No. 682,800. Patented Sept. 17, 1901.

J. M. HUGHES.

CHURN.

(Application filed July 17, 1901.)

(No Model.)

Fig. 1.

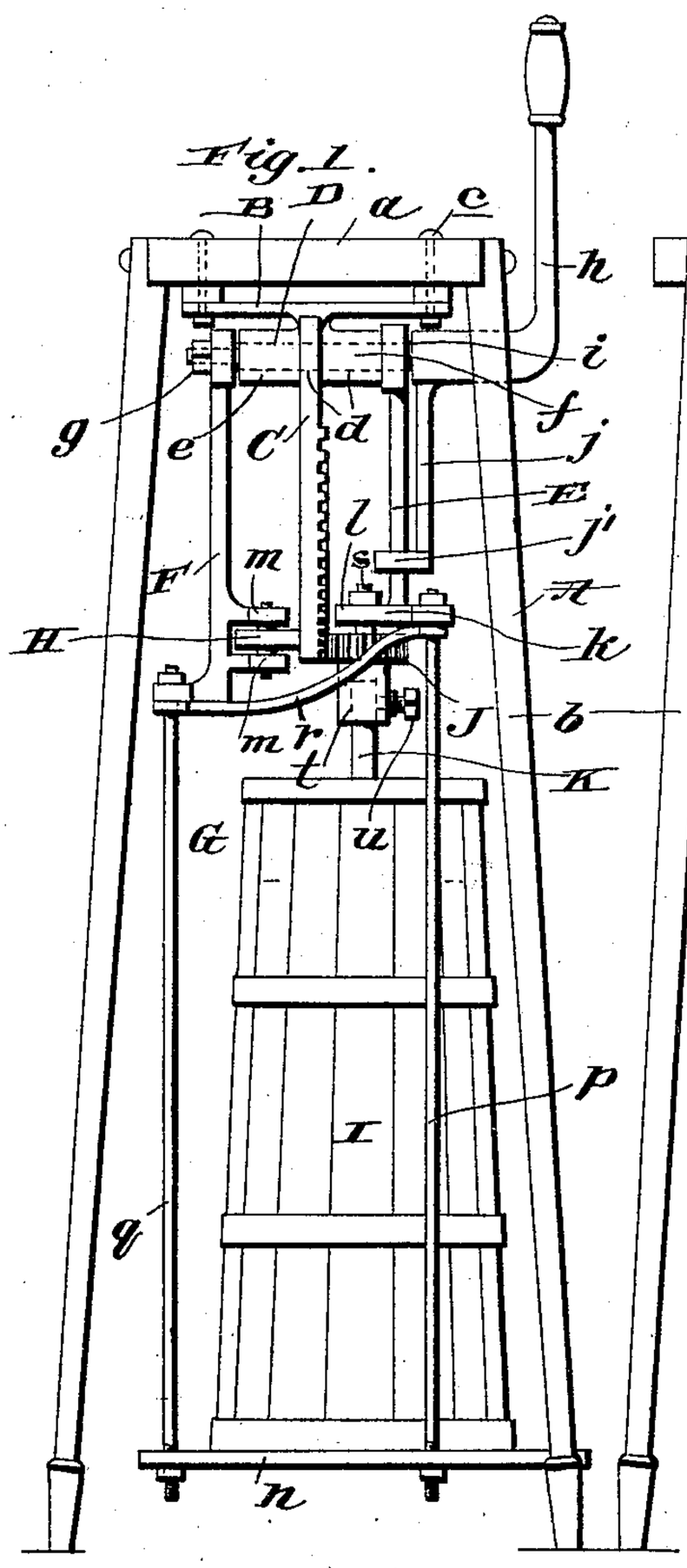


Fig. 2.

