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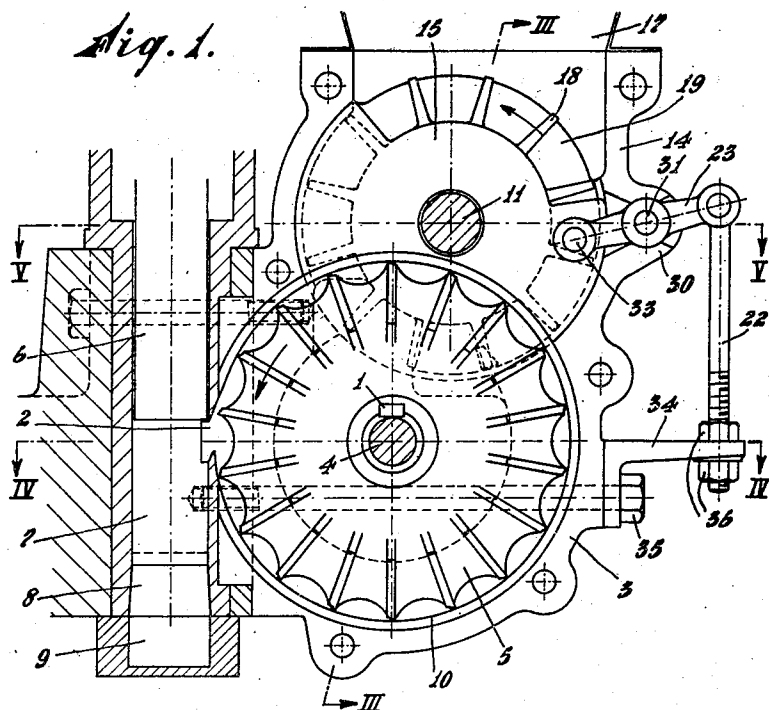
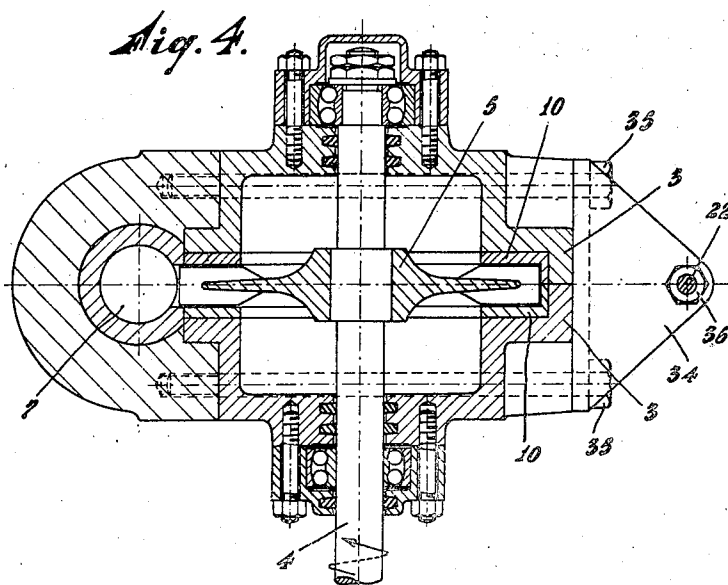
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2,278,772

