

(No Model.)

J. W. PENFIELD.
CLAY CRUSHING ROLLER.

No. 292,577.

Patented Jan. 29, 1884.

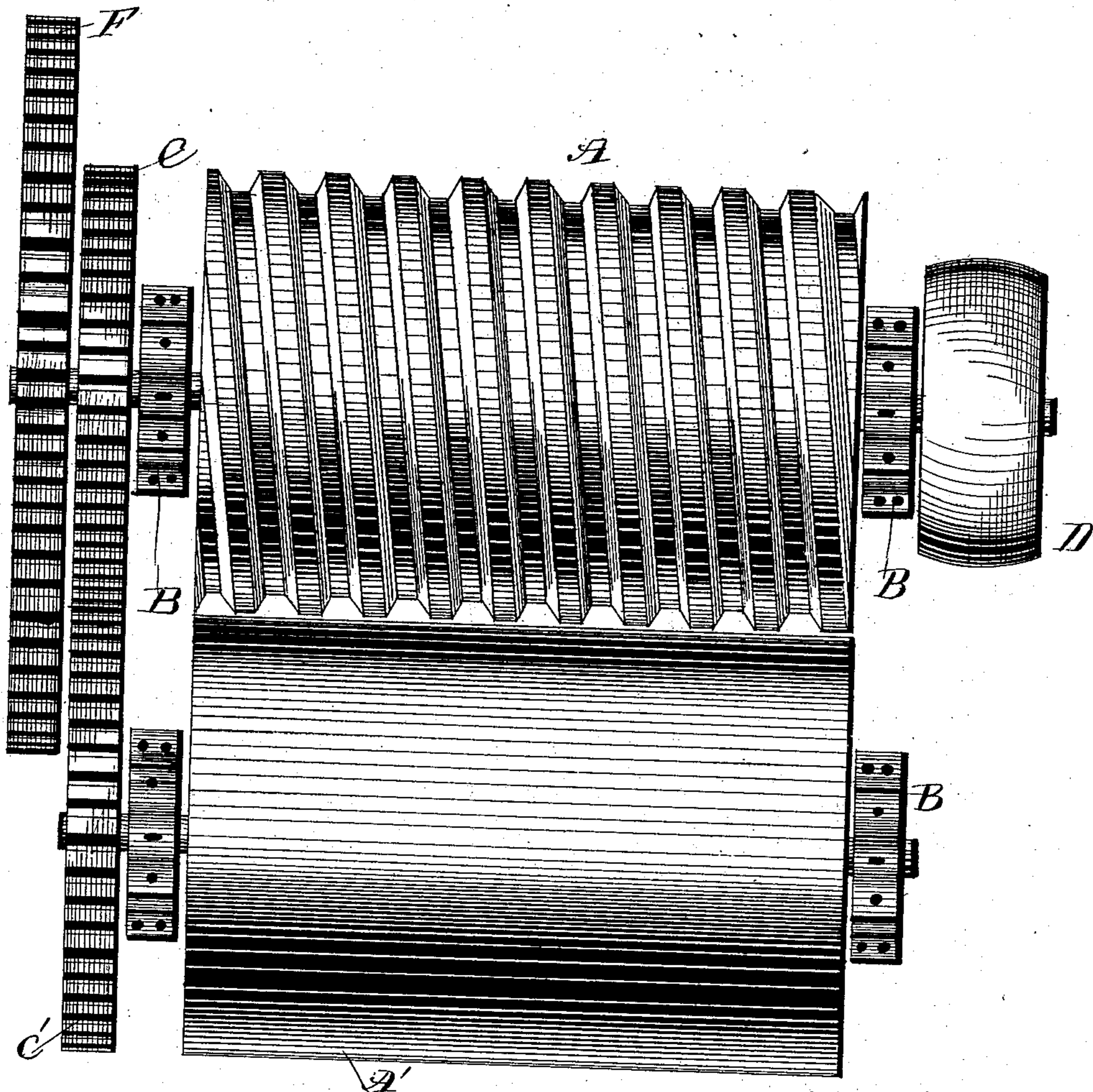


Fig. 1.

