W. S. Reinert,

Dough-Kneader,

No. 21,112, Patented Sept. 7, 1858.

Fig 1.

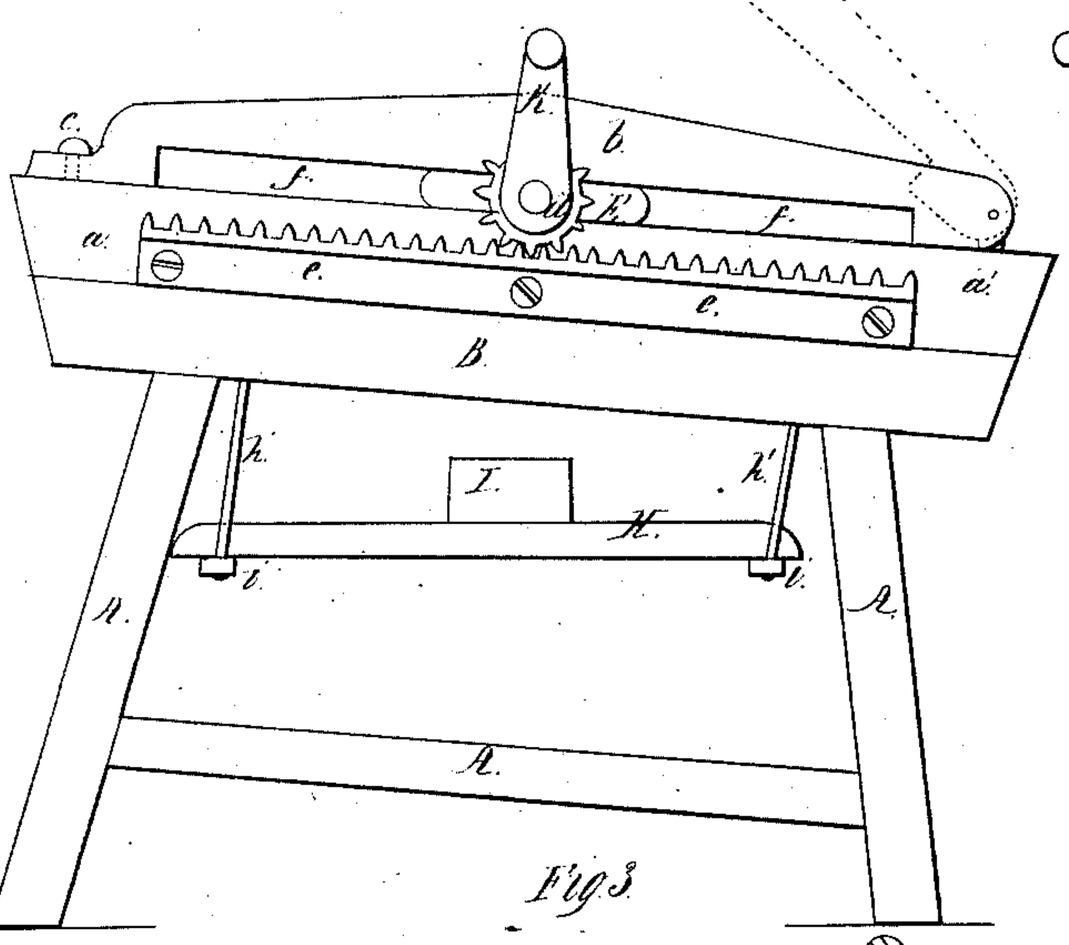


Fig 2.

