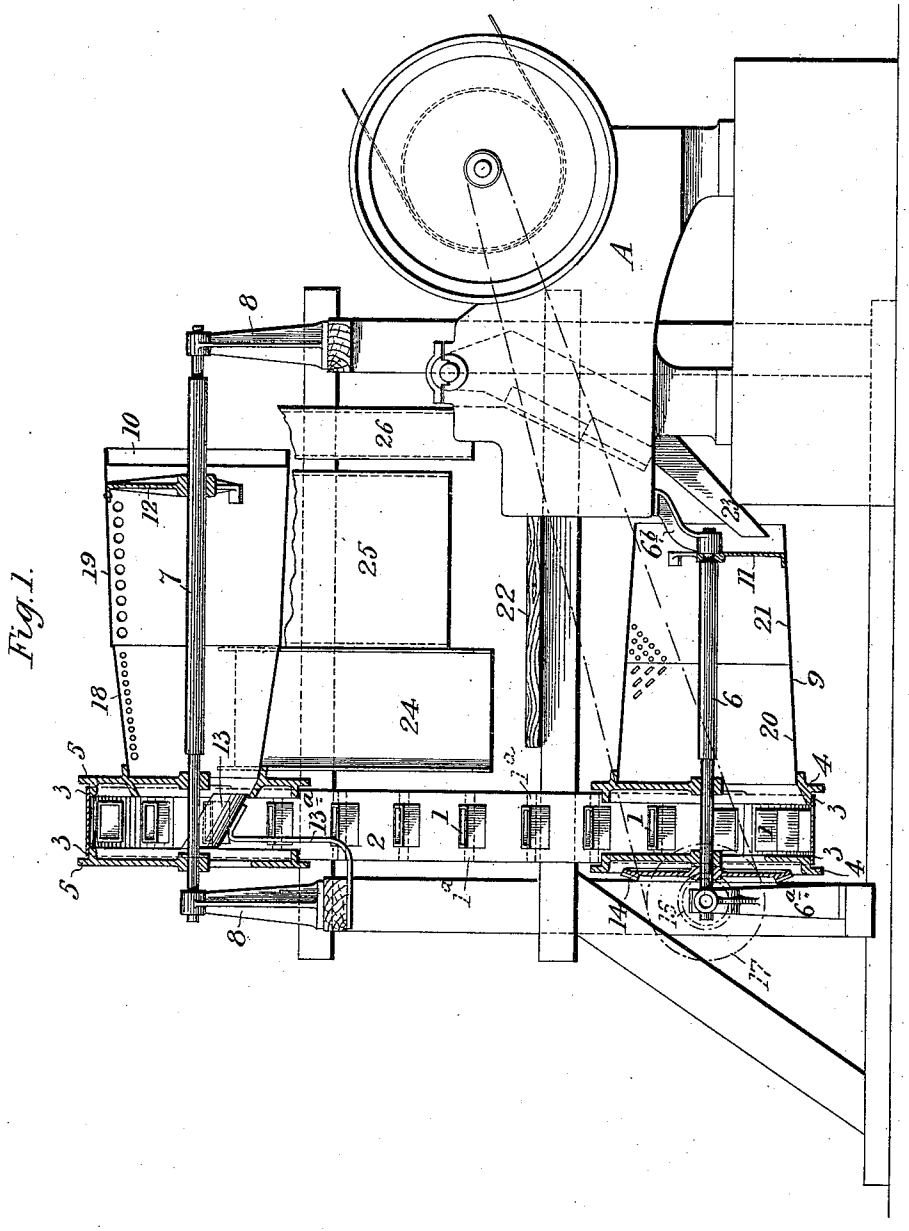
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W. H. BAXTER.

ELEVATOR AND SCREEN FOR CRUSHING MACHINES.

No. 446,319. Patented Feb. 10, 1891.

Fig. 1.



Witnesses.
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Charles Ainley
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

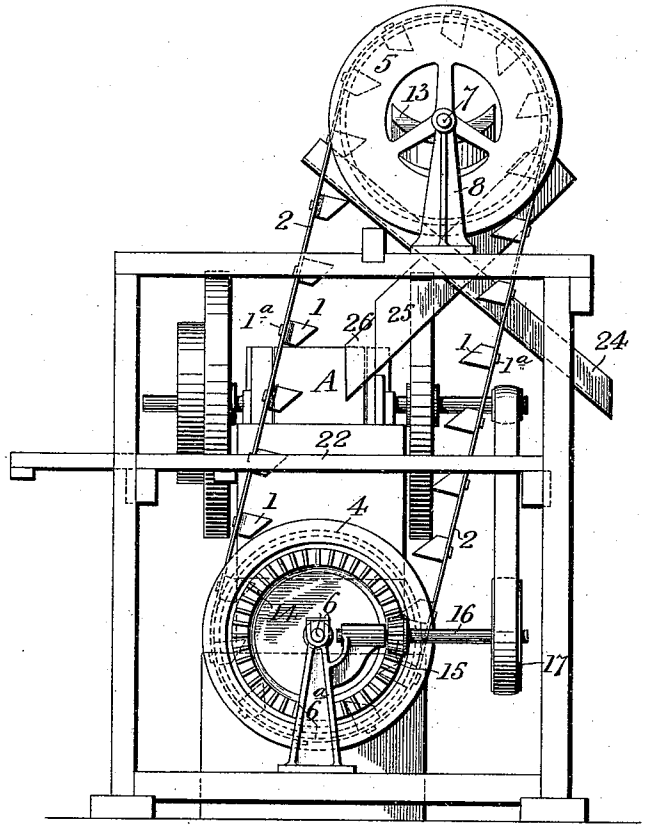
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Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY BAXTER, OF LEEDS, ENGLAND.

