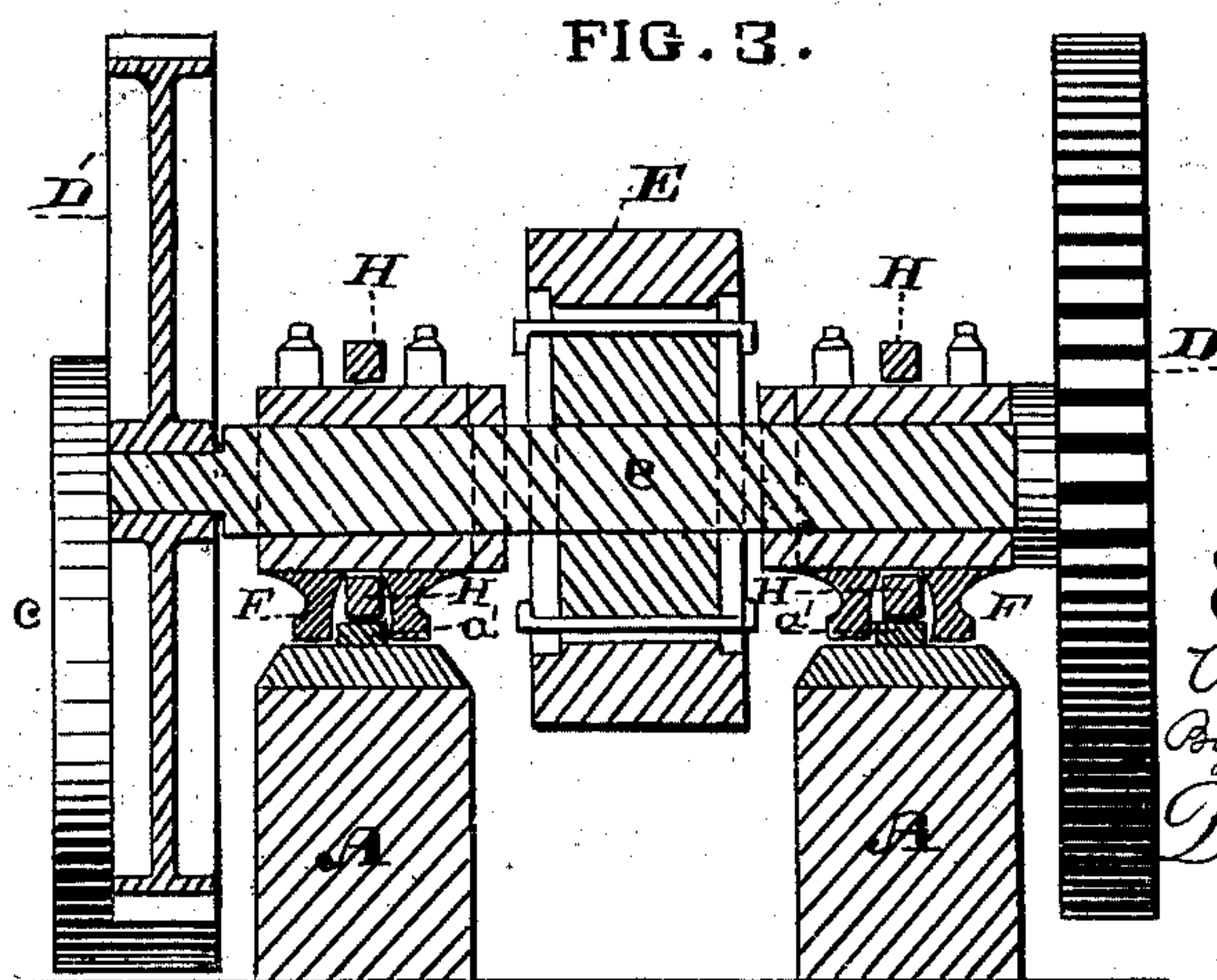