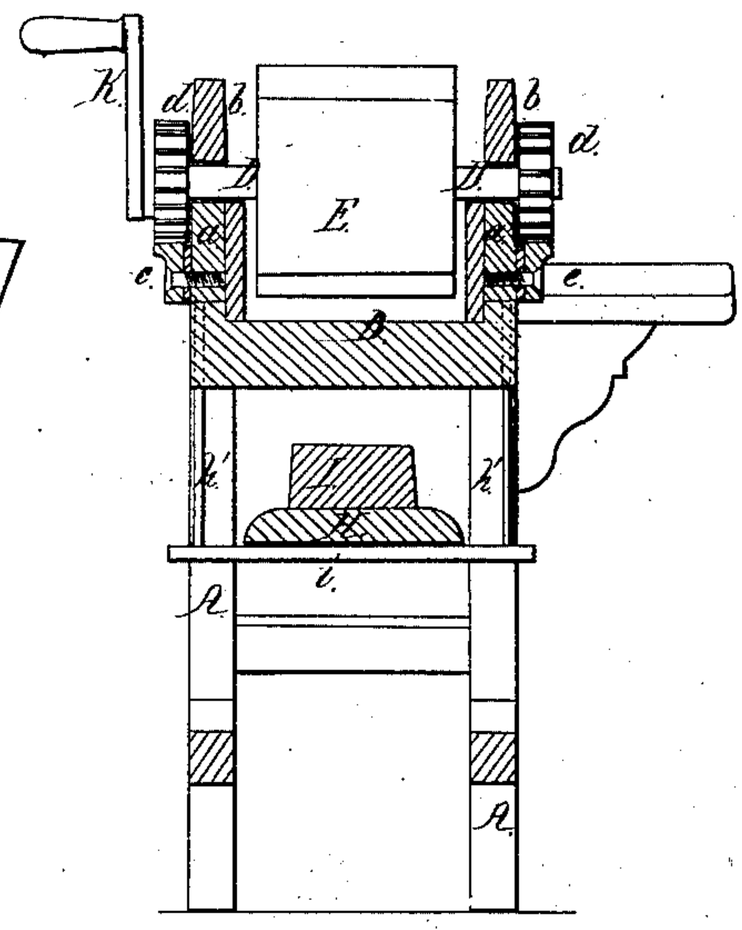
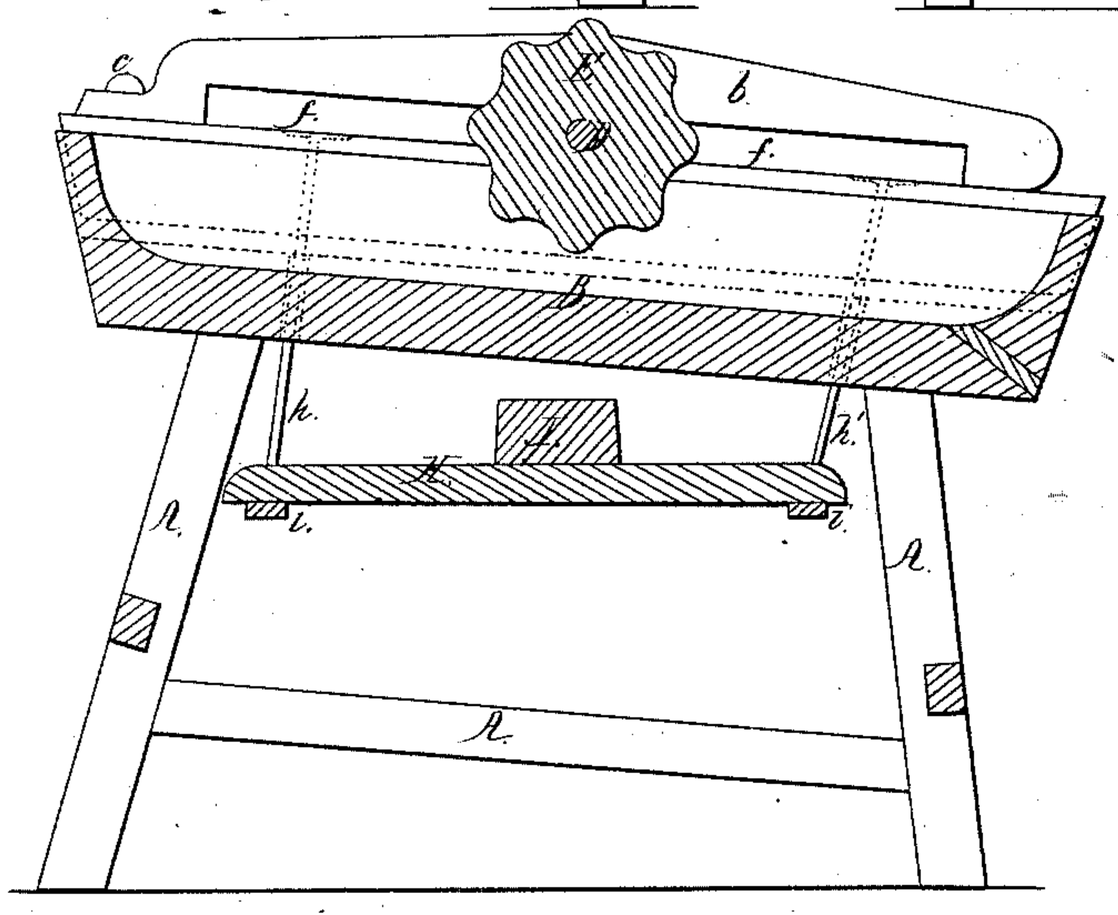


