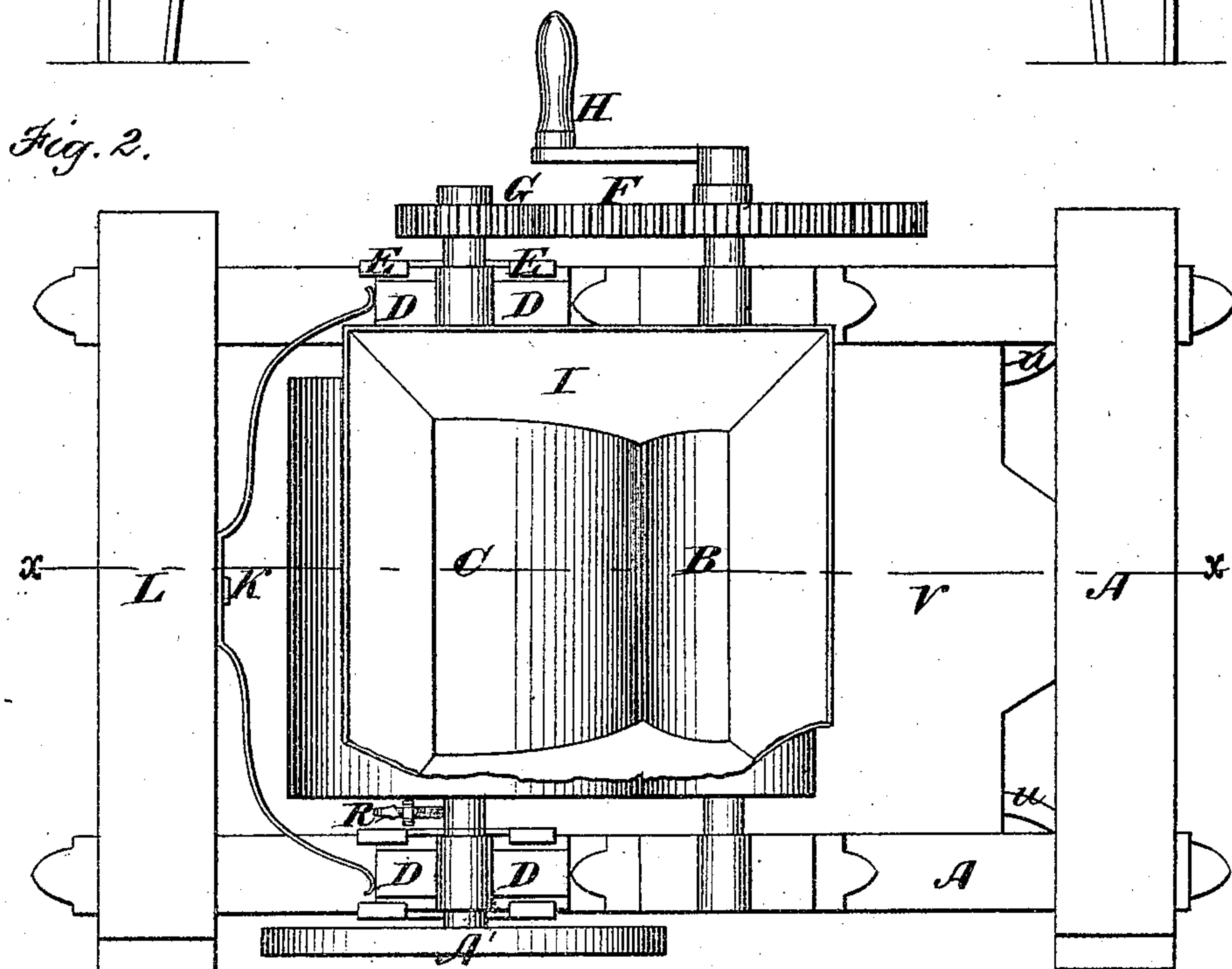
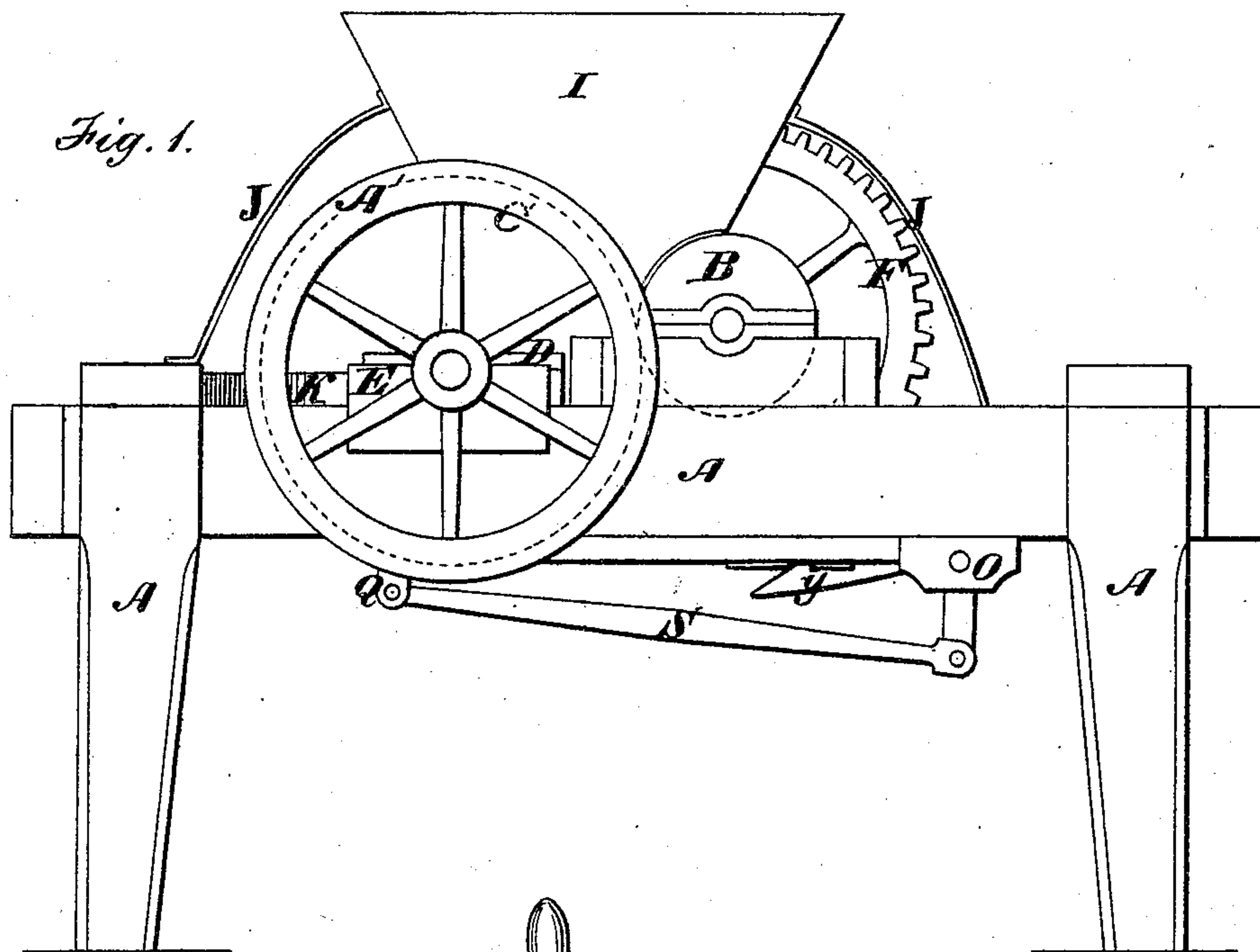


