(No Model.)

A. H. REID.

BUTTER WORKING MACHINE.

No. 283,142. Patented Aug. 14, 1883.

Fig. 1

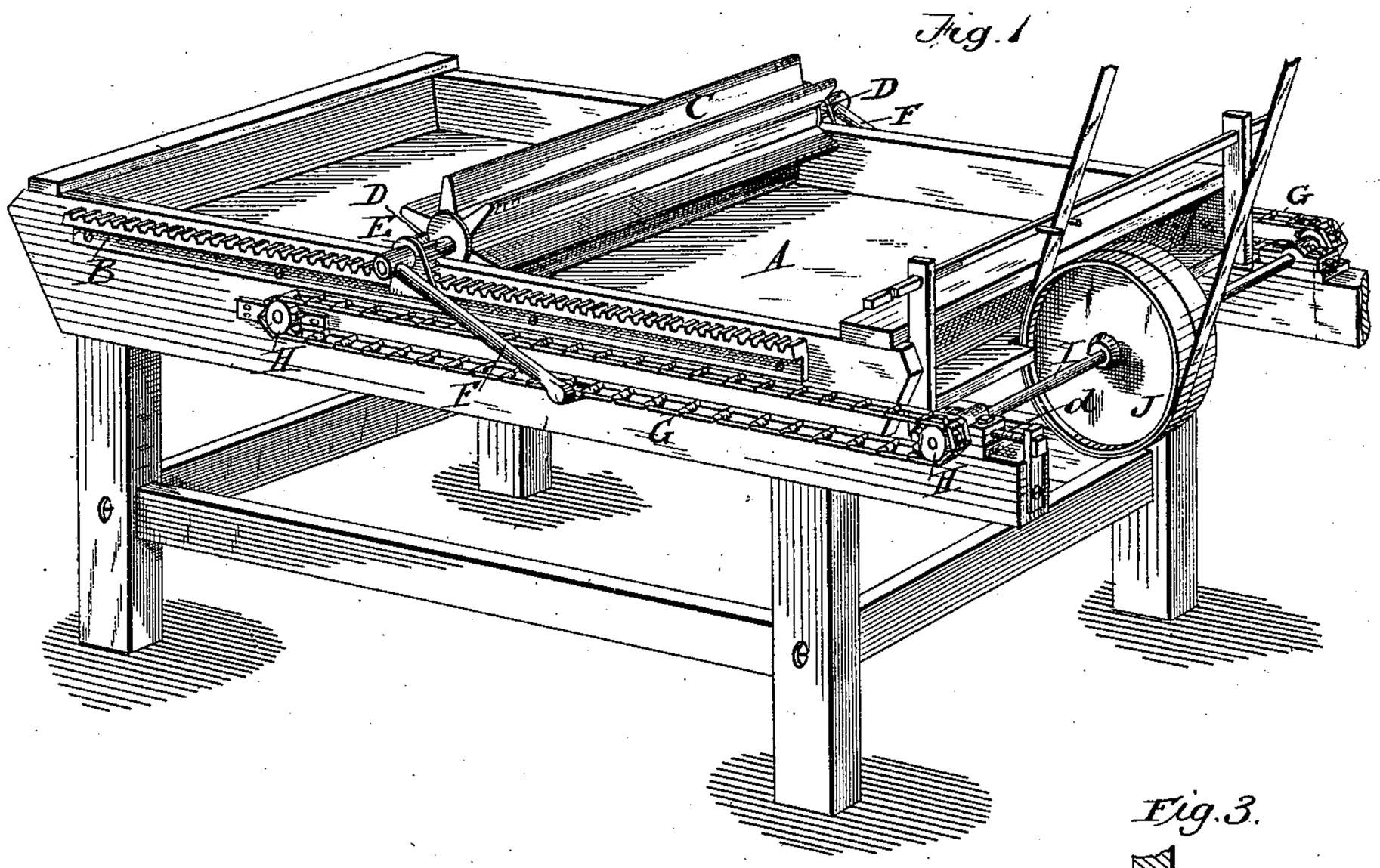


Fig. 3.

