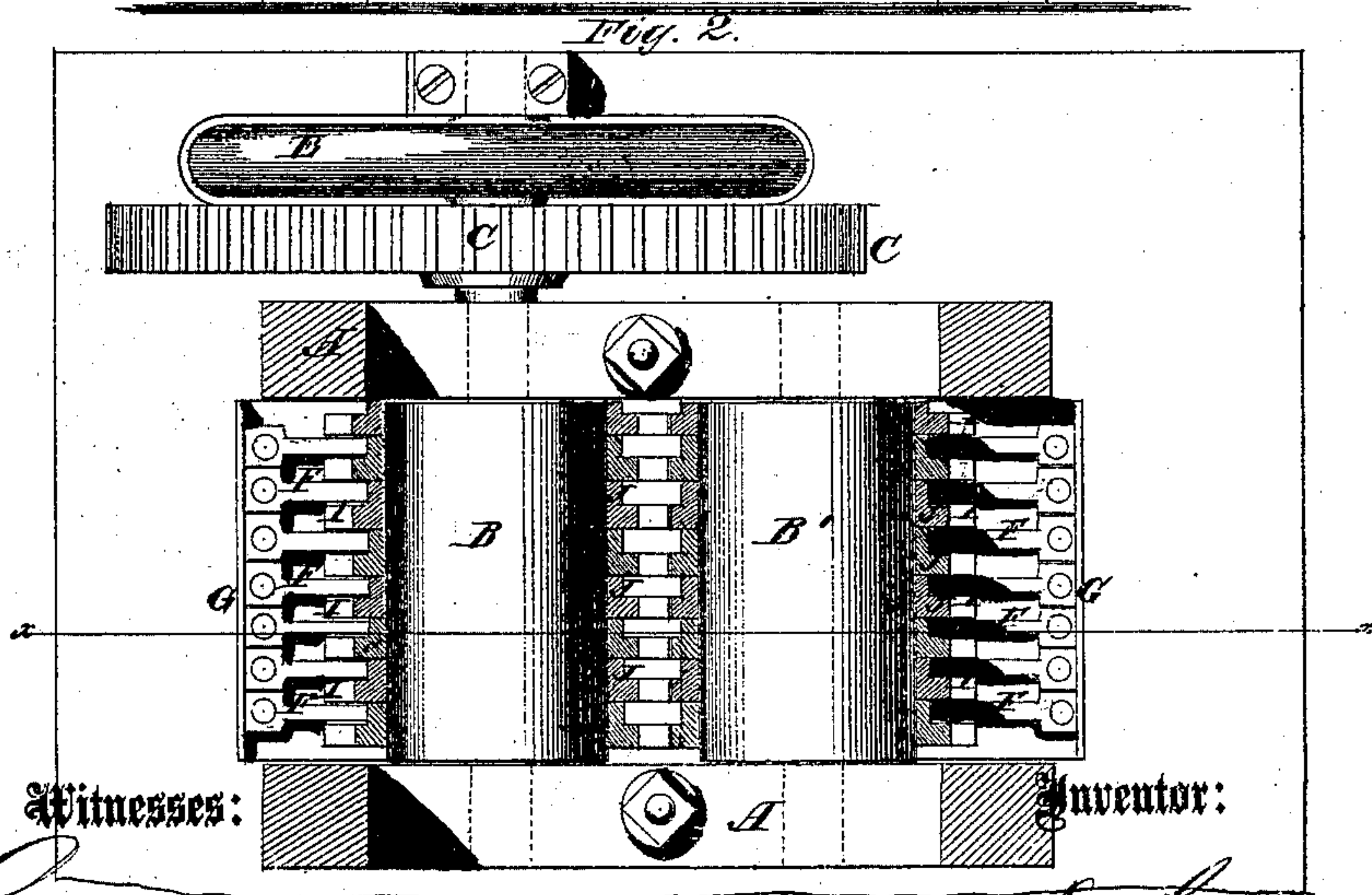
