

J. B. BOLINGER.
Device for Operating Churns.

No. 223,700.

Patented Jan. 20, 1880.

Fig1.

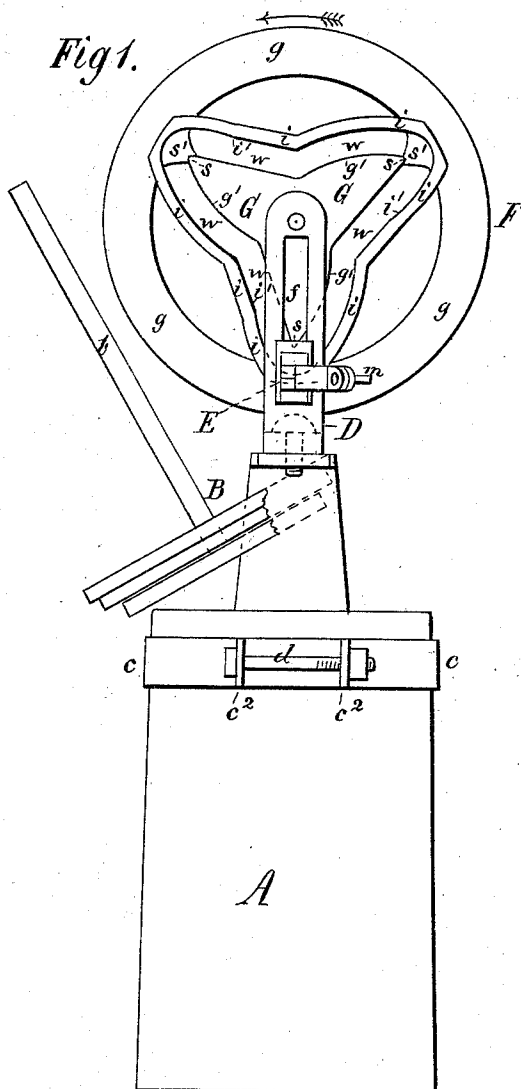


Fig2.

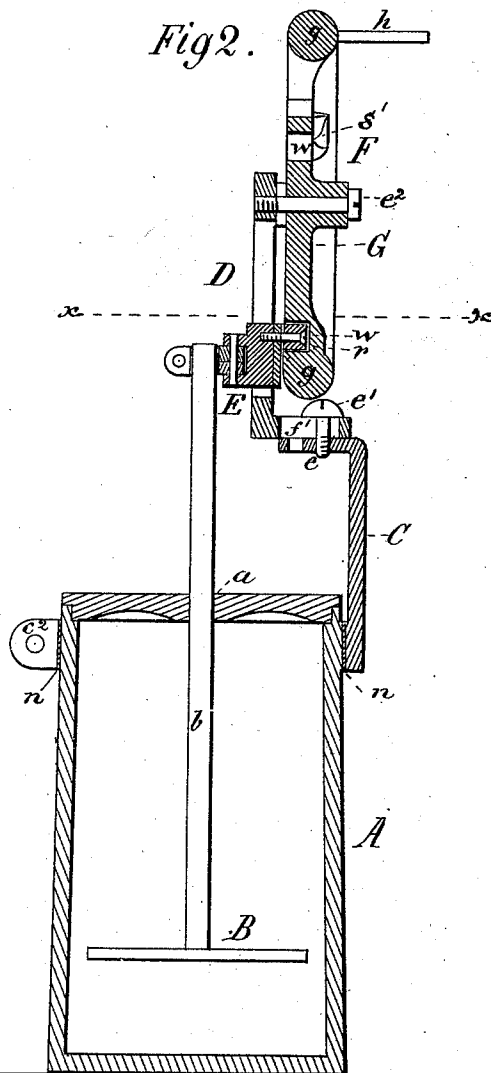


Fig3.

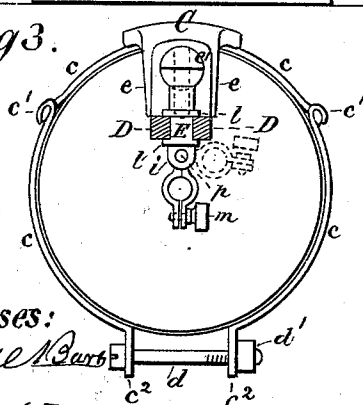
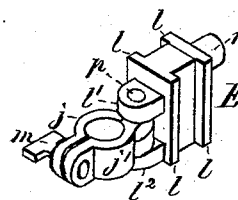


Fig4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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DEVICE FOR OPERATING CHURNS.

SPECIFICATION forming part of Letters Patent No. 223,700, dated January 20, 1880.

Application filed December 5, 1879.

To all whom it may concern:

Be it known that I, JOHN B. BOLINGER, of Jackson, in the county of Jackson and State of Michigan, have invented an Improvement in Devices for Operating Churns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and letters of reference marked thereon, forming a part of this specification, in which drawings—

Figure 1 is a front elevation of my improved churn. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a plan view with that portion of the mechanism removed which is above the line *xx* of Fig. 2. Fig. 4 is a detail view, in perspective, of the pitman-connection between the dasher and the driving cam-wheel of the churn.

Like letters indicate the same parts in the several figures.

One object of my invention is to provide a churn with the means whereby a rapid reciprocating movement can be imparted to the dasher positively, which at the same time shall only require a slight exertion of the power of the operator.

Another object of my invention is to provide the means whereby an ordinary churn-dasher may be operated with ease and without binding upon the cover of the churn, although the hole in the cover through which the handle of the dasher passes shall not be in exact line with the longitudinal axis of the churn; and a further object is to provide the means whereby the dashers of churns may be operated in the bodies of churns having different diameters.