C. W. WASSON.
Mortar Mixers.

No. 136,571.

Patented March 4, 1873.



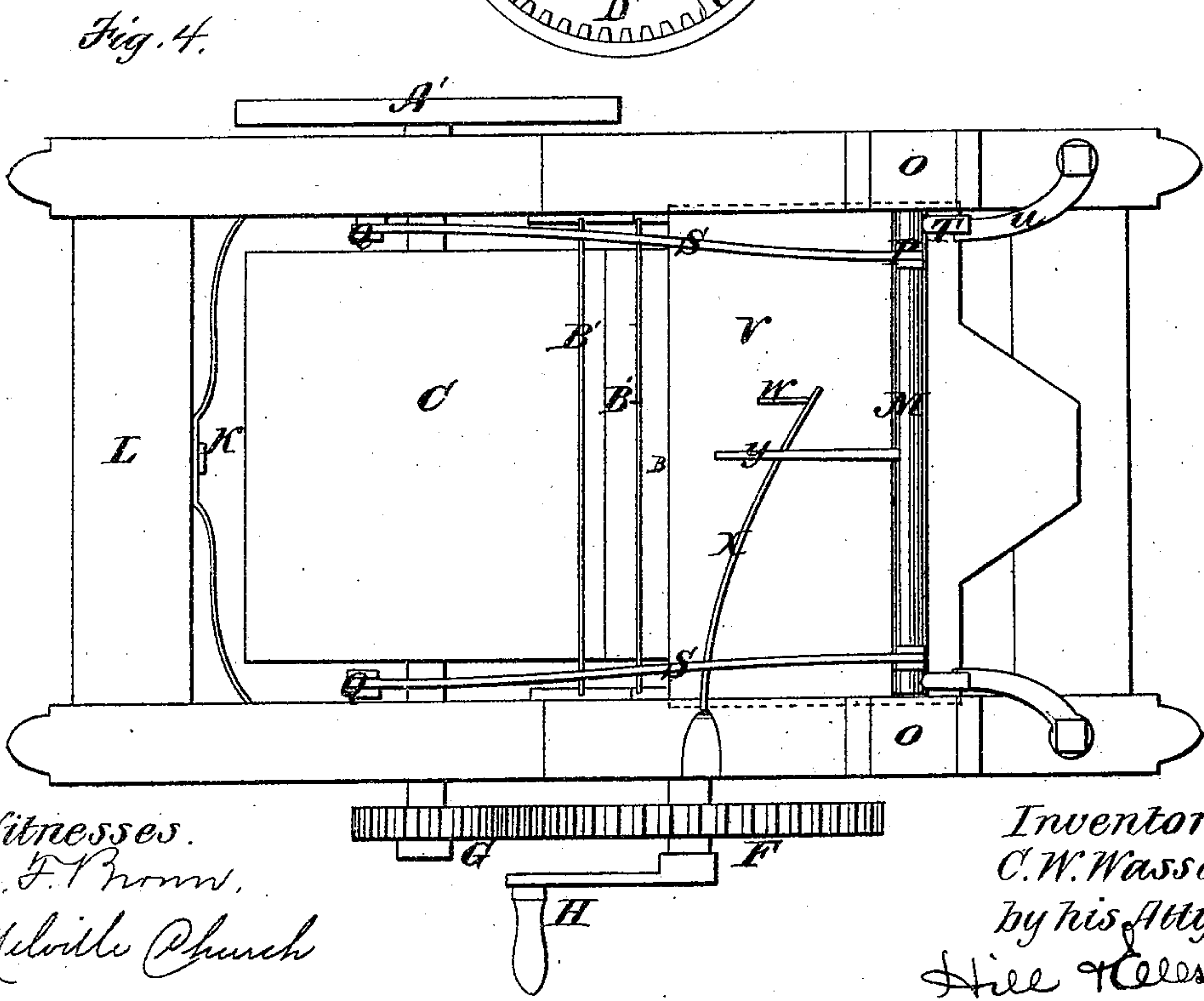