ELEVATOR AND SCREEN FOR CRUSHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 446,319, dated February 10, 1891.

Application filed October 14, 1890. Serial No. 368,136. (No model.) Patented in England December 24, 1885, No. 15,837.

To all whom it may concern:

Be it known that I, WILLIAM HENRY BAXTER, a subject of Her Majesty the Queen of Great Britain, residing at Leeds, in the county of York, England, have invented a new and Improved Elevator and Screen for Crushing-Machines, (for which I have obtained Letters Patent in Great Britain, No. 15,837, bearing date December 24, 1885,) of which the following is a specification.

My invention relates to an improved elevator and rotary screen specially applicable to stone-breaking and ore-crushing machines, the object being to facilitate the operation of screening and feeding, to reduce the power required, and to minimize the wear.

In the accompanying drawings I show my apparatus applied to a stone-breaking machine, arranged more particularly for the treatment of "macadam" material.

Figure 1 represents an elevation of the apparatus, partly in section, and Fig. 2 an end view of same.

According to my invention, I arrange in connection with a stone-breaker A an elevator, the buckets 1 of which I place inside the belt or endless carrier 2, instead of outside of the same. The width of the belt 2 is in excess or wider than the width of the buckets 1, so that its projecting edges 3 3 can run over flanged guide-pulleys 4 4, fast on a horizontal shaft 6, carried by a vertical bracket 6^a and a hanging bracket 6^b at the bottom of the apparatus, and over similar pulleys 5 5 on a similar shaft 7, carried in brackets 8 8, supported on the upper part of the framing. The pulleys of each pair are arranged at such a distance apart as to leave sufficient room for the buckets to pass between them. The screens 9 10 are secured at one end to the flanged pulleys 4 5, respectively, and at the other ends to bracket-arms 11 12, carried on the shafts 6 and 7, respectively.

By arranging the buckets inside the belt it will be seen that as they pass round the bottom pulleys 4 4 the belt forms a receptacle into which the material is discharged, said material falling into the buckets as the latter move round. For the purpose of stiffening the belt and to keep the buckets in position when passing over the pulleys, a metal plate 1^a may be fastened across the belt behind each bucket, to which plates the buckets are secured. From this point it is carried up and is discharged into a curved chute 13, supported by a bent arm 13^a, attached to the framing, said chute being preferably placed just above or about the axial line of the shaft 7 of the upper screen, and from which it is delivered into the screen 10.

The shaft 6 of the lower screen is driven by a gear-wheel 14, with which a gear 15 engages, the latter being secured on a shaft 16, on which is a driving-pulley 17, the belt of which is operated from the main shaft of the crusher A, as shown. It will be seen that the driving-gear is thus kept outside of the screens and elevator and away from the dust. The screens 9 10 are so constructed that their shafts 6 7 can be placed in a horizontal position, instead of being inclined. This is effected by constructing them of two or more frustums of a cone 18 19 of different taper, as shown in the screen 10, so that the feed end 18 will be a quicker incline than the delivery end 19, or the screen may be simply one frustum or two frustums 20 21 of the same taper, as shown in the screen 9.

In the arrangement of elevator and screen shown the stone or material is shoveled into the jaws of the crusher A from the platform 22, whence it is conveyed by means of the chute 23 to the lower screen 9, the larger material passing into the bight of the elevator-belt 2 and being carried up and discharged down the chute 13 into the portion 18 of the screen 10, through which it falls down the chute 24 into a cart or other receptacle, the next size falling through the portion 19 of the screen down the chute 25 onto the platform 22, from whence it may be removed or again shoveled into the crushing-machine while the largest lumps pass out of the end of the screen down the chute 26 into the jaws of the machine.

What I claim is—

1. In combination, the shafts 6 and 7, the pulleys 4, placed at a distance apart on the shaft 6 and having flanges projecting inward, a similar pair of pulleys 5 5 on the shaft 7, a carrier-belt having buckets on its inner side adapted to pass between the pairs of pulleys,

and having also the projecting edges extending laterally beyond the buckets and bearing upon the flanges of the pulleys, substantially as described.

2. In combination, a feed-screen on a rotating shaft, a receiving-screen on a separate shaft, and means for conveying the material from the feed-screen to the receiving-screen and for rotating the latter, consisting of pairs of pulleys 4 5 on the screen-shafts, and a belt extending between and engaging the pulleys, said belt having elevating-buckets on its inner side, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM HENRY BAXTER.

Witnesses:

WALTER BRIERLY,

CHARLES AINLEY,

Both of Halifax, in the County of York, England.