

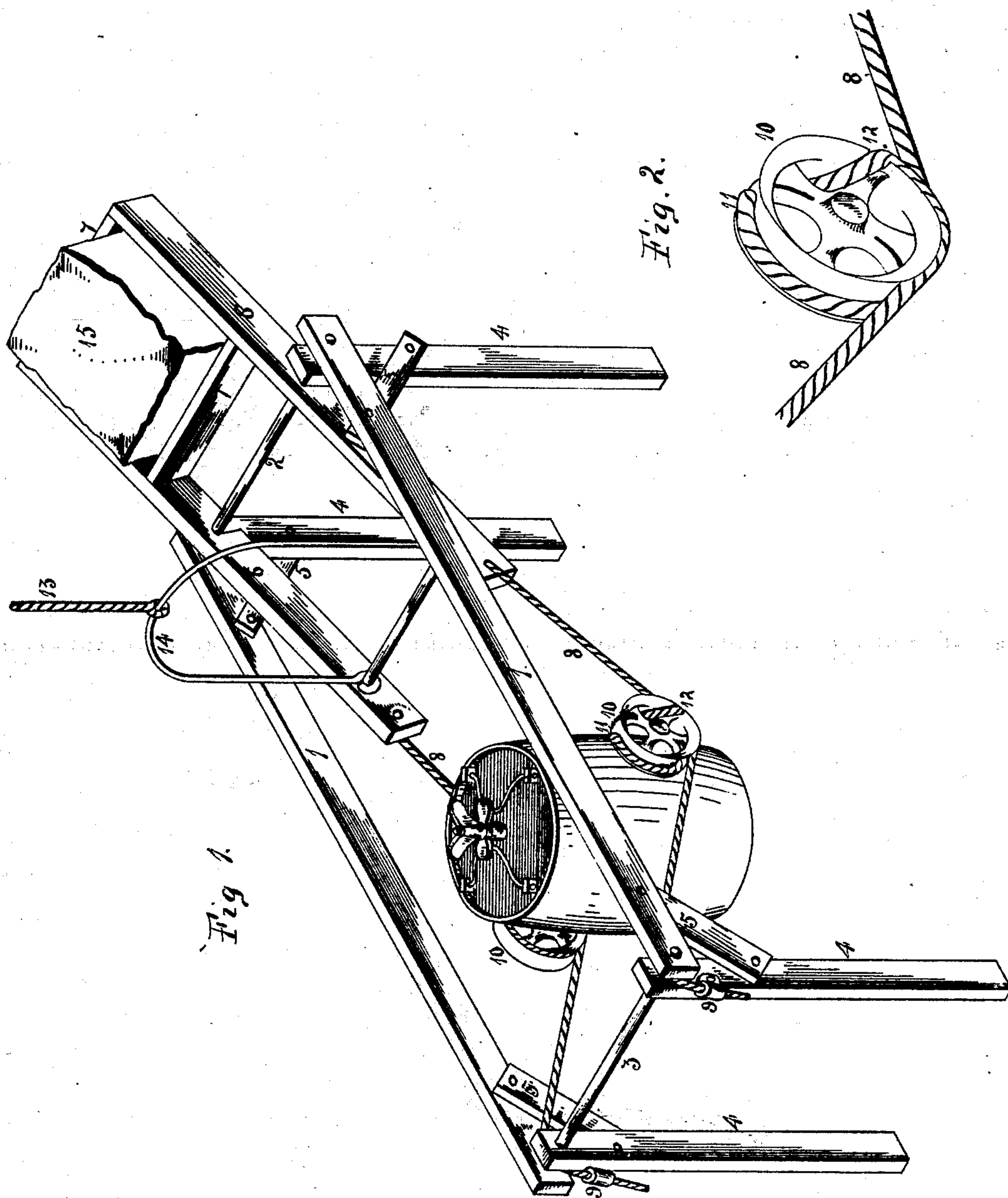
(No Model.)

2 Sheets—Sheet 1.

W. DOBSON
CHURN.

No. 509,880.

Patented Dec. 5, 1893.



