W. P. HAMMOND.

Improvement in Ore-Crushers.

No. 131,612. Patented Sep. 24, 1872.

Fig. 1

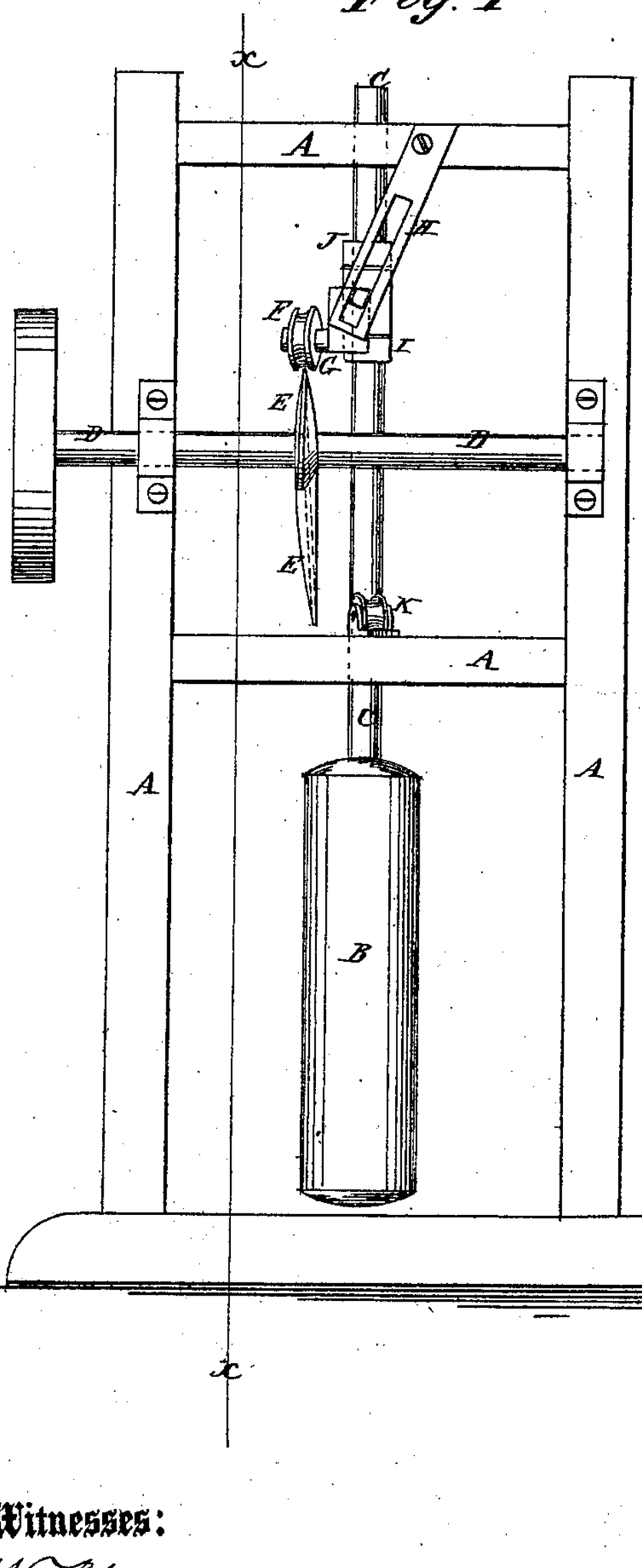
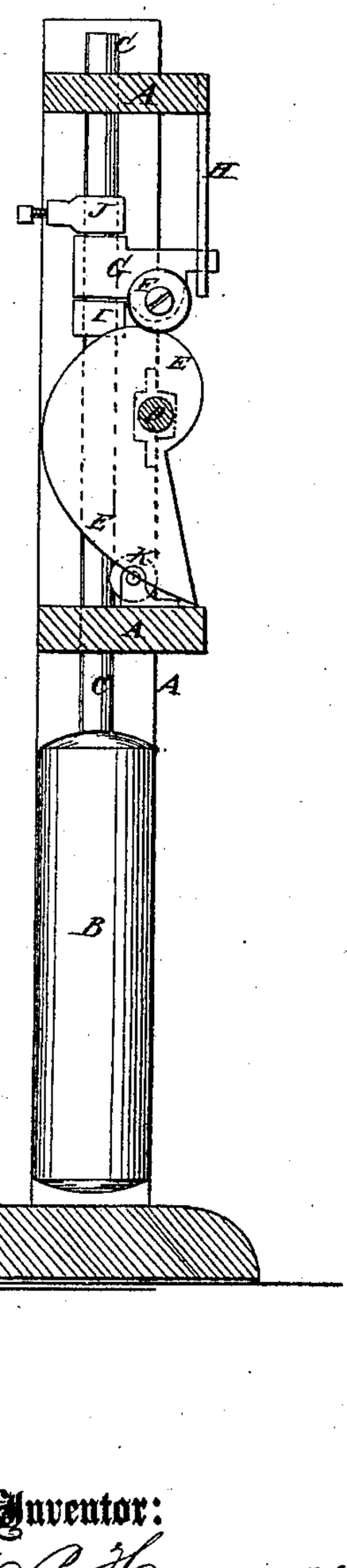


