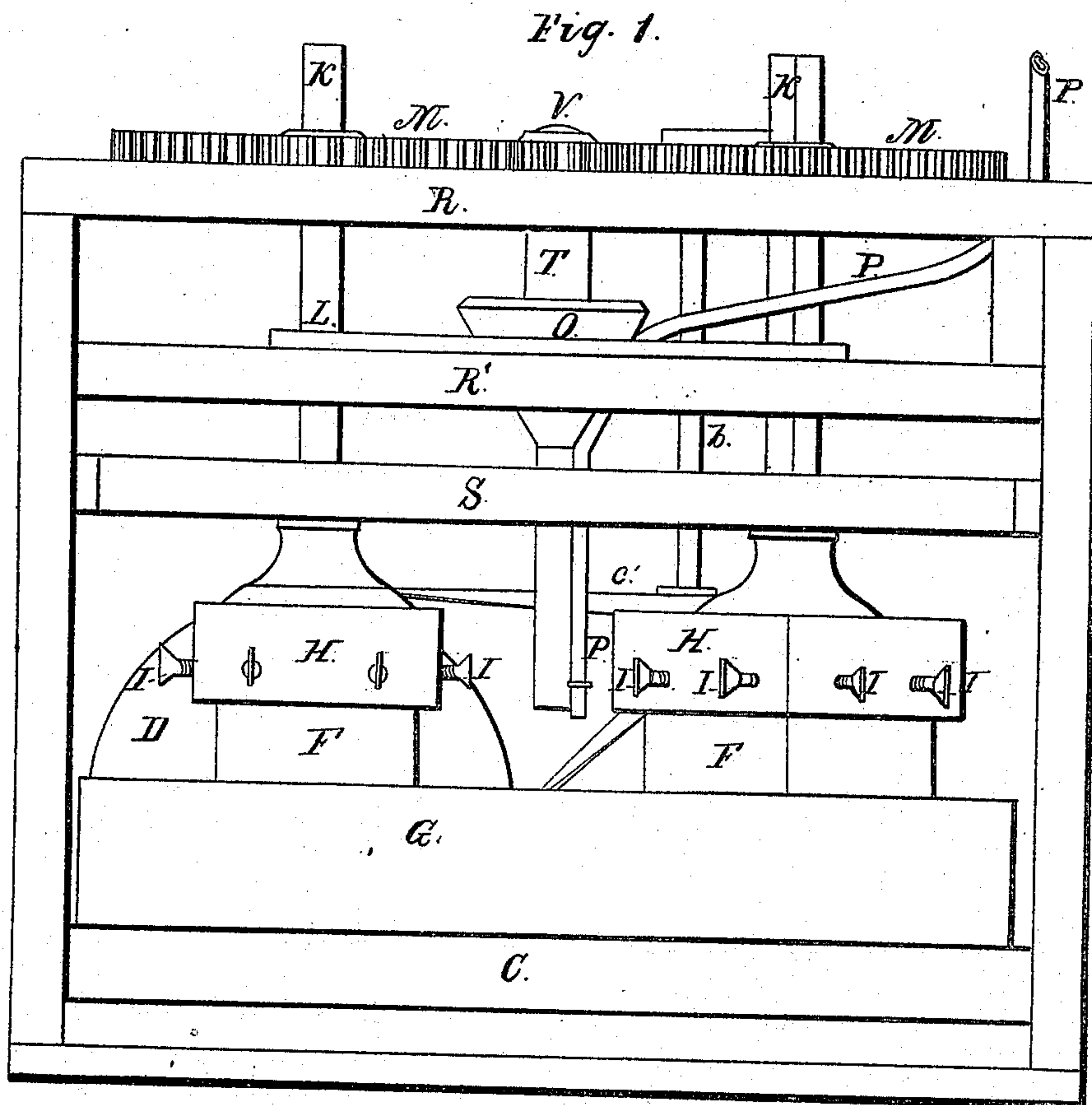


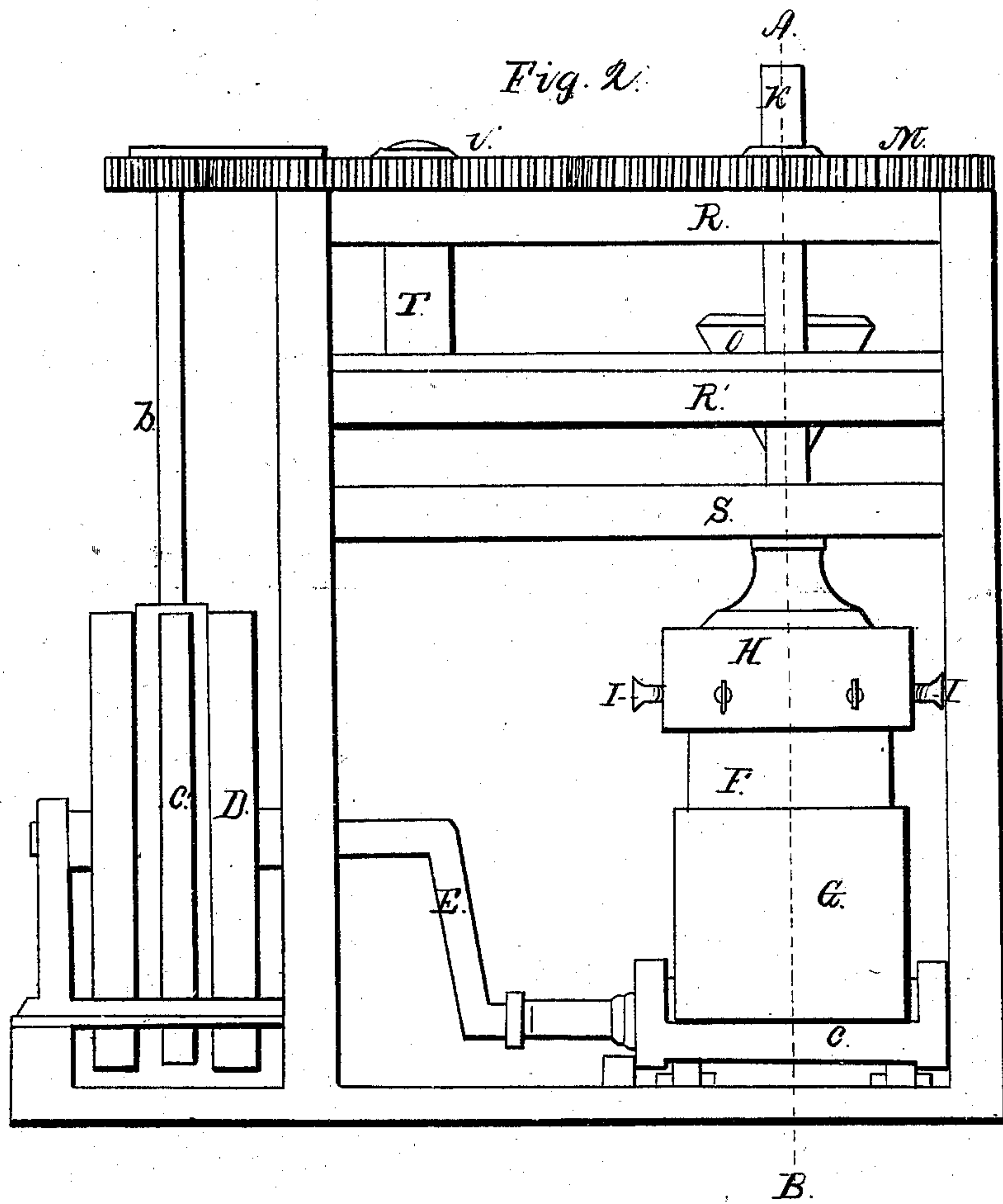
F. L. King,
Stone Dressing Machine,
No 66,716, Patented July 16, 1867.



Witnesses:
H. C. Rice
Frank W. Perry

Inventor:
Francis L. King

F. I. King,
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Witnesses:
H. C. Rice
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F. L. King,
Stone Dressing Machine,
No 66,716, Patented July 10, 1867.

