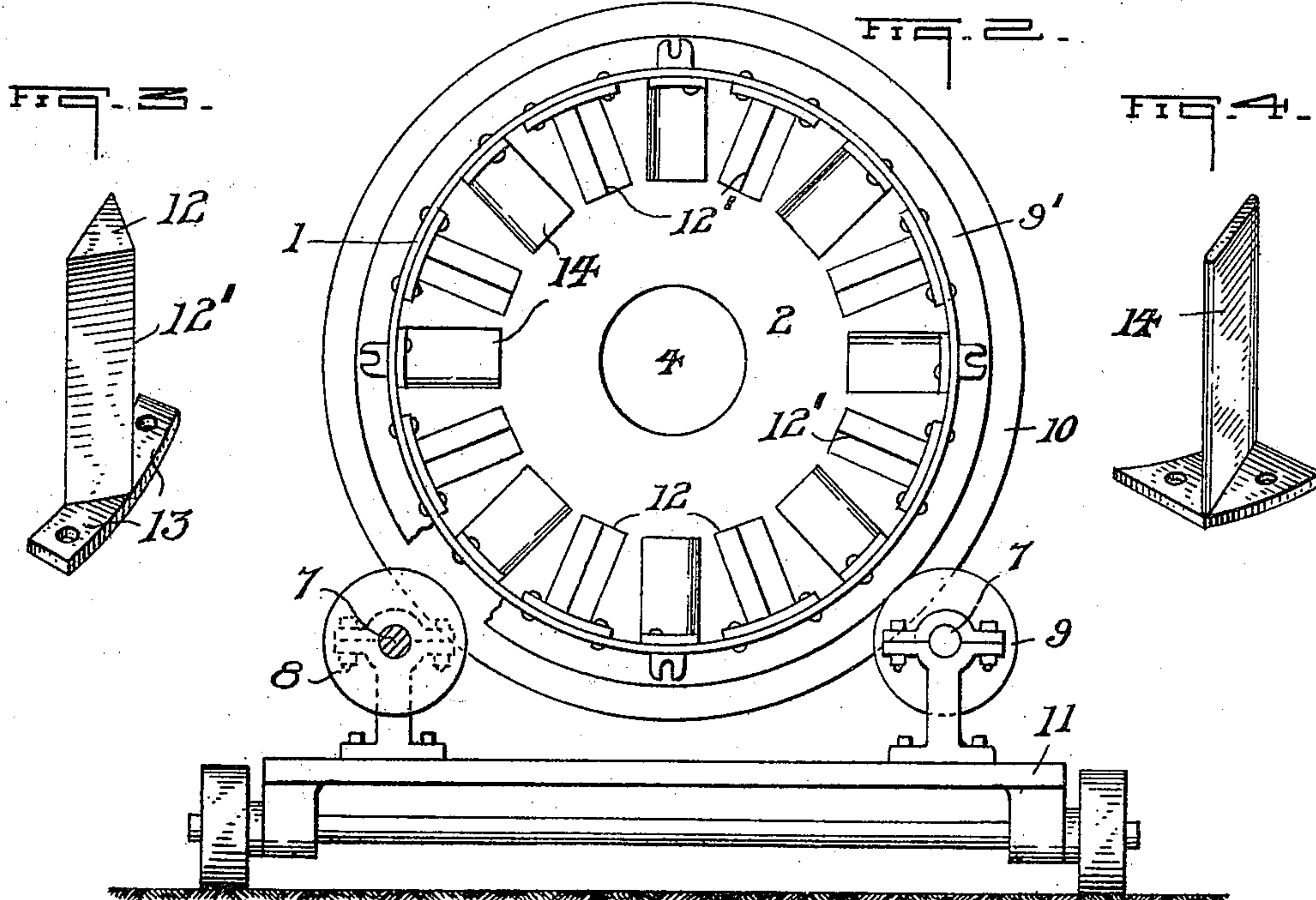