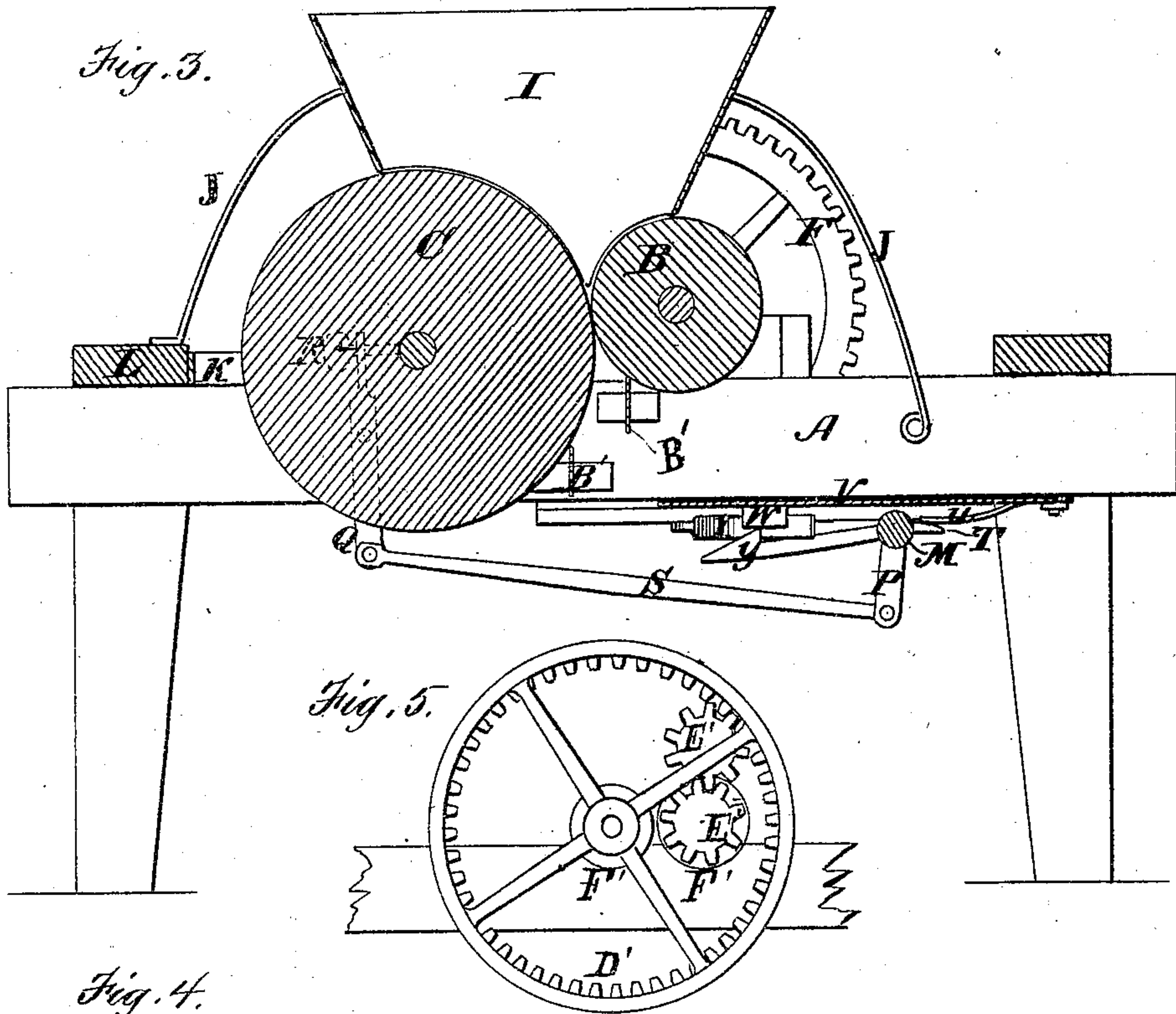
Witnesses.
C. F. Brown.
Melville Church