CENTRIFUGAL FILLING MEANS FOR COMPRESSION MOLDS

Filed Oct. 24, 1938

3 Sheets-Sheet 1



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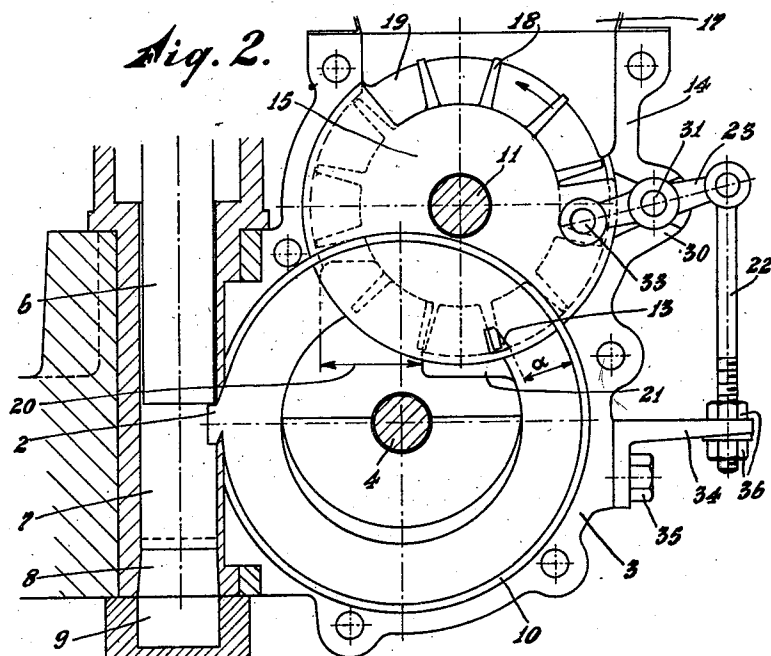
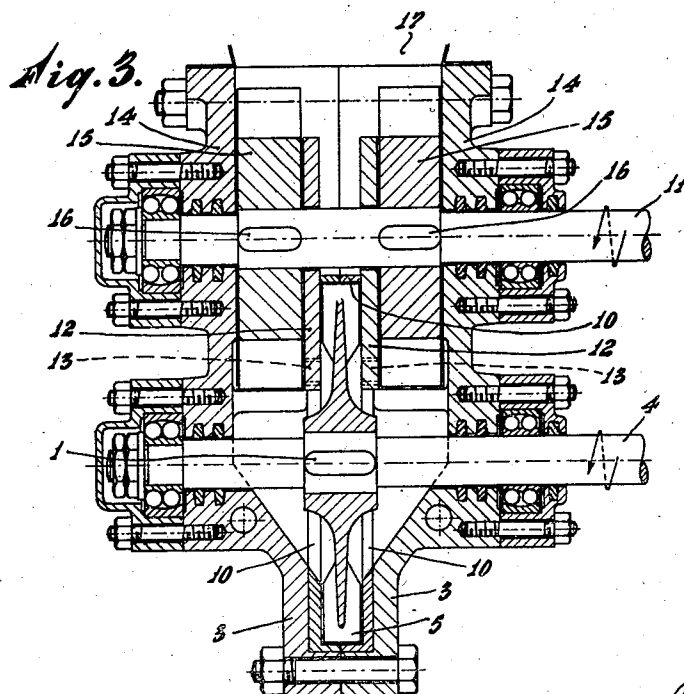
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CENTRIFUGAL FILLING MEANS FOR COMPRESSION MOLDS

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3 Sheets-Sheet 2



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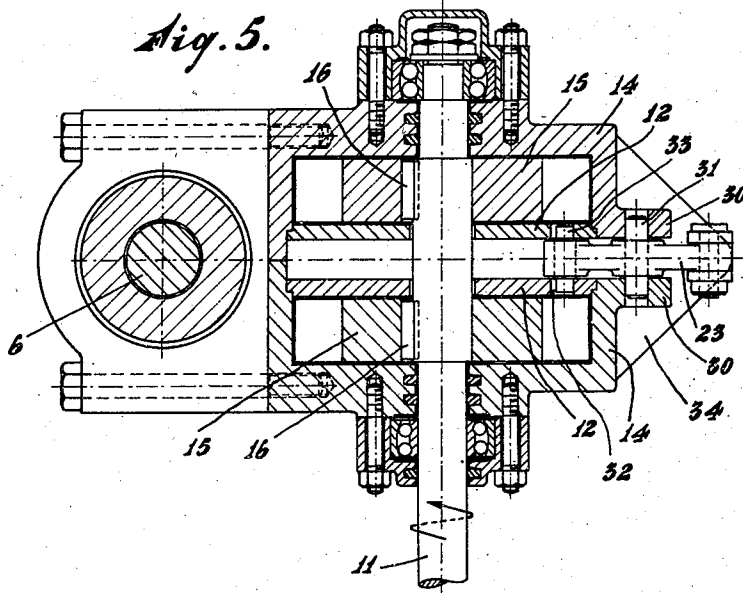
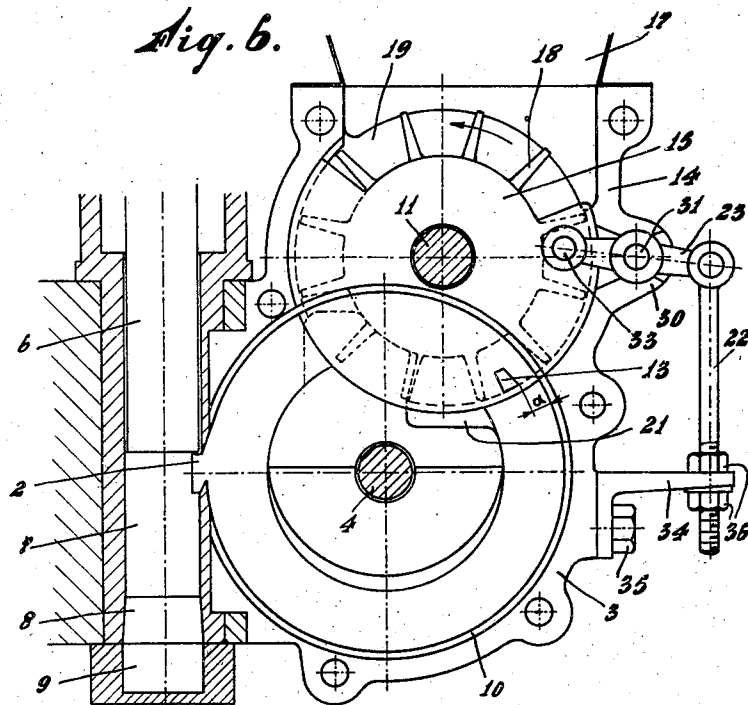
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CENTRIFUGAL FILLING MEANS FOR COMPRESSION MOLDS

