

(Model.)

J. M. McFARLAND.

STAMP MILL.

No. 249,068.

Patented Nov. 1, 1881.

Fig. 1

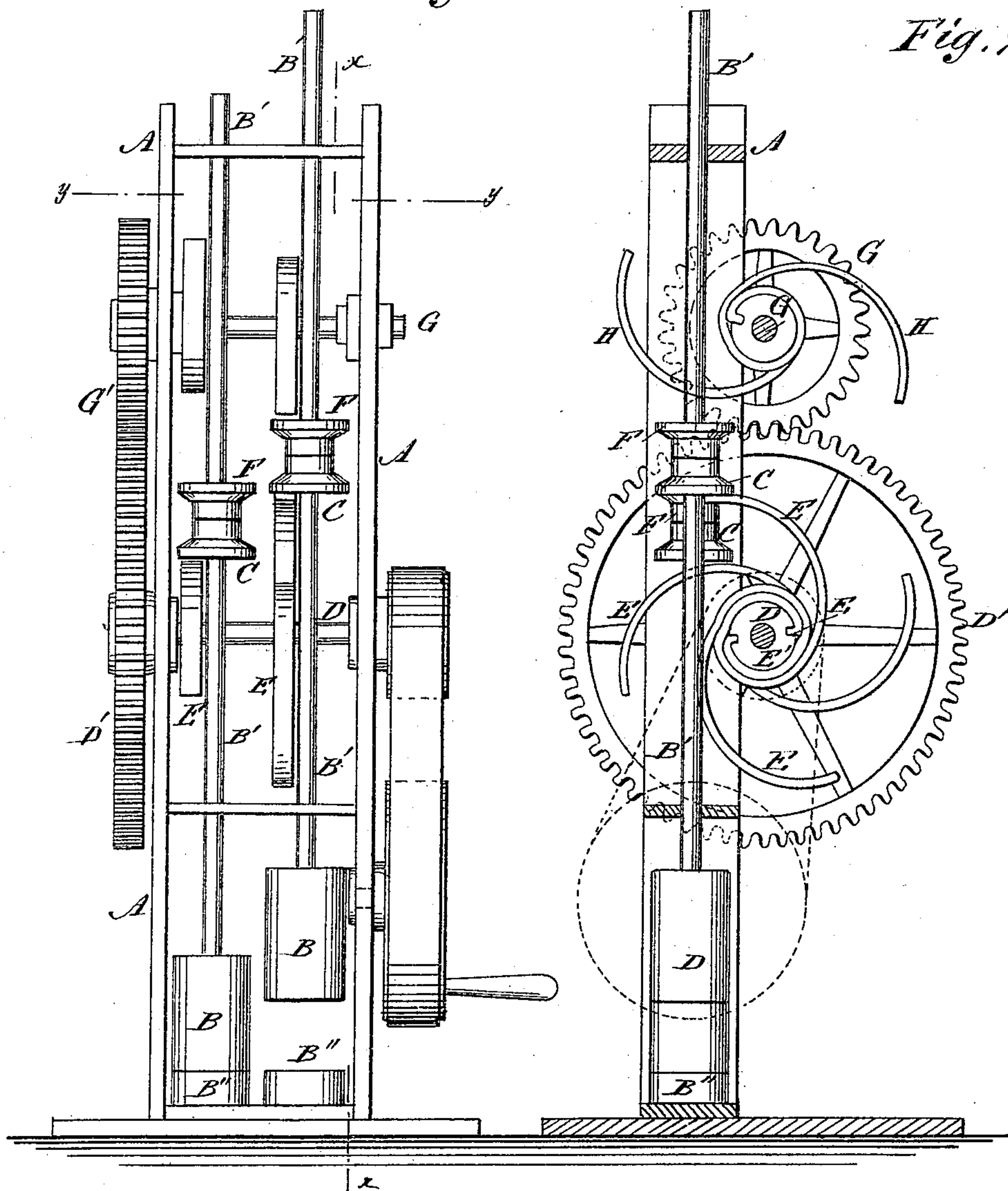


