

A. MILLER & U. FARIS.

Bellows.

No. 125,605.

Patented April 9, 1872.

Fig 1

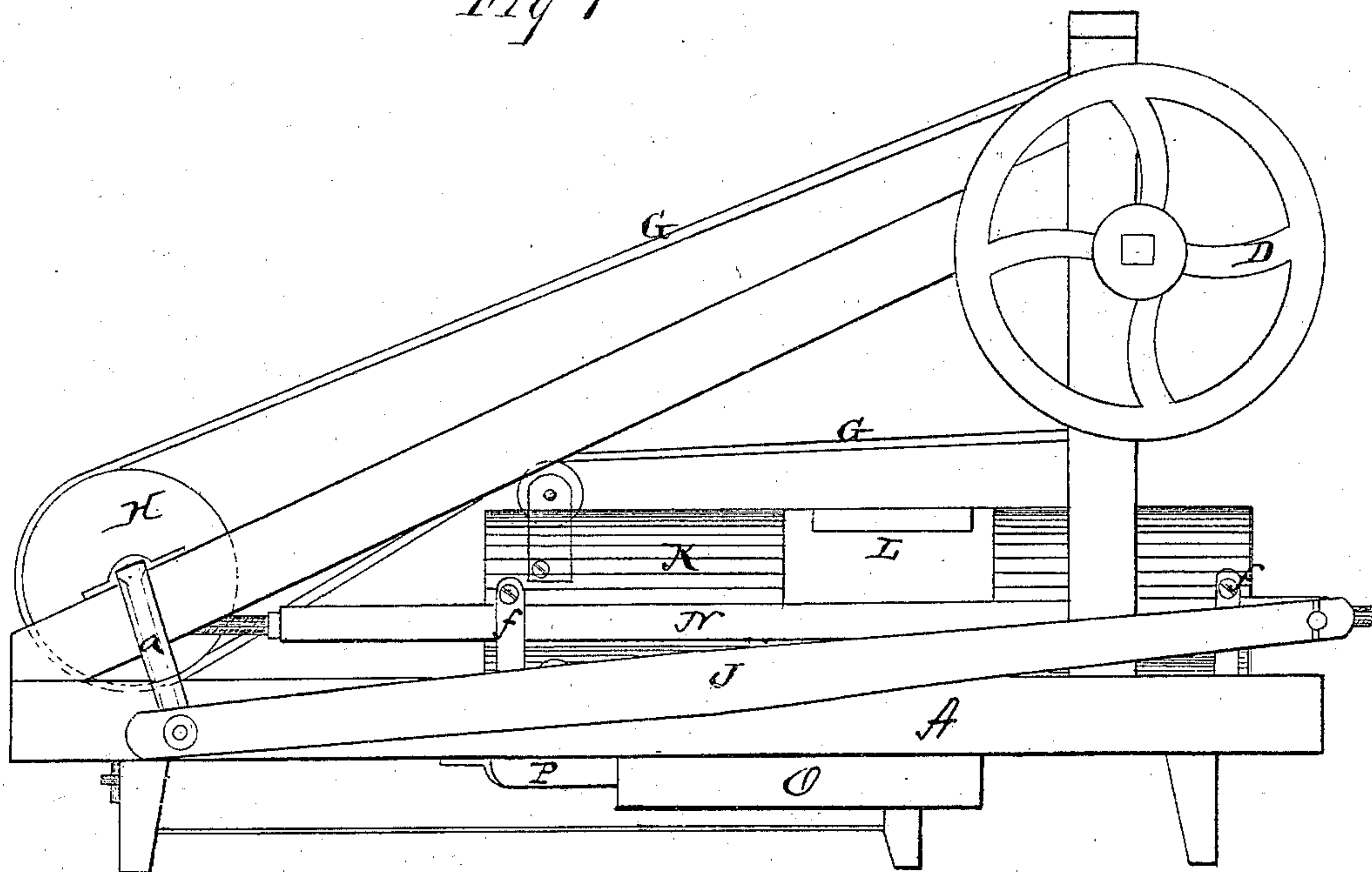


Fig 4.