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L. L. Miller

Inventor:
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By A. O. Bebel
Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

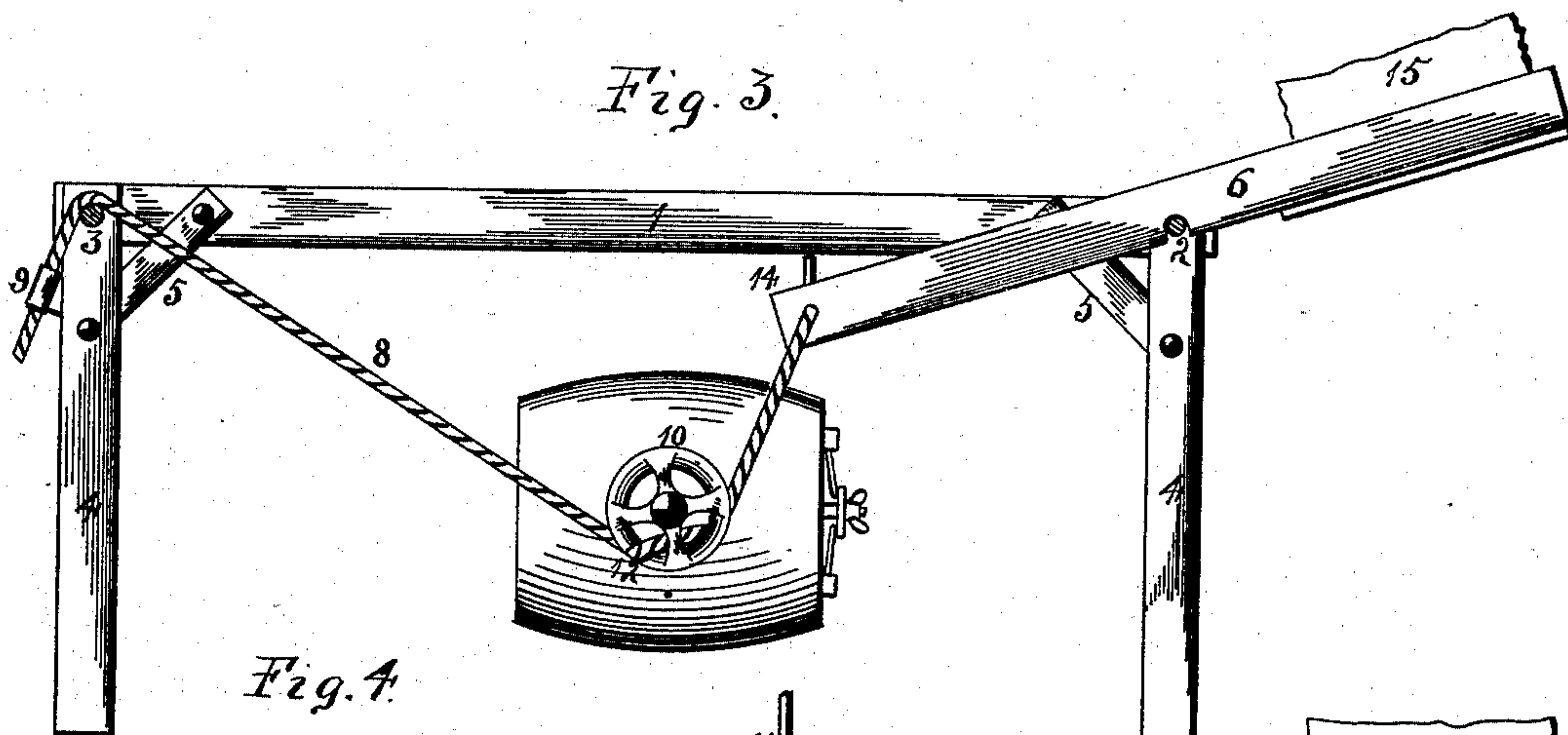


Fig. 4.

