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PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Stirring and Dough Kneading Machine for Household use.

We, BING-WERKE, vorm GEBR. BING A.-G., of Blumenstrasse, 16, Nurnberg, Germany, a German company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a stirring and kneading machine for household use.

In similar machines it is known to employ a number of fixed arms projecting inside a vessel and rotatable arms positioned at various heights which pass between the fixed arms, these are suitable for making butter or mixing fluid or semi-fluid materials, but are not suitable for the mixing or kneading of a tough doughy mass, such as in cake or bread making, as the resistance offered by the dough to the passage of a number of rotatable arms through a number of fixed arms would be so considerable as to become practically impossible for hand actuation and household use.

The object of this invention is to construct such class of appliance in an improved manner intended for household use and whereby dough or other mixture can be easily stirred or kneaded.

According to this invention we employ only one fixed arm extending into the vessel and two stirring vanes or arms positioned at different heights and at an angle of 180° in relation to each other, which cross one above and one below the fixed arm; further in a bridge that is removable in a known manner, and on which the driving gear is arranged. This gear renders possible various speeds of the stirring vanes, according as the crank handle is put on one or the other shaft of the gearing, in order to vary the leverage of the handle it is furnished with two hubs so that a comparative short or long handle can be used. Consequently with this machine it is not only possible to treat thin liquid substances at great speed of the stirring vanes but also tough bread-dough at lower speed, and further to adapt the conditions of speed and power to the consistency of the material at the time. These are substantial advantages compared with the known kneading machines, which are of far more complicated construction and only fulfil one purpose *viz.*, that of kneading or stirring, and do not make it possible to knead or stir at will at different speeds.

Our invention will be clearly understood from the following description aided by the annexed drawings which show one example of carrying our invention into effect and in which

Figure 1 is a section along the line A—A in Figure 2 and Figure 2 a plan.

In the stirring dish or trough *a* a kneading arm *b* or support extending nearly to the centre is fixed by means of stays or supports *c*. The stirring shaft *e* mounted in a removable bridge *d* and in a bearing in the bottom of the dish or trough carries two stirring vanes *f* and *g* situated opposite one another and placed at different heights. On the stirring shaft *e* a small pinion *h* is mounted which engages with a tooth wheel *i* mounted on the bridge. For the rapid stirring of the material the driving handle or crank *k* is put on the square pin *l*, with its hub *n*, if the greatest speed is to be attained, and with its hub *o* if a somewhat reduced speed is to be attained. When kneading is effected the hub *o* or *n* of the crank is put on the square pin *m*.

The preparation of the dough is effected in the following manner. The

[*Price* 1/-]

Price 4s 6d

Price 3s

crank is put with its hub *n* on the square pin *l*. By means of the stirring vanes *g* and *f* the fluid or semi-fluid elements of the dough are stirred up into a foaming state; the stirring vanes serve in connection herewith as "throwers" and the fixed arm *b* as a support. In consequence of the great speed of the stirring vanes a considerable beating effect is caused. If through addition of flour and milk the mass of dough becomes thicker, the hub *o* is placed on the pin *l*. By means of the larger lever arm the speed is reduced. If, in consequence of further addition of flour the mass becomes tougher, the driving handle or crank with its hub *n* and finally with its hub *o* is placed on the pin *m*. The kneading of the dough is effected, the mass of dough being conveyed by means of the lower stirring vane *g* to the finer kneading arm *b* and "stowed" thereon. The mass rising above the kneading arm is again stripped off by the upper stirring vane *f* and turned downwards over the kneading arm, in connection wherewith a considerable quantity of air is driven into the dough.

By means of the machine it is possible in a continuous working process to treat the dough from its fluid starting state until it becomes a tough mass, without the necessity of exchanging the stirring vanes and putting in a kneading arm.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. A hand operated stirring and dough kneading machine, comprising a dish or trough, a single fixed arm in said dish or trough extending inwards nearly to the centre, and a shaft mounted in said dish carrying two stirring vanes or arms situated opposite one another and at different heights substantially as and for the purpose set forth.

2. In a stirring and dough kneading machine as claimed in Claim 1 mounting the stirring shaft on a removable bridge and a driving gear consisting of a pinion on the driving shaft and a toothed wheel on the bridge meshing with the pinion, the stirring shaft and axle of the toothed wheel being each provided with a square or equivalent shaped end for engagement by a driving handle, substantially as and for the purpose set forth.

3. In a stirring and dough kneading machine as claimed in Claim 2 providing a driving handle having two hubs either of which can be engaged with one or the other of the square ends of the driving gear substantially as and for the purpose set forth.

4. The stirring and dough kneading machine constructed substantially as described with reference to the annexed drawings.

