Feb. 27, 1968 L. SELMER 3,370,795

ROCK CRUSHER

Filed July 6, 1965

FIG. 1

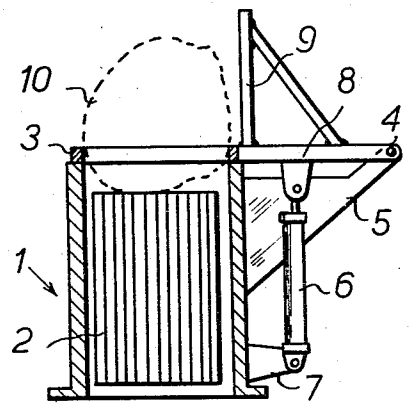
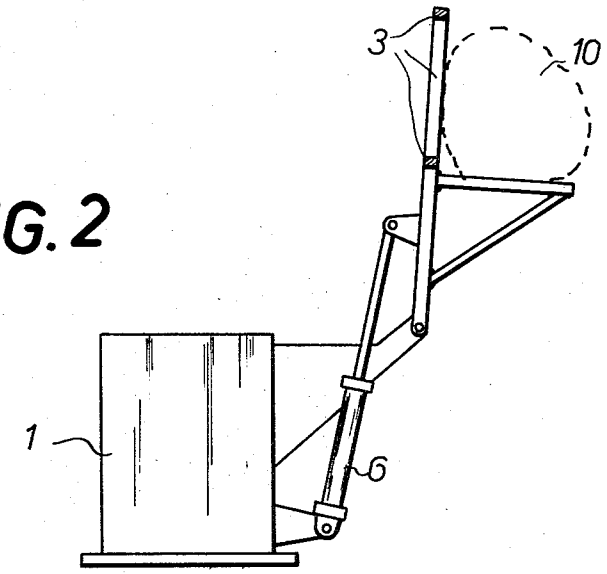


FIG. 2



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ROCK CRUSHER

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3 Claims. (Cl. 241—81)

ABSTRACT OF THE DISCLOSURE

This application discloses a rock crusher provided with an opening for receiving rocks to be crushed, which opening is provided with a protective rock sorter, including a frame adapted to retain rocks which are too large to be handled by the crusher, said frame being pivotally mounted on the crusher structure, and means for actuating the frame to remove rocks caught therein.

The present invention relates to an improvement in rock crushers for the purpose of preventing larger rocks from being wedged in the jaw opening and to guide them away from said opening.

Amongst other things, it is important to the capacity of a crushing mill to avoid larger rocks than may be worked in the coarse crusher. Larger rocks have a tendency to become tightly wedged in the crusher and it is a difficult and time-consuming problem to remove rocks that have already fallen into the jaw opening and become wedged. It is previously known to dispose a type of cover provided with holes over the openings of the different rock crushers, in most cases, with the object of preventing rocks from falling outside the opening of the rock crusher. If too large a rock is conveyed to such a plate provided with holes, the rock may become wedged in the opening and one is presented with the same problems of removing the rock.

The object of the invention is to correct these conditions by arranging a sorter and raising means over the jaw opening of the rock crusher, in order that larger rocks which are capable of becoming wedged in the jaw openings are retained and dropped, or tipped to one side, no manual effort being necessary.

According to the invention this is achieved by arranging a sorter frame over the jaw opening of the rock crusher in such a manner that it may be pivoted, raised or displaced from the opening of the rock crusher by means of for instance a pressure cylinder. In this manner a too large rock which remains in the sorter frame is carried away from the jaw opening of the rock crusher and is dropped, or tipped to one side, contingent upon the configuration of the sorter frame. A continuous operation of the crushing mill is thus achieved by this improvement since the difficulties following the wedging of larger rocks in the actual rock crusher are avoided.

The invention thus comprises an improvement in rock crushers for preventing too large rocks from becoming wedged in the jaw opening of the rock crusher and for conveying said rocks away from the said opening, characterized by including a sorter frame disposed over the jaw opening of the rock crusher, and further by said sorter frame being adapted to be raised, pivoted or displaced from the jaw opening of the rock crusher by means of a suitably arranged pressure cylinder or mechanical device. A further feature of the invention is that the opening of the sorter frame is of the same configuration or somewhat smaller than the jaw opening of the rock crusher.

The invention is further described with reference to the drawing, which shows an embodiment of the invention.

In the drawing:

FIG. 1 is a diagrammatic view partly in section of a rock crusher with the sorter frame in normal operating position, and

FIG. 2 is an elevational view showing the same rock crusher with the sorter frame in raised position for the removal of a rock too large for the jaw opening of the rock crusher.

On the rock crusher **1**, having a breaker plate **2**, a sorter frame **3** is pivotally mounted about the point **4** on the bracket **5**. The sorter frame **3** is arranged to be pivoted or raised by means of a pressure cylinder **6** which is mounted between a bracket **7** on the rock crusher **1** and the arm **8** of the sorter frame **3**. A support member **9** is further mounted on the sorter frame in order to prevent the rock **10** from rolling off the sorter frame before said rock has arrived at its final position as shown in FIG. 2.

When a too large rock, for example, the rock **10** is delivered to the rock crusher **1**, the rock **10** will be retained by the sorter frame **3**, the opening of which is the same configuration or somewhat smaller than the jaw opening of the rock crusher, and prevent the rock from becoming wedged in the crusher. The sorter frame **3** with the rock **10** is thereafter raised or pivoted by means of the pressure cylinder **6**, so that the rock **10** is conveyed away from the jaw opening of the rock crusher and rolls off the sorter frame **3** and the support member **9**. The sorter frame is then pivoted into place and the operation may be continued with no great loss of time for the removal of the rock **10**.

I claim:

1. In a rock crusher including rock crushing elements and provided with an opening to said elements for receiving rocks to be crushed by the crushing elements, and means for preventing rocks from entering said opening which are so large that they would become wedged in said opening, the improvement comprising a protective rock sorter frame mounted on the crusher over said opening and adapted to hold rocks which are too large for handling by the crushing elements of said crusher, means for mounting said frame on the crusher over said opening, and means for displacing the frame from its position over the opening in the crusher to a position for discharging a too large rock caught therein.

2. A rock crusher as claimed in claim **1**, wherein the frame is pivotally mounted on the crusher and the means for displacing said frame with respect to the opening of the crusher comprises a pressure cylinder unit one end of which is fixed to the crusher, while the other end is operatively connected to the frame.

3. A crusher as claimed in claim **1**, wherein the sorter frame has an opening for the normal passage of rock material including rocks not too large to be crushed in the crusher and which opening is somewhat smaller than the opening of the rock crusher.

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