Fig. 2

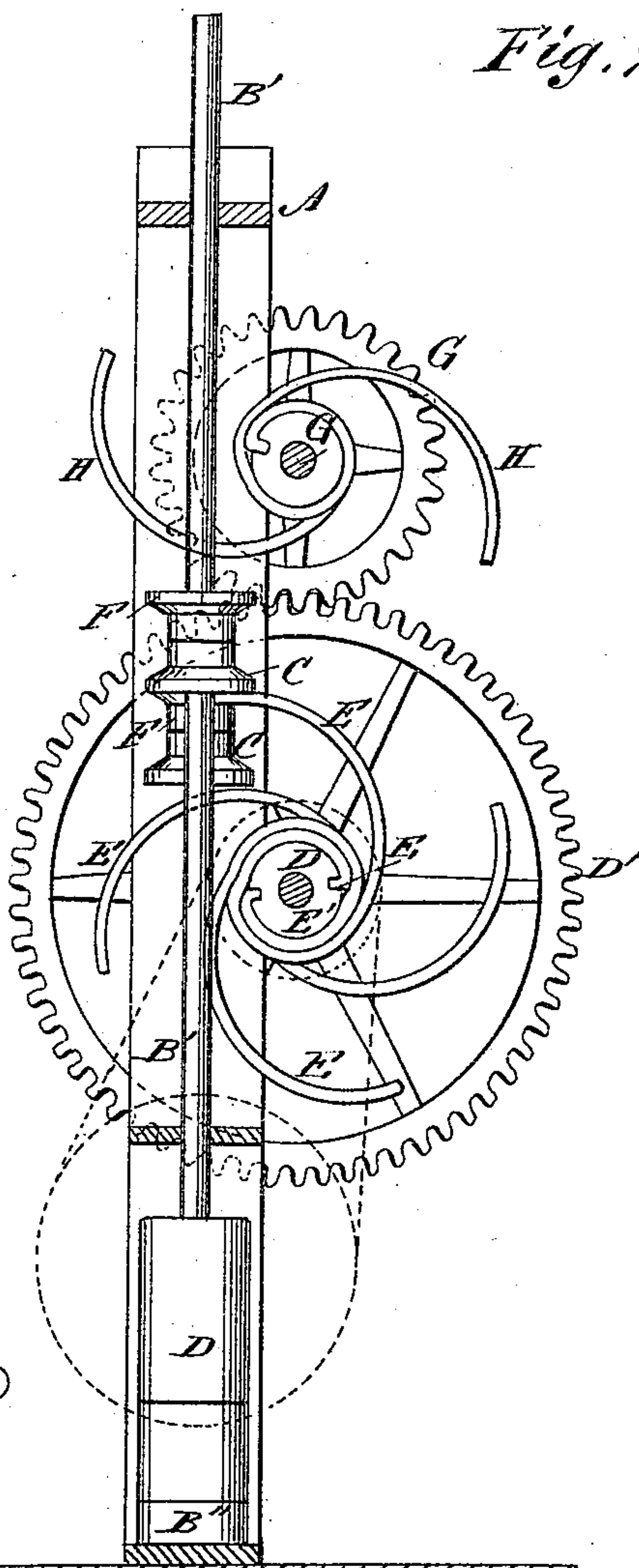
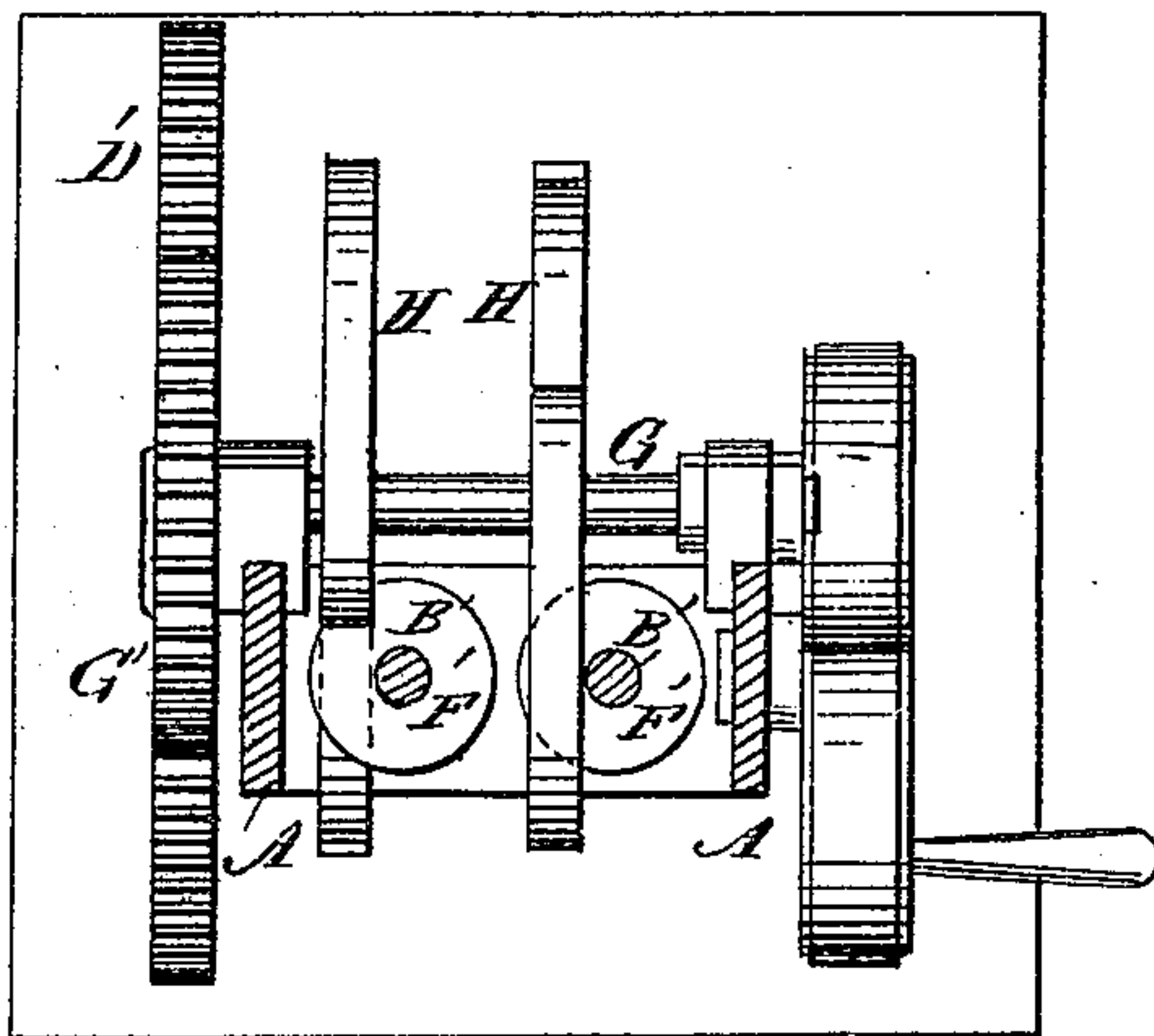


