

G. C. BOVEY.

Machines for Pulverizing Clay.

No. 139,110.

Patented May 20, 1873.

Fig. 1.

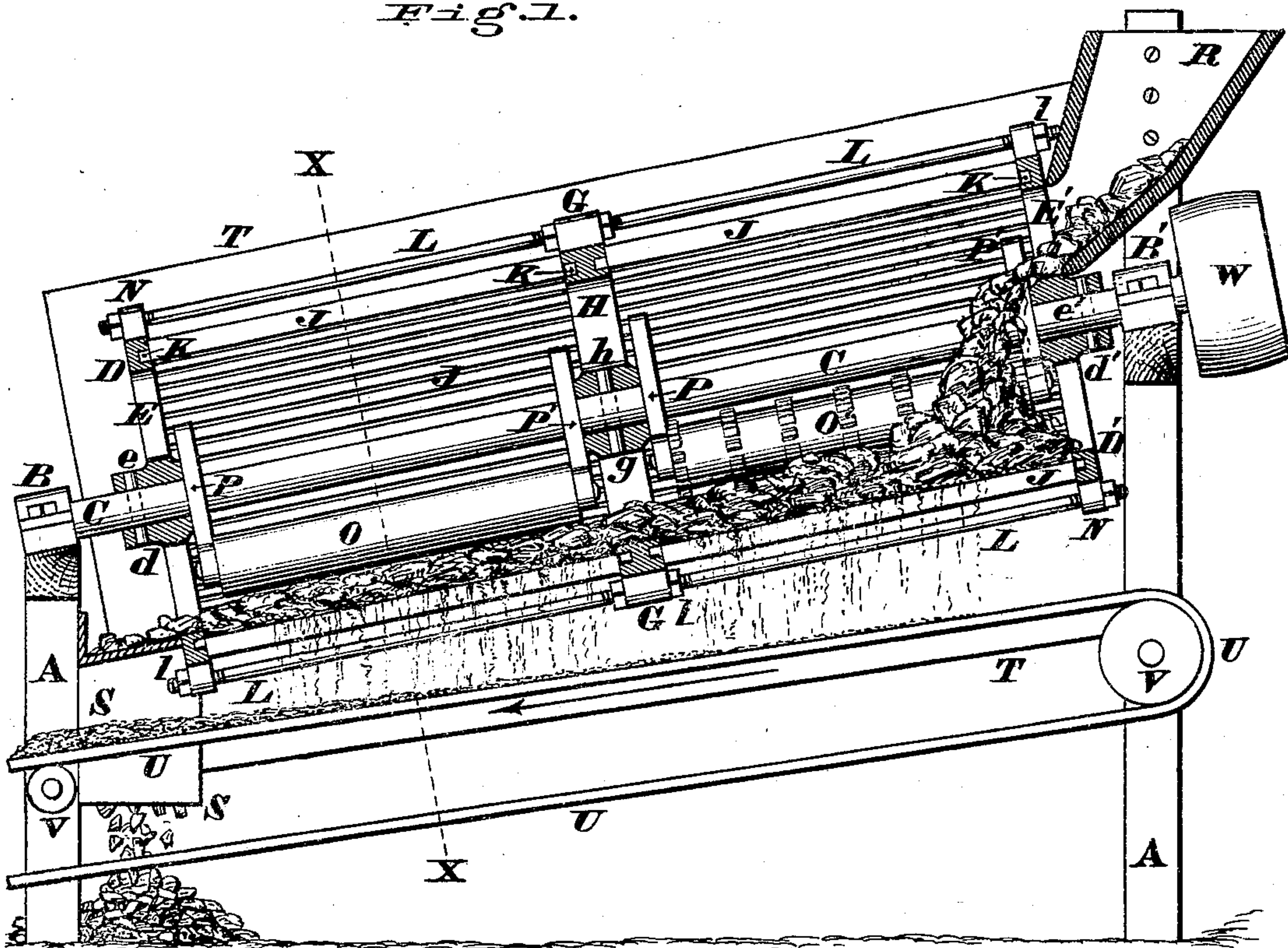


Fig. 2.

