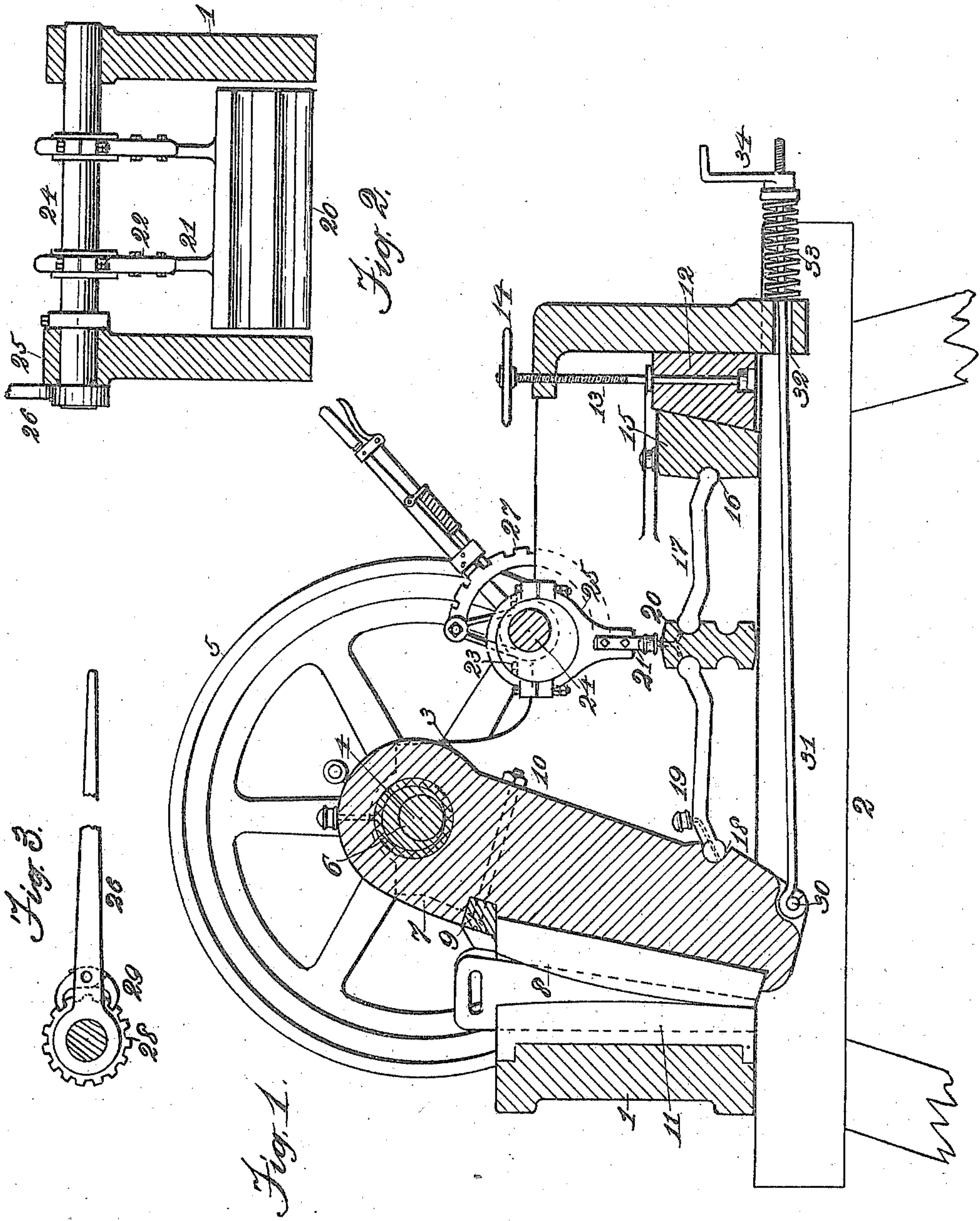


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947,669.

Patented Jan. 25, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

ISAAC L. MITCHELL, OF CEDAR RAPIDS, IOWA.

CRUSHING-MACHINE.