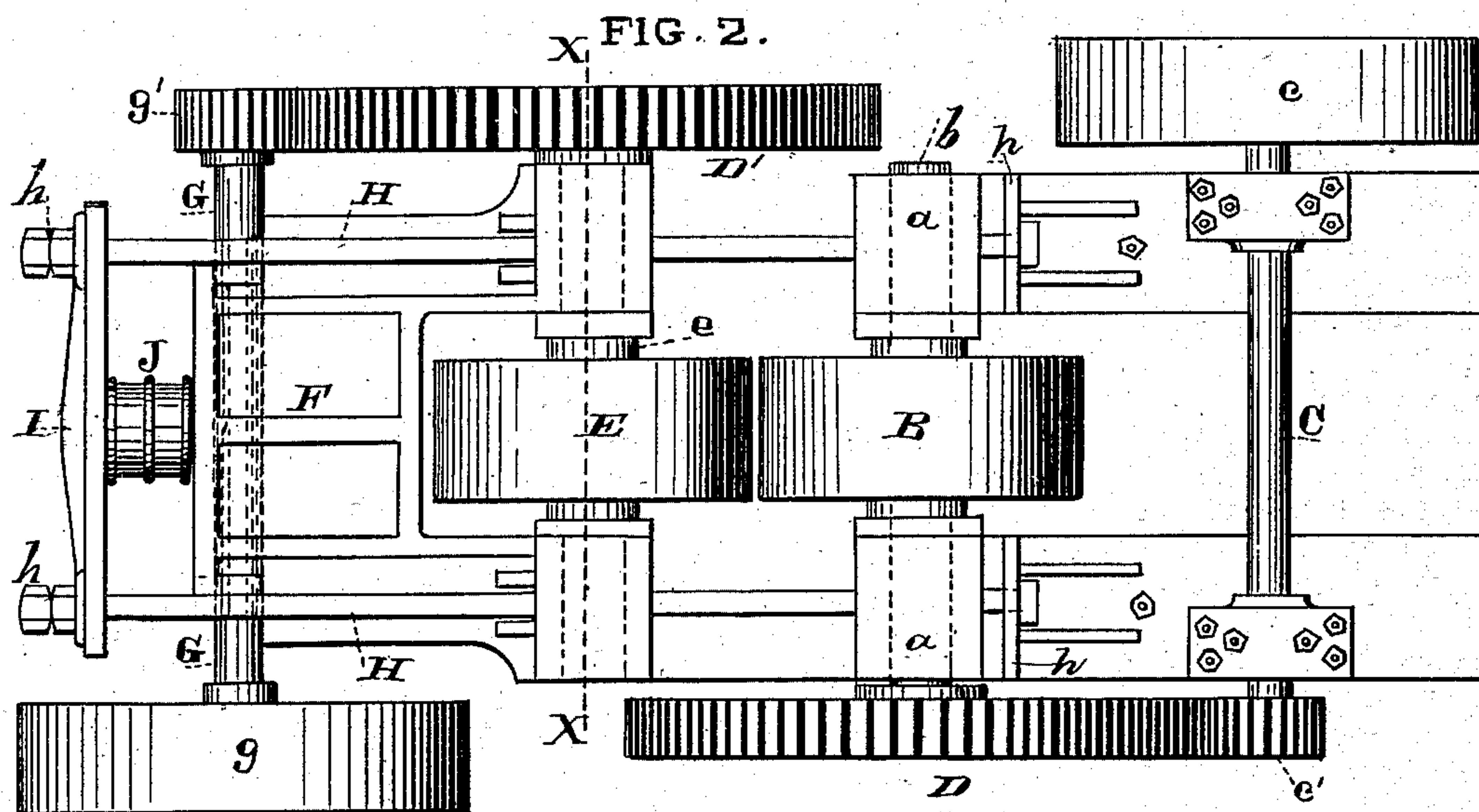