Inventor
C. W. Wasson.
by his Attys.
Hill & Cleworth.

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UNITED STATES PATENT OFFICE.

CHARLES W. WASSON, OF FRIENDSHIP, NEW YORK.

IMPROVEMENT IN MORTAR-MIXERS.

Specification forming part of Letters Patent No. 136,571, dated March 4, 1873.

To all whom it may concern:

Be it known that I, CHARLES W. WASSON, of Friendship, in the county of Allegany and State of New York, have invented a new and useful Machine for Grinding and Mixing Mortar and other Compositions; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1, Sheet 1, is a side elevation of my machine. Fig. 2, Sheet 1, is a top-plan view of the same. Fig. 3, Sheet 2, is a longitudinal section taken in the plane of the line $x x$, Fig. 2. Fig. 4, Sheet 2, is an inverted plan view; and Fig. 5, Sheet 2, is a modification of the gearing.

Similar letters of reference in the accompanying drawing indicate the same parts.

My invention has for its object to prepare mortar, cement, plaster, and other building compounds in a more economical, rapid, and perfect manner than heretofore; and to this end it consists, first, in passing the compound or composition between rollers revolving at different velocities, whereby a grinding and rubbing action is produced upon the compound to thoroughly pulverize and mix the same; secondly, in adapting the rollers for the passage between them of non-pulverable substances, and in automatically separating the latter from the compound; thirdly, in adapting the grinding-surfaces for adjustment to graduate their action upon the compound for the purpose of reducing the latter to a greater or less degree of fineness; and, lastly, in the construction and combination of various parts of the machine, as I will now proceed to describe.

In the accompanying drawing, A is a rectangular or other frame suitably formed for supporting the operating parts of the machine. B is the small and C the large roller, the former having its bearings in boxes affixed to the supporting-frame, and the latter having its bearings in boxes D, adapted to slide upon the frame between suitable guides E. The journals of the rollers are geared together by the gear-wheel F upon the smaller, and the pinion G upon the larger roller. By this arrangement the large roller is made to revolve