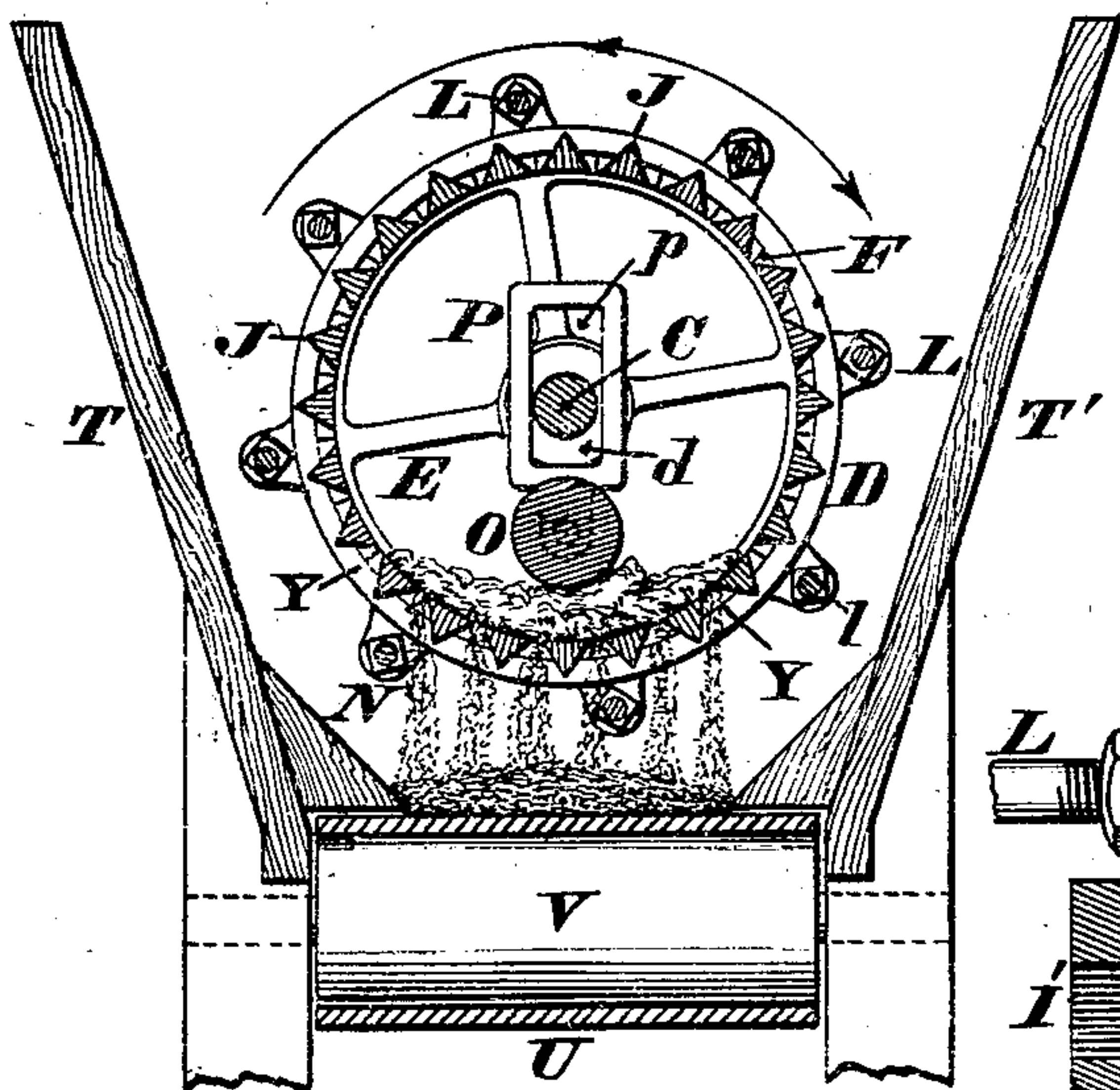


Fig. 3.

