

N. E. MARSH.  
CONCRETE MIXER.  
APPLICATION FILED MAR. 20, 1908.

899,549.

Patented Sept. 29, 1908.

Fig. 4.

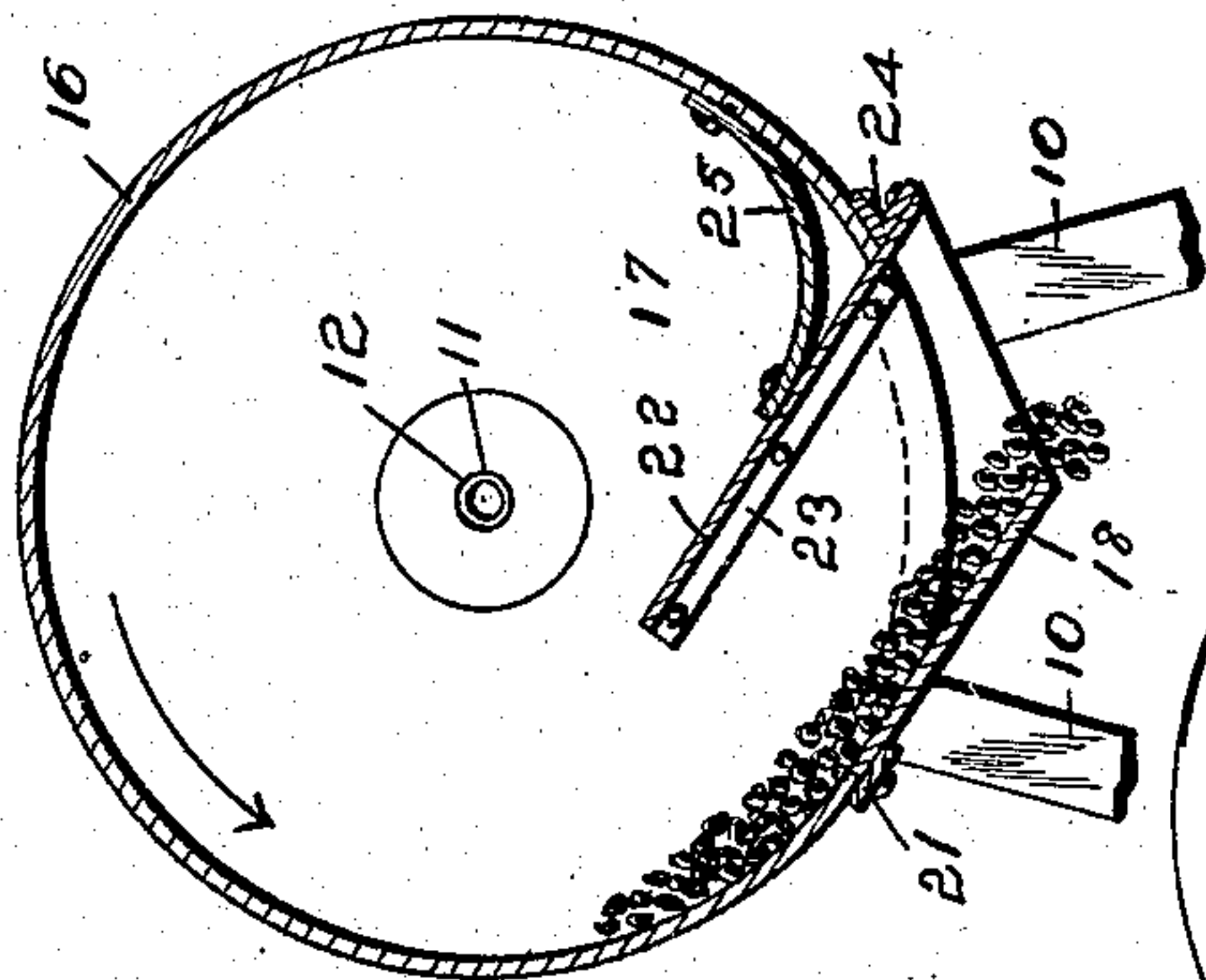


Fig. 2.