947,669.

Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed February 3, 1909. Serial No. 475,929.

To all whom it may concern:

Be it known that I, ISAAC L. MITCHELL, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Crushing-Machines, of which the following is a specification.

The invention is an improvement in the class of crushing machines in which a movable jaw is arranged opposite a fixed jaw, the two being so placed as to form a hopper or wedge-shape receptacle for the material to be crushed.

My invention relates to improved means for adjusting the movable jaw for crushing material finer or coarser.

In the accompanying drawing, forming a part of this specification, Figure 1 represents a longitudinal central section of a machine embodying my improvements. Fig. 2 is a transverse section, illustrating a part of the mechanism for adjusting the length of stroke whereby the fineness or coarseness of the product is regulated. Fig. 3 is a detail view illustrating a ratchet lever applied to this adjusting mechanism.

In Figs. 1 and 2, the numeral 1 designates the rectangular iron frame which is mounted on a wooden support 2. It has bearings 3 for the main shaft 4 carrying one or more heavy belt-wheels 5, and provided with an eccentric 6 whereon is hung a movable swinging jaw 7 provided with a crushing face plate 8, which is secured by a wedge block 9 and bolt 10, and thus adapted to be reversed. A fixed crushing plate 11 is attached to the frame 1 and thus constitutes the fixed jaw of the machine.

Adjustable supports for a movable jaw in this type of crushing machines have been provided for the purpose of holding the lower end of the movable jaw nearer to or farther from the fixed jaw, and a spring attachment consisting of a rod 31, spring 33, and hand nut 34 has also been employed for holding the jaw engaged with the strut. In this case, however, two pairs of struts, 17 and 19, are used, the same being arranged on opposite sides of, and engaging, a central

block 20 in which they are socketed. Their outer ends are also socketed at 16 in a vertically adjustable fulcrum block 15 and at 18 in the jaw 10.

The fulcrum block 15 may be adjusted by means of a wedge block 12 and screw shaft 13 provided with a hand-lever 14.

The central fulcrum block 20 is connected by suitable devices 21 with straps 22 arranged on the eccentrics 23 which are in turn fixed on shaft 24. If but a single strut were employed, say 19, the block 20 would have to be adjusted twice the distance now required in order to effect a desired adjustment of the jaw 10. In other words, by employing two sets of struts arranged on opposite sides of a central fulcrum block 20, an adjustment of the latter one inch will effect the same movement or adjustment of the block 10 as could be effected by a movement of the fulcrum block two inches if but a single pair of struts were employed. It is obvious, therefore, that the eccentric requires to be moved or rotated but half the distance that would be required with a single pair of struts, and hence the desired adjustment of the jaw 10 may be effected more easily and quickly, that is to say, in half the time that would otherwise be required.

On one end of the shaft 24 is attached a hand lever 26, which is provided with a spring catch adapted to engage a notched sector 27, as shown in Fig. 1. The hand lever may be pivoted to the rock shaft adjacent to a ratchet 28, as shown in Fig. 3, and provided with oppositely connecting pawls 29 adapted for engagement with the ratchet. By this means it is possible to turn the rock shaft 24 a full revolution in either direction, as may be desired, which would obviously not be possible if the hand lever were fixed to the shaft.

As before intimated, a vertical adjustment of the central fulcrum block 20, enables the lower end of the movable jaw to be moved toward or from the fixed jaw with the utmost facility or least possible loss of time. The jaw 10 may be opened as widely as possible and almost instantly in case a non-breakable substance, such as a hammer

or wrench, happens to get between the jaws, and thus breakage of the machine may be avoided.

What I claim is:

5 The combination, with the fixed and a movable jaw, means for suspending and operating the latter, of means for adjusting its lower end toward or from the fixed jaw, the same consisting of oppositely arranged
10 struts and a fulcrum block interposed be-

tween them, a rock-shaft, eccentrics, and straps connected with the fulcrum block, and a lever attachment for rocking said shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC L. MITCHELL.

Witnesses:

J. M. ST. JOHN,

ROBT. L. ZOLLINGER.