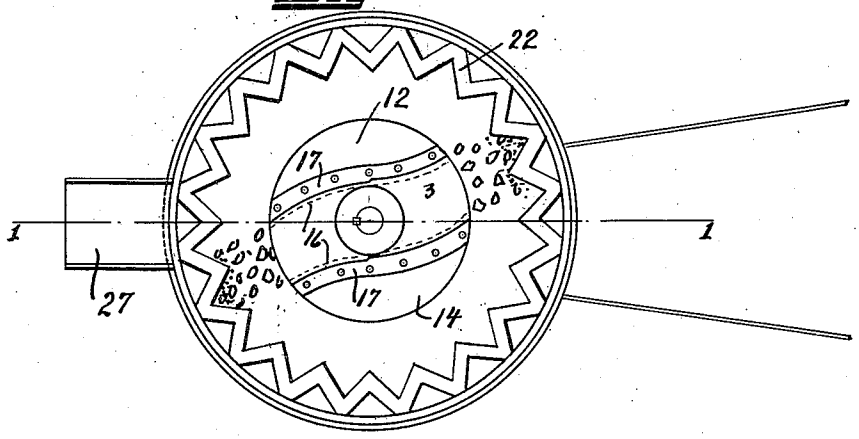
April 7, 1925. 1,532,742

A. D. HADSEL

ROCK CRUSHER

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Fig. 2.



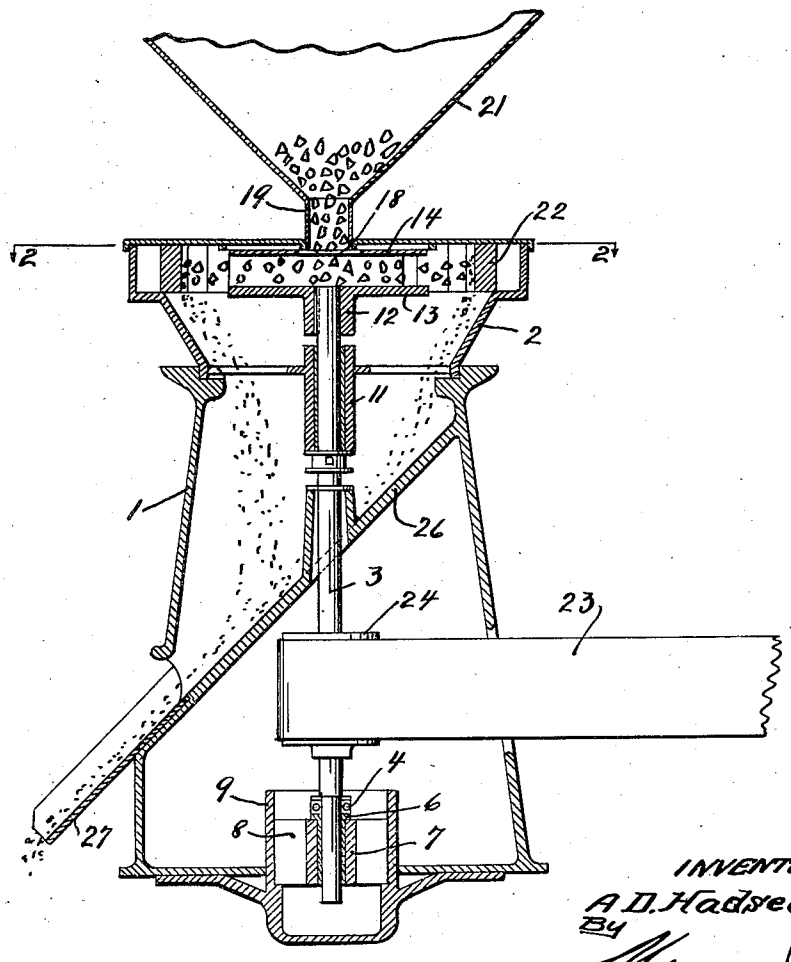


Fig. 1.

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Fig. 3.

