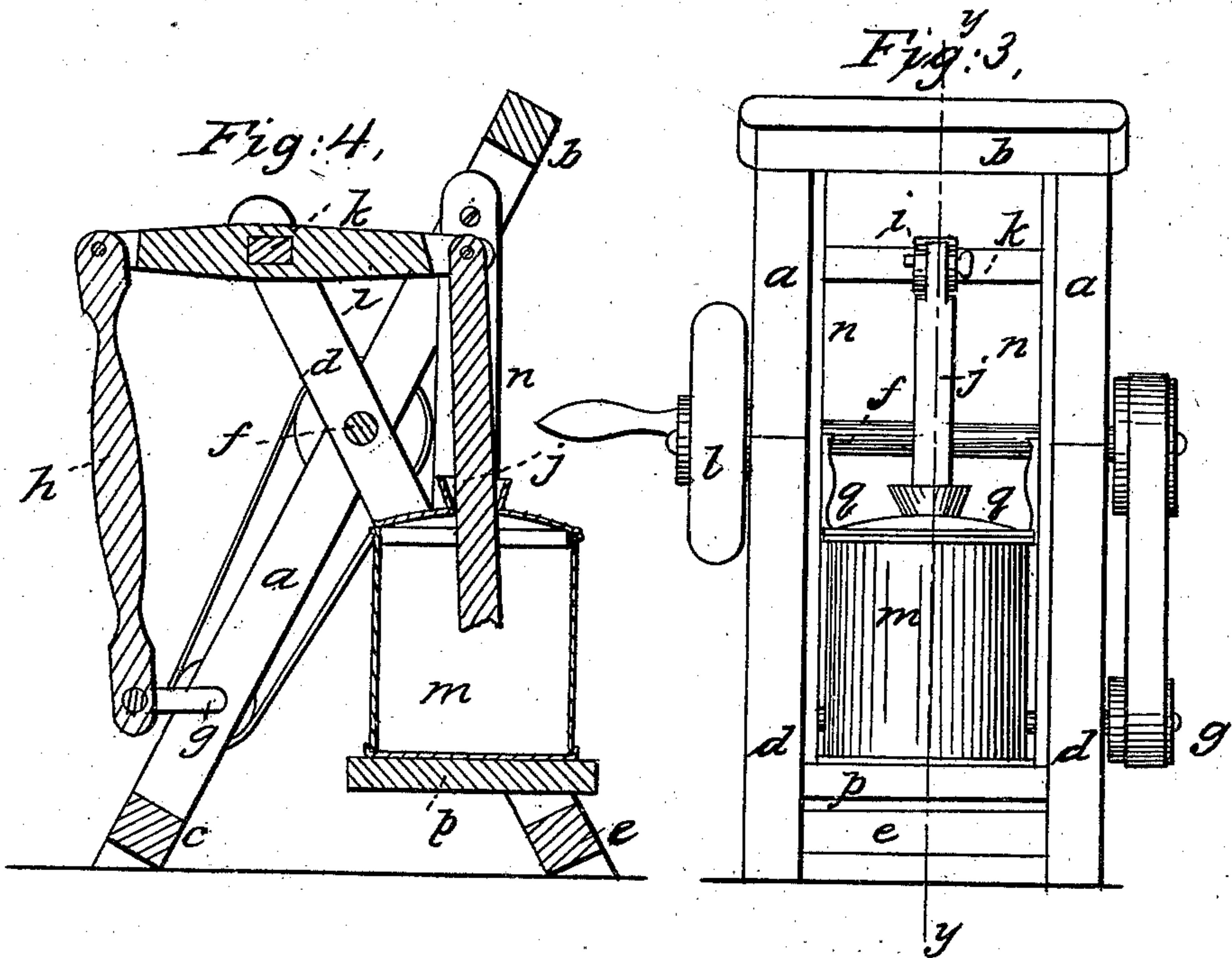
