

F. E. COLEMAN.
Tire-Bending Machines.

No. 138,231.

Patented April 29, 1873.

Fig. 1

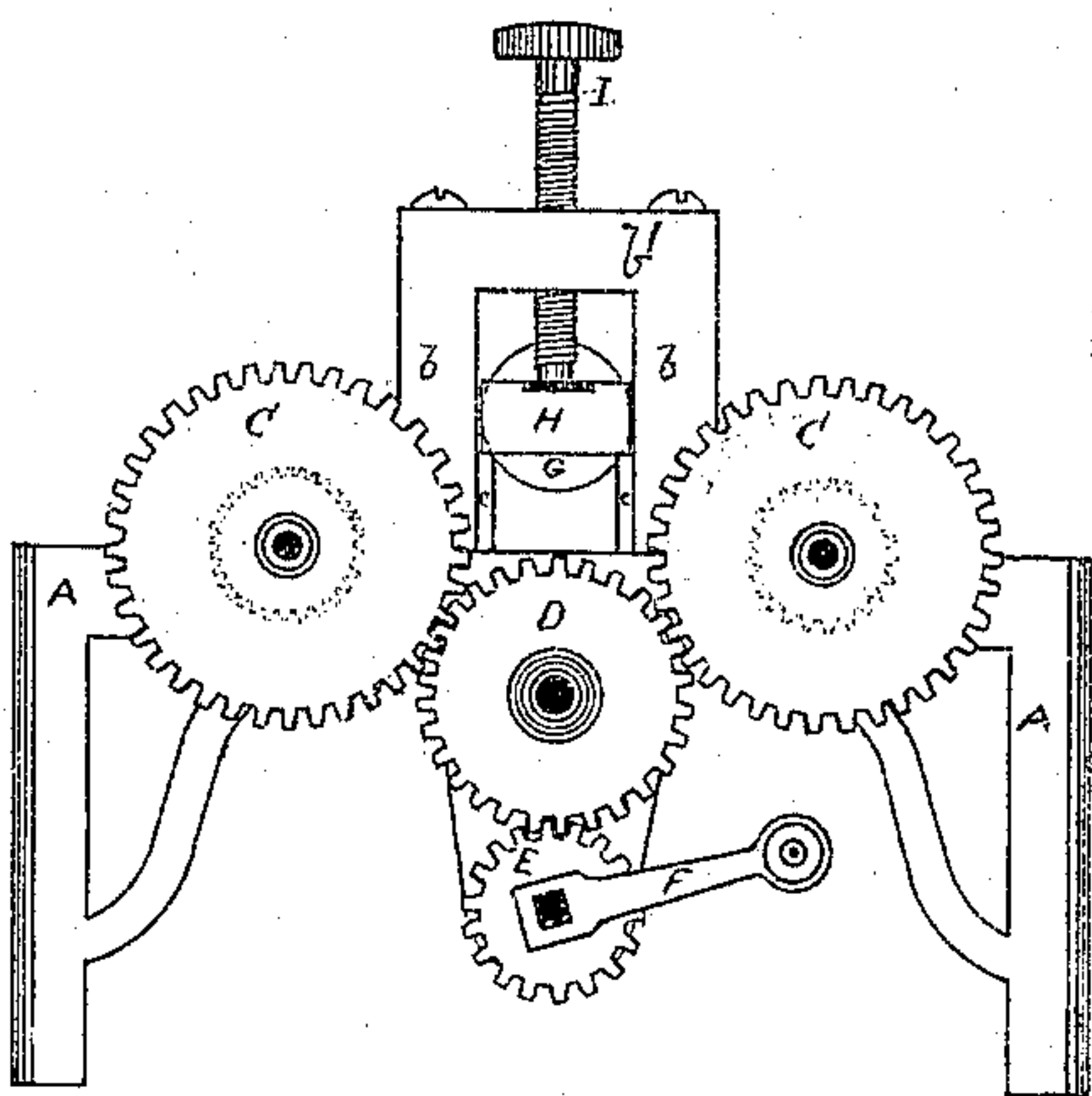


Fig. 2