Fig 3.



UNITED STATES PATENT OFFICE.

W. S. REINERT, OF PHILADELPHIA, PENNSYLVANIA.

KNEADING-MACHINE.

Specification of Letters Patent No. 21,442, dated September 7, 1858.

To all whom it may concern:

Be it known that I, WILLIAM S. REINERT, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Kneading-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to an improvement in those machines, in which a traversing, rotating roller is used, in conjunction with a trough or table, to knead butter, dough, clay or other like plastic substances; and my improvement consists in a certain combination of a corrugated roller, pinions, guides and racks, fully described hereafter, and so arranged in respect to the trough, that the roller and the appliances for operating the same may be allowed an upward and downward movement, independent of the trough, in order that the roller may be caused to bear with more or less pressure on the material to be kneaded, at the will of the operator.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of this specification; Figure 1 is a side view of my improved kneading machine. Fig. 2 a transverse sectional elevation, on the line 1, 2, (Fig. 1) Fig. 3 a longitudinal sectional elevation.

Similar letters refer to similar parts throughout the several views.

A is the frame or stand of the machine, to the top of which is secured an inclined trough B. On the sides of the latter fit the pieces *a* and *a'*, to one end of each of which is hinged a strap, *b*, the opposite ends of the straps being so constructed as to be readily attached to or released from the opposite ends of the side pieces *a* and *a'* by means of turnbuckles *c*, or other suitable attachments. The straps *b* are so constructed, that, in conjunction with the side pieces, they form longitudinal openings *f*, through which the shaft D passes, and in which it is guided. To this shaft is secured the fluted or corrugated roller E, situated within the trough, and, to the same shaft, are attached the pinions *d*, each pinion gearing into a rack *e*, one of which is secured to each of the side pieces. These pieces are so arranged and adapted to the sides of the trough, as to be capable of moving vertically, but neither longitudinally nor laterally, independent of the trough. Two rods *h*, *h* and *h'*, *h'*, are secured to the underside of each side piece *a*, and these rods pass through openings in the sides of the trough, below which they are connected together by bars *i*, *i*, upon which is placed the platform H, and upon the latter a weight I.

Operation.—The butter, dough, clay or other plastic substance to be kneaded being placed in the trough, the machine is operated by turning the handle first in one direction and then in the other. This, through the pinions *d* and their racks *e*, imparts a rotary motion to the corrugated roller E and, at the same time, causes it to traverse backward and forward within the trough, and in the direction of the longitudinal guides above alluded to.

The roller may be caused to press with more or less force on the material, by simply changing the weight I, as the vertical movement of the sidepieces, with the racks, pinions and roller shaft, is controlled by this weight. On turning the buckles *c* so as to free the straps, and raising the latter, (as indicated in red lines, Fig. 1) the corrugated roller may be taken from the trough, the kneaded material removed, and the trough and roller cleansed, prior to being again brought into action.

I do not claim broadly, the employment of a traversing, rotating, corrugated roller for kneading purposes but

I claim and desire to secure by Letters Patent;

The shaft D, with its corrugated roller E and pinions *d*, *d*, in combination with the guides *f* and pinions *c*, when the whole of the above named parts are so constructed and arranged, in respect to the trough, that they may have an upward or downward movement, controlled by the weight I or its equivalent, independently of the trough, substantially as and for the purpose herein set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

WM. S. REINERT.

Witnesses:

HENRY HOWSON,

HENRY ODIORNE.