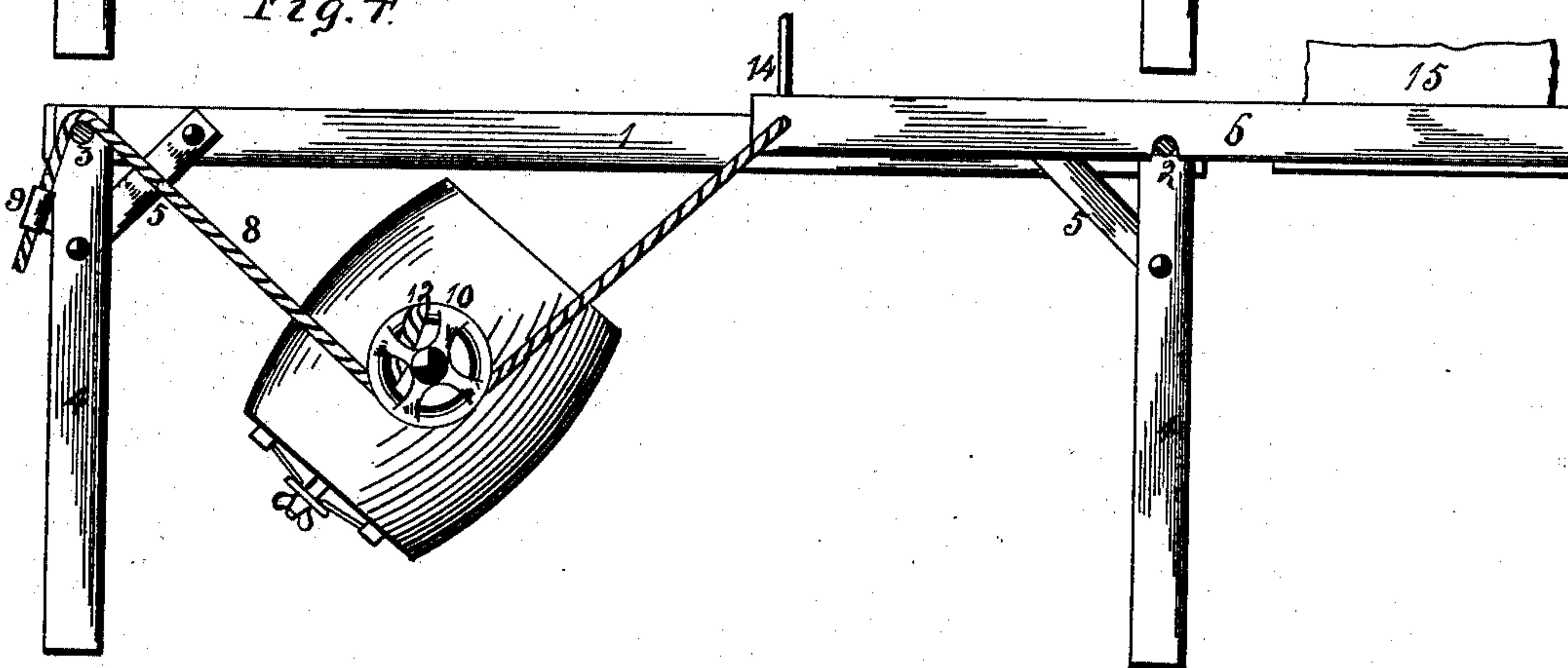
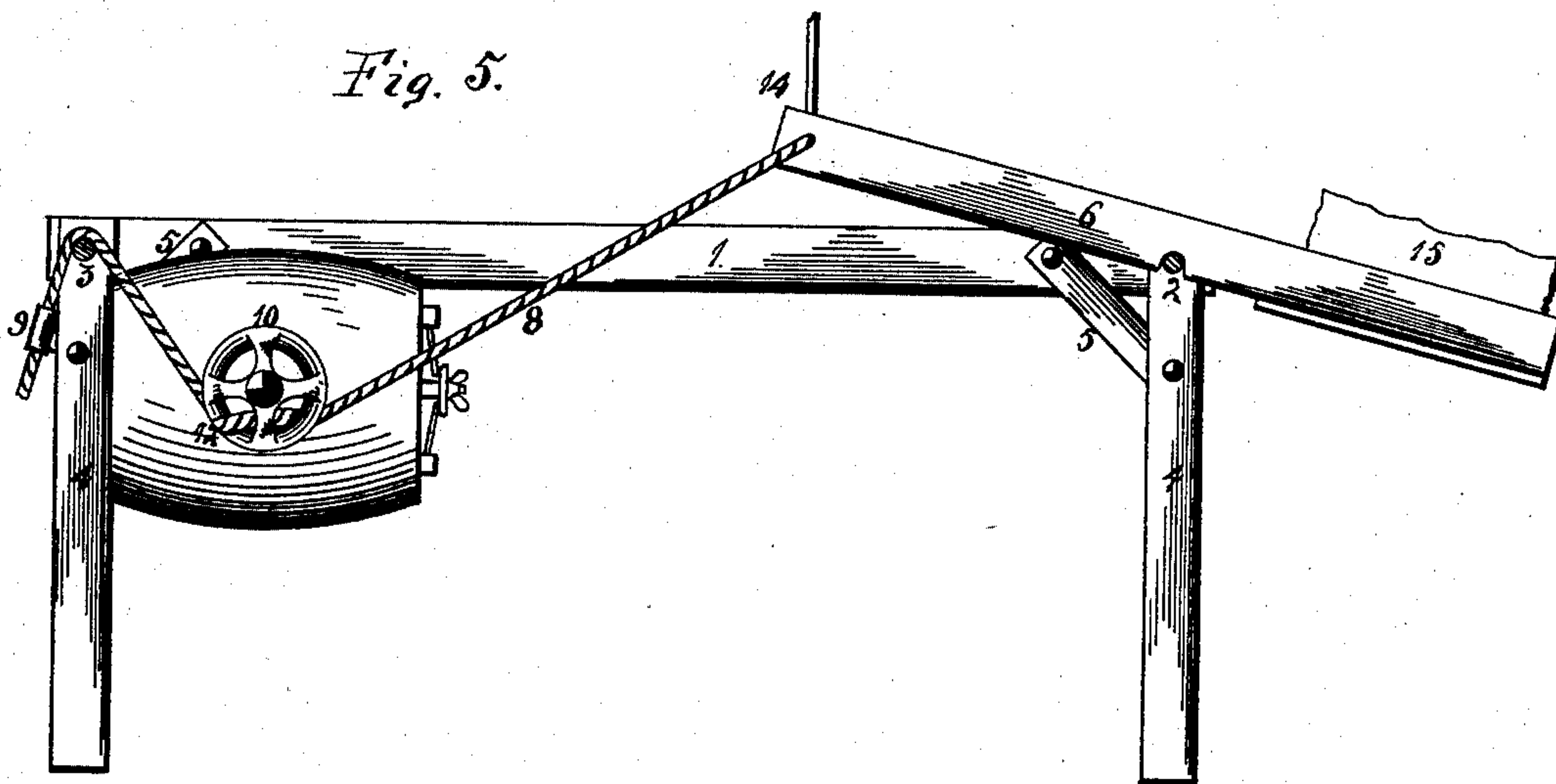