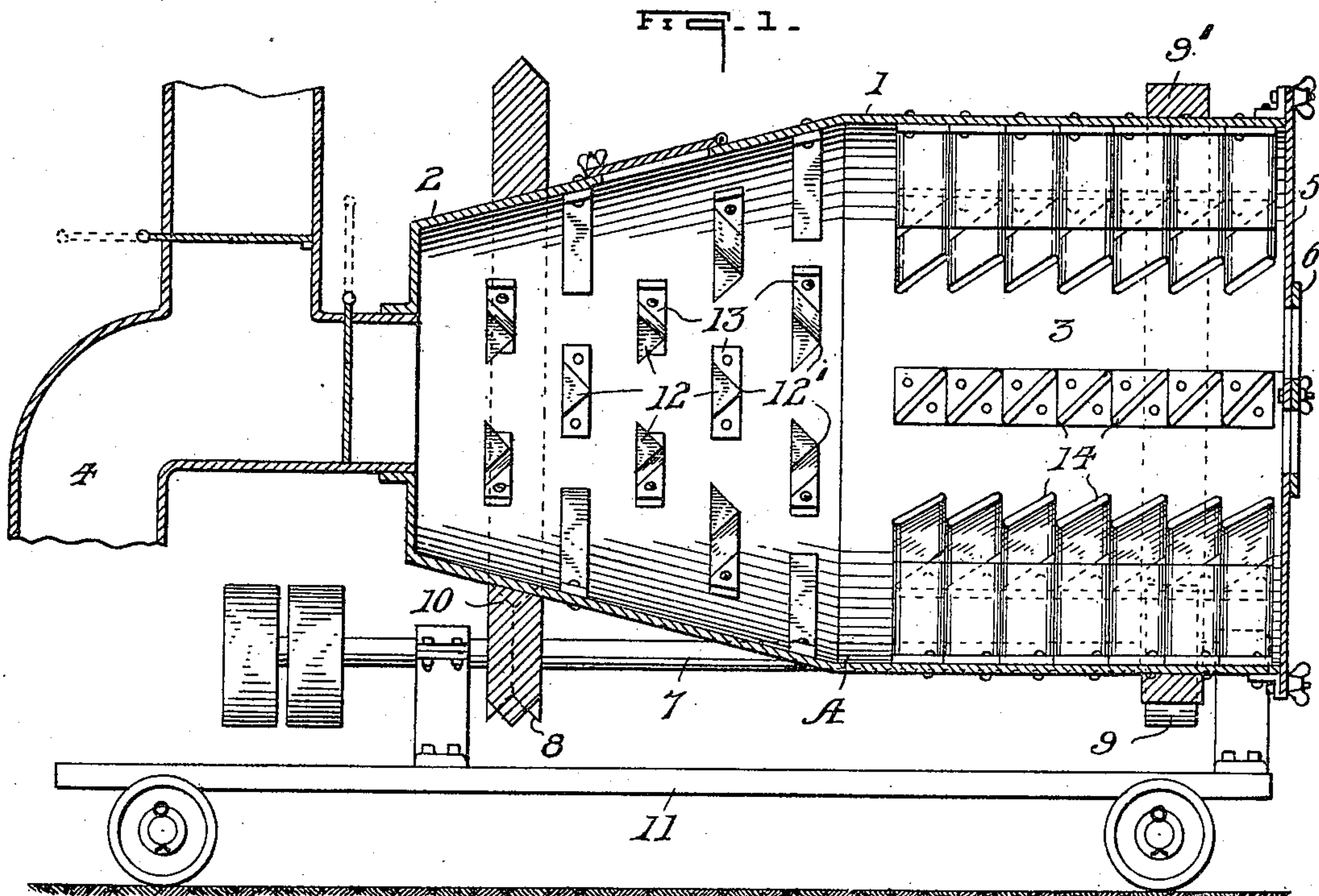