Dated this 12th day of June, 1922.

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[This Drawing is a reproduction of the Original on a reduced scale]

Fig. 1

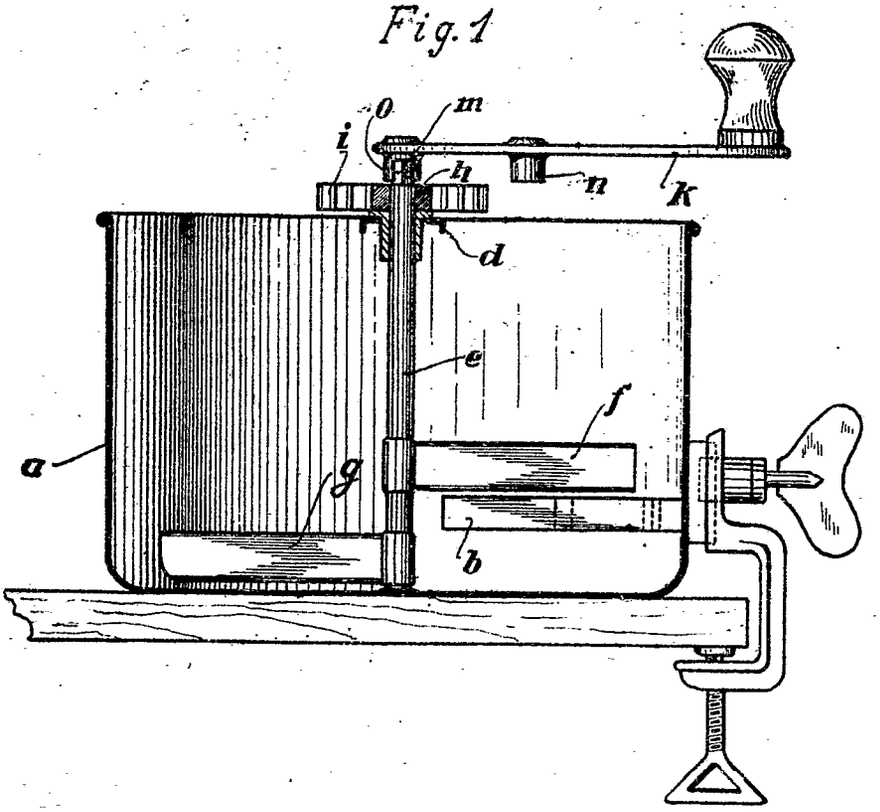
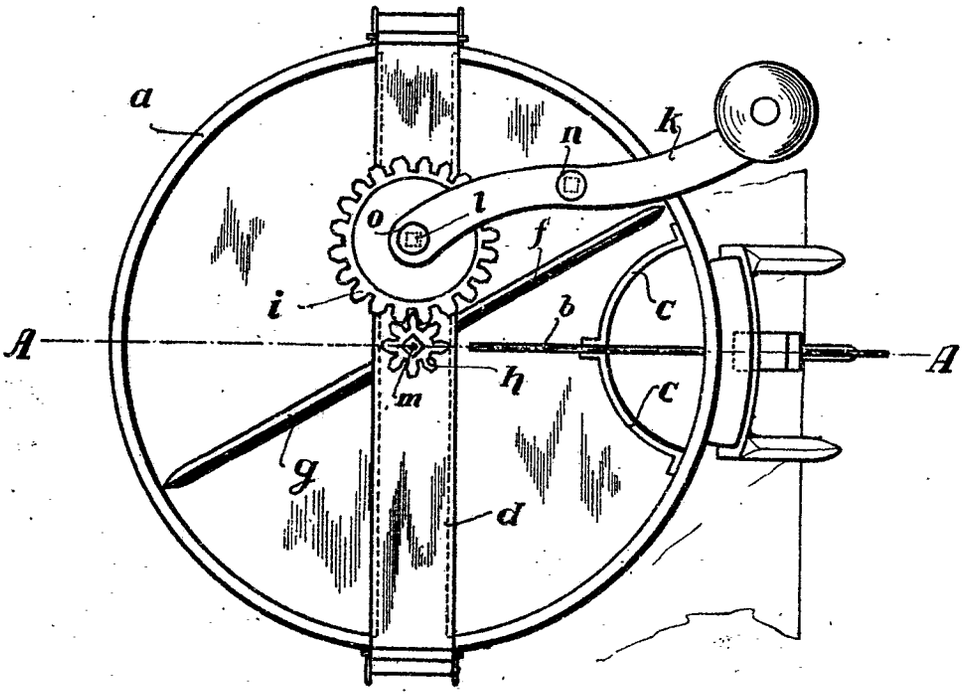


Fig. 2



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