The nature of the invention will fully appear from the subjoined description when considered with reference to the accompanying drawings, forming a part of this specification.

A in the drawings indicates the body of the churn; B, the dasher, provided with an ordinary handle, *b*; and C, a standard for supporting the mechanism to impart motion to the dasher.

The standard C at its lower end is provided with a hinged metallic clasp, *c*, which is constructed to nearly encircle the upper end of the body A of the churn. This clasp is hinged

at *c'*, and through its perforated terminating ends *c''* is provided with a tightening bolt and nut, as shown.

The bolt *d* is made with a grooved head, and at its opposite end is screw-threaded to receive the nut *d'*. The clasp *c* is also provided in any suitable manner with an interior elastic lining, *n*, in order that a churn may be properly embraced by the clasp, although the churn-body may not be perfectly cylindric. The clasp *c*, thus constructed and held in place, as shown, is adapted for use upon churns of varying diameter, while at the same time, by simply loosening the nut *d*, the dasher being disconnected from its operating mechanism, it can readily be removed from the body of a churn, together with the superincumbent mechanism for imparting motion to the dasher.

The standard C has an upper bent end, as at *e*, provided with screw-threaded perforations to receive a screw-bolt, *e'*, by means of which an adjustable standard, D, is held in position upon the standard C.

The standard D is slotted longitudinally, as at *f*, a greater portion of its length to receive a metallic pitman-connection, by which the dasher B is connected with a driving cam-wheel, F, applied to the upper end of the standard by means of a screw-bolt, *e''*, as shown. The lower supporting end of the standard D is also slotted, as at *f'*, thereby permitting the standard, with its pitman-connection E and cam-wheel F, to be adjusted bodily nearer to or farther from the longitudinal axis of the body of a churn, according to the diameter of such body.

The cam-wheel F is made of cast metal, and with its perimeter *g* weighted, as indicated in the drawings, in order that it may act also as a balance-wheel. It is constructed with a central portion, G, of the form represented in Fig. 1, thereby presenting cam-surfaces, as at *g'* *g'*, which positively force down the pitman-connection E when the wheel F is rotated in the proper direction, as indicated by the arrow. This central portion, G, is bounded by an inclosing portion of the wheel, as at *i*, thereby leaving an intermediate space or way, as at *w*, all around the edge of said central portion, in which a friction-roller, *r*, bolted to the

pitman-connection E, travels during the operation of the churn.

The inner or edge faces, as at i' , of the inclosing portion i , when the wheel F is rotated by its handle h in the direction of the arrow, serve to positively lift the pitman-connection E; and as there are three cam-surfaces, g' , and three lifting-faces, i' , which alternately come into action during a single revolution of the wheel F, the dasher B, when connected to the device E, will make three positive up and down strokes at every revolution of the wheel.

The central portion, G, at its points s , is connected to projections s' , which extend inwardly from the perimeter g of the wheel, said parts g , G, and i being all connected together in the operation of casting the wheel.

The pitman-connection E, as clearly represented in Fig. 4, is adapted to work in the slot f of the standard D, and be retained therein by the overlapping portions l . On its rear side it is provided with a friction-roller, r , which is held in place by a screw-bolt, as shown in Fig. 2. In front it has two projecting portions, as at l' l'' , between which clamping or clasp jaws, as at j j' , are hinged on a pin, p . The forward ends of these jaws are perforated, and the perforation in j' is screw-threaded, so as to engage the thumb set-screw m , and thereby tighten the jaws upon the dasher-handle b when inserted for action between the jaws, as indicated in Fig. 2. By hinging these jaws upon the pin p it will be perceived that they may be deflected either to the right hand, as indicated in Figs. 1 and 3, or to the left hand, as occasion may require, and that by means of the slot f' in the standard D the standard, the wheel F, and the pitman-connection E may all be simultaneously moved either forward or back, or either to the right or to the left hand, as occasion may require. Hence it will be seen that if, for any cause, the hole a in the cover of a churn through which the handle b of the dasher works should not be in

exact line with the longitudinal axis of the body A of the churn, the said mechanism for operating the dasher can be adjusted to said handle, and this without causing a binding of any of the parts during the act of churning, and also that said mechanism is adaptable to operate dashers in churns which do not have the same diameter.

It will also be seen that when it is desirable to detach the handle b from the jaws j j' a single rearward turn or two of the thumb-screw m will effect this object; whereupon, if it is desired to withdraw the dasher from the churn, the jaws may be turned to one side, as indicated in Fig. 1 in full lines, and in Fig. 3 in dotted lines, and the dasher removed, as illustrated in Fig. 1; or the standard D, carrying the pitman-connection E, may be swung around entirely out of the way of the removal of the dasher.

I claim—

1. The combination of the weighted cam-wheel F, having a camway, w , for giving a positive up-and-down movement of the dasher B, standards C and D, pitman-connection E, and dasher B, substantially as and for the purpose described.

2. The adjustable standard D, in combination with a pitman-connection, E, having swinging or hinged jaws j j' , substantially as and for the purpose described.

3. The metallic clasp c , provided with hinges at c' , tightening-bolt d , standard C, and elastic lining n , substantially as and for the purpose described.

4. The pitman-connection E, provided with swinging clamping-jaws j j' and thumb set-screw m , substantially as and for the purpose set forth.

JOHN B. BOLINGER.

In presence of—

HOWARD W. ROSS,
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