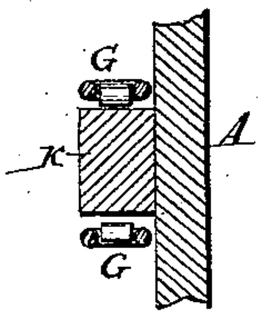
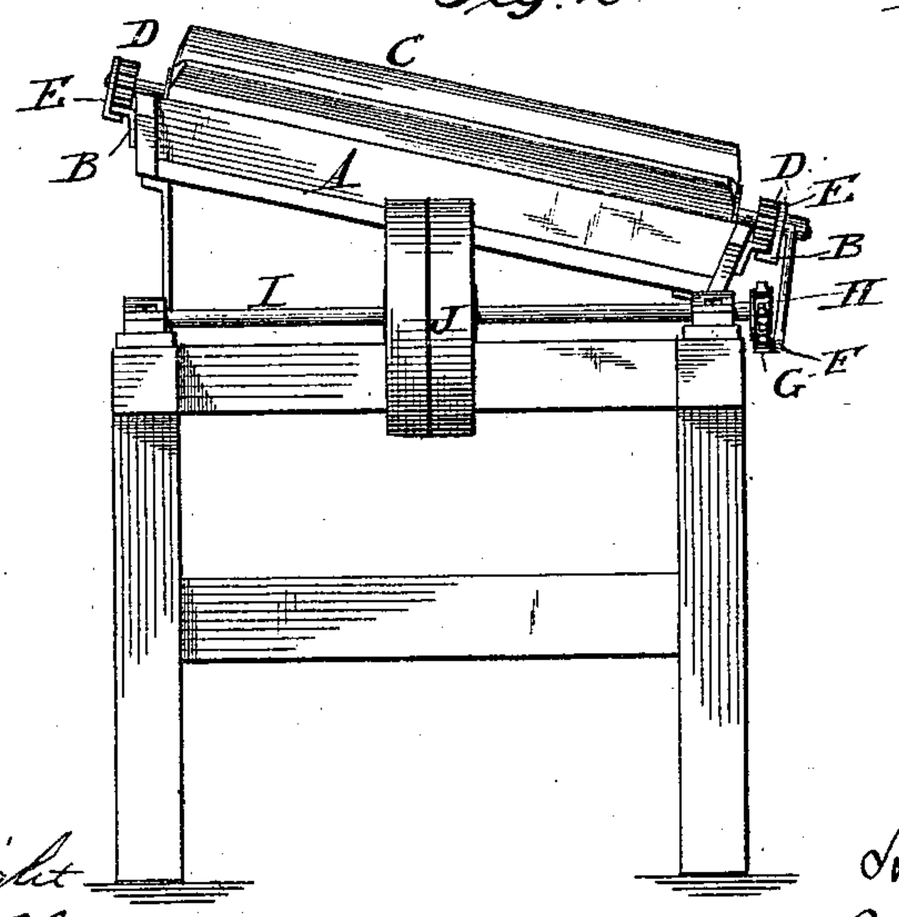


Fig. 2



WITNESSES

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BUTTER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,142, dated August 14, 1883.

Application filed January 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBAN H. REID, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Butter-Working Machines, of which the following is a specification.

This invention relates more particularly to improvements upon the machine for which Letters Patent of the United States were granted to me on the 23d day of March, 1875, the particular object of the invention being to provide a means of operating said machine in a continuous manner from any suitable motor, and to admit of this operation when the tray is placed in an inclined position to secure the discharge of the fluid from the butter.

With these ends in view the invention consists, mainly, in combining with the traveling roll and the racks and pinions for actuating the same an endless chain and pitman, whereby the traveling movement of the roll is effected.

Referring to the accompanying drawings, Figure 1 represents a perspective view of my improved machine, the roll being driven by chains at both ends. Fig. 2 is an end elevation illustrating the modification adopted when the machine has a lateral inclination. Fig. 3 is a vertical cross-section through one side of the body, showing the stationary bar seated within the driving-chain.