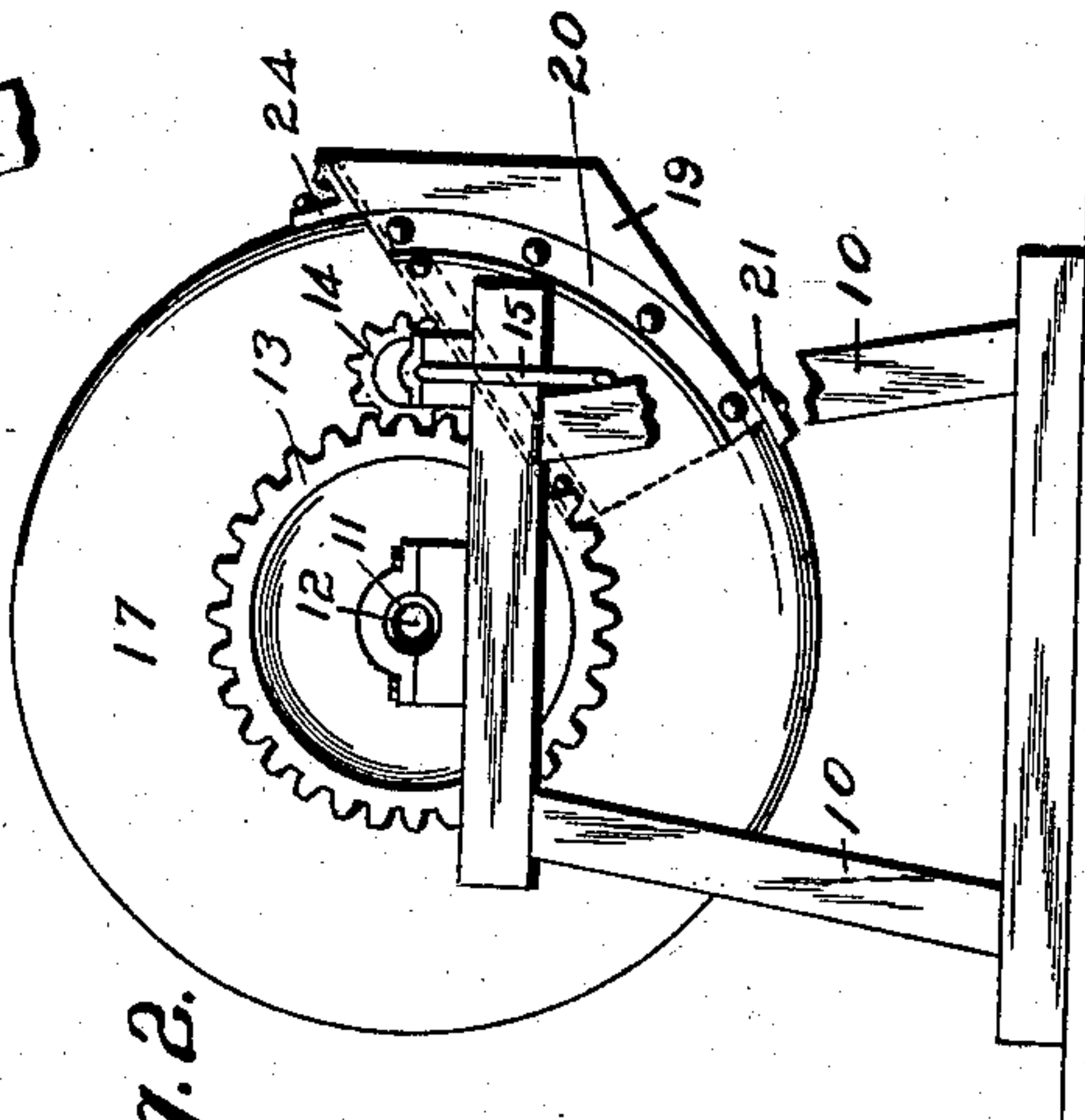


Fig. 5.