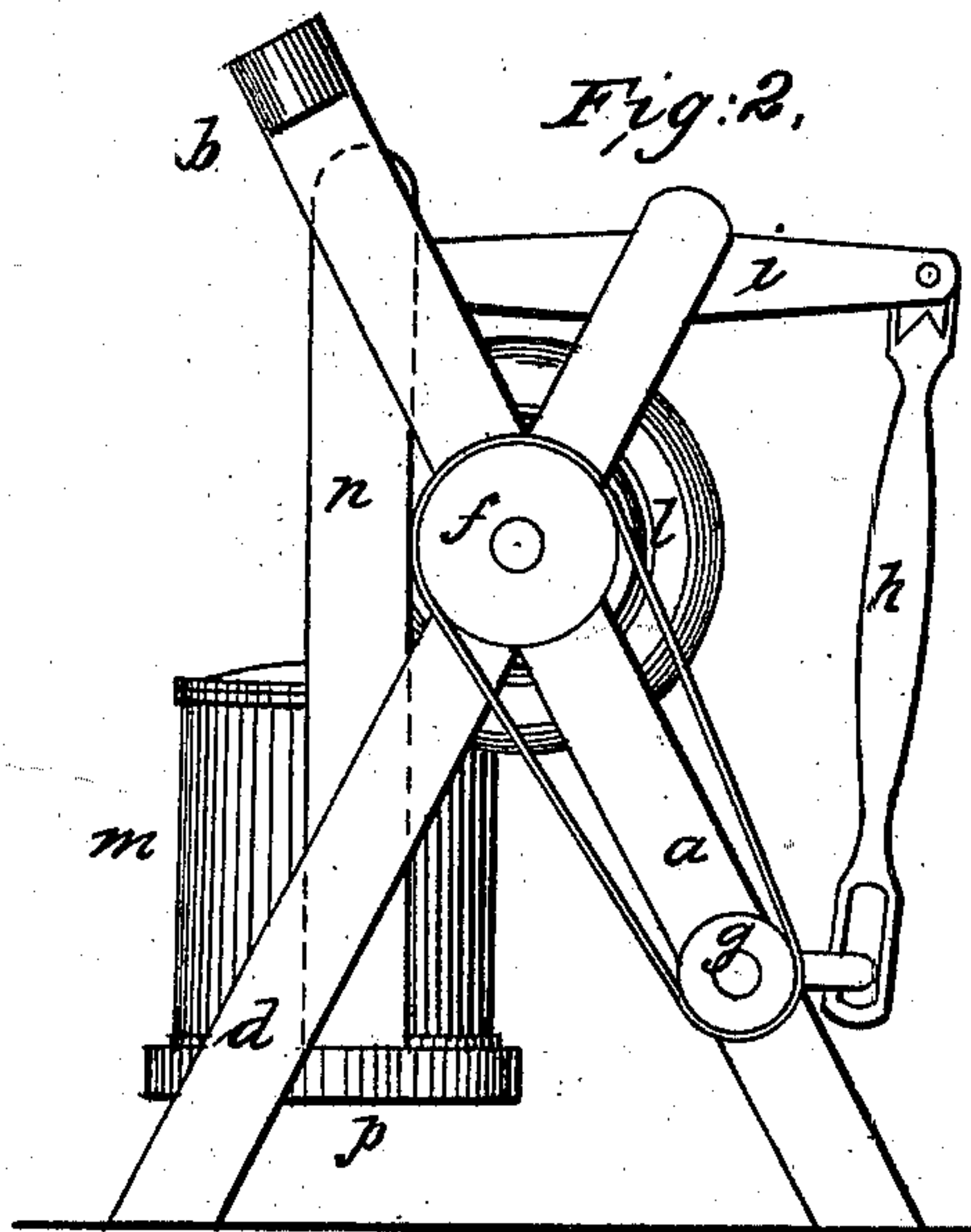