A represents a flat rectangular tray, and B B two horizontal rack-bars applied lengthwise of the tray upon its outer sides.

C represents the traveling ribbed roller, provided at its ends with pinions D, which engage with the respective racks, and which effect a positive rotation of the roller as it is moved to and fro within the tray.

E represents flat plates journaled upon the ends of the roll, and engaging at their lower edges beneath the rack-plates for the purpose of retaining the pinions in engagement therewith.

F F represent two pitmen or connecting-rods applied one to each end of the roll outside of the tray, and connected at their opposite ends with the respective endless chains G. These chains are extended lengthwise on opposite sides of the frame and carried at their ends by sprocket-wheels H, sustained on the main frame.

The two wheels H at the head of the machine are mounted on opposite ends of a shaft, I, provided with a driving-pulley, J, through which a continuous motion is imparted to the machine. The rotation of the wheels H imparts a continuous revolving motion to the two chains, which in turn causes the pitmen to move to and fro lengthwise of the machine, the upper ends of the pitmen carrying with them the ends of the roll, which is thus caused to traverse the tray or box from one end to the other, receiving at the same time a motion upon its own axis through the medium of the racks and pinions.

It will be observed that the pitmen are journaled or swiveled upon lugs projecting beyond the outer edges of the respective chains, this arrangement permitting the pitmen to be carried with the chain around the supporting-wheels at their ends.

The above construction, which provides for the direct application of power to both ends of the roll, is particularly advantageous in connection with machines of large size. When machines are constructed on a smaller scale, it will be sufficient to employ the driving-chain and pitman at one end only of the roll. Although this chain applies power at one end only, the use of the racks and pinions at both ends of the roll will cause the latter to be driven equally at its two ends.

In many cases it is desirable to secure automatically the drainage of the fluids from the butter during the operation of working the same. To accomplish this result I arrange the tray with a lateral inclination, as represented in Fig. 2, whereby the fluids are caused to run to one side, from which they may be withdrawn through a suitable opening. When the parts are thus arranged with an inclination, it is desirable that the main driving-shaft shall still remain, for the sake of convenience in applying power thereto, in a horizontal position upon the main frame. I therefore adopt the arrangement represented in Fig. 2. The driving-chain and pitmen are used only upon one—the lower—side of the tray. The horizontal driving-shaft is mounted in bearings on the frame, and provided at one end with a wheel, J, carrying one end of the driving-chain, the parts being otherwise arranged as in the pre-

ceding figure. In this manner motion is communicated positively to the chain and pitmen and thence to the roll.

For the purpose of preventing the sagging of the chain, and to give increased steadiness to the parts without making them excessively heavy for the purpose, I propose in each form of machine to secure to the sides of the tray or frame a wooden bar, K, filling the space within the chain, as shown in Fig. 3. For the purpose of permitting compensation for wear in the chain I mount the driving-shaft in boxes, which are secured to the main frame by means of slots and bolts, this construction permitting the boxes to be adjusted, in order to increase the tension of the chain, as may be required.

The present invention is restricted to those matters and things which are hereinafter claimed, and as to all matters which may be described or shown, but which are not claimed, the right is reserved to make the same the subject of a separate patent.

Having thus described my invention, what I claim is—

1. In a butter-worker, the combination of the traveling roll and its pinion, the stationary rack, the endless chain, and the pitman.

2. In a butter-worker, the combination of a traveling roll provided with pinions at its two ends, two fixed racks engaging with said pinions, two endless driving chains or belts, and two pitmen connecting said belts with the ends of the roll.

3. In a butter-worker, the combination of a tray, a traveling roll provided with pinions at its two ends, stationary racks engaging with said pinions, endless chains connected by pitmen with the opposite ends of the roll, and two driving-wheels for said chains, mounted upon opposite ends of one and the same shaft, whereby an equal motion is transmitted positively to the two ends of the roll.

ALBAN H. REID.

Witnesses:
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