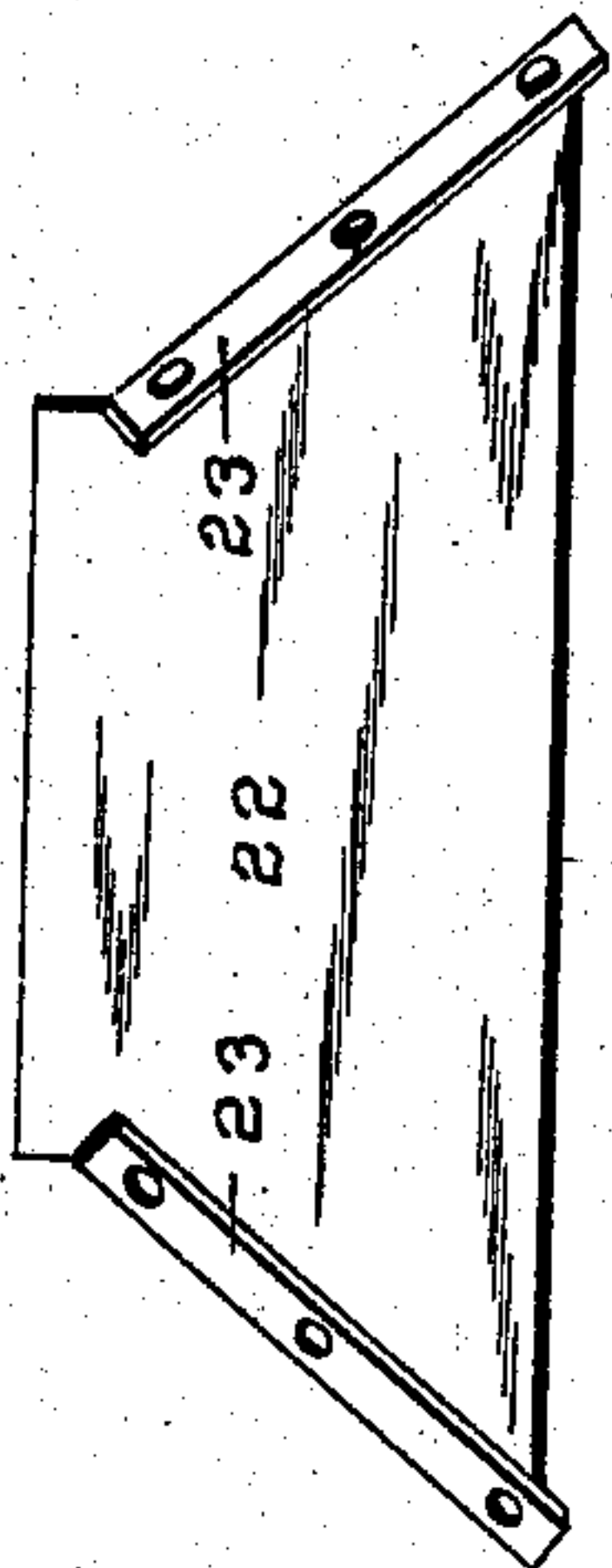


Fig. 6.