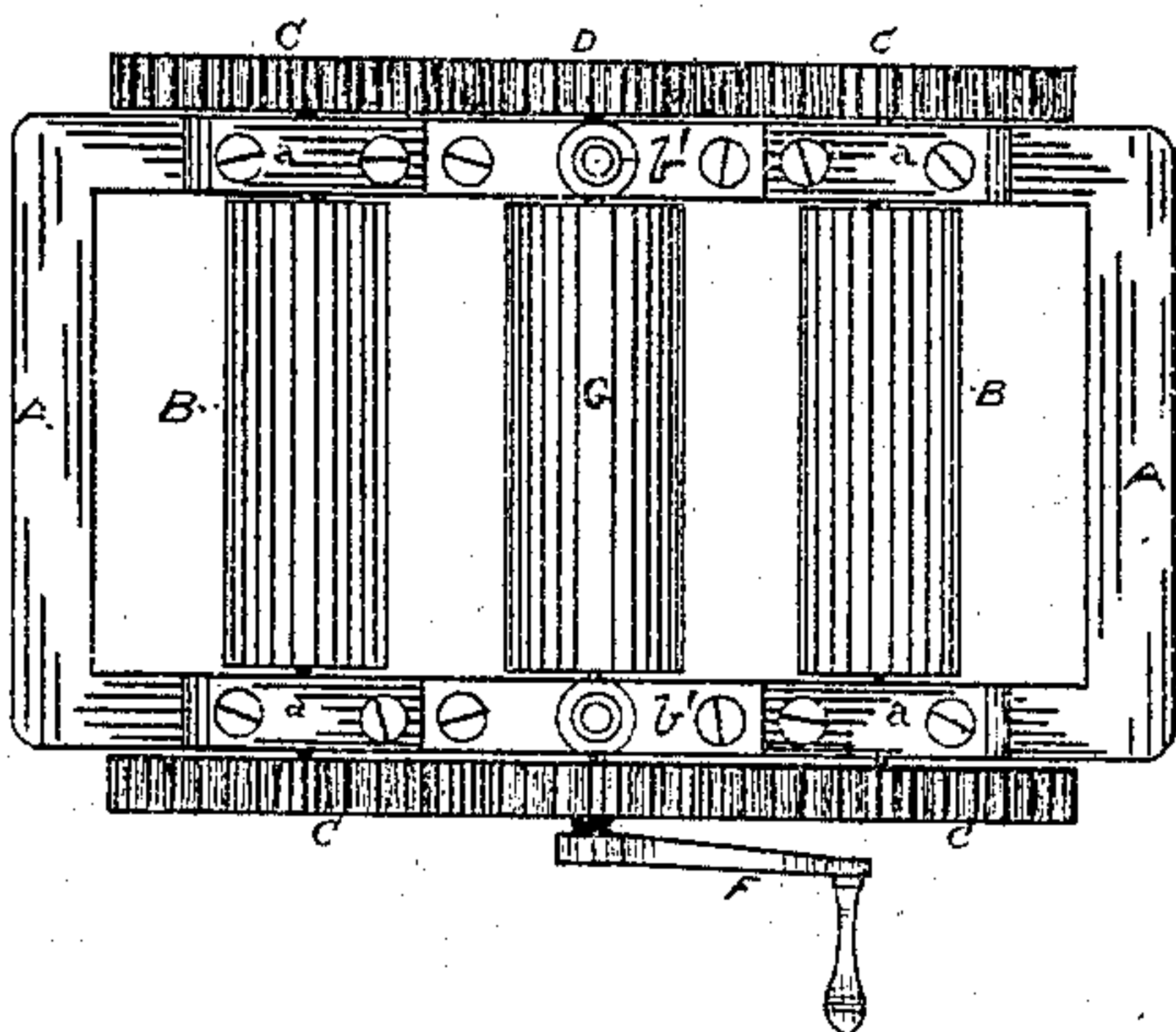


Fig. 3

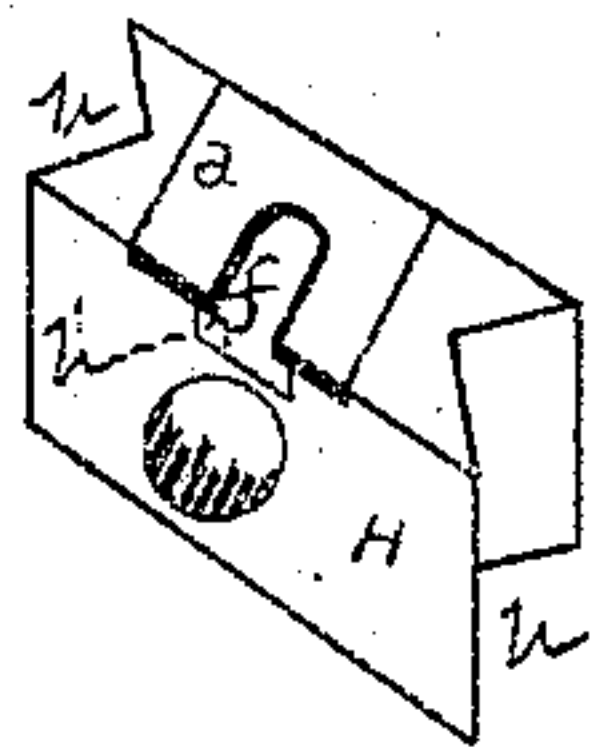
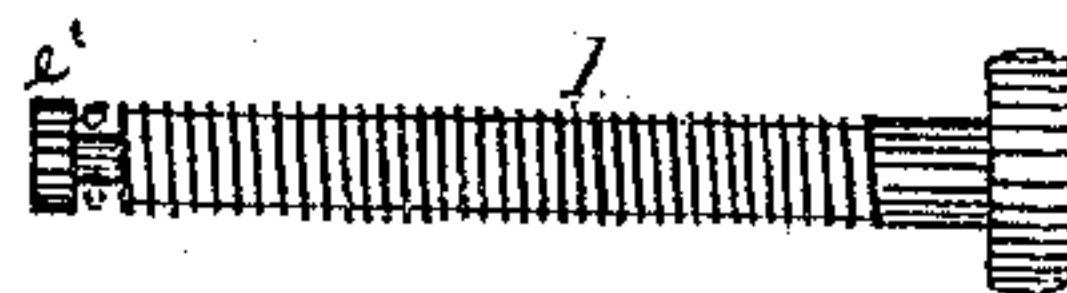


