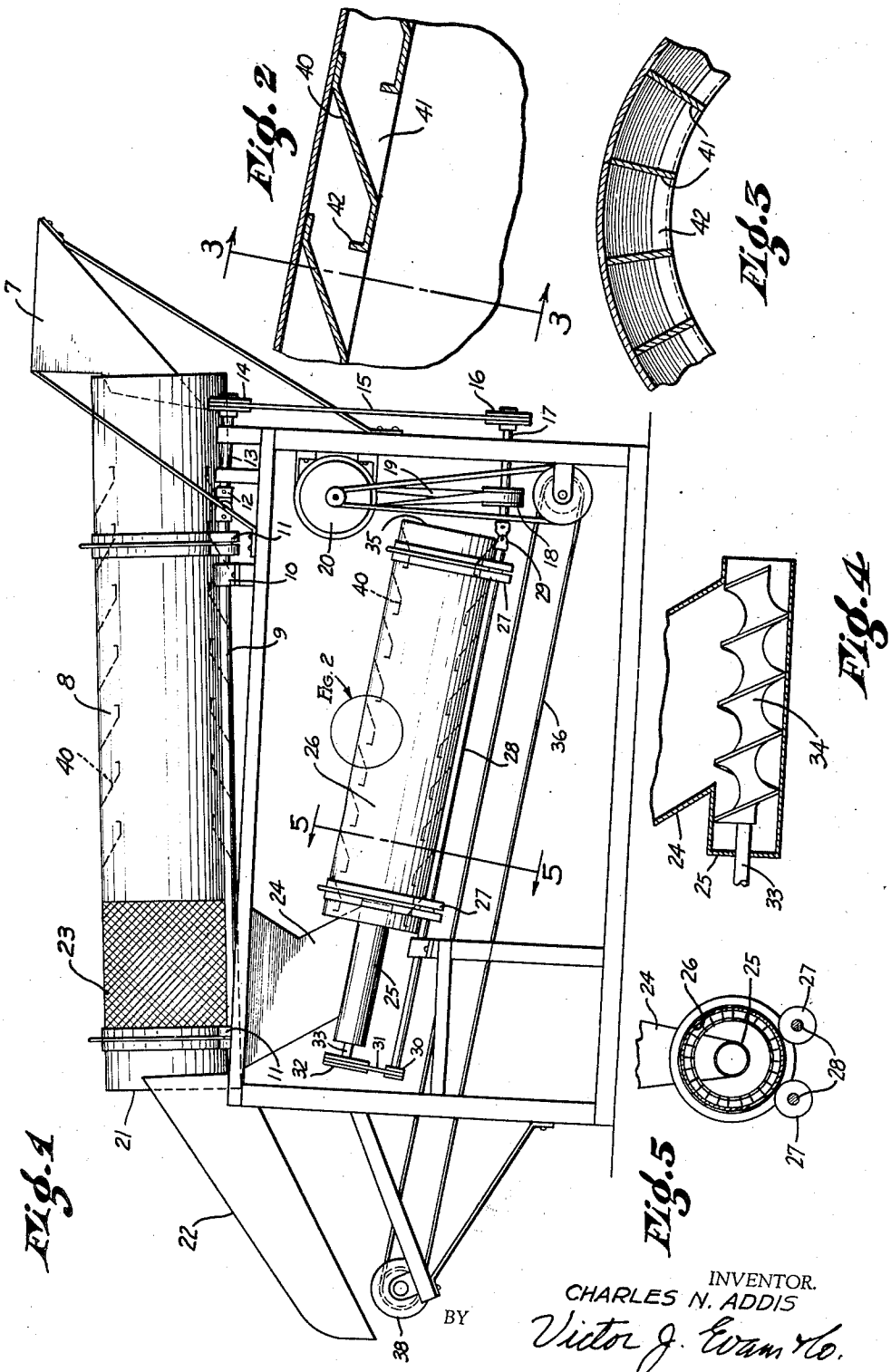
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C. N. ADDIS

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PLACER CONCENTRATOR

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INVENTOR.
CHARLES N. ADDIS

BY Victor J. Evans & Co.

ATTORNEY.