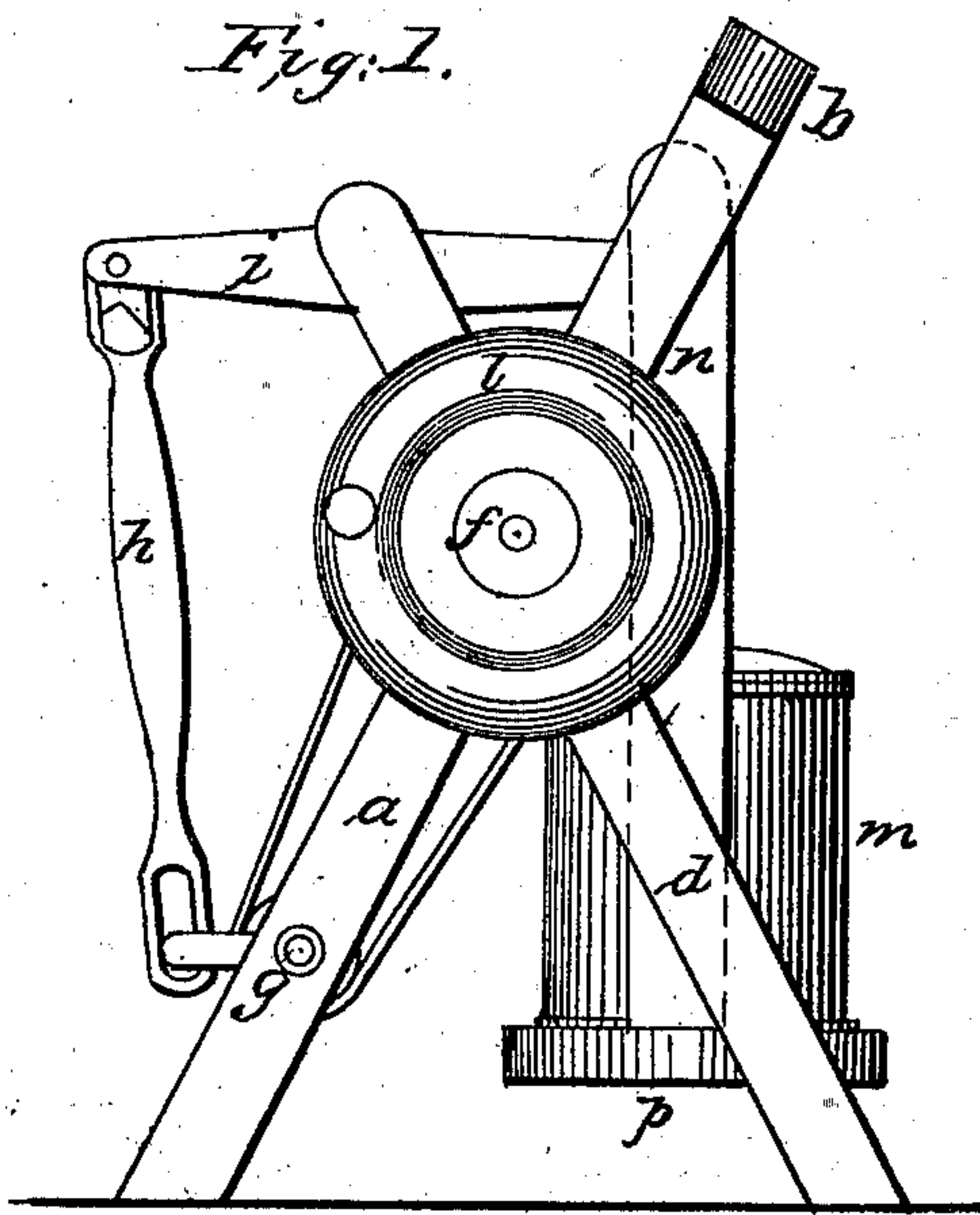


