

(No Model.)

J. W. PENFIELD.
CLAY CRUSHING ROLLER.

No. 292,576.

Patented Jan. 29, 1884.

Fig. 1.

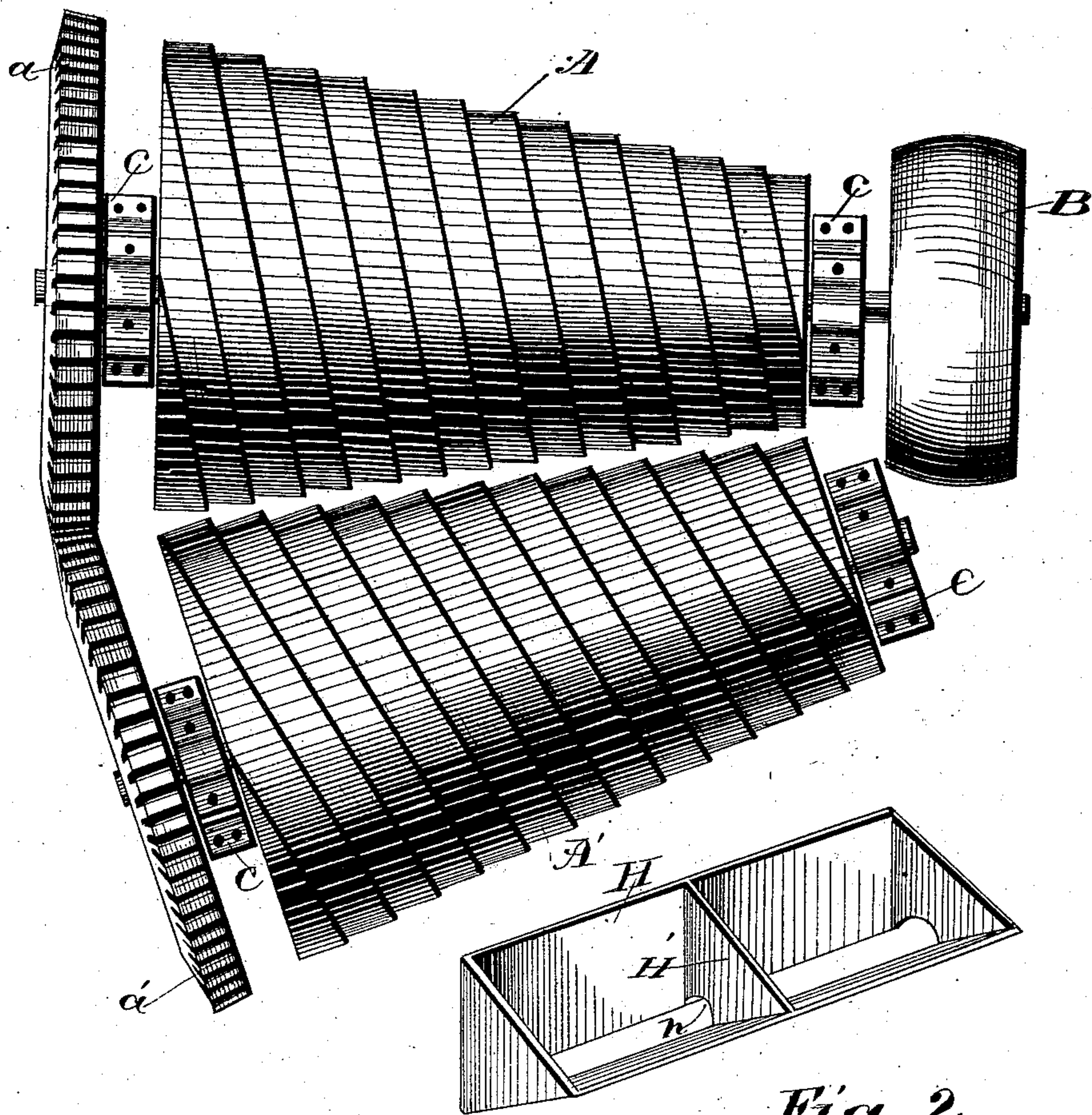


Fig. 2.