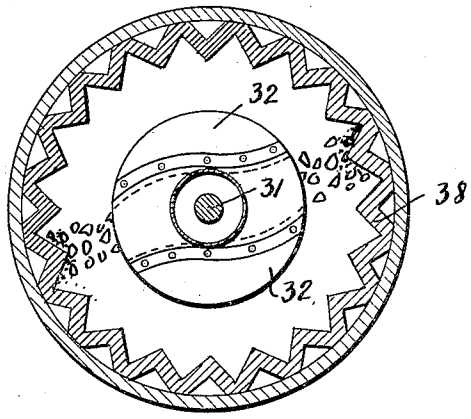
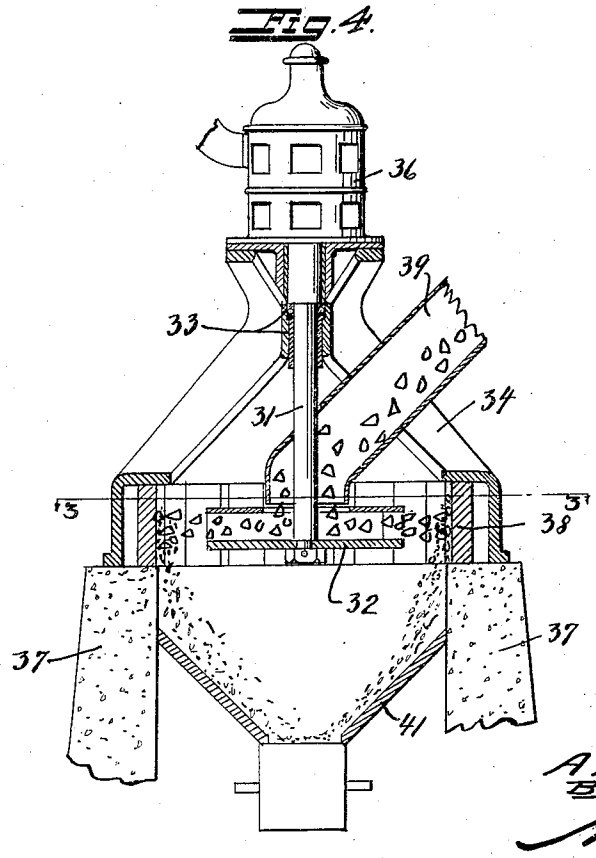


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ROCK CRUSHER.

Application filed October 19, 1922. Serial No. 595,645.

To all whom it may concern:

Be it known that I, ALVAH D. HADSEL, a citizen of the United States, and a resident of San Francisco, county of San Francisco, State of California, have invented a new and useful Rock Crusher, of which the following is a specification.

The present invention relates to improvements in rock crushers and has particular reference to a rotary rock crusher in which the rock to be crushed is fed into a horizontal disc at the center and discharged peripherally so as to strike a surrounding corrugated concave whereby the rock is broken up.

The preferred forms of my rock crusher are shown in the accompanying drawings in which Figure 1 represents a vertical section through my rock crusher taken along line 1—1 of Figure 2, Figure 2 a horizontal cross section taken along line 2—2 of Figure 1, Figure 3 a horizontal cross section through a modified form taken along line 3—3 of Figure 4 and Figure 4 a vertical section through said modified form. While I have shown only the preferred form of the invention it should be understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

Referring to the forms illustrated in Figures 1 and 2 it will be seen that my rock crusher rests on a frame (1) made in any suitable manner which supports the receptacle (2), conical in its lower portion and cylindrical in its enlarged upper portion. Through the frame extends a vertical shaft (3) resting on the thrust bearing (4), the lower race (6) of which is supported on the hub (7) of a spider (8) provided in the oil reservoir (9). A second bearing (11) serves to support the upper end of the shaft. A rotor (12) is keyed to the upper end of the shaft. It may be of any suitable construction and is shown in the drawing as comprising a bottom plate (13) a top plate (14) and two channel irons (16) connecting the same so as to form a slightly curved central passage with strips (17) reinforcing the upper member. The upper plate (14) is provided with a central opening (18) with which communicates the spout (19) of a hopper (21). In the upper enlarged portion of the receptacle (2) I provide a corrugated concave (22), the corrugations preferably formed in such a manner that rocks discharged from the rotor strike the concave substantially at right angles. The shaft may be rotated in any suitable manner as for instance by means of a belt (23) engaging a pulley (24) secured to the shaft.

The operation of this device should be readily understood from the foregoing description. Rock is fed into the hopper by any suitable means and delivered by the same to the rotor (12). It is discharged by centrifugal power at the periphery of the rotor and thrown violently against the corrugated concave (22). After striking the concave and being crushed thereby the rocks drop through the conical receptacle (2) on the inclined plate (26) which delivers them to any suitable receptacle through the outlet (27).

The modified forms shown in Figures 3 and 4 work substantially on the same principle but involve a somewhat different arrangement. In this modification the vertical shaft (31) supporting the rotor (32) and supported in the thrush bearing (33) provided in the frame (34) is driven by means of an electric motor (36) provided on top of the frame (34). Pillars (37) form the base for the frame (34) and for the concave (38) and the rock is delivered into the central portion of the rotor through the pipe (39) and drops after having struck the corrugated concave into the conical receptacle (41). This modification is slightly inferior to the forms shown in Figures 1 and 2 in so far as the shaft (31) extends into the rotor and into the intake passage (39) which interferes to some extent with the motion of the rock. It presents an advantage however in the direct drive for the shaft.

I claim:

1. In a centrifugal rock crusher, a rotor adapted for receiving the rocks centrally and discharging them peripherally, said rotor comprising a hubbed disk adapted for securing to a shaft, a centrally perforated disk axially aligned with the hubbed disk, and a pair of similar spacing members between the disks extending entirely across the disks spaced from the central portion thereof and secured to both disks.

2. In a centrifugal rock crusher, a rotor adapted for receiving the rocks centrally and discharging them peripherally, said rotor comprising a hubbed disk adapted for securing to a shaft, a centrally perforated disk axially aligned with the hubbed disk, and a pair only of similar spacing members between the disks extending across the disks spaced from the central portion thereof and secured to both, said spacing members being oppositely curved along their working faces substantially as shown.

ALVAH D. HADSEL.