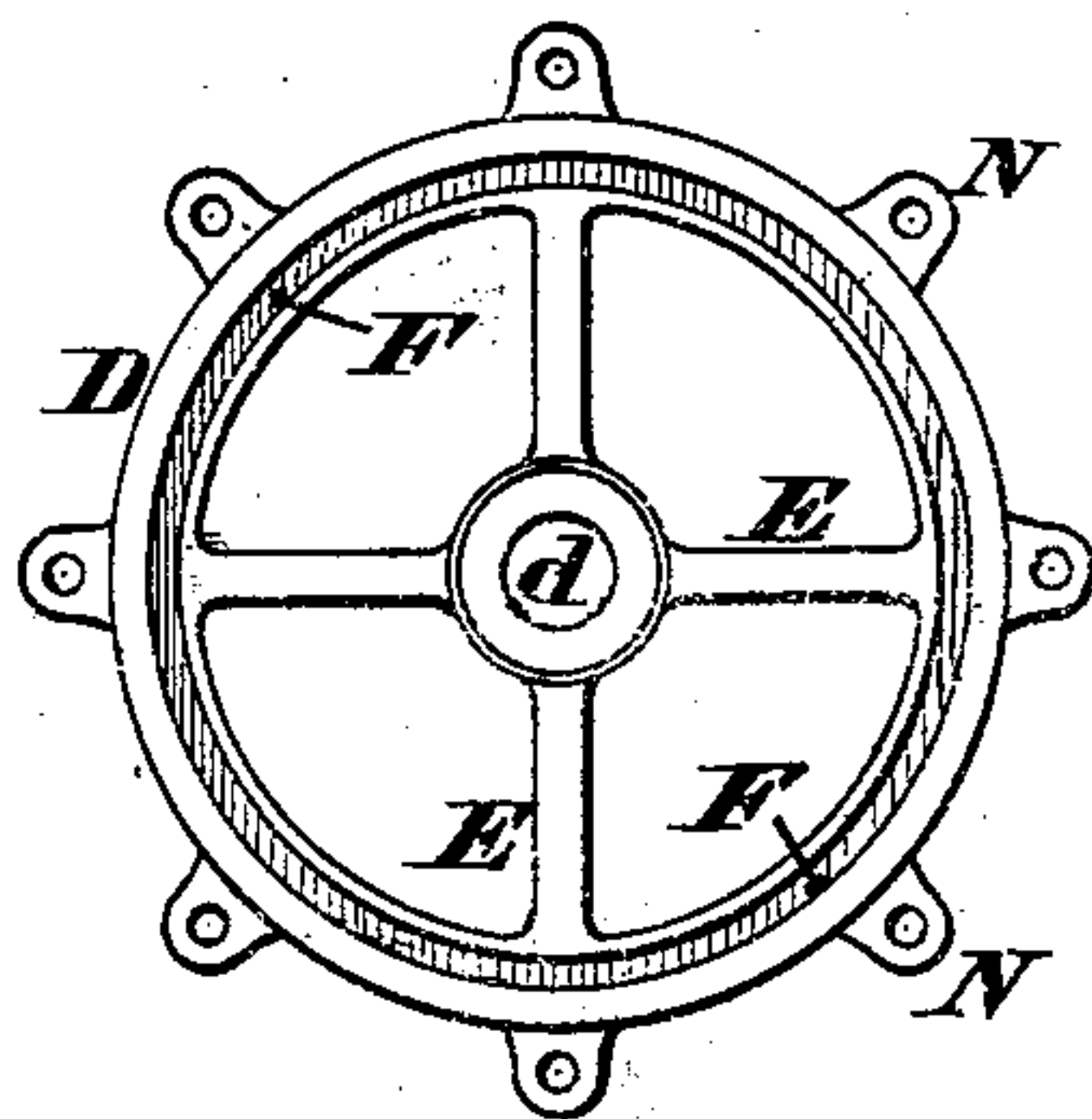
