S. B. DONALDSON.

Churn.

No. 205,620. Patented July 2, 1878.

Fig. 1.

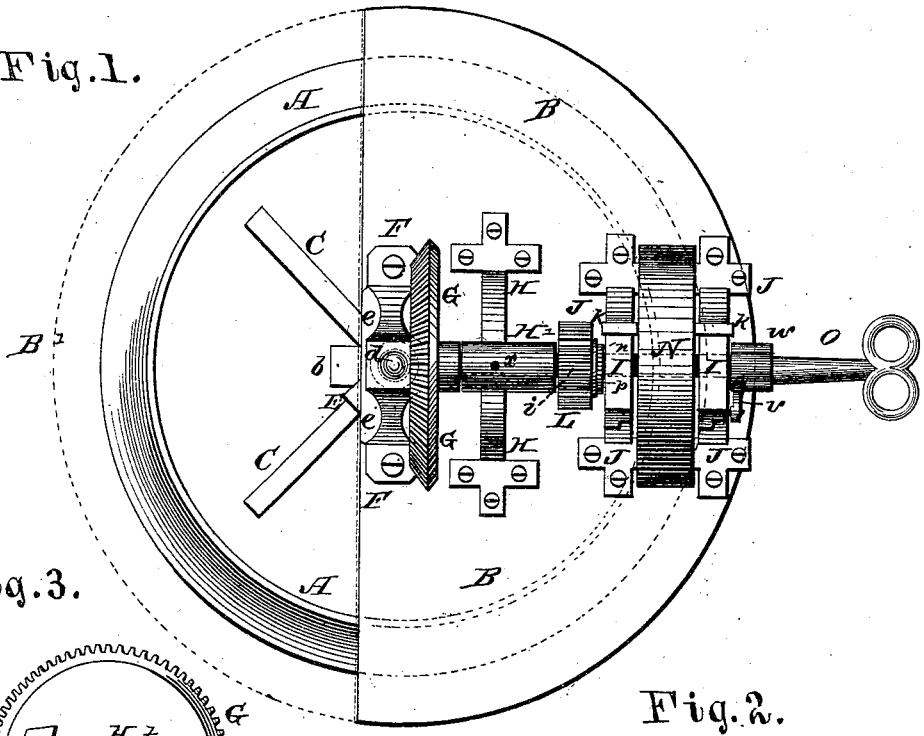


Fig. 3.

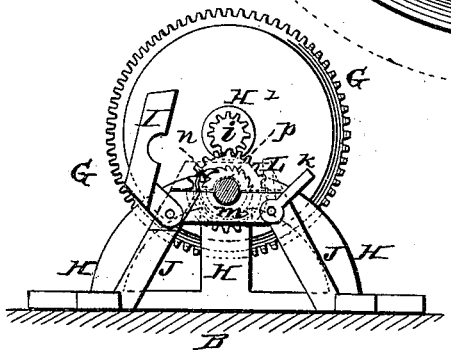
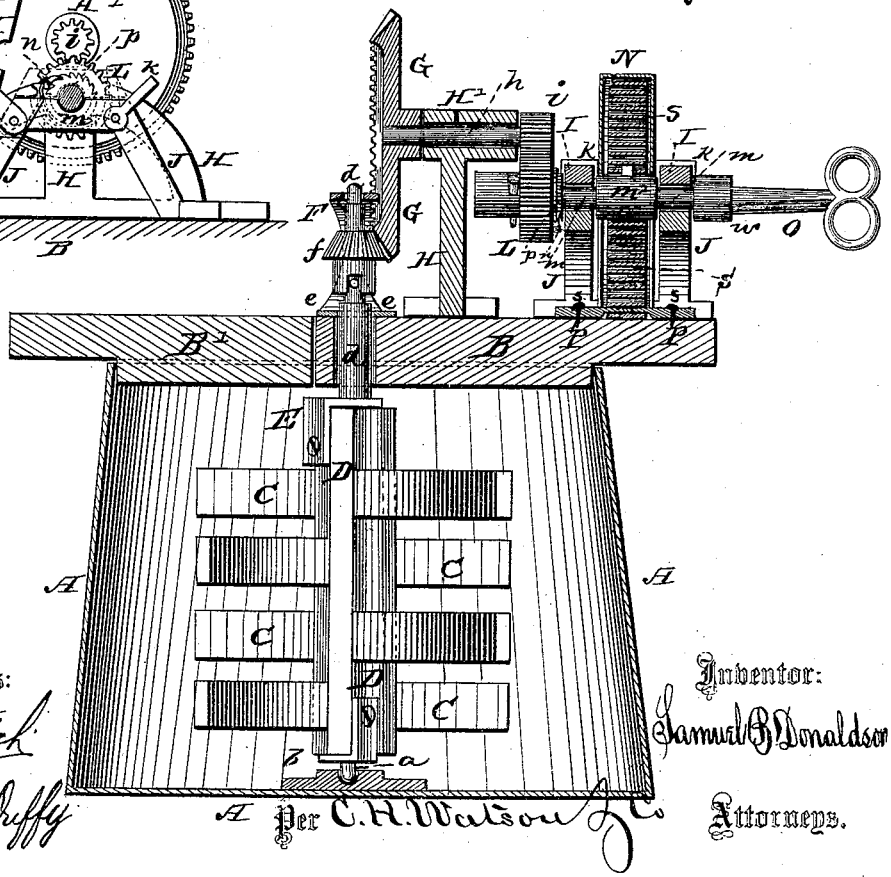


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL B. DONALDSON, OF SCOTTBOROUGH, ALABAMA.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **205,620**, dated July 2, 1878; application filed May 22, 1878.