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM P. HAMMOND, OF NAPA CITY, CALIFORNIA, ASSIGNOR TO HIMSELF AND HENRY MYGATT, OF SAME PLACE.

IMPROVEMENT IN ORE-CRUSHERS.

Specification forming part of Letters Patent No. **131,612**, dated September 24, 1872.

To all whom it may concern:

Be it known that I, WILLIAM P. HAMMOND, of Napa City, in the county of Napa and State of California, have invented a new and useful Improvement in Ore-Crushers, &c., of which the following is a specification:

In the accompanying drawing, Figure 1 is a front view of my improvement, and Fig. 2 is a detail sectional view taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved device for raising the stamps for crushing rock and for other purposes, which shall be simple in construction and effective in operation, working with less friction and requiring less power to operate it than the ordinary devices for such purposes; and it consists in the construction and arrangement of the various parts of the device, as hereinafter more fully described.

A represents the frame-work of the machine. B is the stamp, the shaft C of which passes up through guide-holes in the frame A so that it may always move up and down vertically. D is the driving-shaft, which revolves in bearings in the frame A, and to which power may be applied by a band and pulley, or by other means, as may be desired or convenient. To the horizontal shaft D is attached a cam, E, as shown in Figs. 1 and 2. The cam E is made slightly spiral so as to slightly rotate the stamp B while being raised. F is a small roller, the face of which is grooved to fit upon the face of the cam E. The roller F is pivoted to the tappet G, through which the shaft C passes, and which is kept in place upon the said shaft C by the collars I J, placed upon the said shaft, the one below and the other above the said tappet. The upper collar J is adjustably secured to the said shaft C by a set-screw or other convenient adjustable means, so that the stroke of the stamp may be regulated as desired. The tappet G is so arranged that the axis of the roller F may be directly over the shaft D. By this arrangement the cam will lift the stamp vertically, and with the greatest advantage of leverage, so as to require the smallest amount of power. H is a guide, within which the tappet G moves up and down, so as to always keep the roller F in proper position and thus diminish friction. The guide H is arranged in an inclined position, as shown in Fig. 1. By this construction the spiral shape of the cam E and the inclination of the guide H move the tappet G laterally as it rises, and the friction between the tappet G and the collar J causes the said tappet, by its lateral movement, to partially rotate the stamp. K is a small friction-roller pivoted to a cross-bar of the frame A, upon that side of the stamp-shaft C, toward which said shaft is slightly drawn by the action of the cam E to prevent any friction from said cause.

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

1. The arrangement of the cam E, friction-roller F, and tappet G with respect to each other and the horizontal driving-shaft D and stamp-shaft C, substantially as herein shown and described, and for the purposes set forth.

2. The guide H, in combination with the tappet G, friction-roller F, cam E, driving-shaft D, and stamp-shaft C, substantially as herein shown and described, and for the purpose set forth.

WILLIAM POTTER HAMMOND.

Witnesses:

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