To all whom it may concern:

Be it known that I, Homer Mason Sackett, a citizen of the United States, residing at Telluride, in the county of San Miguel and State of Colorado, have invented a new and useful Rock and Ore Crusher, of which the following is a specification.

This invention relates to rock and ore crushers, and while particularly intended for use in crushing samples it will be evident to those skilled in the art that machines embodying the invention may be built on a larger scale.

In assaying samples of ores care is of course necessary that the true results be obtained.

As many samples are passed through the same crusher, there is always danger that some of the material from one sample may remain and become mixed with the next unless the crusher is thoroughly cleaned after each use. Hereinbefore this has been a comparatively difficult operation because of the inability of the operator to brush out thoroughly between the crushing-jaws, and the manner of fastening said jaws in place has practically precluded their being removed each time.

It is one of the objects of this invention to provide a novel manner of mounting one of the jaws, so that it may be readily removed and cleaned, thereby permitting access to the other jaw, so that it may be also thoroughly cleaned of all adhering particles.

Another object is to improve the means for regulating the distance between the jaws so that the space between them will always remain equal throughout its entire length, and as a result the material crushed will be of a uniform grade of fineness.

The preferred manner for accomplishing these objects is shown in the accompanying drawings, and the construction and operation thereof is described in the following specification; but the right is reserved to make such changes from the illustrated and described structure as the scope of the appended claims will permit.

In the drawings, Figure 1 is a side elevation of a machine embodying the present invention. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a top plan. Fig. 4 is a vertical transverse section taken on the line X X of Fig. 3. Fig. 5 is a detail perspective view of the stationary jaw-plate when detached. Fig. 6 is a detail perspective view of a portion of the frame more clearly illustrating the arrangement of one of the 55 seats.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

In the embodiment of the invention as shown a frame is employed which is in the form of a rectangular boxing having side walls 10 and an end wall 11. The ends of the side walls opposite the end wall 11 are cut away or contracted and are joined by a transverse bar 12. Within this boxing is mounted a pair of coacting jaws 13 and 14, said jaws being constructed and arranged in the following manner: The side walls 10 are provided in the upper portion of their inner faces and contiguous to the end wall 11 with seats 15, said seats tapering toward their lower ends, as shown, so that their rear faces are inclined. The jaw 13 is in the form of a plate that fits between the side walls 10 and against the end wall 11, and this plate has lugs 16 projecting from the upper ends of its side edges that are arranged to fit in the seats 15, said lugs tapering toward their lower ends and corresponding to the shape of the seats. The jaw-plate 13 is thus supported by the lugs within the boxing and is held against lateral displacement. As there is a tendency for the plate to work upwardly when the crusher is in operation, suitable means may be employed for holding it in its proper position, this means being shown in the form of a turn-button 17, secured to the upper edge of the end wall 11 by means of a screw-bolt 18 and arranged between the seats 15. This button is adapted to be turned so that it will engage over the top edge of the jaw-plate 13, as shown, thereby holding said plate in place. This plate, furthermore, is provided with a suitable handle 19, secured to and projecting above its upper end, as shown.

The movable jaw is designated by the reference-numeral 14 and comprises a base 20, having on its rear face and contiguous to its lower end a projection 21, provided with a seat 22. The upper end has a rearwardly-
projecting ear 23, provided with an opening in which is journaled a cam 24, mounted upon the driving-shaft 25. This shaft extends across the boxing and is journaled in suitable bearings 26, secured to the upper edges of the side walls 10. It carries at its ends a pair of balance-wheels 27, one of which is provided with an operating handle, as 28. A jaw-plate, as 29, is attached to the front face of the base 20 by means of bolts 30, which pass through said plate and base, as shown in Fig. 2.

The lower end of the movable jaw 14 is adjustable toward and from the lower end of the stationary jaw, and to this end the inner sides of the contracted ends of the walls 10 are provided with horizontally-disposed spaced ribs 31, forming guideways in which is slidably mounted a cross-head 32, said cross-head having in its forward face a seat, as 33. A link 34 extends from the cross-head to the base of the movable jaw, having its ends fitted in the seats 22 and 33 of said base and cross-head. An adjusting-screw 35 is threaded through the bar 12 and bears against the side of the cross-head 33 opposite the seat, said screw being provided with a lock-nut, as 36. A coiled resistance-spring 37 is attached at one end by means of an ear 38 to the base 20 of the movable jaw, and at its other end is secured to the bar 12 of the boxing, as shown.

In use the stationary jaw-plate 13 is secured in place, as already described, and the material to be crushed is dropped between the upper ends of the jaws. Upon rotating the shaft it will be evident that the movable jaw will be oscillated back and forth toward and from the stationary jaw, and as the material is broken it will gradually descend toward the lower ends of the jaws until it has been crushed fine enough to pass between said lower ends. Should it be desired to vary the grade, it will be evident that by rotating the screw in one direction or the other the lower end of the movable jaw will be moved toward or from the stationary jaw, thus varying the size of the opening between said jaws.

The particular arrangement of the link and cross-head, as shown, prevents any tendency of one side of the movable jaw being spaced farther from the stationary jaw than the other side, and thus the grade, whether fine or coarse, will always be uniform. The spring employed holds the movable jaw, the link, and the cross-head in their coating relations, but permits the ready disassociation of these members should it be necessary to replace or repair any of them. When one sample has been passed through the machine and it is desired to crush another sample, said machine may be readily and thoroughly cleansed by simply turning the button 17 and removing the jaw 13. This jaw may then be thoroughly brushed to remove all adhering particles, and the space within the boxing will be sufficient to give access to the face of the movable jaw. As a result it will be seen that the objects mentioned in the preliminary portion of the specification are accomplished, and, further than this, the structure is comparatively simple, and the parts are so arranged that there is little chance of derangement or injury. These parts, however, are inexpensive to construct, and any or all may be removed when worn and replaced by others.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a crusher of the class described, the combination with a supporting-frame having oppositely-disposed seats, of a jaw-plate having a handle on its upper end, and provided with portions on its opposite side edges that detachably engage in the seats, and a turn-button mounted upon the frame between the seats and engaging over the top of the jaw-plate within the handle to hold said plate in place in said seats.

2. In a crusher of the class described, the combination with a frame comprising a boxing having seats in the upper portions of its opposing inner sides, said seats tapering to their lower ends and toward the inner faces of said sides, of a jaw-plate having tapering lugs that project from its side edges and detachably fit in the seats, said lugs conforming to the shape of said seats, and a turn-button rotatably mounted on the upper end of the boxing between the seats and movable over the upper edge of the jaw-plate.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HOMER MASON SACKETT.

Witnesses:

CHAS. F. PAINTER,
O. C. THOMAS.