July 31, 1923. 1,463,720

L. NEGRO

UNIVERSAL CUTTING AND KNEADING MACHINE

Original Filed Jan. 29, 1921

Fig. 1

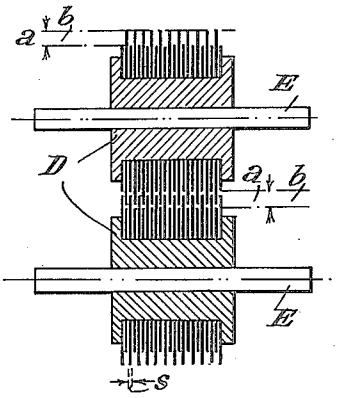


Fig. 2

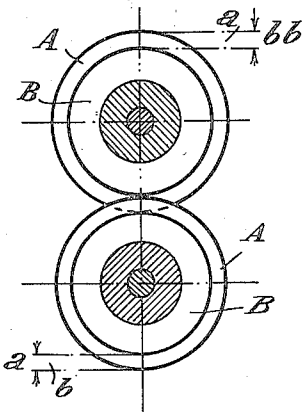


Fig. 3

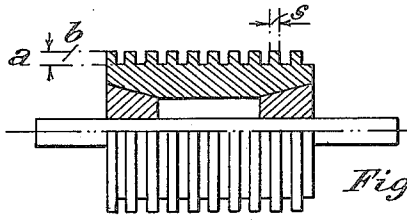


Fig. 4

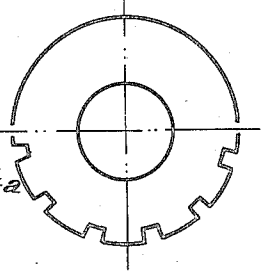


Fig. 4a

Fig. 5

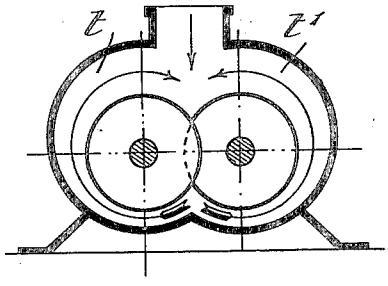
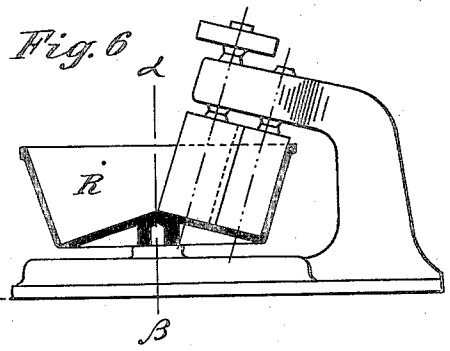


Fig. 6



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UNITED STATES PATENT OFFICE.

LUIGI NEGRO, OF BUCHAREST, RUMANIA.

UNIVERSAL CUTTING AND KNEADING MACHINE.

Application filed January 29, 1921, Serial No. 441,093. Renewed June 16, 1923.

To all whom it may concern:

Be it known that I, LUIGI NEGRO, of Bucharest, Rumania, a subject of the King of Italy, and residing at Bucharest, Rumania (whose post-office address is: 3 Strada Smardan, Bucharest, Rumania), have invented certain new and useful Improvements in Universal Cutting and Kneading Machines, of which the following is a specification.

The subject matter of the present invention is a universal cutting and kneading machine for materials of any kind, substantially comprising two main parts, viz two continuous acting cutting and kneading cylinders on the one hand, and a metal support or frame containing the material, on the other hand, as shown in the annexed drawings where:

Figs. 1 and 2 are views of the two cylinders in working position to each other.

Fig. 3 a modification of cylinder.

Figs. 4 and 4ª modifications cutting disk, and

Figs. 5 and 6 two distinct forms of material container and frame.

The said cutting and kneading cylinders comprise a plurality of disks A of rolled steed, having a thickness *s*, and a corresponding number of disks B of the same thickness but of a smaller diameter, alternating with disks A, both these series of disks A and B being mounted within a drum-like receiver D for the material to be cut and kneaded and keyed on shafts E.

The two cylinders are so placed to each other that the crown *a—b*, of one cylinder A enters into the gap between two disks A A of the other cylinder, and the disks B having the same thickness as the disks A there is a perfect adherence of the faces of the crowns *a—b*.

Thus the material to be worked upon is caught between the two rotating cylinders and not only rolled or kneaded but also cut into pieces of a thickness corresponding to that of the disks. It is obvious that the smaller the thickness *s* and the greater the number of times the material passes between the cylinders, the more finely the product obtained will be cut and mixed.

The cylinders instead of being composed of disks may be made of solid steel blocks with cutting ribs cut out of the web of the cylinder, Fig. 3, in the shape either of circular rings or a right hand or left hand screw thread of rectangular section.

As to the disks, they may be made with a smooth cutting rim, Fig. 4, or a toothed cutting rim, Fig. 4ª.

The cylinders are contained in, and supported by a frame, and rotate with a speed determined according to the nature of the material to be worked.

The frame or body of the machine will vary according to the special purposes the machine is designed for, and may be fixed, Fig. 5, in which case the material is fed by the cutting and kneading cylinders in the directions of arrows *t* and *t'*, and caused to pass as many times between the cylinders as are necessary to obtain a finely cut and kneaded product.

The part of the machine or receptacle R containing the material may also be movable, Fig. 6, in which case the cylinders are not supported by the main body of the machine, but by a special bracket, the receptacle R rotates on an axe $\alpha\ \beta$ and the material is continuously fed to the cutting and kneading cylinders.

Having now described my said invention and the manner in which it is performed

I claim:

1. A cutting and kneading machine comprising a revolubly mounted receptacle, and two kneading and cutting cylinders mounted in the receptacle to rotate independently thereof and adjacent the inner peripheral face of the receptacle, the cylinders each being provided with a plurality of peripheral annular cutting members, the cutting members being of equal thickness and spaced apart and the cutting members of one cylinder extending between the cutting members of the other cylinder.

2. A cutting and kneading machine comprising a frame having an angular bracket, a receptacle mounted on the frame to rotate, and two kneading and cutting cylinders revolubly mounted in the bracket and extending into the cylinder adjacent to the

inner peripheral face thereof, said cylinders each comprising a hub, two sets of discs of the same thickness but of different diameters secured alternately upon the hub, the discs of one cylinder extending between the discs of the other cylinder.

In testimony whereof I have hereunto signed my name in the presence of two witnesses.

LUIGI NEGRO.

Witnesses:
Mr. COLFOL, Jr.,
GREE S. PARIS.