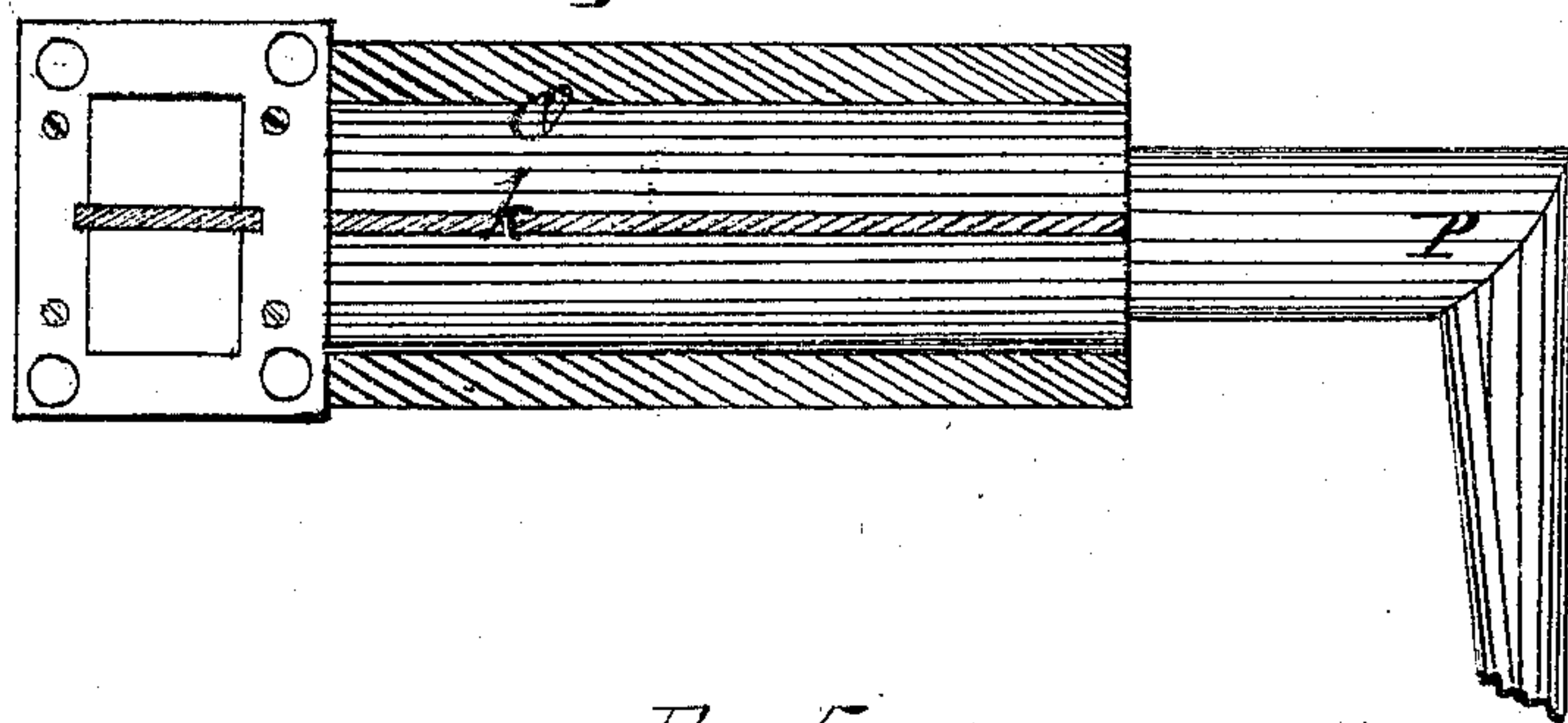
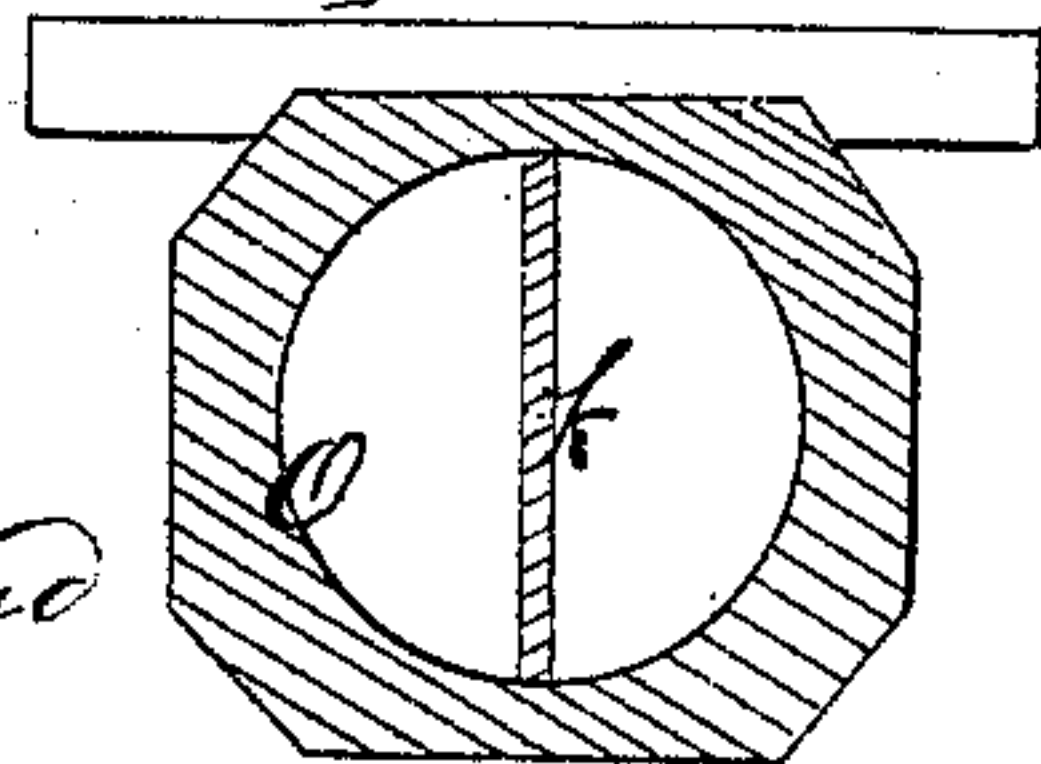