To all whom it may concern:

Be it known that I, SAMUEL B. DONALDSON, of Scottborough, in the county of Jackson and State of Alabama, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a churn-power, as will be hereinafter more fully set forth.

In the annexed drawing, to which reference is made, and which fully illustrates my invention, Figure 1 is a plan view of my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a detailed view of a part of the machinery.

A represents the churn, with lid divided in two parts, B B′, connected to the churn by hooks, and each part cut with a shoulder on the under side, so as to fit within the upper end of the churn, and also project outside of the same, as shown. C C are the dashers, secured on a vertical shaft, D, which has a pivot, *a*, at its lower end, resting in a socket, *b*, on the bottom of the churn A. On the upper end of the shaft D is fastened a clip, E, from which projects a center rod, *d*, passing upward through a plate, *e*, on or in the part B of the lid, and forming the upper bearing for the churn-dasher. There is, however, a frame, F, on top of the lid B, in which the upper end of the shaft or rod projects, as shown. Within this frame the rod *d* is provided with a pinion, *f*, which meshes with a gear-wheel, G, secured upon a short shaft, *h*. This shaft has its bearing in an elongated tube, H′, formed at the top of a stand or standard, H, secured on the lid B. The opposite end of the shaft *h* is provided with a pinion, *i*, either formed on or secured to the shaft.

On the lid B are further secured two frames or stands, J J, which form bearings for a horizontal shaft, *m*, said shaft being held down upon its bearings by means of caps I I, which are hinged to the stands J J at one side, and held down at the other by clips *k k*. By this means the caps can be easily thrown off when desired.

On the inner end of the shaft *m* is placed a loose pinion, L, which meshes with the pinion *i* on the shaft *h*. The pinion or cog-wheel L is connected to the shaft *m* by means of a spring-pawl, *n*, and a ratchet-wheel, *p*, the latter being formed on or attached to the shaft *m*. The shaft *m* is, between the stands J J, provided or formed with an enlargement, *m′*, to which one end of a coil-spring, S, is secured. The other end of this spring in held between a plate, P, and the top of the lid B, the plate P being fastened to the lid by screws or bolts *s s*. By loosening these screws or bolts the spring may be pulled from under the plate P more or less, as required, so as to regulate the tension of the spring, as may be desired for the proper working of the dasher. The outer end of the shaft *m* is provided with a handle, crank, or lever, O, by means of which the spring S may be wound up; and by means of the spring thus wound up the churn-dasher is operated automatically to churn the butter from the milk or cream in the churn.

N is a casing inclosing the spring S, as shown, and which casing may be made permanently attached to the stands or frames J J, or arranged in any other suitable manner, only so as to completely envelop and protect the spring.

It will readily be seen that the unwinding of the spring, when the same has been properly wound up, will, by means of the ratchet-wheel *p* and pawl *n*, cause the pinion or cog-wheel L to rotate with the shaft *m;* and this cog-wheel, meshing with the pinion *i*, communicates motion through the gears *f* G to the churn-dasher.

On the outer end of the shaft *m* is a ratchet-wheel, *w*, and a dog or catch, *v*, for locking or catching the shaft *m* as the spring is wound up. This dog or catch is pivoted to the frame J, and falls into the ratchet-wheel by its own weight; and when the spring is wound up said dog is raised from the ratchet-wheel, which permits the unwinding of the spring to rotate

the shaft. The elongated tube H′, which forms a bearing for the shaft *h*, is provided on the top with a suitable hole, *x*, for oiling or lubricating said shaft *h*.

The spring S may, when desired, be entirely disconnected, and the dasher operated by hand by means of a crank applied on the end of the shaft *m*.

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

1. In combination with a vertical dasher-shaft, having a pinion, *f*, upon its upper pivot, the gear-wheel G, with shaft *h*, the pinion *i* on opposite end of said shaft, and the shaft *m*, with loose cog-wheel L, ratchet-wheel *p*, pawl *n*, and spring S, substantially as and for the purposes herein set forth.

2. The plate P, fastened by bolts or screws *s s* to the lid B, the spring S, and shaft *m*, in combination with the stands J J, provided with the hinged caps I I and the clips *k k*, substantially as and for the purpose set forth.

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

SAMUEL B. DONALDSON.

Witnesses:

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