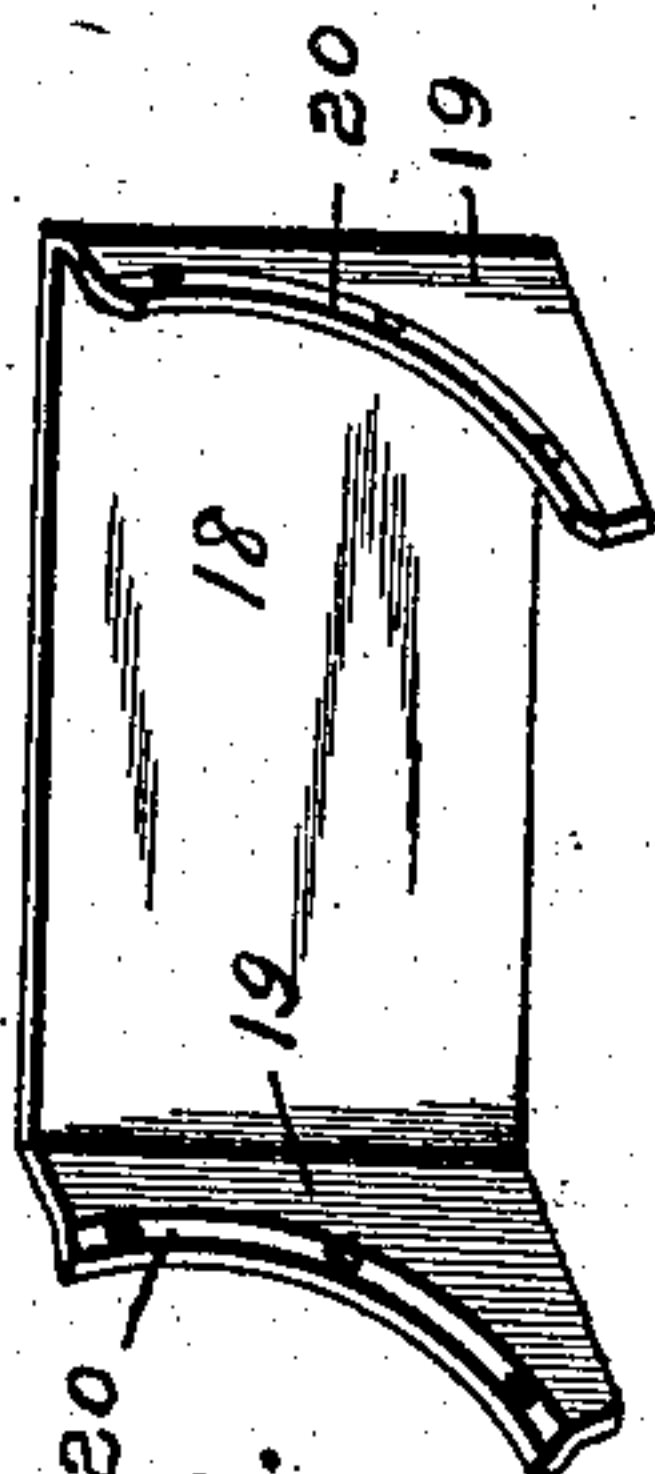


Fig. 3.