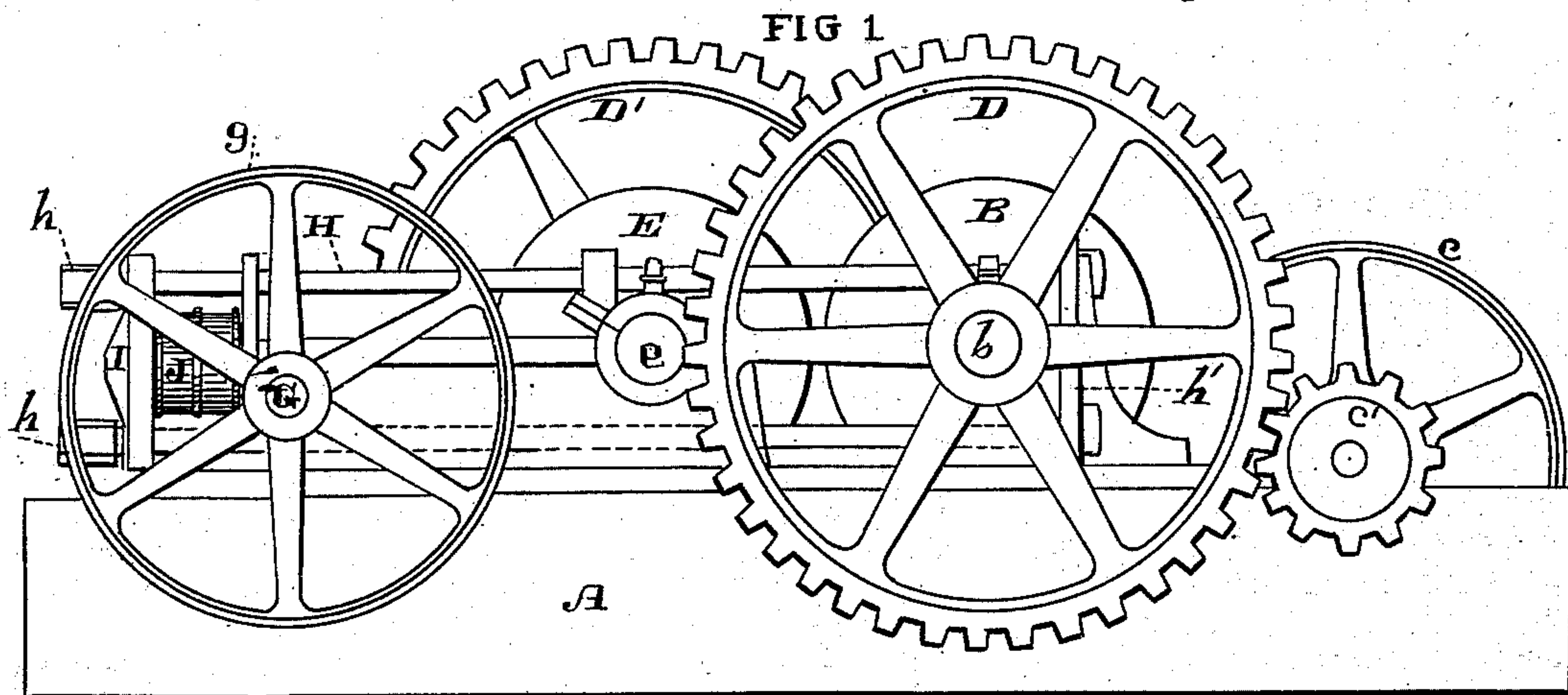