with greater velocity than the small roller, and therefore operates with a grinding and rubbing action upon any substance passing between the two. The rollers are driven by a crank, H, affixed to the large gear-wheel or to its shaft; but power may be applied in any other proper and convenient manner to either of the rollers. I is a hopper supported immediately over the rollers by legs J affixed to the frame, as shown. K is a plate-spring secured at its center to the inner face of the cross-bar L, which forms one end of the frame, and having its ends bent inward so as to bear against the journal-boxes D of the large roller. By this provision the large roller is held forward with a yielding pressure. M is a transverse rock-shaft journaled in boxes O, secured to the under side of the frame, as shown, and provided with two short pendent arms, P. Q are two short vertical arms pivoted at or near their centers to the side pieces of the frame somewhat in rear of the journals of the large rollers. Their upper ends extend between the large roller and frame, and are provided with set-screws R projecting toward or against the journals of such roller. Their lower ends are connected by rods S to the pendent arms of the rock-shaft M, as shown. T T are short studs projecting from the ends of the rock-shaft toward the front of the machine, and U U are springs secured to the frame so that their free ends shall press downward upon such studs. The pressure exerted by these springs holds the pendent arms P forward and through the connecting-rods S, and pivoted arms Q hold the points of the set-screws R against the journals of the large roller. V is a horizontal apron or pan adapted to slide freely within grooves formed in the side pieces of the frame. When the pan is moved in it occupies a position beneath the rollers so as to arrest any substance escaping from between them, and when moved out its inner end clears the path of such substance and allows it to fall unobstructed to the ground. W is a stud on the under side of the pan, which, when the latter is drawn out, strikes the free end of a spring, X, affixed to one of the side pieces of the frame, and presses it back until it engages with a latch, Y, projecting inward from the rock-shaft M, as

shown. The latch is held up to its work by the pressure of the springs U, upon the lateral studs T of the rock-shaft.

The operation of the machine thus far described is as follows: The hopper is first filled with mortar, cement, or other substance, the pan drawn out, as above described, and the machine set in motion. The differential size and rotation of the rollers cause them to operate with a grinding and rubbing action upon the compound, so that the latter is thoroughly pulverized and mixed as it escapes from between them. Inasmuch as the large roller is held up to its work with a yielding pressure, any non-pulverable matter contained in the compound will force it back against the spring K, and cause its journals to strike or press back the set-screws R. This movement throws the lower ends of the arms Q forward, and, through the medium of the connecting-rods S and rock-shaft M, disengages the latch Y from the spring X, and allows the latter to throw the pan inward to receive the non-pulverable body as it falls from the rollers. By this means the pan is operated automatically to separate foreign substances from the compound.

The pan may be drawn forward and set again by hand or other convenient means. The adjustment of the set-screws R regulates the distance the large roller shall move to operate the pan, and therefore determines the degree of fineness to which the compound shall be reduced. The balance-wheel A' upon the shaft of the large roller materially assists the crushing of the ingredients of the compound, and facilitates the rapid movement of the roller to operate the separating-pan.

B B' are adjustable scrapers, supported by the frame of the machine a certain distance apart, so as to bear upon the rollers and remove any of the compound adhering to their surfaces. As the compound is ground and mixed, it passes between the scrapers and falls to the ground, or into a receptacle placed beneath the machine to receive it.

If desired, more than two rollers may be used in the machine, or but one may be employed, and arranged to move in contact with a fixed head-block.

Fig. 5 shows a modification of the gearing for driving the rollers, consisting of the internal gear-wheel D' and gears E' E'. The grinding-cylinders are shown of the same size and marked F'.

Having thus described my invention, what I claim is—

1. A machine for grinding and mixing mortar, cement, &c., composed of two rollers revolving at unequal velocities, one of which is made adjustable, and adapted to yield for the passage of non-pulverable substances, substantially as described, for the purpose specified.

2. A machine for grinding and mixing mortar, cement, &c., adapted to automatically separate non-pulverable substances from the compound, by means substantially as described.

3. In a machine for grinding and mixing mortar, cement, &c., a separating-pan, operated automatically by the adjustable yielding pressure-roller, substantially as described, for the purpose specified.

4. The combination of the roller B, yielding adjustable roller C, and the separating-pan V, substantially as described, for the purpose specified.

5. The combination of the adjustable arms Q, connecting-rods S, yielding roller C, and spring rock-shaft M with the separating-pan V, substantially as described, for the purpose specified.

6. In combination with the sliding separating-pan V and rock-shaft M, the stop W, spring X, and latch Y, substantially as described, for the purpose specified.

7. In combination with the rods, shaft M and its attachments, the springs U, substantially as described, for the purpose specified.

8. The combination of the roller B, yielding pressure-roller C, adjustable arms Q, connecting-rods S, spring rock-shaft M, latch Y, and spring separating-pan V, substantially as described, for the purposes specified.

CHARLES W. WASSON.

Witnesses:

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