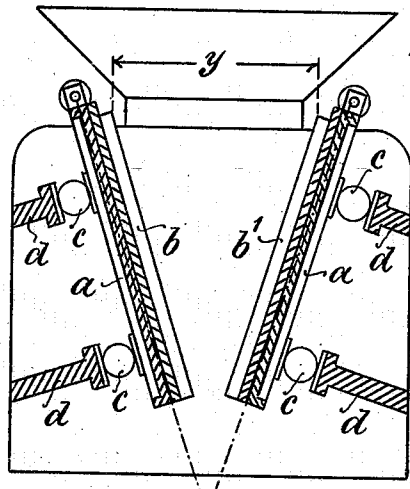
No. 867,711. PATENTED OCT. 8, 1907.

C. EITLE.

SPLITTING MACHINE.

APPLICATION FILED JAN. 18, 1905.

Fig. 1.



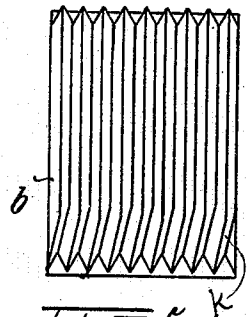


Fig. 5.

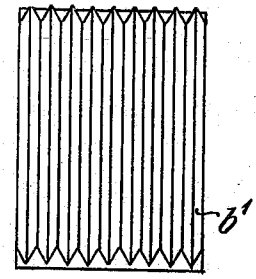


Fig. 4.

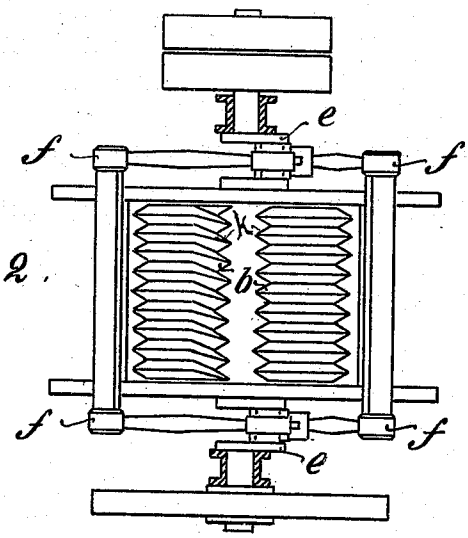


Fig. 2.

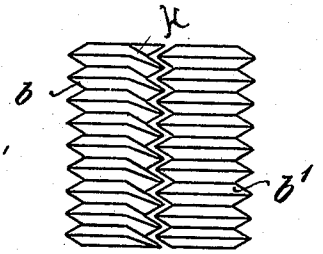


Fig. 3.

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CHRISTIAN EITLE, OF STUTTGART, GERMANY.

SPLITTING-MACHINE.

No. 867,711. Specification of Letters Patent. Patented Oct. 8, 1907.

Application filed January 18, 1905. Serial No. 241,578.

To all whom it may concern:

Be it known that I, CHRISTIAN EITLE, a subject of the King of Würtemberg, and a resident of Stuttgart, Kingdom of Würtemberg, German Empire, have invented certain new and useful Improvements in Splitting-Machines, of which the following is a specification.

This invention has reference to a splitting machine, which is intended for splitting lumpy material of any size and of any degree of hardness such as gun-powder and all other material which it is desired to comminute from large cakes or pieces so as to produce grains of approximately cube shape and as uniform sizes as possible. This is of particular importance in the case of materials that are to be reduced to a certain grain for various industrial purposes, inasmuch as the smalls, screenings or waste materials, also produced in the reducing process are frequently not suitable for these purposes and of greatly less value.

The invention is illustrated in the annexed drawing forming a part of this specification and wherein

Figure 1 is a view of my improved splitter or crusher, in central vertical section; Fig. 2 is a top plan view thereof; Fig. 3 is a top view of the toothed crushing-plates when forced together into the extreme crushing position, such toothed plates in Figs. 1 and 2 being shown apart and in the receiving position; Fig. 4 is a face view of the right hand or straight toothed crushing or face-plate and Fig. 5 is a similar view of the left or angle-toothed face-plate.

Referring to the drawing: Two side walls *a*, *a*, are arranged at proper vertical angles relatively to one another, so as to be nearer together at the bottom than at the top, upon rollers *c*, *c* which are supported upon stationary abutments *d*, *d* of the frame A. These side walls are provided upon their inside surfaces facing each other with removable crusher face plates *a* provided with longitudinal grooves *b* so as to leave projecting sharp teeth *b'*, running from top to bottom of such crusher face plates *a*.

The grooves and consequently the sharp teeth also on one of the crushing face plates *b*, in this case the one on the right shown in detail in Fig. 4, run in straight lines from top to bottom, while the coacting or left hand crusher face plate, shown in detail in Fig. 5, has the lower portion of such grooves and teeth running at a slight angle to the axis of the upper portion of such grooves and teeth, as shown at *k* in Figs. 2, 3 and 5, so that the inclined lower tooth and groove portions *k* of the left hand crusher plate will lie wholly or partly across the abutting straight lower portions of the grooves of the straight toothed right hand plate and will meet therewith at an angle, and such crossing of the teeth and grooves at the lower portion only, I have found to result in a more equable and better grade of finished material, wherein the larger portion is of the required size of grain, and the smalls or waste is reduced to a minimum.

By means of a crank shaft *e* mounted in the point of intersection of lines drawn through the side walls and forming the extensions thereof, an up and downward, in and out radial motion, is imparted to the side walls and toothed plates by means of the connecting rods *f*, *f*.

The space between the side walls serves for the reception of the material to be comminuted and such material may be conveyed into this space through a suitable hopper.

By the action of half a revolution of the crank shaft *e*, that is to say by one stroke of the side walls from their lowest into their highest position, the conical space between the plates becomes wider, the distances *x* and *y* being increased; hence the material slides down by its own gravity to such extent that the whole space will be filled up again. Upon a further half revolution of the shaft *e*, the side walls perform a downward stroke, which causes the distances *x* and *y* to be decreased, whereby upon the continuation of these movements the teeth are gradually driven like wedges into the material, until a splitting of the pieces and not a squeezing or crushing of the same takes place, the formation of smalls or similar refuse being reduced to a minimum.

The bearing surfaces of the side walls upon the rollers, and also the resting surfaces of the abutments are provided with hardened and interchangeable ledges.

It is further obvious that the groove angle being comparatively light and always less than a right angle, there is no more tendency to clogging of the grooves at the lower portion than at the upper, and that the material at all times is fed freely down by gravity as the plates are moved apart.

What I claim and desire to secure by Letters Patent, is:

1. In a machine of the class described, a crusher plate having vertical longitudinal teeth extending from top to bottom thereof, a coacting crusher plate having similar teeth on the upper portion merging at the lower end into teeth set at an angle less than a right angle to the upper portion of such teeth and to the teeth of the straight coacting plate, a support for the crusher plates and means for moving the plates so as to comminute the material lying between them.

2. A jaw for crushing machines, provided with grooves separated by longitudinal parallel teeth having upper and lower straight portions, the lower portions being slightly inclined to the upper.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHRISTIAN EITLE.

Witnesses:
WM. HAHN,
ERNST ENTLEMANN.