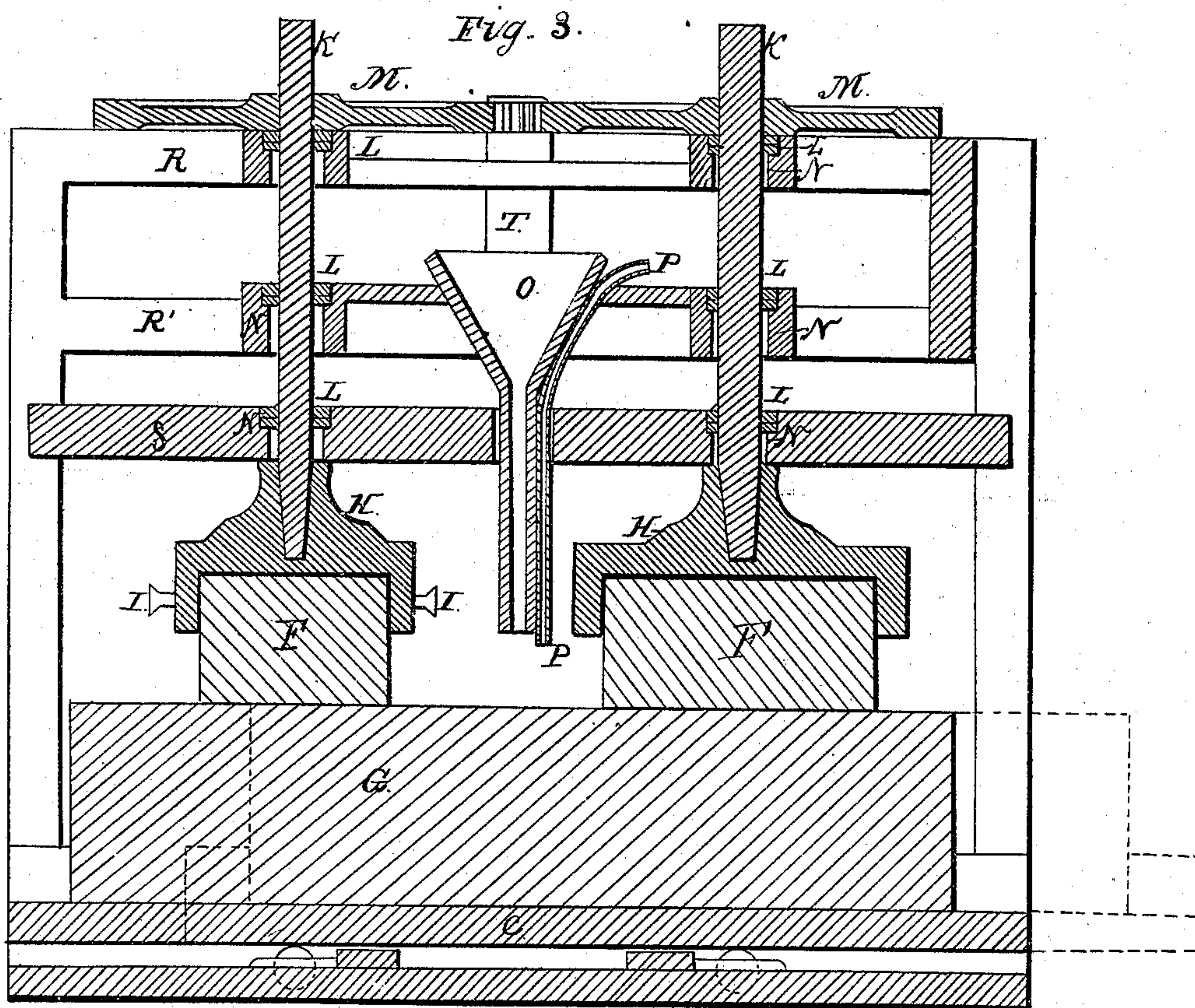


Fig. 4.



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United States Patent Office.

FRANCIS L. KING, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 66,716, dated July 16, 1867.

IMPROVED MACHINE FOR DRESSING STONE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, FRANCIS L. KING, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented a new and improved Machine for Dressing Stone; and I hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the drawings annexed, which make a part of this specification—

Figure 1 being a side elevation of a machine constructed after my invention.

Figure 2, an end elevation.

Figure 3, a section taken on the red line A to B on fig. 2; and

Figure 4, a detached perspective view of the collars L on an enlarged scale.