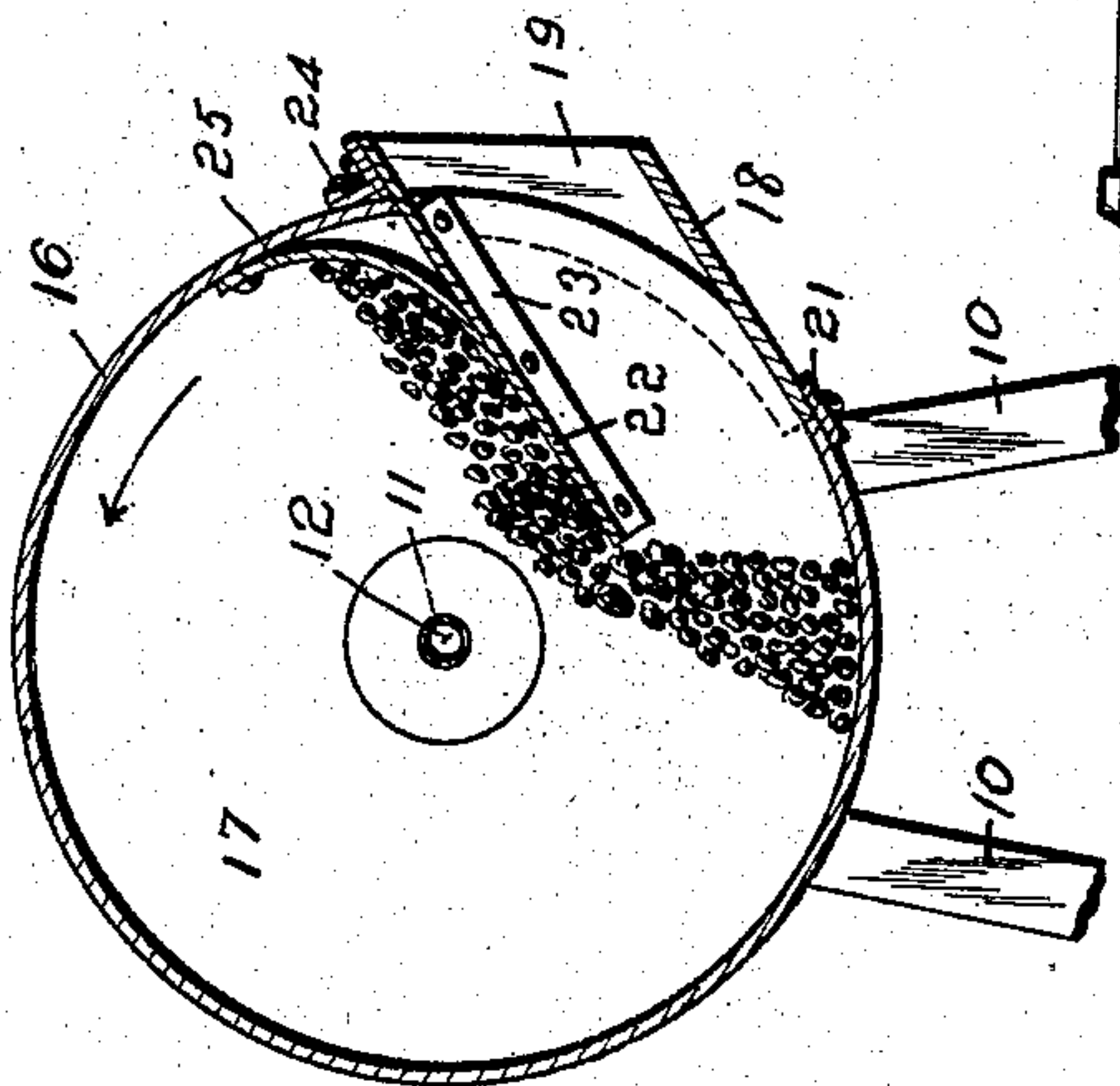
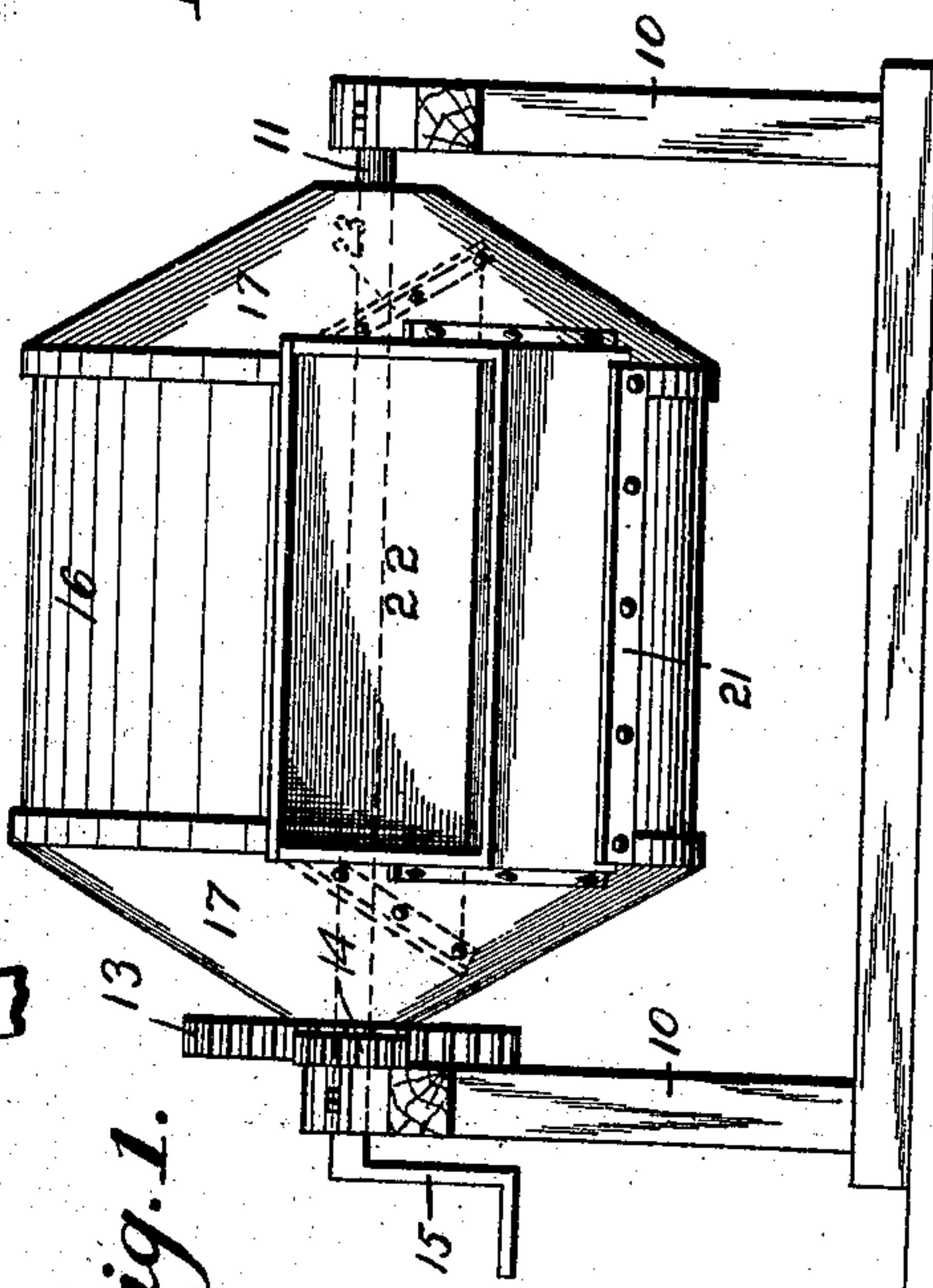


