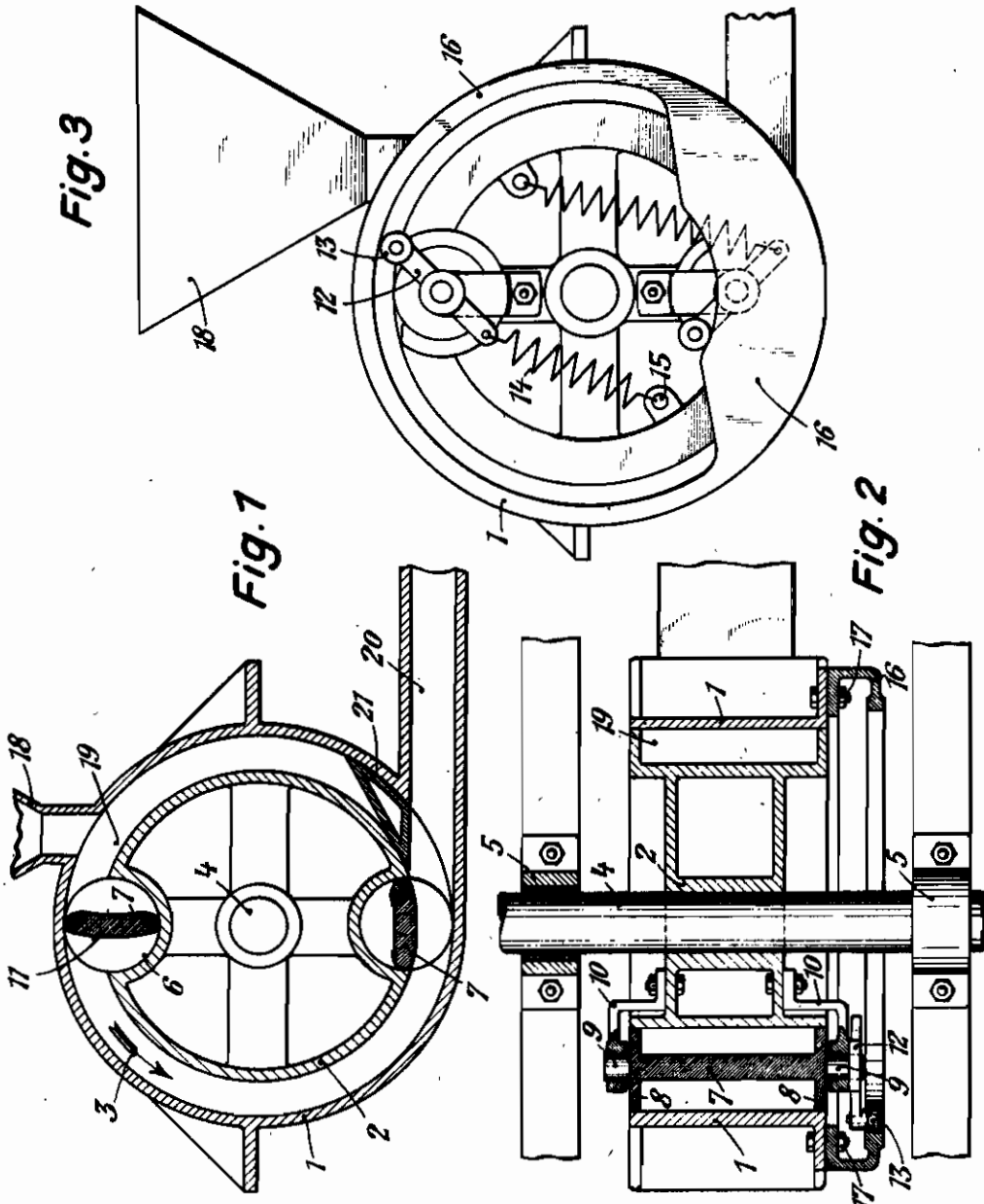


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CIRCULATING PUMP FOR PASTY MASSES  
ESPECIALLY FOR CONCRETE  
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# ALIEN PROPERTY CUSTODIAN