Fig 5.



Witnesses:

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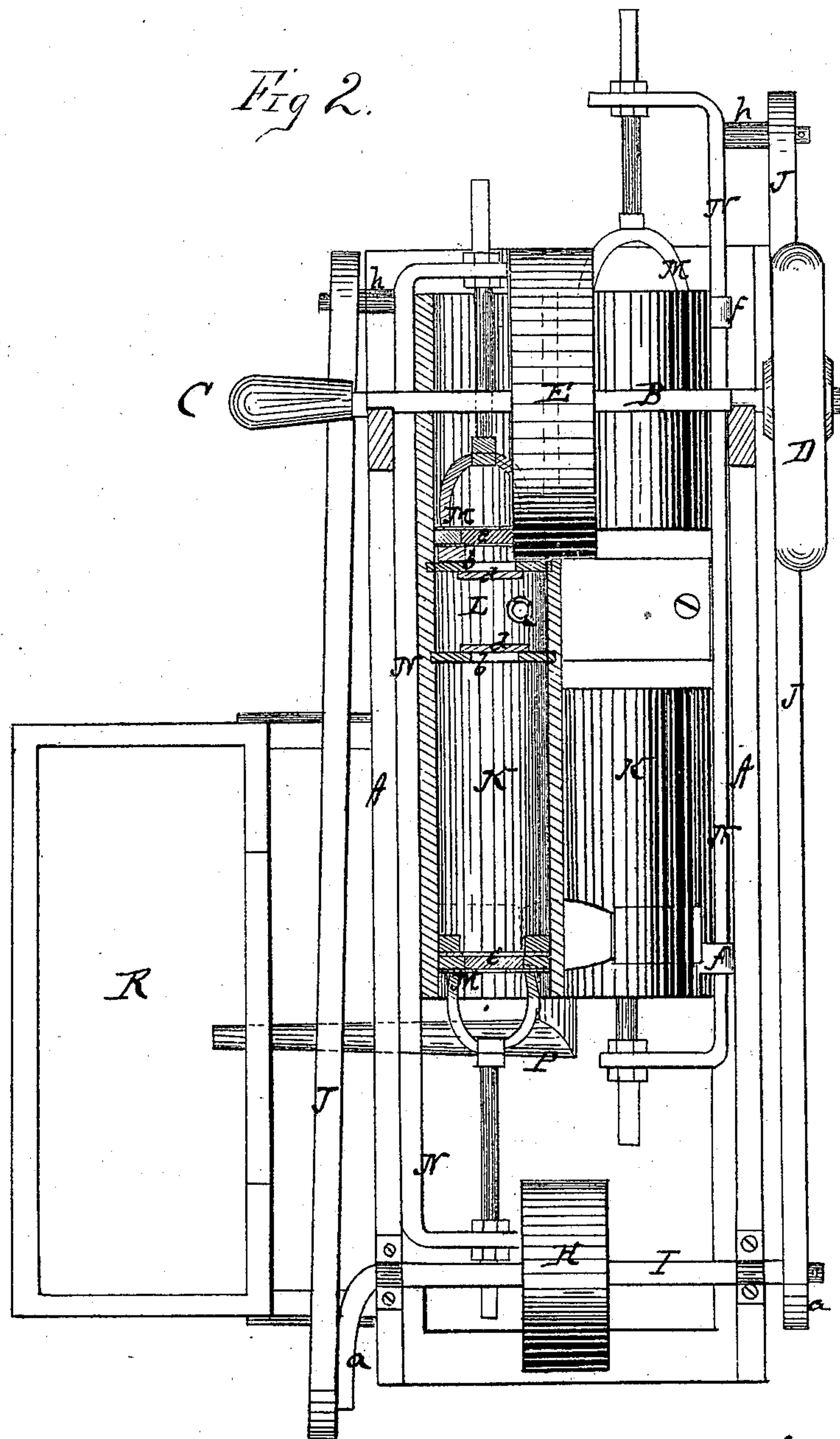