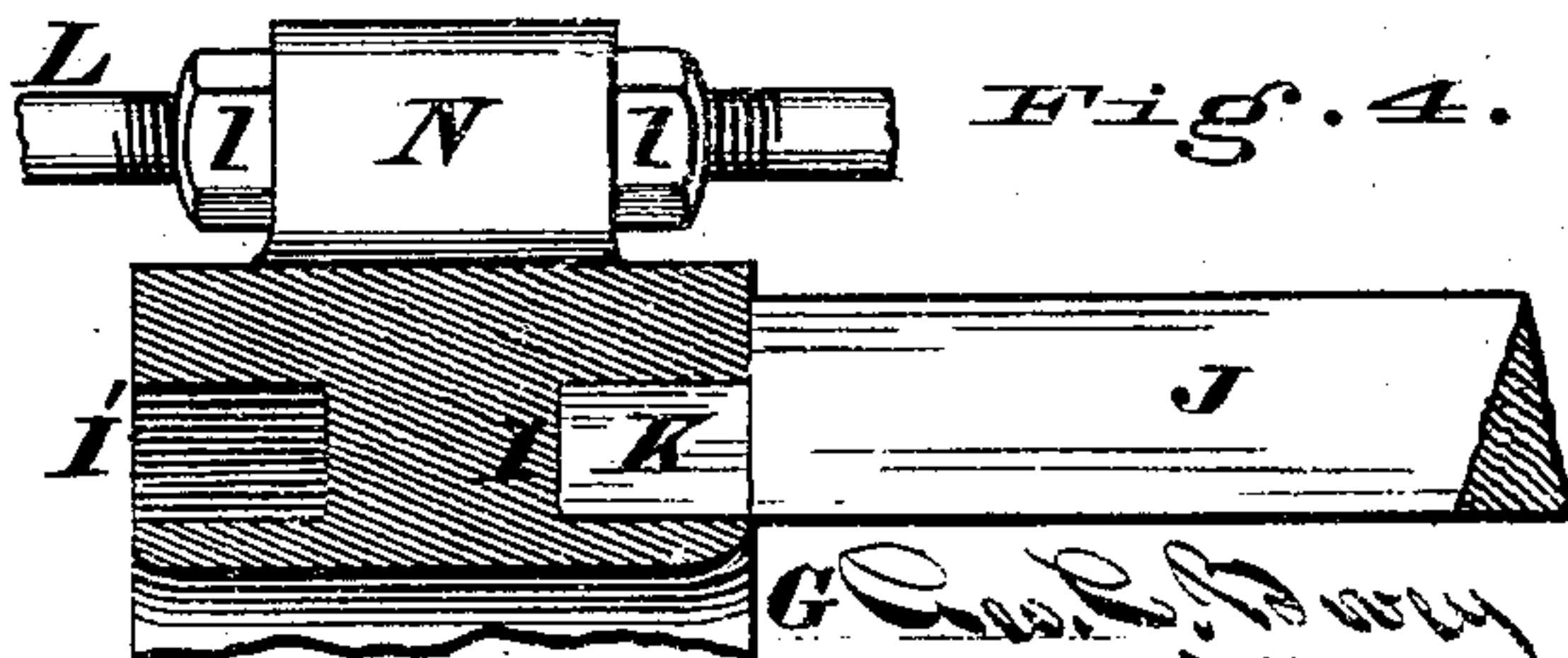


