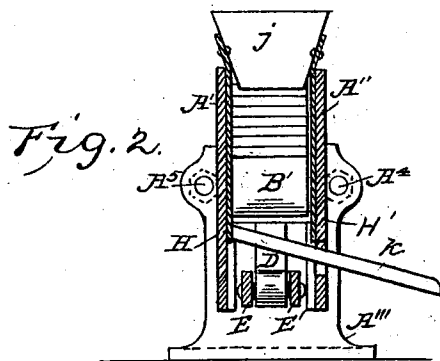
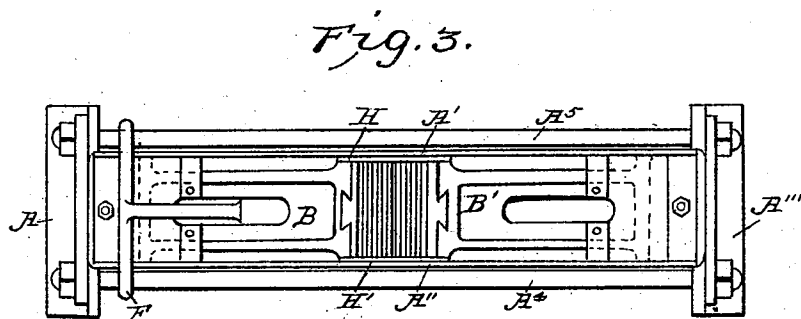
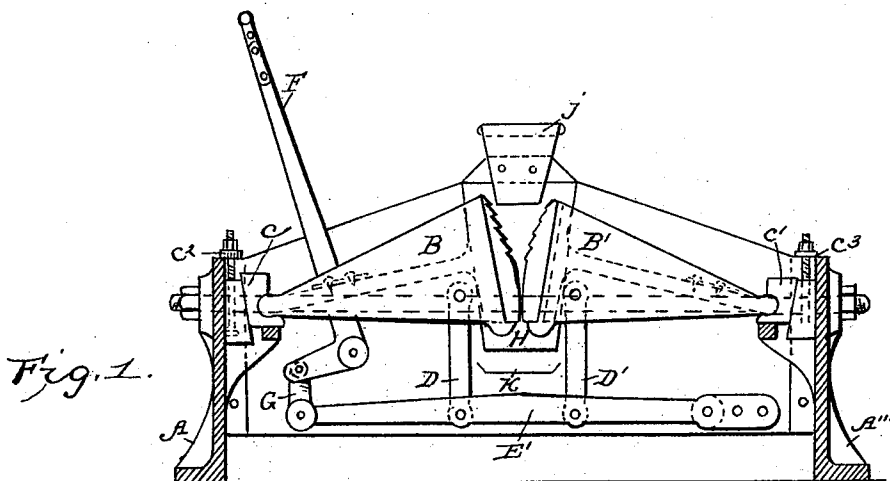


(No Model.)

G. F. P. LENZ & W. PAYNTER.
CRUSHER AND PULVERIZER.

No. 551,127.

Patented Dec. 10, 1895.



Attest
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UNITED STATES PATENT OFFICE.

GUSTAF FREDRICK PHILIPP LENZ AND WILLIAM PAYNTER, OF GAWLER,
SOUTH AUSTRALIA.

CRUSHER AND PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 551,127, dated December 10, 1895.

Application filed October 24, 1894. Serial No. 526,883. (No model.)

To all whom it may concern:

Be it known that we, GUSTAF FREDRICK PHILIPP LENZ, engineer, a resident of Blanche Street, and WILLIAM PAYNTER, pattern-maker, a resident of Coombs Street, Gawler, in the Province of South Australia, subjects of the Queen of Great Britain, have invented an Improved Crusher and Pulverizer, of which the following is a specification.

10 This invention is for the purpose of enabling any ore or material to be effectually and economically broken or crushed and ground or pulverized.