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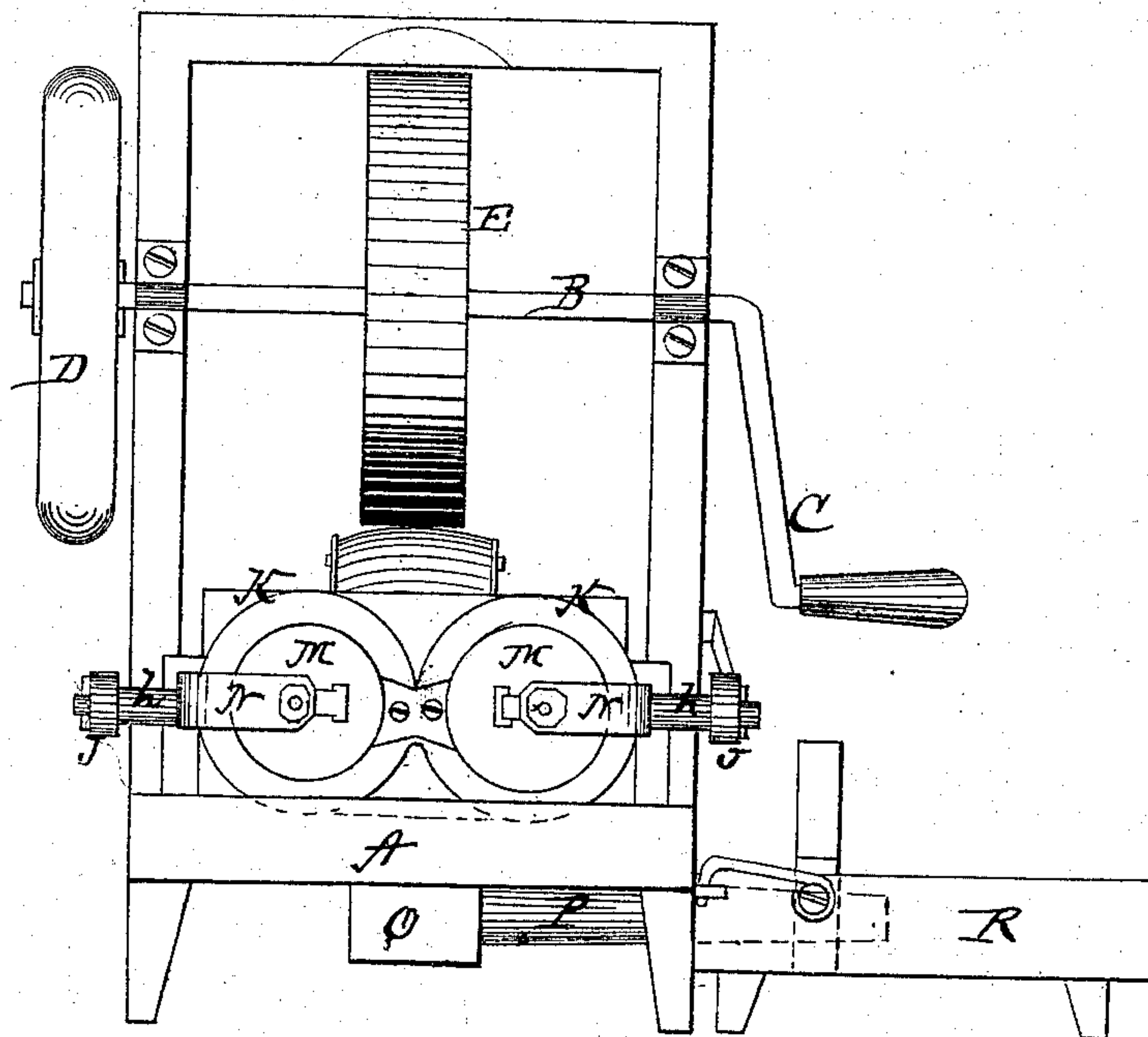
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Fig 3