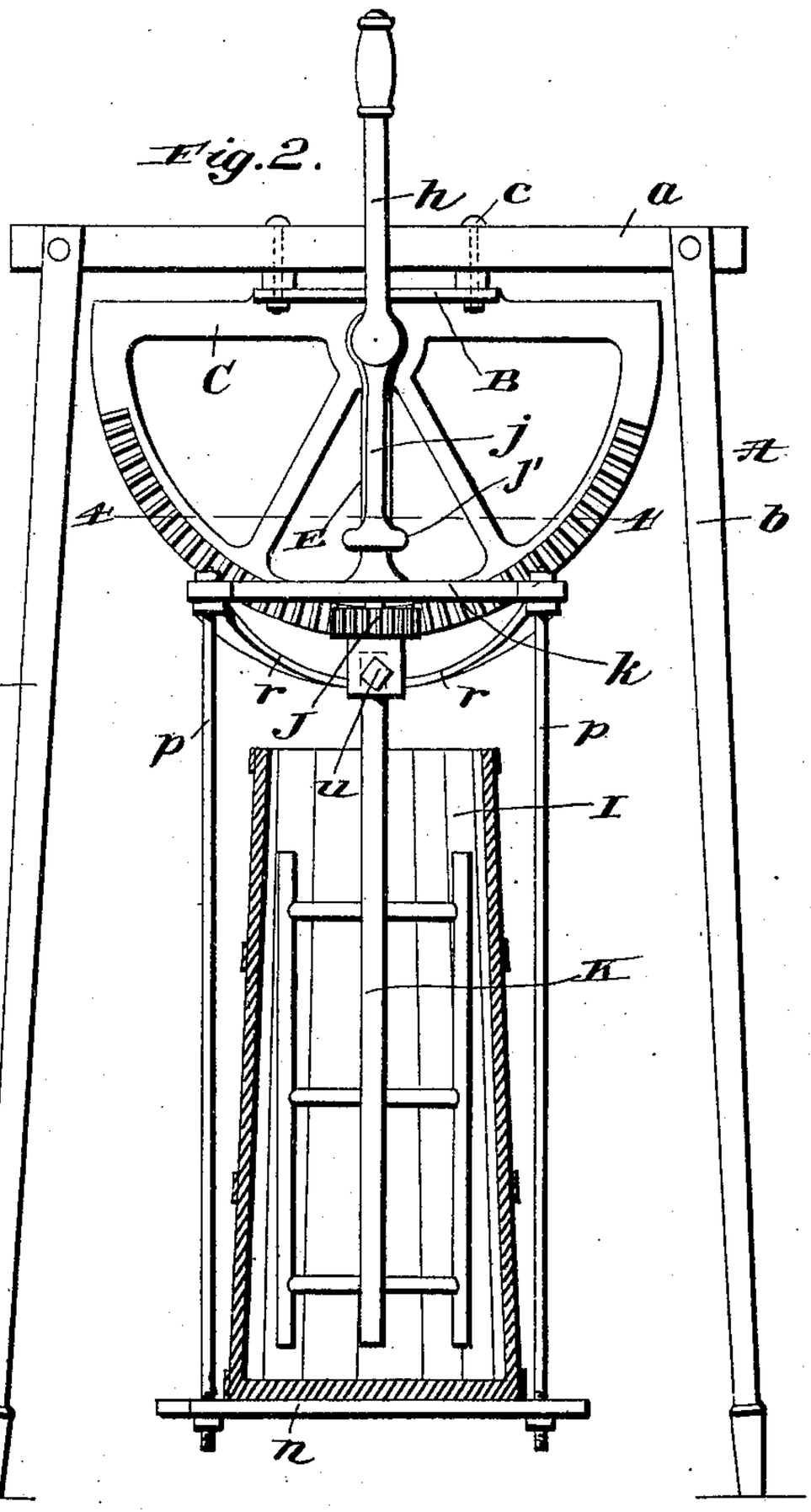


Fig. 3.

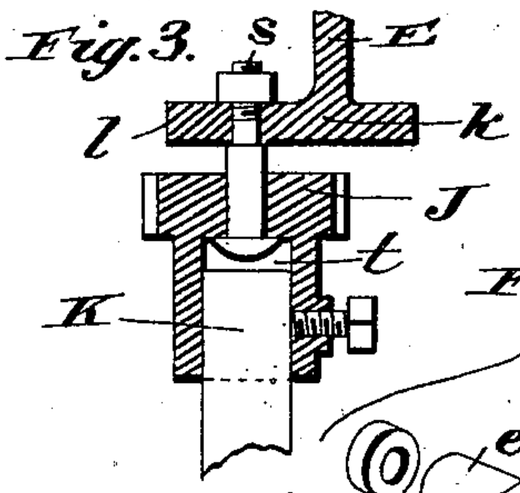


Fig. 4.