## CIRCULATING PUMP FOR PASTY MASSES ESPECIALLY FOR CONCRETE

Fritz Hell, Kiel, Germany; vested in the Alien  
Property Custodian

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The invention relates to a circulating pump for pasty masses, especially concrete. It has for its object to provide a construction which is simple and reliable in service and not endangered even by the stones contained in the concrete. The invention starts from a cylindrical casing with cylindrical piston rotating therein and with slide plates adapted to be oscillated out of the piston and serving as conveying means. The invention consists in that, the piston being centrally arranged in the casing, the slide plates uniformly distributed around the piston are gripped from both sides by cylindrical discs which are mounted in the extensions of the piston closing the pump space from the sides and extending up to the casing.

The arrangement is further made, in order to carry through a drive of the slide plates, that the cylindrical discs which engage on the slide plates carry outwardly projecting pins fixed on the side walls of the piston. On at least one of these pins a control lever for the slide plates may be mounted.

It has proved to be suitable to provide a two-armed control lever, one arm of which carries a roller destined to roll on a guide rail, and to the other arm of which a pull spring fixed on the piston is attached so that the slide is moved in the opening direction by the co-operation of roller and guide rail, and in the closing direction by the spring. This arrangement prevents that the slide plates or their control elements are damaged or must be made extra strong owing to the stones which may be stuck between the slide plate and the casing wall of the pump.

The slide plate has preferably the shape of a plate extending over the passage cross section of the pump and curved and mounted in the piston so that in the opening position it fits snugly in the outer circumference of the piston. The plate is journaled in the piston preferably by lateral discs made in one piece and connected with it.

An embodiment of the invention is illustrated by way of example in the accompanying drawing, in which

Figs. 1 and 2 are sections through the circulating pump according to the invention,

Fig. 3 is a front elevation of the piston pump.

The stationary pump casing is designated by 1 and the piston rotating in the direction of the arrow 3 is designated by 2. The piston 2 is keyed on the driving shaft 4 journaled in lateral bearings 5.

The rotary slides are mounted in the piston which heretofore has indentations 6. The rotary slides consist of slide plates 7 extending over the passage cross section of the pump and carrying at their ends discs 8 from which pins 9 extend which are journaled in brackets 10 fixed on the piston. The outer side 11 of the rotatable discs 7 are curved so that they fit flush into the circumference of the piston 2 when the slide is in the open position shown in the lower portion of Fig. 1.

Two-armed levers 12 are fixed on one side of the pump on the journaled pins 9 of the rotary slides and carry a roller 13 on the outer arm, whereas a pull spring 14 is hooked onto the end of the other arm, the other end of the spring being fixed on the piston at 15. The rollers 13 run on a guide rail 16 fixed on the outer side of the stationary pump casing by screws 17.

The operation of the pump is as follows:

The material is fed to the pump by a funnel 18 and drops into the conveying channel 16 of the pump which is bordered by the stationary pump casing and by the piston 2. The material is then displaced by a rotary slide rotating with the piston when the plate 7 is in the transverse position relative to the outlet 20 as shown in Fig. 1 at least up to the moment when the plate 7 of the next following rotary slide has shut off the connection of the space behind the plate of the rotary slide in front of it with the admission point 18. The slide is then opened by the co-operation of the two-armed lever 12 with the roller 13 and the control rail 16, and the plate 17 arrives finally in the extreme opening position shown in the bottom portion of Fig. 2, in which the passage to the outlet 20 is free. If the slide, i. e. the plate 7, has passed along the stripper 21 fixed on the casing wall, it is returned into its closing position by the action of the spring 14 according to the construction of the control rail, and the operation begins afresh.

The invention is evidently not restricted to the embodiment illustrated, as this may be constructively modified within the range of the invention; for instance more than two rotary slides may be mounted in the piston and special devices may be provided at the different points for a perfect packing of the conveying channel against the outer side, for instance on the side discs 8.

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