

(No Model.)

J. CHARLESWORTH.
SIFTER.

No. 482,545.

Patented Sept. 13, 1892.

Fig. 1.

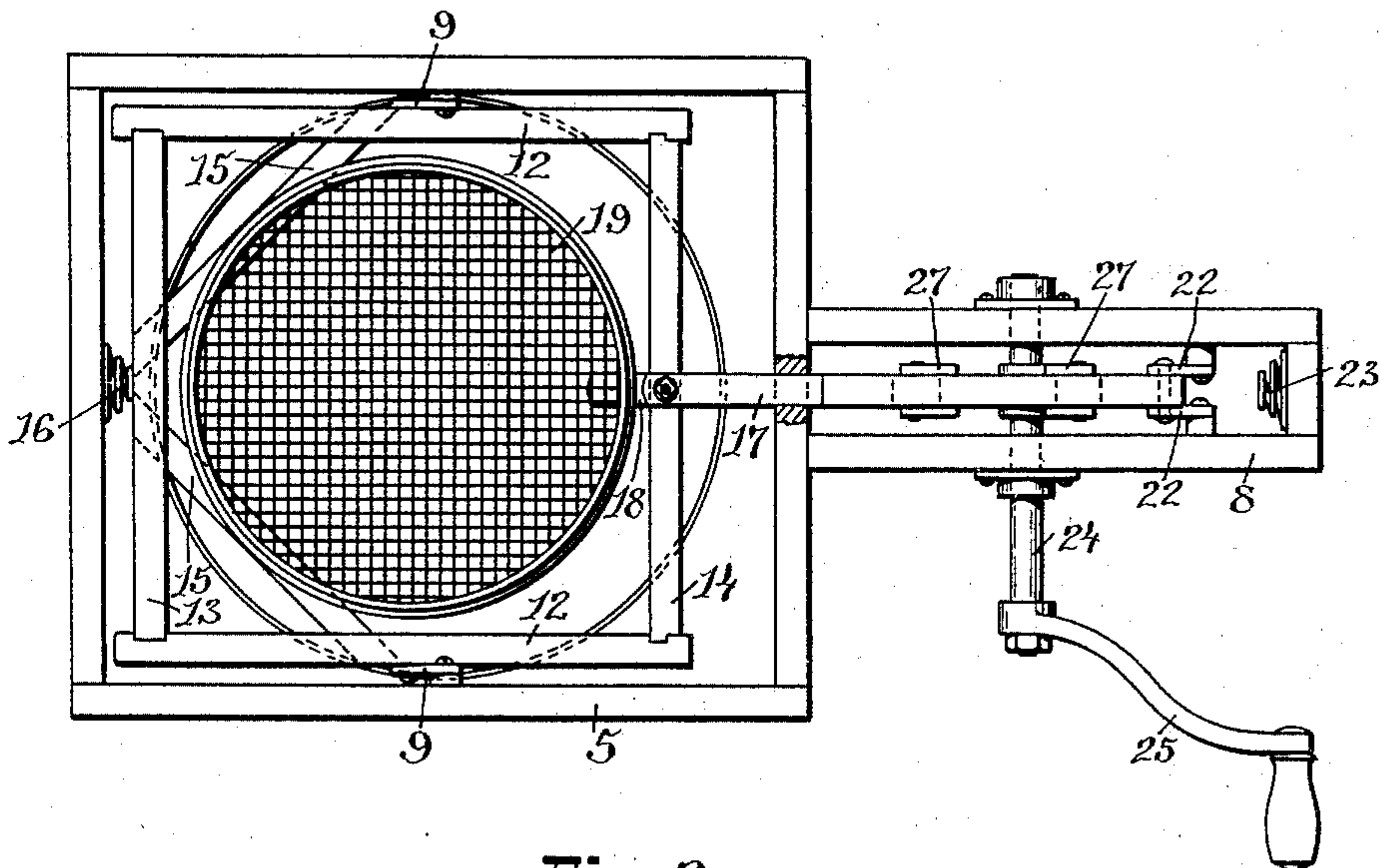
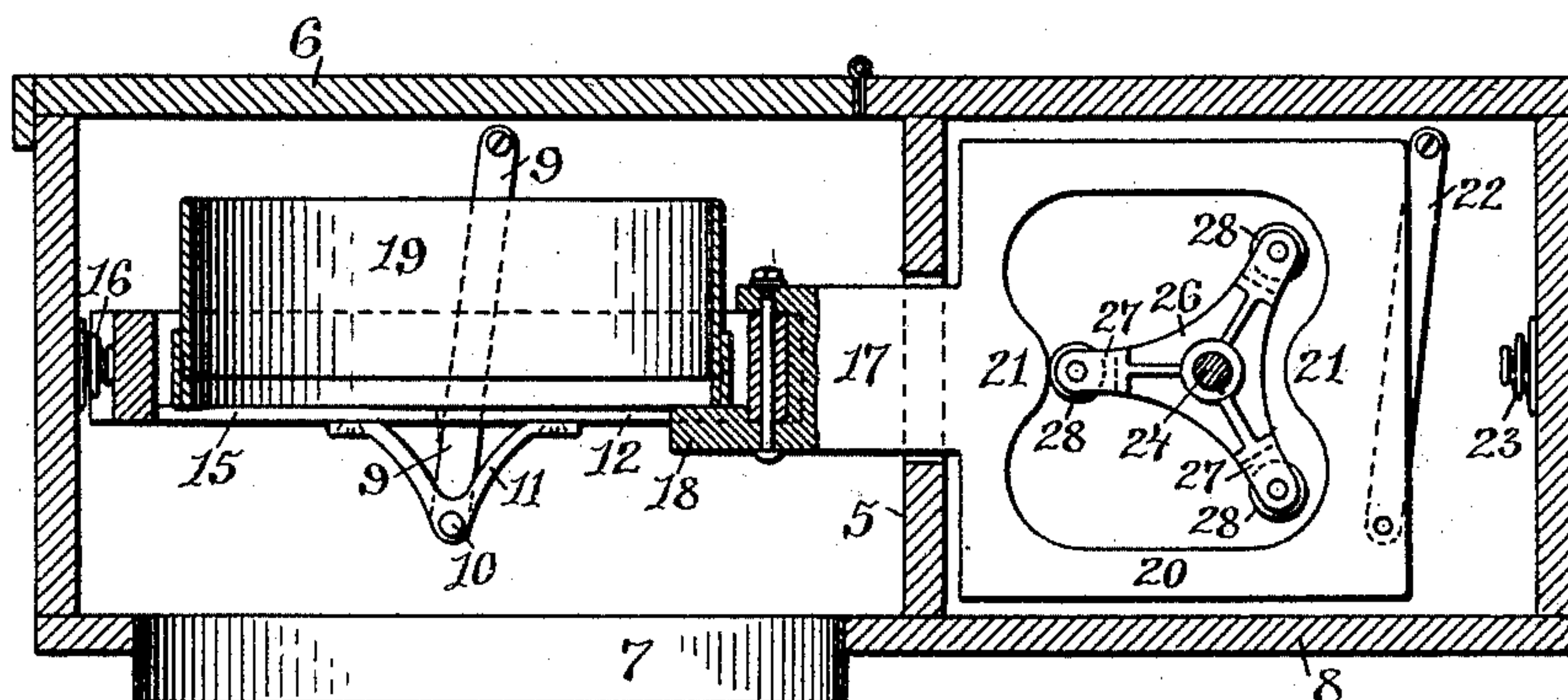