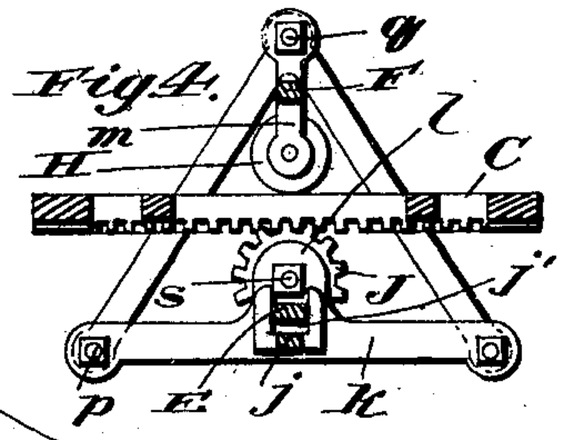
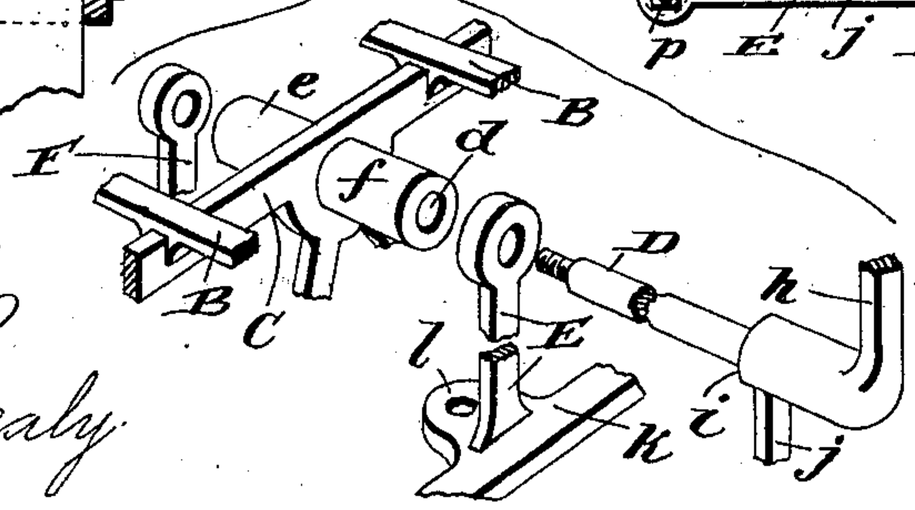


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN M. HUGHES, OF BOWLING GREEN, KENTUCKY.

CHURN.

SPECIFICATION forming part of Letters Patent No. 682,800, dated September 17, 1901.

Application filed July 17, 1901. Serial No. 68,615. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HUGHES, a citizen of the United States, residing at Bowling Green, in the county of Warren and State of Kentucky, have invented new and useful Improvements in Churns, of which the following is a specification.

My invention relates to improvements in churns; and it consists in the peculiar and advantageous specific construction hereinafter described, and particularly pointed out in the claims appended.

In the accompanying drawings, Figure 1 is an end elevation of a churn constructed in accordance with my invention. Fig. 2 is a side elevation of the same with the churn-body in diametrical section. Fig. 3 is an enlarged detail section illustrative of the manner in which the dasher-shaft is connected to one of the arms of the swinging frame; and Fig. 4 is a detail horizontal section taken in the plane indicated by the line 4 4 of Fig. 2 looking downwardly. Fig. 5 is a detail perspective view of parts disconnected.

Similar letters of reference designate corresponding parts in all of the several views of the drawings.

A is the main frame or stand, which is preferably of wood and comprises a top *a* and legs *b*.

B is a hanger connected by bolts *c* or other suitable means to the under side of the frame-top and having an integral depending segmental rack C, provided in its upper portion with a transverse aperture *d*, and also having short sleeves *e f*, disposed at opposite sides of the rack and coincident with said aperture *d*.