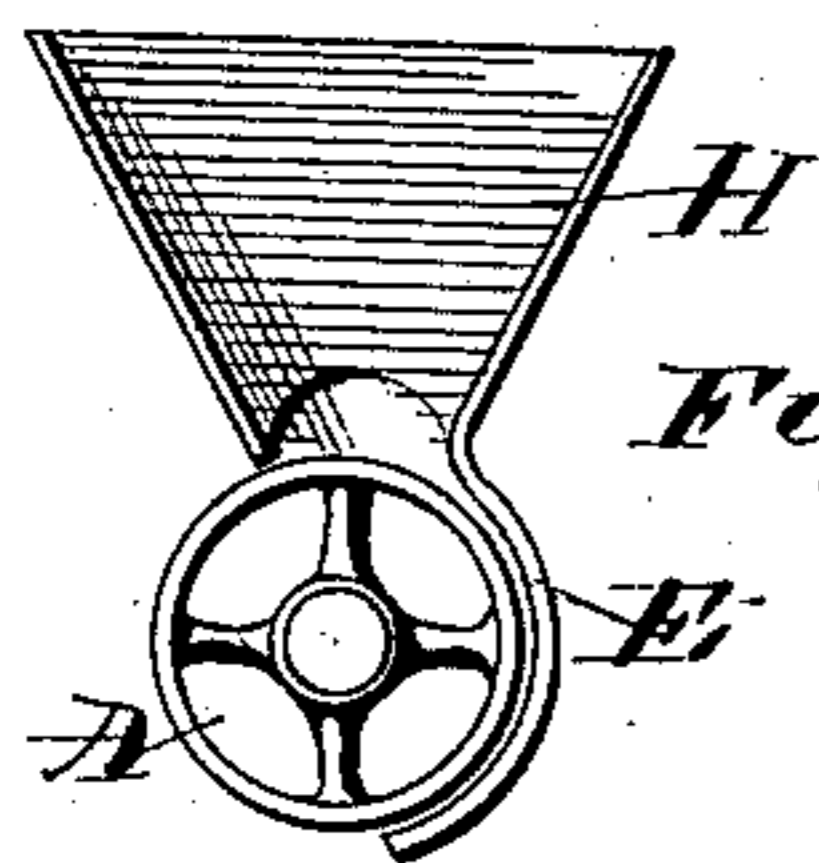


Fig. 2.