J. S. APPLETON.

Churn.

No. 21,176.

Patented Aug. 17, 1858.





# UNITED STATES PATENT OFFICE.

JAMES S. APPLETON, OF WHITE RIVER JUNCTION, VERMONT.

## CHURN.

Specification of Letters Patent No. 21,176, dated August 17, 1858.

*To all whom it may concern:*

Be it known that I, JAMES S. APPLETON, of White River Junction, in the county of Windsor and State of Vermont, have invented a new and Improved Churn; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, Figures 1, 2, and 3 being side elevations of said churn, and Fig. 4 a section in the line *y y* of Fig. 3.

Similar letters indicate like parts in each drawing.

The vessel *m*, in which the churning operation is performed, is of a cylindrical shape and may be made of any suitable material. Any form of dasher may be combined with the dasher-shaft *j*, which may be deemed expedient.

The requisite reciprocating movements are imparted to the dasher-shaft *j*, and the vessel *m*, is secured in a swinging frame, while the said movements are imparted to its dasher, in such a manner that the said vessel can freely adapt its movements to the swinging movements of the churn dasher substantially in the manner represented in the accompanying drawings and hereinafter particularly set forth.

I construct a supporting frame for my improved churn of four principal timbers *a, a*, and *d, d*, which are combined with each other in the following manner, viz;—each timber *a*, is halved to a timber *d*, and then the extremities of the opposite timbers *a, a*, are combined with each other by means of the cross-pieces *b, c*, and the lower ends of the opposite timbers *d, d*, are combined with each other by means of the cross-piece *e*.

The pair of flat bridle-pieces *n, n*, whose upper ends are pivoted to the inner sides of the upper ends of the timbers *a, a*, and whose lower extremities are combined with the disk *p*, form the swinging frame for the reception of the churning vessel *m*. The said vessel is secured in its position within said frame by means of the buttons *g, g*, which are pivoted to the inner sides of the bridle-pieces *n, n*, and which also serve to secure the cover upon said vessel. Any other suitable catches may however be used in place of said buttons for producing the same effect.

The upper end of the dasher-shaft *j*, is

jointed to one end of the vibrating beam *i*, by means of a removable pin. The vibrating beam *i*, is combined with the oscillating shaft *k*, whose journals work in apertures in the upper ends of the frame-timbers *d, d*, and the after end of the said vibrating beam is jointed to the pitman *h*, which rises from a central crank in the crank-shaft *g*, whose journals work in boxes secured to the frame timbers *a, a*, near the lower ends of the same.

The driving shaft *f*, works in bushed apertures formed at the points where the frame-timbers *a, a*, and *d, d*, are joined to each other; and the said driving shaft is connected with the crank-shaft *g*, by means of a band and pulleys, as represented in Fig. 2; or the said shafts may be connected with each other by means of gearing wheels if deemed preferable by the manufacturer. A balance wheel *l*, is combined with the projecting front end of the main shaft *f*, and a crank-handle is inserted in an aperture in said balance wheel for the hand to take hold of for the purpose of rotating said shaft and thereby imparting the necessary reciprocating movements to the churn dasher, through the medium of the crank-shaft *g*, the pitman *h*, the vibrating beam *i*, and the dasher-shaft *j*.

The churning vessel *m*, being allowed to swing freely back and forth during the operation of its dasher, will prevent any binding or grinding friction between the sides of said dasher and the sides of the churning vessel, and will also prevent any severe frictional action between the sides of the dasher shaft and the sides of the aperture in the cover of the churning vessel; consequently, the said dasher can be safely operated at a very high velocity. The oscillating movements imparted to the churning vessel by the rapid movements of its dasher, and the pulsating movement of the cream that will be produced thereby, will cause the dasher to act with an unusual degree of energy upon the cream as it meets the upwardly pulsating movements of the same.

By removing the joint pin which connects the dasher shaft *j*, with the end of the vibrating beam *i*, the churning vessel *m*, can be freely removed from the swinging frame *n, n, p*.

Having thus fully described the construction and operation of my improved churn,



what I claim therein as new and desire to secure by Letters Patent, is—

5    Securing the churning vessel *m*, within a freely swinging frame when the dasher of the churn is operated by means of a crank-shaft, pitman, and vibrating beam, constructed, arranged and operating as herein set forth.

The above specification of my improved churn signed and witnessed this 17th day 10 of June 1858.

JAMES S. APPLETON.

Witnesses:

GEORGE LYMAN,  
RODNEY LANEL.