D is a rock-shaft journaled in the transverse aperture *d* and sleeves *e f* of hanger B and threaded at one end to receive a nut *g* and provided at its opposite end with an upwardly-extending crank *h*, and E F are the pendent arms of a swinging frame G, designed to support the body of the churn, as will be presently described. The arm E is mounted on the rock-shaft D between the end of the sleeve *f* of the hanger and a shoulder *i* of the shaft and extends through a vertically-disposed eye *j'* on an arm *j*, depending from the shaft, this to enable the shaft to communicate oscillatory motion to the arm, and consequently to the frame G, and afford considerable leverage. At its lower end said arm E is provided with a T-head *k*, which at its middle has an apertured offset *l* for a purpose presently pointed out. The arm F is mounted on shaft D between the nut *g* and end of the sleeve *e*, and adjacent to its lower end is provided with two inwardly-extending lugs *m*. These lugs receive between them an antifriction-roller H, which by bearing against the smooth side of the segmental rack serves to reduce the friction incident to the swinging of frame G to a minimum, and also serves to hold said frame against lateral deflection and prevents the pinion, presently described, from binding in the teeth of the rack, with the result that the swinging of the frame is rendered very easy.

In addition to the arms E F the frame G comprises a platform *n*, designed to support the churn-body I, rods *p q*, which connect said platform to the arms E F, respectively, and braces *r*, (see Fig. 1,) which connect the arm F and rod *q* to the arm E and rods *p*, so as to cause all of these parts to move as one.

J is a pinion disposed below and connected by a bolt *s* to the offset *l* of T-head *k* and having an angular socket *t* at its lower end, and K is the shaft of a dasher arranged in the body I, the said shaft having an upper angular end let into the socket of the pinion and detachably secured thereto by a set-screw *u*. By virtue of this construction it is simply necessary when the churn-body is to be removed from the swinging frame to loosen the set-screw *u* and move the dasher-shaft downwardly out of engagement with the angular socket of the pinion.

In the practical operation of the churn the frame G, with the churn-body thereon, is swung to and fro through the medium of the crank *h*. When the frame is thus swung, the pinion J will travel from end to end of the segmental rack, and the dasher in body I will be rotated a number of times incident to the movement of said frame in each direction, with the result that the production of butter will be accelerated. It will be readily appreciated from the foregoing that the frame G and churn-body thereon may be swung to and fro through the medium of the crank *h* with but a minimum amount of effort, this

because of the fact that when once started the frame swings after the manner of a pendulum. It will also be appreciated that the antifriction-roller H and the leverage afforded contribute materially toward rendering the operation of the churn very easy.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

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

1. In a churn of the class described, the combination of a main frame or stand having a top, a hanger connected to the under side of said top and having a depending, segmental rack provided with a transverse aperture, and also having sleeves at opposite sides of the rack and coincident with the aperture thereof, a rock-shaft journaled in the hanger and having a crank, and also having a depending arm provided with an eye, pendent arms loosely mounted on the rock-shaft and disposed at opposite sides of the segmental rack; one of said arms extending through the eye on the depending arm of the rock-shaft, a platform disposed below and connected with the pendent arms, and serving in conjunction with same to form a swinging frame, a churn-body mounted on the platform of the frame, a pinion connected with one of the pendent arms of the swinging frame and intermeshed with the teeth of the rack, and a dasher arranged in the body and connected with the pinion.

2. In a churn of the class described, the combination of a main frame or stand having a top, a hanger connected to the under side of said top, and having a depending, segmental rack provided with a transverse aperture, and also having sleeves at opposite sides of the rack and coincident with the aperture thereof, a rock-shaft journaled in the hanger and having a crank, and also having a depending arm provided with an eye, arms loosely mounted on the rock-shaft and disposed at opposite sides of the rack; one of said arms extending through the eye on the depending arm of the rock-shaft and having a T-head at its lower end, a platform disposed below the pendent arms and connected thereto by rods, braces connecting the arms and rods, a churn-body mounted on the platform, a pinion connected to one of the pendent arms and intermeshed with the teeth of the rack and having an angular socket at its under side, and also having a set-screw, and a dasher arranged in the churn-body and having an angular upper end secured in the angular socket of the pinion.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN M. HUGHES.

Witnesses:
HUBERT P. OLDHAM,
J. M. JAMISON.