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,278,772

CENTRIFUGAL FILLING MEANS FOR
COMPRESSION MOLDS

Gustav Duden, Dusseldorf, Germany, assignor to
Naamlooze Vennootschap: Maatschappij tot
Exploitatie van "ten Bosch Octroolen N. V.,"
Arnhem, Netherlands, a corporation of the
Netherlands

Application October 24, 1938, Serial No. 236,775
In the Netherlands October 26, 1937

1 Claim. (Cl. 18—30)

This invention relates to an improved construction for the centrifugal filling means for compression molds used in supplying pulverulent material thereto.

Heretofore a wheel provided with blades and located in a drum shaped casing has been used for supplying a predetermined weight-quantity of a pulverulent material to a compression mold. Such material is fed laterally into the casing and is subjected to centrifugal action prior to the transference of a portion of the material through a tangential opening provided in the circumference of the casing leading to the compression mold to be filled.

The operation of such a device is based upon the constant presence of a quantity of pulverulent material which is kept in motion by the bladed wheel and since it is practically impossible to supply to the casing the exact quantity of material which is discharged therefrom, such supply is generally slightly in excess of the amount discharged from the casing.

Therefore the drum shaped casing tends to become oversupplied and it has been proposed to provide a discharge conduit communicating with one of the lateral walls of the casing through which, due to the air current in such conduit, such excess of material may be discharged.

An object of the present invention is to provide a construction improving the discharge of the excess pulverulent material and at the same time return such material to the supply opening.

A further object of the invention is to provide an adjustable overflow opening located in a lateral wall of the drum shaped casing and located at some distance from the inner circumference thereof. Such opening communicates with a space in which supply pockets are movable and therefore the pockets are successively brought into communication with the overflow opening.

A further object of the invention is to utilize the supply pockets for supplying the pulverulent material to the drum shaped casing. Therefore, the space or compartment through which said pockets are moving is provided with a supply opening communicating with the drum shaped casing which is located in advance of the overflow opening with reference to the movement of the bladed wheel and also closer to the axis of rotation of the bladed wheel.

A further object of the invention is to provide a construction wherein the supply pockets are provided at the circumference of a rotatably mounted disc and such pockets extend into a

supply reservoir or hopper for the pulverulent material.

A still further object of the invention is to provide means for varying the character of the overflow opening during the operation of the device.

Other objects will become more apparent and the invention will be more fully understood with reference to the detailed description below and the drawings in which:

Figure 1 is a vertical cross-sectional view of the device with portions shown in elevation for greater clarity, taken parallel to the plane of the bladed wheel.

Figure 2 is a similar view with the bladed wheel removed.