WITNESSES

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JAMES W. PENFIELD, OF WILLOUGHBY, OHIO.

CLAY-CRUSHING ROLLER.

SPECIFICATION forming part of Letters Patent No. 292,576, 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.

The object of the invention is to provide
15 conical corrugated rollers, with the larger and smaller end respectively contiguous, and that will have the advantage of corrugations the same as cylindrical rollers patented by me November 27, 1883, Nos. 289,025 and 289,026,
20 but will be especially adapted to work stony clay, as the inclination of the upper surface of the rollers will facilitate the discharge of stones from the machine. A further object is to provide a hopper of such construction that,
25 while the stones may pass without hinderance from the machine, little or no clay will be wasted.

With these ends in view my invention consists in certain features of construction and in combination of parts hereinafter described,
30 and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved rollers, but with the hopper removed. Fig. 2 is a view in perspective of the hopper.

35 A and A' are conical rollers, placed preferably with their axes about horizontal, and provided with the engaging-gears *a* and *a'* and the driving-pulley B. The axes of the rollers are journaled in the boxes C, that are
40 adjustable, so that the rollers may be set the desired distance apart. The rollers—one or both—are provided with circumferential corrugations that may be varied according to the kind of clay that is to be pulverized. If the
45 clay is very stony, spiral corrugations, right and left handed, that will aid in discharging the stone, will be found desirable. If the clay is less stony, but tough, so as to require more cutting or breaking, spiral corrugations with
50 the same lead on each roller, so that the corrugations will cross each other as the rollers

revolve, will be found effective in cutting and breaking the clay, while the rollers, by reason of the inclination of the upper surfaces, will still discharge stone quite freely. A very good
55 result may be had by having one roller grooved spirally, so that the lead of the spiral is in the direction that will aid in discharging the stones from the machine, and the other roller provided with a series of circumferential grooves
60 that are not spiral.

Clay-crushing rollers are usually provided with a hopper, for convenience in feeding the clay into the rollers. When corrugations or
65 other means are used for discharging stones from the rollers, an opening in one or both ends of the hopper is left for the passage of the stones. Through the same openings lumps of clay will also pass, so that the ordinary hopper that will admit of the escape of the stones
70 is very wasteful. I have therefore devised an improved hopper that, while allowing the stone to pass, will not waste the clay.

The body of the hopper H may be shaped in the usual manner, but provided with a partition, H', set back some distance from the ends
75 of the rollers where the stones are discharged. At the lower end of this partition is left an open space, as shown at *h*, sufficiently large for the passage of the stones. As the said
80 opening is some distance from the end of the rollers, these lumps of clay, that pass out of the hopper with the stones, will come in contact with and be crushed by the rollers before reaching the point of discharge at the end of
85 the rollers, so that by this simple device there will be no waste of clay. This partition H' is usually secured by wood-screws passing through the hopper from the outside, so that the partition is easily adjustable, and may be
90 secured in any part of the hopper where it is found to be most effective, or may be moved from time to time to suit the different kinds of clay.

What I claim is—

1. Conical corrugated clay-crushing rollers, substantially as set forth.
2. Conical clay-crushing rollers, one or more of which are provided with a spiral corrugation extending from end to end of the roller, substantially as set forth.
3. In clay-crushing-rollers, a partition or

end piece so arranged as to leave an opening
at the bottom for the passage of stone, and set
at some distance from the end of the roller
where the stones are discharged, so that the
5 clay that passes through the said opening
with the stone may be crushed by the roller
before reaching the end thereof.

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

JAMES W. PENFIELD.

Witnesses:

F. C. CARROLL,

H. Y. CROBAUGH.