Fig. 1.



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# UNITED STATES PATENT OFFICE.

NORMAN EUGENE MARSH, OF DES MOINES, IOWA.

## CONCRETE-MIXER.

No. 899,549.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed March 20, 1908. Serial No. 422,269.

*To all whom it may concern:*

Be it known that I, NORMAN E. MARSH, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Concrete-Mixer, of which the following is a specification.

The object of my invention is to provide a concrete mixer of simple, durable and inexpensive construction, and of few working parts, so arranged that the operator may easily deposit therein the materials for forming concrete, and then by turning a crank, he may rapidly rotate the body portion of the mixer and thoroughly mix and commingle the ingredients contained therein, and then by a reverse movement of the crank, he may discharge the concrete, all of which may be done without opening or closing any doors or other movable devices.

More specifically, it is my object to provide a mixer of this class in which a comparatively small amount of material is needed for the construction of the body portion, and the same is firmly and securely braced in all directions, and a mixer of comparatively small size will have a comparatively large capacity.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a complete mixer embodying my invention. Fig. 2 shows an end view of same. Fig. 3 shows a central vertical sectional view through the device, showing a quantity of concrete material therein. The arrows in said figure indicate the direction in which the mixer is turned when mixing the material. Fig. 4 shows a similar view, with the material in position for discharging it. The arrow in said figure indicates the direction in which the device is turned to cause it to discharge. Fig. 5 shows a side view of the top of the chute which is also the mixing blade, and Fig. 6 shows a perspective view of the body and sides of the chute.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate two standards upon which the device is rotatably mounted. Mounted in suitable bearings on said standards, is a hollow shaft 11 provided with discharge openings 12 at

its central portion, so arranged that water may be introduced in one end of said hollow shaft, and discharged into the interior of the mixer. Upon one end of this shaft I have fixed a cog wheel 13 in mesh with a pinion 14, which latter is provided with a crank 15 whereby the hollow shaft may be rotated by hand.

The mixer proper comprises a central cylindrical body portion 16 which may be made of sheet metal of comparatively light gage. The ends 17 of the mixer body are also made of sheet metal and are of cone shape. These ends are fixed to the hollow shaft 11. An opening is formed in one side of the cylinder 16, and a combined spout and mixing blade is provided adjacent to said opening. This spout and mixing blade is preferably formed of two parts, one comprising the bottom and sides of the chute, and the other comprising the top of the chute, and the mixing blade. The part comprising the bottom and sides of the chute may be formed of one piece, and comprises a flat bottom 18 and two sides 19. Each side has its outer edge inclined outwardly to form the flange 20, which flange is curved so as to accurately fit against the exterior of the ends 17 adjacent to the opening in the cylinder 16, as clearly shown in Fig. 2. One edge of the bottom 18 rests against one of the edges of the cylinder 16 at the opening therein, as clearly shown in Fig. 3, and it is connected therewith by means of the metal strip 21, which is riveted to it, and to the cylinder 16, and the flanges 20 are riveted to the exterior of the ends 17. The other part of the chute comprises a flat sheet metal plate 22, one of its edges being of a size to fit the interior of the opening in the cylinder, and the side edges of same being inclined outwardly to fit against the interior of the ends 17. These outwardly inclined edges are each provided with a flange 23 designed to lay flat against the ends 17, and be riveted thereto.