Fig. 4



WITNESSES

H. C. Merrick
J. C. Robie

INVENTOR

Frank E. Coleman

UNITED STATES PATENT OFFICE.

FRANK E. COLEMAN, OF KIRKWOOD, NEW YORK.

IMPROVEMENT IN TIRE-BENDING MACHINES.

Specification forming part of Letters Patent No. **138,231**, dated April 29, 1873; application filed November 11, 1872.

To all whom it may concern:

Be it known that I, FRANK E. COLEMAN, of Kirkwood, in the county of Broome and State of New York, have invented certain new and useful Improvements in Machines for Bending Tire; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a side elevation. Fig. 2 is a plan or top view. Fig. 3 is a detached view of one of the bearing-blocks in which the upper roller is mounted; and Fig. 4 is a detached view of one of the set-screws employed to raise and lower the upper roller.

The invention relates to that class of tire-bending machines in which the two outside rollers are mounted in fixed bearings, and are connected with each other and driven by means of an intermediate gear, the central roller being made adjustable vertically for the purpose of deflecting the tire between the two outside rollers, and thus giving it (the tire) a proper curvature. The invention consists in certain details of construction and arrangement of parts, which will be fully explained.

In the accompanying drawing, A A is the main frame. B B are two rollers mounted in suitable bearings formed in or attached to the main frame. The journals of these rollers extend beyond the frame and have cogged gears C C keyed to them. D D are intermediate gears mounted upon stud-axles projecting from the frame A A, or from a bracket or pendant hanging from either side thereof. E E are pinions keyed to a shaft, E', which rotates in the lower ends of the pendants. Pinions E gear with wheels D, and the ends of shaft E' are squared to receive cranks as at F. It will be readily seen that when power is applied to the cranks the rollers B B are both driven in the same direction of rotation. b b are posts rising from each side of the frame and connected at their upper ends by girts b'. G is a roller, the journals of which are mounted in bearing-blocks H of a peculiar construction, as follows: One of these blocks is shown in detached view, Fig. 3. Each end of this block

is grooved, as at h, which adapts it to slide vertically upon corresponding ribs c c on the inner faces of the posts b. These ribs c do not extend the entire height of the posts, but have their upper ends cut away in order that bearing-blocks may be removed from their position between the posts b b without first removing the caps or girts b'. Each block H has a recess or chamber, h', in its inner and upper side, the recess being covered by a plate, d, which has a throat, f, in it. I, Figs. 1 and 4, is a set-screw working in a thread cut in cap b', there being one of these screws at each end of roller G. The lower end of each set-screw has a groove cut in it, as at e, thus forming a small shank, which will enter the throat f in plate d of block H. The groove e should be wide enough to permit the end of the screw to bear directly upon the block, and thereby avoid all danger of breaking said plate when the screw is being turned down. When the screw is turned up the lip or flange e' will engage with the under side of plate d and lift the bearing-block and roller H.

In operating my machine I elevate the roller G until I can thrust the bar (of which the tire is to be formed) under it, so that it (the bar) shall rest upon both rollers B B, and then screw roller G down until the bar is bent, when, by turning the cranks, the tire may be formed as in other machines of this class. By preference I flute or otherwise roughen the surfaces of rollers B B in order to give them the desired "bite."

To remove the tire from the machine I draw the bearing-blocks H up until their lower faces are above the upper ends of the ribs c, and then take the blocks and roller G out of the machine, thus releasing the tire.

I regard my combination and arrangement of gearing as being very advantageous, because it enables me to use a through shaft with a crank on each end and small driving-pinions, as the employment of the intermediates D D allows the shaft E' to be placed so far below rollers B B that the tire is never bent down far enough to touch it. This gives me a great leverage upon these rollers, and also applies the power equally upon both sides of the machine.

My construction of parts permits the ready

removal of the upper roller G, yet insures great simplicity, strength, and durability.

Having thus described my invention, what I claim as new, is—

In a machine for bending tire, in combination with the roller G and set-screws I, the posts or frame *b b b'* provided with ways or

ribs *c c*, and the bearing-blocks H provided with recesses *h'* and throats *f*, substantially as set forth.

FRANK E. COLEMAN.

Witnesses:

WM. M. CROSBY,

J. C. ROBIE.