J. H. RYAN.
 BITUMINOUS MIXING MACHINE.
 APPLICATION FILED JULY 14, 1909.

960,410.

Patented June 7, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH H. RYAN, OF PITTSBURG, PENNSYLVANIA.

BITUMINOUS MIXING MACHINE.

960,410.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed July 14, 1909. Serial No. 507,525.

To all whom it may concern:

Be it known that I, JOSEPH H. RYAN, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bituminous Mixing Machines, of which the following is a specification.

My invention pertains to certain new and useful improvements in mixing machines, and is more particularly designed and intended for the purpose of mixing bituminous products, such as asphalt, etc.

The viscous nature of the asphaltum when being amalgamated with the other substances for forming the finished product necessitates thorough mixing and kneading, and it is principally to this purpose that my invention relates.

Another object involved is the feature of keeping the materials being mixed continually working toward a common center of the machine when the same is being revolved in one direction, and providing means for gradually forcing the finished product out of the machine when the latter is revolved in an opposite direction.

With the above objects in view my invention consists of the novel construction and arrangement of parts shown in the accompanying drawing, in which:

Figure 1 is a longitudinal section of my device mounted on a portable truck and connected to a heat supplying means. Fig. 2 is an elevation looking into the machine from the discharge end. Fig. 3 is a perspective view of one of the tri-angular shaped mixing blades, and Fig. 4 is a similar view of one of the angled mixing and expelling members.

Throughout the drawings the numeral 1 indicates the shell or casing constituting the body portion or drum of my device, which is preferably made as shown, forming a conical shaped chamber 2 at one end thereof, and a cylindrical shaped chamber 3 at the opposite end, both chambers however communicating, and their respective holding capacities determined by usage. The conical shaped end communicates with a heat supplying medium 4, and the cylindrical end is closed, when the device is in operation, by a removable cap member 5, which is supplied with a central damper 6.

The power means for rotating the drum involves suitably journaled shafts 7 having

mounted thereon friction members 8 and 9, the former being preferably of a grooved nature, and engaging a V-shaped collar 10 secured to the outer periphery of said drum, and the members 9 engaging a flat band or collar 9' secured on the cylindrical periphery of said drum. No novelty however is claimed for this particular construction shown and described, as various other adequate revolving means can be substituted. The shaft is turned by any suitable motive power, not shown, but preferably mounted on and carried by the truck 11.

Arranged in staggered relation on the inner periphery of the conical section of the drum are a plurality of tri-angular shaped mixing blades 12, one of which is shown in Fig. 3. These said blades are securely fixed to the casing 1 by means of the integral flanges 13. The said blades 12 all project into the chamber 2 with the edge 12' facing toward the exit end of the drum, for a purpose to be more particularly described hereinafter.

Secured on the inner periphery of the cylindrical portion of the drum, and extending into the chamber 3 a pre-determined distance, are a plurality of angularly disposed mixing and expelling members 14, arranged in series a pre-determined distance apart, in alinement with one another, and extending practically to the extreme discharge end of the machine. The degree of pitch given to these members 14 is sufficient to force the contents of the drum toward the common center A, when said drum is revolved in one direction, and when revolved in an opposite direction these said members will gradually work the finished product toward, and out of, the machine at the discharge end; the cap member 5 being removed beforehand for that purpose.

No matter in which direction the drum is revolved the mixing blades 12 will, on account of their angular sloping sides, work the material in toward the central point A. The conical wall of the machine also aids materially in keeping the mixture working toward said common center A. One movement of the drum will cause both sets of blades 12 and 14 to thoroughly mix and knead the contents thereof by keeping the same continually agitated and worked in the direction of the common center A, the said two sets of blades thus coöperating and acting against each other during the for-

ward movement of the drum, but on a reverse movement of said drum the forward or tri-angular blades 12 will still continue to keep the material working toward the center, while the other members 14 will perform their intended function of gradually forcing the material out of the machine.

What I claim and desire to secure by Letters Patent, is:

1. A drum adapted for rotation in opposite directions; a discharge opening at one end of said drum; means moving the mixture always toward the discharge opening; and means moving the mixture in opposite directions toward or from the discharge opening as the motion of the drum is reversed.

2. A drum adapted for rotation in opposite directions; a discharge opening at one end of said drum; blades, provided with opposed faces, at one end of the drum, and directed toward the discharge opening; and flat blades angularly disposed about the other end of the drum.

3. A drum adapted for rotation in opposite directions; a discharge opening at one end of said drum; blades, provided with opposed faces, arranged in staggered relation at one end of the drum, and directed toward the discharge opening; and flat blades an-

gularly disposed arranged in series and in alinement with one another about the other end of the drum.

4. A drum adapted for rotation in opposite directions, one portion thereof being conical in form, and the other portion of a cylindrical configuration; a discharge opening at one end of said drum; blades, provided with opposed faces, arranged in staggered relation in the conical chamber of the drum; and flat blades angularly disposed arranged in series, and in alinement with one another, about the cylindrical portion of the drum.

5. A drum, portably mounted and in communication with a heat producing means, adapted for rotation in opposite directions; an admission port at one end of said drum, and a discharge opening at the opposite end thereof; blades, provided with opposed faces suitably arranged at one end of the drum, and directed toward the discharge opening; and flat blades angularly disposed about the other end of the drum.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. RYAN

Witnesses:

BEATRICE FITZGERALD,
H. W. STEVENSON.