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES CHARLESWORTH, OF PROVIDENCE, RHODE ISLAND.

SIFTER.

SPECIFICATION forming part of Letters Patent No. 482,545, dated September 13, 1892.

Application filed April 13, 1892. Serial No. 428,947. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHARLESWORTH, of the city of Providence, in the county of Providence and State of Rhode Island, have
5 invented certain new and useful Improvements in Sifters; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this
10 specification.

This invention has reference to improvements in sifters especially adapted for sifting ashes, but which may be used, with slight alterations, for sifting other materials.

15 The object of the invention is to produce a sifter which may be rapidly reciprocated to thoroughly sift the material placed therein.

The further object of the invention is to produce a mechanical movement by which re-
20 ciprocation may be imparted to a mechanism with a higher degree of speed than has heretofore been accomplished.

The invention consists in certain peculiar features of construction and combination of
25 parts, which will hereinafter be more fully described, and pointed out in the claim.

Figure 1 represents a top view of the improved sifter, the covers of the case being removed. Fig. 2 represents a horizontal sectional view of the sifter to more clearly show
30 its construction and to indicate its operation by means of the improved mechanical movement.

Similar numbers of reference designate corresponding parts throughout.

In the drawings, 5 indicates a case oblong in shape and formed of any suitable material. This case is furnished with a hinged cover 6 to provide ready access to the interior, and
40 the bottom of the case is cut away at its central portion to form an opening through which the sifted particles may drop. The edge of this opening is provided with a collar 7, generally of sheet metal, adapted to fit the
45 top of a barrel. At the rear of the case 5 is secured the extension-case 8 for containing the mechanism by which reciprocation is imparted to the sieve.

Pivoted on each side of the case 5 on its
50 interior surface is an arm 9, the lower portions of these arms being connected together by a shaft 10, and mounted on this shaft are

brackets 11, the upper portions of which are secured to the lower edges of the side frames 12 12. The ends of these frames are con- 55
nected by the cross-pieces 13 and 14, the piece 13 being braced by the braces 15 15. The front end of the case 5 is provided with the buffer-spring 16.

Extending through a vertical slot in the
60 back of the case 5 is an arm 17, which is bolted to the end 14 of the reciprocating frame and has a tongue 18 extending inward beyond this end. The sieve 19 may be of any convenient form to be held in the reciprocating
65 frame and is supported on the tongue 18 and on the braces 15 15.

Formed in part with the arm 17 or secured thereto is a member 20, the central portion of which is cut away to form an opening, hav- 70
ing a plurality of cam-shoulders 21 21 with depressions between them, and the member 20 is supported by the arms 22 22, pivoted to the lower sides thereof and at their upper ends to the sides of the extension-case. The
75 rear end of this case is provided with the spring-buffer 23.

Journaled in bearings secured to the sides of the extension-case is a shaft 24, which is adapted to be rotated by the crank 25, secured
80 to the outer end thereof, and mounted on this shaft is a member 26, having a plurality of arms 27 27, each of which is provided with a bearing-roll 28, journaled in the outer end thereof, the number of these arms being odd
85 when the number of cam-shoulders 21 21 on the member 20 is even, and vice versa. In the drawings the rotatable member 26 is shown as having three of these arms and bearing-rolls, and the member 20 as having two cam-shoulders. It is, however, obvious that these num-
90 bers may be varied at will without departing from the spirit of my invention.

By the rotation of the member 26 the rolls 28 will ride over the cam-shoulders 21 and
95 will cause the member 20 to move first in one direction and then in the opposite. The directions in which the arms 27 extend are such that as the bearing-roll on one arm is leaving one cam-shoulder the roll on the next arm is
100 approaching the apex of the next cam-shoulder, thus producing a very steady and rapid reciprocation of the member 20 and of the movable mechanism connected therewith. It

is, of course, necessary that the cam-shoulders should be so located that it will not be possible for the bearing-rolls to be brought to bear on the apexes.

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

10 The combination, with the case 5, having an extension 8, an opening in the bottom of the case surrounded by the collar 7, the arms 9 9, pivoted at their upper ends to the sides of the case and having their lower ends connected by the shaft 10, the brackets 11, mounted on said shaft, a frame composed of the
15 sides 12 12, the ends 13 and 14, and the braces 15 15, supported on said brackets, and a sieve 19, supported in said frame, of the mem-

ber 20, pivotally supported in the extension-case by the arms 22 22 and having the arm 17 extending into the case 5 and secured to end 14 of the sieve-frame, cam-shoulders 21 21, formed around an opening in the member 20, a shaft 24, journaled in bearings in the sides of the extension-case, rotatable by a crank, and a member 26, having arms 27 27, 25 and bearing-rolls 28 28, journaled in the ends of said arms, mounted on said shaft, as described.

In witness whereof I have hereunto set my hand.

JAMES CHARLESWORTH.

Witnesses:

M. F. BLIGH,

H. J. MILLER.