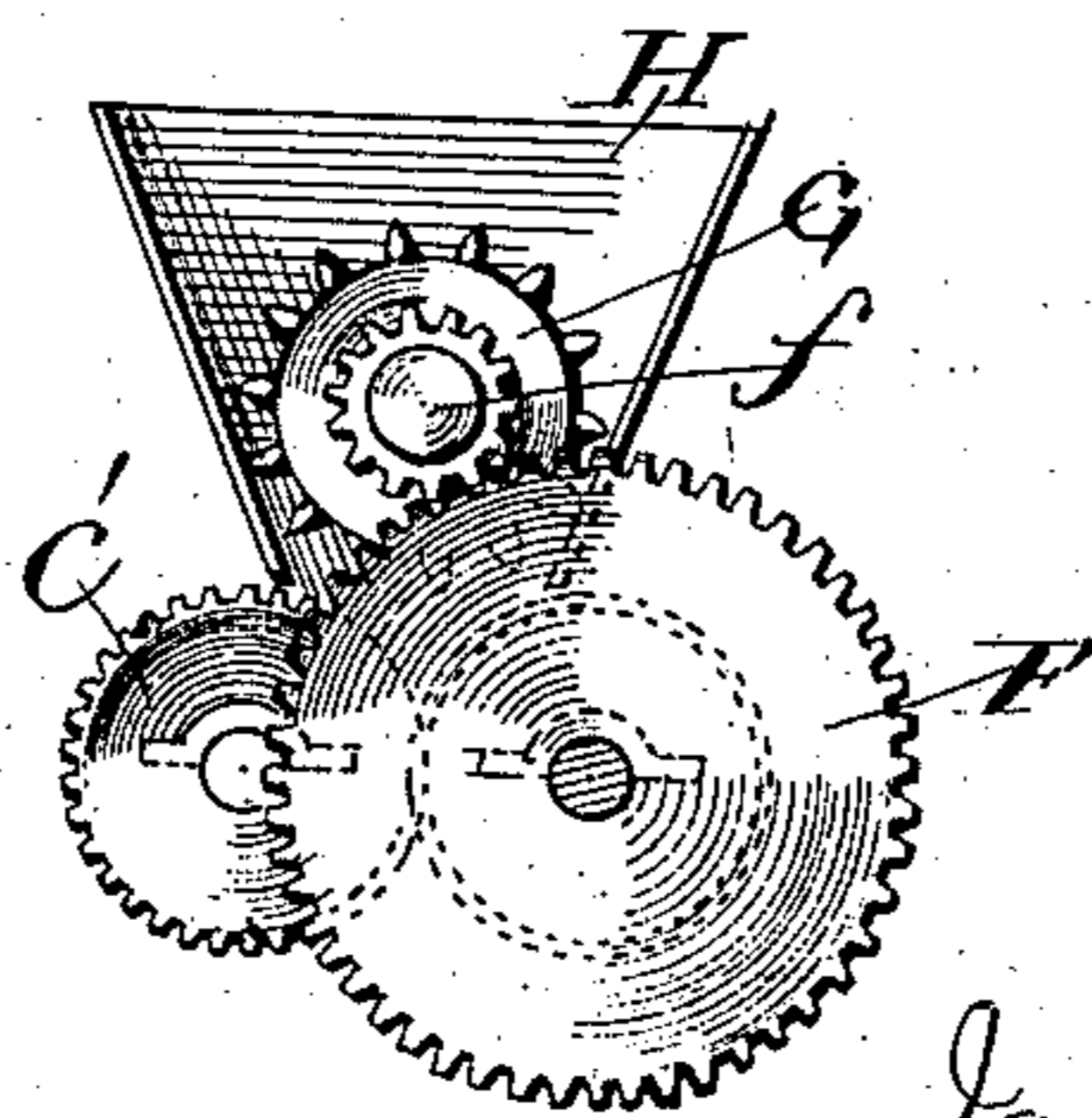


Fig. 3. James W. Penfield
INVENTOR

WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES W. PENFIELD, OF WILLOUGHBY, OHIO.

CLAY-CRUSHING ROLLER.

SPECIFICATION forming part of Letters Patent No. 292,577, dated January 29, 1884.

Application filed December 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. PENFIELD, of Willoughby, in the county of Lake and State of Ohio, have invented certain new and
5 useful Improvements in Clay-Crushing Rollers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and
10 use the same.

My invention relates to improvements in clay-crushing rollers and their attachments; and it consists in certain features of construction and in combination of parts hereinafter
15 described, and pointed out in the claims.

In the drawings, Figure 1 is a plan view of my improved rollers, but with the hopper and breaker removed. Fig. 2 is a transverse
20 vertical section of a modification when but one roller is used. Fig. 3 is an end elevation, showing the gearing and in vertical section the hopper and breaker.

A and A' are rollers, the former provided with a spiral corrugation on the periphery
25 and running from end to end of the roller. The latter may have a smooth surface, as shown, or may have a series of circumferential or annular grooves, if preferred. The shafts of these rollers are journaled, respectively, in the boxes B, that may be made ad-
30 justable laterally, in order to set the rollers at the desired distance apart. These boxes may be secured to any suitable supporting-frame. The axles of the rollers are provided,
35 respectively, with the engaging gears C and C', and with the driving-pulley D. The single spirally-corrugated roller will free the clay from stones and discharge them from one end of the machine, and with brittle clay that
40 does not require cutting, but only crushing, will do good service, and may be made at a less initial cost than machines provided with two spirally-corrugated rollers.

A still simpler and less expensive machine
45 may be made by substituting for the smooth roller A' a plate, E. (Shown in Fig. 2.) A machine of this kind will perform the work equally well, but not so fast, as the machine with two rollers described above. As a ma-

chine of this kind would require no gears 50 and but one set of journal-boxes, it could be made at a minimum cost, and, when but a moderate amount of work is required, will be found a desirable machine.

In some kinds of tenacious clay the lumps 55 are too large to feed into the rollers.

I have invented a clay-breaker, G, consisting of a cylinder or shaft that revolves inside of the hopper H and above the crushing roller or rollers, and journaled in suitable
60 boxes that may be attached to any convenient supports and actuated by the engaging gears F and f. Inside of the hopper the shaft or cylinder is provided with projections or teeth g, that break the lumps of clay into
65 pieces sufficiently small to engage the crushing-rollers.

What I claim is—

1. In clay-crushing rollers, a roller provided with a corrugation, rib, projection, 70 groove, or depression on the periphery thereof, and extending spirally around the roller from end to end, in combination with a roller that is without a spiral corrugation, substantially as set forth.

2. In a clay-crushing machine, a roller provided with a spiral corrugation extending around the roller from end to end thereof, in combination with a roller, plate, bar, or other device for holding the clay in contact with
80 the said roller in the process of crushing the said clay, but such roller, plate, bar, or other device being without corrugations, substantially as set forth.

3. In a clay-crushing machine, the combination, with one or more rollers provided with a spiral corrugation extending from end to end of the roller, of a clay-breaker located above the said roller or rollers, and provided with projections or teeth adapted to break
90 large lumps of clay, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 10th day of December, 1883.

JAMES W. PENFIELD.

Witnesses:

F. C. CARROLL,
H. Y. CROBAUGH.