of the vibrating shaft 13 is journaled on an adjustable slide 21, and the upper end of the shaft 13 is journaled in a bearing-opening of the longitudinally-adjustable top-bar 3. The lower end of the shaft 13 is provided with a journal which is arranged in a bearing-socket 22, of the slide 21; and the latter is slidingly mounted in a longitudinal recess 23 in the upper face of the lower intermediate cross-bar 5. The slide 21 is provided with a longitudinal opening 24, adapted to partially register with an opening 25 of the cross-bar 5, and to be forced into more complete registering by a wedge 26. The wedge 26 is adapted to move the slide away from the dasher-shaft in tightening the belt, and its vertical edge engages a transverse piece 28, which is secured to the upper edges of the bar 5, spanning the recess thereof. The beveled edge of the wedge engages the outer end of the opening 24 of the slide, and as the wedge moves downward the slide is forced outward, as will readily be seen. The upper intermediate cross-bar 4 has an elongated shaft-opening 29, to permit free movement of the vibrating shaft in its adjustment, and it has a longitudinal slot 30 to receive the upper end of the wedge, when the latter is in its most elevated position when the belt is first placed on the pulleys, in order to steady and support the wedge. The upper ends of the uprights 1 are reduced, and the top-bar 3 is provided with longitudinal slots 31, and has at the inner ends of the slots adjusting perforations 32, arranged at different distances from the slots and adapted to be engaged by hooks 33, which are hinged to the reduced ends of the uprights 1, and which secure the bar 3 in its adjustment. The bar 3

enables the upper end of the vibrating shaft to be adjusted to agree with the adjustment of the lower end in order to maintain the vibrating shaft perfectly plumb to insure proper operation of the vibrating mechanism. The post 15 is arranged in rear of the front portion of the frame and is connected with the uprights 1 by upper and lower forwardly-diverging braces 34 and 35.

It will be readily apparent that the churn is simple in construction, that the dasher may be rapidly vibrated to accomplish a rapid production of butter, and that the belt connecting the pulleys may be maintained at the desired tension and the vibrating shaft be held perfectly plumb to insure proper operation of the parts.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

The bearing-socket of the adjustable slide is formed in a metal plate which is set in a recess of the slide. The slide is retained in the recess of the lower intermediate bar by the transverse piece.

What I claim is—

1. In a churn, the combination of a supporting frame, a dasher-shaft journaled therein, a drive-shaft journaled on the frame, pulleys mounted on said shafts, a belt connecting the pulleys, a horizontally-adjustable top-bar mounted on the frame and receiving the upper end of the drive-shaft, a horizontally-adjustable slide having the lower end of the shaft journaled on it, and means for holding the adjustable slide in position substantially as and for the purpose described.

2. In a churn, the combination of uprights, upper and lower intermediate bars connecting the uprights, the lower one being provided in its upper face with a longitudinal recess, a slide mounted in the recess and provided with a bearing-socket, a dasher-shaft journaled in suitable bearings of the intermediate bars and carrying a dasher, a longitudinally-adjustable top-bar mounted on the upper ends of the uprights and provided with a bearing-opening, a drive-shaft journaled at its upper end in the bearing-opening of the top-bar and having its lower end journaled in said socket, pulleys mounted on said shafts, a belt arranged on the pulleys and communicating motion from the drive-shaft to the dasher-shaft, and means for securing the slide and the top-bar in their adjustment, substantially as described.

3. In a churn, the combination of uprights 1, intermediate upper and lower bars connecting the uprights and provided with bearings and having longitudinal slots the lower intermediate bar being provided in its upper face with a longitudinal recess and the upper intermediate bar having an elongated shaft-opening 29, a dasher-shaft journaled in said bearings, a drive-shaft passing through the shaft-

opening 29 of the upper intermediate bar, pulleys arranged on said shafts, a belt passing around the pulleys, a slide arranged in the recess of the lower intermediate bar and provided with a slot arranged above that of the lower intermediate bar, said slide having a bearing-socket and receiving the lower end of the drive-shaft, a transverse piece secured to the upper face of the lower intermediate bar and spanning the recess, a wedge arranged in said slots for securing the slide in its adjustment, and an adjustable top-piece mounted on the uprights and having the upper end of the drive-shaft journaled in it, substantially as described.

4. In a churn, the combination of uprights, intermediate lower bars connecting the uprights and provided with bearings, a dasher-shaft journaled in the bearings, an adjustable slide mounted on the lower one of the intermediate bars, an adjustable top-bar provided with longitudinal slots receiving the upper ends of the uprights, said top-bar having adjacent to the slots perforations arranged at different distances from the slots, hooks hinged to the uprights and engaging the perforations to secure the top-bar in its adjustment, a drive-shaft journaled on the slide and the top cross-bar, pulleys mounted on the shafts, and a belt arranged on the pulleys, substantially as described.

5. In a churn, the combination of a supporting frame having uprights provided with reduced upper ends, a lower intermediate bar having a longitudinal slot and connecting the uprights and provided in its upper face with a longitudinal recess, a slide having a longitudinal slot and arranged in the recess, a transverse piece spanning the recess and securing the slide therein, an adjustable top bar provided with longitudinal slots receiving the reduced ends of the uprights and having adjacent to the slots adjusting perforations, hooks mounted on the uprights and engaging the perforations and securing the top-bar in its adjustment, a drive-shaft having its lower end journaled on the slide and having its upper end journaled on the top-bar, a wedge arranged in the slots of the slide and the intermediate bar, a dasher-shaft journaled on the intermediate bar, pulleys mounted on said shafts, and a belt connecting the pulleys, substantially as described.

6. In a churn, the combination of a supporting frame comprising a base, uprights rising from the base, a fulcrum post mounted on the base in rear of the uprights, horizontal bars connecting the uprights and the fulcrum post, upper and lower intermediate bars connecting the uprights and provided with bearings and having longitudinal slots, the lower intermediate bar being provided in its upper face with a longitudinal recess and the upper intermediate bar having an elongated shaft-opening 29, a dasher-shaft journaled in said bearings, a slide arranged in the longitudinal recess of the lower intermediate bar and pro-

vided with a longitudinal slot, a wedge arranged in said slots and securing the slide in its adjustment, an adjustable top-bar mounted on the uprights, a vibrating shaft arranged in the elongated opening 29 of the upper intermediate bar and journaled on the slide and the top-bar, pulleys mounted on said shafts, a belt connecting the pulleys, an operating-lever fulcrumed at its rear end on said post and provided intermediate of its ends with laterally-extending arms and having an open-

ing receiving the vibrating shaft, and a cord extending downward from the shaft at opposite sides thereof and connected to said arms, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPHUS WYLIE.

Witnesses:

GEO. C. SHOEMAKER,
J. H. SIGGERS.