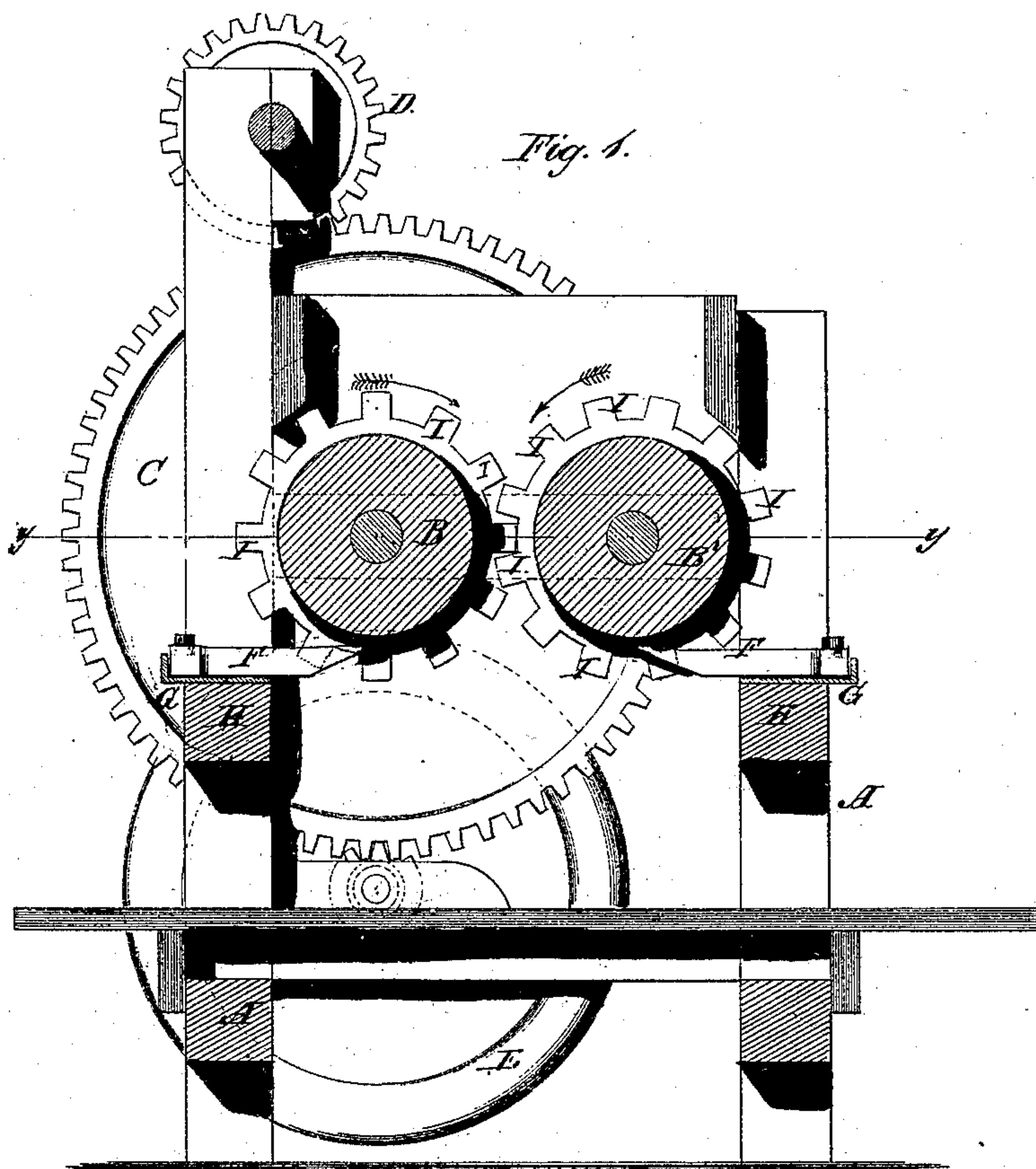