(No Model.)

W. E. WILD.
ORE CRUSHING MACHINE.

No. 315,583.

Patented Apr. 14, 1885.



Witnesses,
Geo. H. Strong,
J. H. Howie.

Inventor,
Wm. E. Wild
By
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Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM E. WILD, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO GEORGE E. AMES, OF SAME PLACE.

ORE-CRUSHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 315,583, dated April 14, 1885.

Application filed September 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. WILD, of the city and county of San Francisco, and State of California, have invented an Improvement in Ore-Crushing Machines; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of ore-crushing machines in which the material is crushed between heavy rolls; and my invention consists in a sliding frame mounted on the main frame and carrying one of the rolls and the driving mechanism for said roll independent of that by which the other roll is driven; and it consists, further, in certain details of construction, all of which I shall hereinafter claim, and fully describe by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of an ore-crushing machine embodying my improvements. Fig. 2 is a plan of same. Fig. 3 is a cross-section on line *x x*, Fig. 2.

A is the main frame, consisting of heavy timbers suitably braced, upon which, near one end, are the fixed boxes *a*, in which the shaft *b* of the fixed roll B is mounted. This roll is driven, in the usual manner, by means of the driving-pulley *c*, shaft C, pinion *c'*, and master-gear D, arranged as shown in Fig. 2.

E is the yielding or movable crushing-roll. It has been customary to drive this roll by gearing it directly to the fixed roll; and in order to provide for its various changes of position the teeth of the driving-gears are made of some length.

The object of my invention is to provide a separate sliding frame and driving mechanism for the yielding roll, whereby the wear and tear on the machine, and especially on the gears, is reduced, and also to provide a means for adjusting the movable roll and for receiving the working-pressure of the sliding frame.

Upon the main frame are fixed guide-tracks *a'*, on which is mounted, as shown in Fig. 3, the sliding frame F. In this frame is mounted the shaft *e* of the movable roll E, and also the shaft G, carrying the driving-pulley *g* and pinion *g'*, which meshes with the master-gear

D' on the shaft *e*. These constitute the driving mechanism of the movable or yielding roll, which, it will be observed, is independent of the driving mechanism of the fixed roll. By being on the sliding frame all these parts move together, and the variation on the driving-belt caused by its movement is so slight as not to be of consequence.

H are four bolts, two of which lie above the sliding frame and two below, as shown in Fig. 3. The heads of these bolts are firmly secured behind suitable brackets, *h'*, on the main frame, and their ends extend beyond the sliding frame, and carry a plate, I, which is held by nuts *h* on the bolts. Between this plate and the end of the sliding frame is an elastic cushion, J, preferably a rubber buffer. The cushion is carried by the plate I, and receives the backward motion of the sliding frame and forces it forward again to keep its roll to its work. By setting up the nuts *h* on the bolts the sliding frame, with its roll, may be accurately adjusted, and all the working-pressure of the frame and roll is borne by the plate I and bolts H, whereby little or no strain is brought on the main frame.

I make the resisting-plate I the weakest part of the machine, in order that under great pressure, as where the rock is very hard, or some hard foreign substance finds its way between the rolls, it may be the first to break, thus saving other and more important parts of the machine.

The operation of machines with crushing-rolls is well known. The ore is fed down between the heavy rotating rolls and is crushed by them. One of the rolls yields slightly to prevent choking and breakage of any of the parts. By my improvements each roll is driven by its own mechanism, and the machine is compact and strong.

In localities where the rock is not very hard, and there is no necessity of having roll E yield, I can make it rigid by substituting for the elastic buffer a block of wood or other inelastic substance.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in an ore-crushing machine, of two crushing-rolls, a sliding frame, on which one of the rolls is mounted, and driving mechanism carried by the sliding frame, for rotating the roll on said frame independent of the other roll, substantially as herein described.
2. In an ore-crushing machine, the main frame A and the crushing-roll B, fixed thereon, and mechanism for driving it, in combination with the sliding frame F, the crushing-roll E, mounted thereon, and independent mechanism carried by said sliding frame for driving roll E, substantially as herein described.
3. The combination, in an ore-crushing machine, of a fixed roll, the sliding frame F, the roll E on the frame, and the mechanism carried by said frame for driving roll E, consisting of the shaft G, pulley *g*, pinion *g'*, and master-gear D', all arranged to operate substantially as herein described.
4. In an ore-crushing machine, the main frame A, fixed roll B, and mechanism for driving it, consisting of the shaft C, pulley *c*, pinion *c'*, and master-gear D, in combination with the sliding frame F, roll E, and mechanism carried by the sliding frame for driving the roll E, consisting of the shaft G, pulley *g*, pinion *g'*, and master-gear D', all arranged to operate substantially as herein described.
5. An ore-crushing machine comprising the main frame, fixed roll-driving mechanism therefor, the sliding frame, the roll and independent driving mechanism carried by said sliding frame, the bolts H, adjustable cross-plate I, and cushion J, all arranged to operate substantially as described.
- In witness whereof I have hereunto set my hand.
- WILLIAM E. WILD.
- Witnesses:
C. D. COLE,
J. H. BLOOD.