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM DOBSON, OF ROCKFORD, ILLINOIS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 509,880, dated December 5, 1893.

Application filed April 23, 1891. Serial No. 390,195. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DOBSON, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Churns, of which the following is a specification.

The object of this invention is to utilize the reciprocating motion of the rod of a pumping wind-mill for churning, and this in such a manner as not to interfere with the performing of other work by the mill.

In the accompanying drawings: Figure 1, is an insometrical representation of my churning attachment connected to a wind-mill. Fig. 2, is an insometrical representation of the manner of placing the rope about the sheaves on the churn trunnions. Fig. 3, is a side elevation of my churning attachment with one side of the frame removed showing the churn at one extreme of its travel. Fig. 4, is the same as Fig. 3, excepting that the churn is shown between its extreme points. Fig. 5, is the same as the two preceding views excepting the position of the churn which is shown as in the extreme, opposite that in Fig. 3.

The first step in the construction of my churning device is the building of a frame of greater length than width. This frame I have made of two longitudinal side bars 1, joined together near their ends by two rounds 2 and 3 on which I have pivoted between the side bars, a leg 4, at each corner of the frame upon which it stands. These legs are fixed in position by a diagonal brace 5, affixed by bolts to the side bar of the frame, and to the leg a little distance below the round upon which it is pivoted. It will thus be seen that by removing the bolt which attaches the brace to the leg the whole frame may be folded into a small compass for transportation.