A. Hall,

Clay Crusher.

No. 93,764.

Patented Jan. 11. 1870



Witnesses:

Gustave Dietrich
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JD

Inventor:

PER

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ALFRED HALL, OF PERTH AMBOY, NEW JERSEY.

Letters Patent No. 98,764, dated January 11, 1870.

IMPROVEMENT IN CLAY-CRUSHERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALFRED HALL, of Perth Amboy, in the county of Middlesex, and State of New Jersey, have invented a new and improved Clay-Crusher; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to a new and useful improvement in machines for crushing clay, and other similar substances, and consists in two coggod and grooved cylinders, which are rotated so as to engage with each other; and in combination therewith, a series of cleaning-bars or scrapers, and also in the general arrangement and combination of parts, as hereinafter more fully described.

In the accompanying drawing—

Figure 1 represents a vertical section of the machine through the line *xx* of fig. 2, showing the crushing-cylinders, cleaners, and the gear-wheels, fly-wheel, and pinion, by which motion is imparted to the crushing-cylinders and regulated.

Figure 2 is a horizontal section of fig. 1, through the line *yy*, showing the grooves in the crushing-cylinders, and the form and position of the cleaning-bars.

Similar letters of reference indicate corresponding parts.

A represents the frame, by which the operative parts of the machine are supported.

B B' are the crushing-cylinders.

C is the wheel, to which power is applied by means of the small wheel D on a line-shaft.

The wheel C is firmly attached to the shaft of the crushing-cylinder B. This cylinder B engages with and drives the cylinder B', as seen in fig. 1.

The journals of these cylinders are supported on the frame A, in boxes of any suitable description.

E is a fly-wheel for regulating the motion of the cylinders, which is revolved by means of a pinion, which meshes into the wheel C, the pinion being on the fly-wheel shaft, as represented in fig. 1.

F represents the cleaning-bars.

G represents metallic plates, secured to the cross-pieces H of the frame, with their outer edges turned up, as seen in the drawing, so as to form a shoulder for the ends of the bar.

The bars are bolted to these plates. They are not made entirely rigid, but may be left slightly loose, so

that if they do not perfectly fit their respective grooves, they will adjust themselves to any inequalities therein, and be less likely to catch and be broken.

I represents the projecting cogs on the crushing-cylinders. These cogs form rows across the cylinders, as seen in fig. 2, which rows of cogs on the two cylinders engage with each other, the same as two single cogs on separate wheels.

In this case the cogs are divided by deep grooves J, which extend below the base of the cogs into the body of the cylinder, as seen in the drawing.

Into these grooves, the ends of the cleaning-bars F are made to fit, or nearly fit.

As the cylinders revolve, the bars clean the grooves of the clay which is forced into them, which clay being sufficiently crushed, is afterward manipulated or treated, by soaking in water or otherwise, to fit it for mouldings.

The clay which is caught in the ends of the cogs, in the process of crushing, is forced into the grooves, and removed by the cleaning-bars, and drops from the machine into any proper receptacle.

The cogs and grooves of the crushing-cylinders may be cut on the surface of entire cylinders, if desired, but I prefer to make the cylinders of a succession of rings placed and properly fastened on their shafts, each ring being a cog-wheel, with a collar for forming a single groove. The outside rings of each cylinder would have a collar on each side, so as to keep the cogs a suitable distance from the frame.

The clay or other material to be crushed, is thrown into a hopper or suitable receptacle over the crushing-cylinders. These cylinders revolve in the direction indicated by the arrows, and of course the clay or other material is carried down between them.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The arrangement, respectively, upon two clay-crushing rollers, of cogs I and grooves J, as set forth, and for the purpose specified.

2. The combination of a pair of clay-crushing cylinders, grooved and coggod on their peripheries, as set forth, with a series of scrapers arranged opposite to each cylinder in the manner described.

ALFRED HALL.

Witnesses:

H. N. TAFT,

GEO. W. MABEE.