Figure 3 is a cross-sectional view taken on the section line III—III of Figure 1.

Figure 4 is a cross-sectional view taken on the section line IV—IV of Figure 1.

Figure 5 is a cross-sectional view taken on the section line V—V of Figure 1, with certain parts shown in plan for greater clarity, and

Figure 6 is a view similar to Figure 2 showing the overflow opening in a different adjusted position.

Referring to the drawings, the drum shaped casing 3 encloses the bladed wheel 5 which is secured to a rotatable shaft 4 by means of the key 1. The pulverulent material which is fed into the casing 3 is subject to a centrifugal action by the bladed wheel 5 as shown, for instance, in Patent No. 2,093,028, granted September 14, 1937.

By periodically opening the outlet 2, a portion of the material so treated may escape there-through, in order to be preliminarily compressed within the space 7 by a plunger 6 while the outlet 2 is closed in the manner disclosed in applicant's co-pending application Serial No. 210,540, filed May 27, 1938. Afterwards, the material together with the compressed mass 6 already present is pushed into the compression mold 9.

The casing 3 is continued upwardly by the portion 14, which is integral therewith. A rotatable shaft 11 is mounted in the portion 14 and to this shaft are secured the two pocket wheels 15 as shown more particularly in Figure 3, by means of the keys 16. The pulverulent material to be treated is placed in the hopper 17 located at the upper part of the portion 14. The material in the hopper will fill the uppermost pockets 19 located upon the periphery of the pocket wheel. Radial blades 18 serve as partitions between the pockets. A rotation of the pocket wheels in the direction of the arrow in Figure 2 will move the

filled pockets downwardly to the open connection between the portion 14 and the casing 3. At this point the pockets empty into the central portion of the casing 3.

Upon a further rotation, the pockets are closed by the wall 21. The side walls of the pocket are closed at all times by the plates 12. Therefore, by means of the walls 21 and the plates 12, the pockets are entirely closed until they reach the overflow opening 13. The overflow opening 13 permits the pocket to communicate with the space in which the bladed wheel 5 is rotating.

The portion 14 of the casing is provided with spaced lugs 30 (see Figure 5) in which is pivoted a lever 23 by its trunnion 31. The plates 12 are freely rotatable upon the shaft 11 and are provided with aligned apertures 32 in which a pin 33 secured upon one end of the lever 23 engages. The other end of the lever 23 is pivotally connected to a bolt 22 as shown more particularly in Fig. 2. The free end of the bolt 22 extends through an opening provided in an abutment 34 fixed to the casing 3 by the bolts 35 which serve to secure the casing 3 to the compression space 7. The nuts 36 threaded upon the bolt 22 serve to secure the bolt 22 to the abutment 34 in any desired adjusted position. As will be noted, a lowering of the bolt 22 will change the position of the overflow opening 13 as shown in Figures 2 and 6.

The opening 13 serves to give to the material which is supplied in excess to the casing 3 an opportunity to escape again. The material which is received in the pockets 19 in this manner will be carried along forwardly and the pockets will be completely filled from the hopper 17 and the scale of operations will be repeated.

By adjusting the plates 12, the thickness α (see Fig. 2) of the ring of material formed by the centrifugal action is modified according as conditions may require.

As the overflow opening 13 is always in connection with a closed pocket, an air current can not be produced notwithstanding the operation of the bladed wheel 5. Therefore, only excess material is removed through this opening. As is obvious if an air current were produced, such air current might carry along more than the excess material to be removed.

Although in the embodiment of the invention above described which is the preferred construction the pockets engaging successively with the overflow openings 13 are also used for supplying the pulverulent material to the casing 3, it is obvious that the construction may be such that the pockets will serve successfully to evacuate any excess supplied material. It is also obvious that instead of a circular path through which the pockets move such pockets may traverse a closed path of a different configuration.

I claim:

A device for filling a compression mold or like space with a pulverulent material comprising a casing, a bladed wheel rotatably mounted within said casing, a plate located at each side of said wheel and eccentric thereto, one of said plates having an overflow opening therein, means for rotatably mounting said plates, a pivoted lever connected to said plates and means for adjustably securing said lever in fixed position whereby said overflow opening may be varied with respect to the axis of rotation of said bladed wheel.

GUSTAV DUDEN.