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PLACER CONCENTRATOR

Charles N. Addis, Los Angeles, Calif., assignor of one-half to William Hattich, Los Angeles, Calif.

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3 Claims. (Cl. 209—452)

This invention relates to ore separating and more particularly to a placer concentrator.

An object of the invention is to provide a simple, practical and efficient machine of the character described.

Another object is to provide an improved machine for separating ore adapted for both wet and dry aggregates.

Another object is to provide a placer concentrator that is continuous and automatic in operation.

Other objects and advantages will appear and be brought out more fully in the following specification, reference being had to the accompanying drawing wherein

Fig. 1 is a side view of an embodiment of my invention.

Fig. 2 is an enlarged fragmentary sectional view of the interior of one of the drums.

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary view illustrating the hopper conveyor and

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 1.

Referring more particularly to the drawing, I show a frame 6 having a hopper 7 suitably mounted thereon adapted to discharge into a rotary drum 8 mounted on the top of frame 6. A pair of shafts 9 suitably mounted in bearings 10 carry rollers 11 which support and rotate drum 8. Drum 8 is inclined as shown in Fig. 1.

One of the shafts 9 is connected by a universal joint to a shaft 13 which carries a pulley 14 driven by a belt 15 from a pulley 16 carried on a shaft 17 which in turn carries a pulley 18 driven by a belt 19 connected to a motor 20. Drum 8 also has an open end 21 adapted to discharge into a chute 22 and it also has a screen portion 23 over a hopper 24 adapted to discharge into a conveyor housing 25 which is adapted to discharge into the open end of a second rotating drum 26 carried by rollers 27 carried by a pair of shafts 28, one of which is connected by a universal joint 29 to power shaft 17. A pulley 30 is carried by said shaft 28 and drives a belt 31 which in turn drives a pulley 32 from a shaft 33 connected to a spiral conveyor 34 mounted in housing 25.

Drum 26 has an open end 35 adapted to discharge aggregates on a belt 36 which is carried by rollers 37 and 38 suitably mounted on frame 6, roller 37 being driven by a belt 39 from motor 20. The inner walls of drums 8 and 26 are provided with a plurality of cups 40 having separating side walls 41 and lips 42.

The operation of the invention should be clear from the foregoing description. The ore is placed in hopper 7 and is dropped into drum 8 by the rotation of which the ore is caught in the cups 40 which by the rotary action of the drum causes a separation of the ore and same is advanced downwardly in the drum. The coarser particles are discharged through open end 21 and chute 22, the fines being screened through screen 23 into hopper 27 and carried by conveyor 34 into drum 26. Similar separating action occurs in drum 26 which discharges the residue on belt 36 which is carried over a roller 38 and discarded. From time to time drums 8 and 26 can be removed and the ore which has been separated and trapped in cups 40 dumped out and collected.

It is to be understood that the foregoing description is illustrative rather than restrictive of my invention and that changes and modifications may be made without departing from the spirit and scope of the subjoined claims.

Having described my invention, what I claim is:

1. A placer concentrator as described, comprising an inclined open ended rotary drum, a feed hopper at the upper end thereof, a discharge chute at the lower end thereof, and a series of circumferentially arranged rows of abutting cups formed by inwardly and upwardly extending walls secured to the inner face of the drum, and laterally extending lips carried by the upper edges of the walls and extending toward the inner face of the drum and adapted to advance and separate the ore therein.

2. A placer concentrator as described, comprising an inclined open ended rotary drum, a series of circumferentially arranged rows of abutting cups formed by inwardly and upwardly extending walls secured to the inner face of the drum and extending at an angle, and laterally extending lips carried by the upper ends of the walls in a transverse line with the lower end of the preceding row of the circumferentially arranged cups and extending toward the inner face of the drum.

3. A placer concentrator as described, comprising an inclined open ended rotary drum, a series of circumferentially arranged rows of abutting cups formed by inwardly and upwardly inclined walls secured to the inner face of the drum and terminating in flat portions parallel with the walls of the drum, and laterally turned lips carried by the upper ends of the flat portions and extending toward the inner face of the drum and in a transverse line with the lower end of the preceding row of the circumferentially arranged cups.

CHARLES N. ADDIS.