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE C. BOVEY, OF CHILLICOTHE, OHIO.

IMPROVEMENT IN MACHINES FOR PULVERIZING CLAY.

Specification forming part of Letters Patent No. **139,110**, dated May 20, 1873; application filed January 9, 1873.

To all whom it may concern:

Be it known that I, GEORGE C. BOVEY, of Chillicothe, Ross county, Ohio, have invented certain new and useful Improvements in Pulverizers, of which the following is a specification:

Nature and Objects of the Invention.

This invention relates to a simple and effective machine wherewith clay may be thoroughly pulverized and comminuted, so as to adapt it for use in brick-machines, the apparatus being so constructed as to eject stones and other obstructions, as hereinafter more fully explained.

Description of the Accompanying Drawing.

Figure 1 is a longitudinal section of my improved pulverizer. Fig. 2 is a transverse section of the same at the lines X X. Fig. 3 is an elevation of one of the hoops to which the staves are united. Fig. 4 is an enlarged view, showing the manner of uniting the staves to the hoop.

General Description.

A represents a stout frame, having plumb-blocks B B', which afford journal-bearings for an inclined shaft, C, that occupies an axial position with reference to the operative parts of the pulverizer. D and D' represent the two end hoops or rings of the machine, which hoops are united to their respective hubs *d d'* by radial arms E E', and said hubs are secured to the shaft C by pins or keys *e e'*. The inner faces of these rings are provided with annular grooves F, for a purpose which will be hereafter described. G is a central hoop, having a hub, *g*, radial arms H, and a retaining pin or key, *h*. This hoop is provided with two annular grooves, I I', which correspond in size and dimensions with the grooves F. J represents staves or ribs, whose transverse sections are of the triangular shape shown in Fig. 2. These staves have their bases presented toward the interior of the pulverizer, while their apexes project outwardly, so as to afford ample clearance for any clay that may pass through the interstices Y between said staves, which interstices may be wide or narrow, according to circumstances. If it is desired to use clay that has been merely crushed

without being completely pulverized, the staves should be placed some distance apart; but when very finely-pulverized clay is needed, said bars should be set nearer together. These staves are maintained a suitable distance apart, and also secured in the three rings, by tenons K upon them, which tenons enter the annular grooves F I I'. L are tie-rods, which, after passing through the perforated lugs or ears N, have nuts *l* screwed upon them, so as to clamp the three rings, with their accompanying staves, securely together. These ears are cast with the rings D G. O O' are gravitating-rollers, either or both of which may be corrugated. These are journaled in hangers P P', having slots *p*, through which slots the driving-shaft C passes. These slots *p* are sufficiently wide to permit free rotation of the shaft, and at the same time allow the rollers to raise and fall when necessary. Secured to the frame A, so as to discharge the clay directly into the elevated end of the pulverizer, is a hopper, R, which may be of any suitable shape. S is a chute or discharge-trough, which serves to conduct rocks and other obstructions away from the machine as rapidly as they are delivered from the pulverizing mechanism. The frame A supports two outwardly-flaring side pieces, T T, which prevent scattering of the pulverized clay, and cause it to be deposited on an endless carrier or belt, U. This carrier is supported upon rollers or drums V, and may be driven by any suitable appliances. W is the pulley to which the driving-belt is applied, and said pulley may be attached either to the upper or lower end of the shaft C.

The operation of my pulverizer is as follows: The shaft C, with its attached hoops D D' G and staves J, are first set in motion, being rotated in the direction indicated by the arrow in Fig. 2. Clay is then poured into the hopper R, and allowed to enter the pulverizer between the arms E' of the upper hoop D'. As the clay enters the machine it naturally falls and distributes itself along the lower interior surface of the pulverizer, and is acted upon by the gravitating-rollers O O'. These rollers, by their weight, operate to crush the clay and to force it out through the interstices Y between the staves J in a pul-

verized condition; but in case a stone, stick, or other obstruction should accidentally enter with the clay, said rollers will automatically elevate themselves and allow such obstructions to pass out at the lower end of the machine without injuring any of the operative parts. The pulverized clay, as rapidly as it is discharged from between the staves, is received upon the moving belt U, which conducts it away to any desired part of the brick-yard, or into the hopper of a brick-machine. The side boards or screens T T' arrest any clay that may be thrown from the pulverizer by the centrifugal action of the machine when it is driven at a high velocity. Any clay so discharged would be conducted by these converging members of the pulverizer down to the endless carrier.

For smaller machines than that herein described the central hoop may be omitted, while for larger ones a greater number of hoops may be employed.

The number of gravitating-rollers may also be varied, so as to agree with the length of the machine. A screw-conveyer may be substituted for the endless carrier or belt U.

I am aware that rotary pulverizing-cylinders have before been used for various purposes.

What I claim, and desire to secure by Letters Patent, is—

In combination with a clay-pulverizer, constructed substantially as herein described, one or more gravitating-rollers, OO', journaled to slotted arms P P', and working within the screening-cylinder, as explained.

In testimony of which invention I hereunto set my hand.

GEO. C. BOVEY.

Attest:

GEO. H. KNIGHT,
JAMES H. LAYMAN.