On the round 2 forming an end of my main frame, I have placed a tilting frame constructed with two longitudinal side pieces 6, notched in their under side to fit over the round of the main frame on which this tilting frame is pivoted and joined near their ends by cross pieces 7. In the outer end of this tilting frame is a box for containing weights the purpose of which will appear hereinafter. To the inner end of this tilting

frame I have attached two ropes 8 one at each side. These ropes are somewhat slack and pass to adjustable fastenings 9 on the opposite end of the supporting frame. I now take a common churn body and on each of its trunnions I affix a flanged sheave 10. In the flanges of each of these sheaves are two notches 11 and 12 one on each flange and at the distance of about a quarter circumference apart. When the sheaves are attached to the trunnions of the churn the notches on the flanges toward the churn are near its top, and the notches in the outside flanges are in the sides of the wheels nearest to the tilting frame. I now take the ropes attached to the tilting frame and pass one on either side of the churn body in the groove of and underneath each sheave until arriving at the notch 11 in the inner flange, I pass the rope between the sheave and the churn body thence inside and across the rim of the wheel to the outside flange where it enters the notch 12 in the outer flange and passing along the under face of the sheave extends to the fastenings at the end of the supporting frame. It will thus be seen that the churn body is suspended on two ropes forming a track, which ropes are fastened at one end to the tilting frame passing under and around the sheave on the churn trunnions and secured by their other ends to the opposite end of the supporting frame, the threading of the ropes through the notches in the flanges of the wheels being simply to increase the friction of the rope on the sheave and prevent the lost motion which would otherwise result from a slipping of the sheaves on the rope track. The length of the ropes is adjustable to provide for their stretching.

A rope 13 fastened to a bail having a connection with the inner end of the tilting frame is secured to the pumping rod of a wind-mill, cream is put into the churn and the churn cover is fastened in its place. The churn thus hangs supported on its rope track the action of gravity bringing it to rest midway between the point at which the ropes are secured to the supporting frame and the pivotal bearing of the tilting frame. When the wind-mill by its connection with the tilting frame raises the inner end of the latter the point of support of this end of the movable track is

transferred from the point of the tilting frame to the point where the ropes are secured to it and the tendency of the churn is to seek the middle and lowest point between the two points of support and as the fastening of the rope to the sheave prevents the slipping of the wheels they roll down the incline, rotating the churn body. Momentum carries the churn some distance beyond the middle point. The downward stroke of the wind-mill releasing the tilting frame the point of support of the ropes recede from the forward end of the tilting frame to its pivot and the wheels rolling back to the center and lowest point between these new supports rotates the churn in an opposite direction. This action is repeated at every movement of the wind-mill which changes the point of support from the pivot of the tilting frame to the point of attachment of the ropes and vice versa.

A weight 15 is placed in the box at the outer end of the tilting frame to aid in balancing the weight of the churn and thus to render the work of the wind-mill more easy, though the preponderance of weight must lie in the churn to insure its return on the down stroke of the mill.

The bail attached to the inner end of the tilting frame may be turned over the churn to hold it in an upright position when it is desirable to take off the cover to fill it or to remove, or examine its contents by disconnecting the rope 13 from the bail. It is plain that as the churn rolls one way by the action of gravity alone and without the aid of the wind-mill it will be necessary to actuate the tilting frame only in one (the upward) direction or the upward stroke of the wind-mill and

this may be accomplished by a rope connection with the wind-mill which connection may be arranged to pass around several sheaves and to some considerable distance from its source of power if convenient so to do.

I claim as my invention—

1. The combination of a flexible track, a churn, wheels rigidly affixed to the churn and having a positive engagement with the track, and means for moving the track, whereby an oscillatory or reversible rotary movement is imparted to the churn.

2. The combination of a flexible track, a movable support for one end of the track, a churn, wheels rigidly affixed on opposite sides of the churn, the wheels mounted on and having an engagement with the track, and means for operating the movable support, whereby an oscillatory or reversible rotary movement is imparted to the churn.

3. The combination of a supporting frame, a tilting frame pivoted thereto, a weight for one end of said tilting frame, a rope track comprising two ropes connecting the tilting frame with one end of the supporting frame, a churn, two wheels rigidly affixed on opposite sides of the churn, each of the ropes of the rope track passing underneath and around one of the wheels and having a positive engagement therewith, and means for moving the tilting frame, whereby an oscillatory or reversible rotary movement is imparted to the churn.

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