In order to firmly support the plate 22 in position, I provide an angle bar 24 riveted to the plate 22, and to the cylinder 16, as clearly shown in Fig. 3. When the parts are assembled as shown in the drawings, the bottom 18 is arranged on a line tangential to the cylinder 16 at the edge of the opening therein, and the plate 22 is arranged parallel with the plate 18 and extends into the interior of the cylinder 16 a considerable distance to serve as a mixing blade.

In order to prevent the accumulation of



concrete at the corner between the plate 22 and the adjacent portion of the cylinder 16, I provide a curved sheet metal plate 25 secured to the interior of the cylinder 16 and to the top of the plate 22.

In practical use, and assuming that it is desired to fill the body portion with concrete material, the chute is placed in the position shown in Fig. 3, and the material placed in the body portion, through said chute. Then the operator turns the body portion in the direction indicated by the arrow in Fig. 3, and when so doing, the plates 22 and 18 prevent material from flowing out through the chute. Obviously, by the arrangement shown, the body portion may be filled as much as may be desired, without danger of having any of the material pass out through the chute, as long as the body portion is turned in the direction indicated by the arrow in Fig. 3. When the body portion is being turned in this manner, the mixing plate 22 will tend to thoroughly mix and commingle the material. When the material is sufficiently mixed, it may be discharged from the body portion by simply reversing the movement of the body portion in the direction of the arrow shown in Fig. 4. By having the ends of the body portion made cone shaped as shown, and by having the chute made of separate pieces and connected with the body portion as shown, I am enabled to use sheet metal of comparatively light gage, and yet provide a body portion of strong and durable construction, because said parts are so arranged as to mutually brace and support each other.

In the accompanying drawings, I have used a mixing device of comparatively small size, and of the kind adapted to be operated by manual power. Obviously, the same principle may be applied to larger machines to be operated by an engine or other applied power.

I claim as my invention:

1. In a device of the class described, the combination of a body portion comprising a cylindrical central portion, and tapered ends, a frame in which said body portion is rotatably mounted, means for rotating the body portion, an open ended chute having its outer wall substantially tangential to the cylin-

drical body portion, and its inner wall substantially parallel with the outer wall, and projected into the interior of the body portion, a curved shield fixed to the said inner wall and to the interior of the cylindrical body portion, and a gearing device for manually rotating the body portion.

2. In a device of the class described, the combination of a cylindrical body portion having an opening therein, cone shaped ends fixed thereto, a chute formed of two parts, one part comprising bottom and sides, the bottom being fixed in position tangential to the cylinder, and adjacent to one of the edges of the opening therein, and the sides being curved and secured to the cone shaped ends adjacent to the sides of said opening, and a top member for the chute arranged substantially parallel with the bottom member, and having its side edges inclined outwardly and secured to the interior of the body portion against the cone shaped ends thereof.

3. In a device of the class described, the combination of a cylindrical sheet metal body portion having an opening therein, cone shaped sheet metal ends fixed to the cylindrical body portion, a chute formed of two parts, one part comprising a sheet metal bottom and sides, said sheet metal bottom being arranged tangential to the cylinder with one edge thereof flush with one edge of the opening in the cylinder, the sides of said chute being provided with curved outwardly inclined flanges, and rivets for connecting said flanges with the cone shaped ends adjacent to the sides of the opening, the other chute member comprising a flat plate having its side edges inclined outwardly and provided with flanges, said plate being supported parallel with the bottom plate, and said flanges being riveted to the interior of the cone shaped ends, and an angle bar riveted to the said top piece and to the exterior of the cylindrical body portion, for the purposes stated.

Des Moines, Iowa, Mar. 7, 1908.

NORMAN EUGENE MARSH.

Witnesses:

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