A variety of stone-dressing and polishing machines have heretofore been invented having different combinations of motion in the upper and nether stones, but few, if any, are found to produce uniformly perfect work, owing to the veins or spots of different degrees of hardness in most varieties of the material to be operated on.

The object of my invention, first, is to effect a more perfect combination of motions so as to prevent any roundness in the face of the finished work, as is almost certain to be the case where the said surfaces have a reciprocating motion only; and it consists in combining a reciprocating bed for carrying the nether stone with one or more rotating vertical spindles for carrying the upper stones; also in a novel construction of the bearings or journals of said spindles, whereby they may have a vertically sliding and at the same time a rotary motion, imparted to an ordinary square iron bar; and further, in providing that the lower journal of said spindle shall at all times be immediately above the carrying frames of the upper stones, whereby all lateral vibration and the convex grinding consequent thereon are prevented.

By the rotary motion I obtain a lever power, and thereby materially diminish the motive power required, while at the same time, by my combination of the two motions, I very materially increase the grinding capacity. To reduce the stone to a flat surface I must remove the rough or superfluous parts. This must be done by removing small particles at a time. By this combination of motion I apply to each of these particles a power which draws it in every direction almost at the same instant, thus literally twisting and rolling each particle from its position, and at the same time the upper as well as the under stones are dressed for use.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation by referring to the drawings.

The framing of my machine may be constructed in any convenient form and of suitable material, so arranged as to furnish journal bearing for the several operating parts. In a vertical position in the upper portion of this framing, in suitable bearings, is the main shaft T, carrying the master-wheel V, which gears into wheels M M on the vertical shafts K K, which will be hereinafter more fully explained. Said master-wheel also gives motion to the drum D through a pinion on the vertical shaft b and belt c', or in any other convenient manner; or the train of motion may be in the reverse direction, the drum D receiving its motion primarily and communicating motion to the shafts K by suitable intermediate gearing. The shafts K are supported in bearings N in the horizontal bars R R' and S. These bearings are recessed on their upper sides to receive the collars L, and which rotate freely therein, said collars having an aperture corresponding with the formation of the shafts K so that the latter may slide therethrough vertically whilst the collars rotate in their several bearings. Similar apertures are formed in the wheels M M, so that the shafts K are free to slide vertically without changing the position of the gearing or journals in the framing-bars R R', whilst the bar S is capable of rising or falling (with regard to the other portion of the framework) so as to maintain a position as near as possible to and above the holders H, which carry the upper stones and thereby prevent the vibration of the shaft K. The holders H are provided with set-screws I or clamps, which serve to secure the upper stone in the desired position. O represents a hopper to supply sand, and P a tube to convey water to the surface of the material operated on to facilitate the grinding or polishing in the usual manner. In practice it might be found more convenient to arrange the gearing above the lower bars R', and to elevate the hopper O and tube P above the upper bars R.

The construction of the machine being thus described, its operation will be as follows: A block or series of blocks, G, of regular thickness being arranged on the carriage C, and, if small, secured together thereon by suitable clamps, and blocks F, secured by the set-screws I in the centre of the holders H, a reciprocating

motion is communicated to the carriage C, as before described, and a rotary motion through the gear-wheels M to the shafts K; thus a continuous rotary motion of the upper stone is produced in contact with a reciprocating motion of the lower stone, and a varying angle of operation on the projecting particles in rapid succession soon reduces the surfaces in contact to a perfect plane, the vertical motion of the shafts K through their bearings and through the eyes of the propelling-wheels M compensating for the reduction of the surface or for thicker or thinner blocks of stone, whilst the sliding of the bars S keeps the lower bearing in close proximity to the holders H and prevents any vibration of the shafts K, as before described.

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

1. The self-adjusting spindles K and their holders H, for rotating the upper stone, in combination with the reciprocating bed C for carrying the lower stone, when constructed, arranged, and operating substantially as set forth.

2. The combination of the boxes N and rotating collars L with the sliding spindles K, constructed and operating essentially as and for the purpose specified.

3. The self-adjusting frame S, carrying the lower journal-box N L, in combination with the spindles K and holders H, operating substantially as and for the purpose described.

FRANCIS L. KING.

Witnesses:

H. C. RICE,

FRANK W. PERRY.