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES M. McFARLAND, OF VIRGINIA CITY, NEVADA.

STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 249,068, dated November 1, 1881.

Application filed May 13, 1880. (Model.)

To all whom it may concern :

Be it known that I, JAMES M. McFARLAND, of Virginia City, in the county of Storey and State of Nevada, have invented a new Improved Stamp-Mill, of which the following is a specification.

The object of this invention is to provide a device whereby stamps may be run with greater speed, greater crushing force, and less liability to injury or wear of working parts.

The invention consists of a separate cam-shaft with single-armed cam or cams for forcing the stamps down, and of elastic or spring cams for obviating the usual shock or jar that obtains when an inelastic cam comes in contact with a stamp-tappet.

Figure 1 is a front elevation of the device. Fig. 2 is a sectional side elevation on line *x x*, Fig. 1. Fig. 3 is a plan view on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the frame of a stamp-battery; B, the stamps; B', the stamp-rods; B'', the stamp-boxes; and C the tappets, secured upon the rods B', all of which parts resemble those now in use.

D is the cam-shaft, on which are secured the volute cams E, (for lifting the stamps,) that are flat plates of steel, or other metal possessing sufficient elasticity, bent in a proper curve. In this instance two of these cams or cam-arms E, set at equal distances apart, are fixed on each hub E', to operate the opposite stamp, so that a stamp may be lifted twice in each revolution of the shaft D; but three or more cams, E, may be used to operate each stamp, the number required depending upon the speed of the cam-shaft and the desired speed of the stamps.

Above the customary tappet, C, on the rods B', are secured other tappets, F, and still higher up the cam-shaft G is journaled in the frame A, and carries a single volute cam, H, for each stamp.

The cog-wheel D' on the cam-shaft D, and the cog-wheel G' on the shaft G, are geared together, and are of such relative diameters that the cam-shaft G makes one revolution for each arm on a lifting-cam, so that in this instance the shaft G makes two revolutions while the shaft D makes one revolution, while if the lifting-cam have three or more arms the shaft

G will make three or more revolutions to one of the lifting-cam shaft. The object of these cams H is to force the stamps down. When the stamps are run at the usual speed of quartz-mills the upper cams, H, do not engage the tappets F. Said tappets F may be continuations of the tappets C, or separate constructions, as herein shown; but when the speed of the stamps is somewhat increased the upper cams, H, strike against the tappets F and force the stamps B down, the greater the speed the heavier the blow of the stamp, and as the upper shaft, G, revolves with greater speed than the lower shaft, D, in proportion to the number of arms on the lower cams, E, the stamps B are forced down with greater velocity than they are raised. The rotary motion given to the stamps in rising, by the engagement of the cams E with the circular tappets C, is continued in the same direction by the upper cams, H, when they act upon the descending stamps, thus greatly increasing the grinding effect of said stamps.

Inelastic cams used for lifting stamps are extremely liable to fracture and cause a severe jar or shock when engaging with the stamp-tappets; but the elastic volute cams herein shown and described are entirely free from these objections.

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

1. In a stamp-mill, the combination of the tappets C F on the stamp-rod, the flat elastic plates or lifting-cams E on shaft D, the single superposed depressing volute cam H on shaft G, and the cog-wheels D' G', the wheel D' being twice the diameter of the wheel G', as and for the purpose specified.

2. In a stamp-mill, the combination of the tappets C F on the stamp-rod, the lifting-cams E on shaft D, the single superposed volute depression-cam H on shaft G, and the cog-wheels D' G', as and for the purpose described.

3. In a stamp-mill, the volute cam H, arranged above and acting directly upon a tappet of the stamp-rod to force down the stamp, as specified.

JAMES MAXEY McFARLAND.

Witnesses:

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