15 The invention lies in the combination of elements hereinafter set forth.

Figure 1 is a side elevation of our improved crusher and pulverizer with the side plate removed. Fig. 2 is a cross-section at the center of the machine. Fig. 3 is a plan.

20 The essential feature of the machine is the pair of jaws B and B', which are pivoted in bearing-blocks C and C', respectively, and which are operated by the handle or lever F by means of the links G, D, and D' and levers E and E'. These several parts are supported in a suitable frame, that shown in the drawings consisting of end plates A and A³ and side plates A' and A², held together by strong wrought-iron bolts A⁴ and A⁵.

30 Each of the jaws B and B' is constructed in the form of a sector of a circle, the arc forming the crushing-face. The upper portion of the crushing-face has teeth or grooves formed in it, but the lower portion is plain. Each of the jaws is pivoted in a block C or C', which bears against an adjustable wedge provided with a bolt or nut C² or C³, so that the faces of the jaws may be adjusted or brought nearer together, as desired. Each of the jaws is provided with a link D or D', the other end of which is connected to a pair of levers E and E', pivoted to the frame in a suitable position, while the other end of the levers E and E' is connected by a link G with the short end of the handle bar or lever F, which is also suitably pivoted to the frame.

Above the jaws is a feed-hopper J', and below is a chute K to deliver the pulverized material at the side of the machine.

50 The method of operation is as follows: The ore or material to be treated is placed in the

hopper J', through which it passes to the jaws. The lever-handle F being pushed by the operator toward the hopper, the link G lifts the levers E and E' and thereby the links D and D', which open the jaws B and B' to receive the lumps of ore. On pulling the handle F from the hopper the levers E and E' are forced down and the upper portions of the jaws are closed toward each other, crushing the ore between the toothed parts at the top. The crushed material passes down to the smooth faces of the lower parts of the jaws, and here the ore is subjected to a grinding action in the following manner: Each of the faces of the jaws is an arc of a circle, the center of which is the pivot in the block C or C', and owing to the link D being pivoted in the levers E and E' at a greater distance than the link D' from their fulcrum it will be seen that the jaw B will move more rapidly than the jaw B', and this difference of rate of motion causes the faces of the lower parts of the jaws to grind or finely pulverize the crushed material and allow nothing to pass through but what is ground to the uniform fineness regulated by setting the jaws. The pulverized material passes through onto the chute K and is delivered at the side of the machine.

The machine illustrated, which is suited to be carried in a vehicle, might be worked by attaching an eccentric or cam to the hub of the wheel of the vehicle and connections made from the eccentric or cam to the levers E and E', whereby on rotating the wheel of the vehicle the machine would be operated.

In the foregoing specification and in the drawings we have described a portable machine adapted to be worked by a hand-lever; but we do not limit ourselves to this or any one means of communicating the desired motion to the jaws, since by the application in place of the handle F of a shaft and pulley and eccentric or other suitable adjuncts the jaws may be operated by steam or other motive power. The size and strength of parts would be increased according to the capacity required and the power employed; but otherwise the machine would be constructed in the same manner as illustrated and described.

Having now particularly described and ascertained the nature of our said invention and

in what manner the same is to be performed, we declare that what we claim is—

In combination, the end frames having the brackets on their inner sides, the blocks C, C' 5 resting on said brackets, the wedges interposed between the blocks and end frames, the crushing levers B B' pivoted in the blocks and extending inwardly toward each other, and having crushing jaws at their inner ends, 10 the levers E E' extending longitudinally of the crushing levers and below the same in the direction in which said levers are adjustable and the links D D' connecting the levers E E' with the levers B B' respectively and adapted

to swing and permit the longitudinal adjust- 15 ment of the levers B B' and means for operating the levers E E', substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names, in 20 presence of two witnesses, this 7th day of September, 1894.

GUSTAF FREDRICK PHILIPP LENZ.
WILLIAM PAYNTER.

Witnesses:

SAMUEL BRUCE RUDELL,
ALFRED WESLEY BUNYAN MATHER.