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UNITED STATES PATENT OFFICE.

ABRAHAM MILLER AND URIAH FARIS, OF RED ROCK, IOWA.

IMPROVEMENT IN BELLOWS.

Specification forming part of Letters Patent No. 125,605, dated April 9, 1872.

To all whom it may concern:

Be it known that we, ABRAHAM MILLER and URIAH FARIS, of Red Rock, in the county of Marion and in the State of Iowa, have invented certain new and useful Improvements in Combined Portable Bellows and Forge; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of our invention consists in the construction and arrangement of a "combined bellows and forge," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation; Fig. 2, a plan view, part in section; and Fig. 3, an end view of our machine. Fig. 4 is a horizontal section, and Fig. 5, a transverse vertical section of the air-trunk, through which the air passes from the bellows to the forge.

A represents the frame of our machine, having at one end an upright frame, in which is placed a horizontal shaft, B, provided at one end with a crank, C, and at the other with a fly-wheel, D. At about the center of the shaft B is a wheel, E, connected by a belt, G, with a pulley, H, on a shaft, I, situated across the other end of a frame, A. At each end of this shaft is a crank, *a*, having a pitman, J, attached to or placed upon it, said cranks being set at right angles with each other. K K represent two air-cylinders, placed side by side in the frame A. These cylinders are open at both ends, and provided with partitions *b b*, which form a chamber, L, in the center of each cylinder. Each of said partitions being provided with an inwardly-opening valve, *d*. In each end of each cylinder is inserted a piston, M, also provided with an inwardly-opening valve, *e*, and the two pistons for each cylinder are, by suitable piston-rods, connected with the inwardly-bent ends of a bar, N, which moves in guides

ff attached to the outer side of the cylinder. The bars N N are each, on the outer side, provided with a crank or wrist-pin, *h*, upon which the end of the pitman J is placed, thus communicating the necessary reciprocating motion to the pistons. From each the central chambers L in the air-cylinders a passage, *o*, leads into an air-trunk, O, underneath, said air-trunk being by a partition, *k*, divided into two passages, as shown in Figs. 4 and 5, so as to separate the air in the air-trunk, and prevent back action of the air upon the valves in the air-cylinders. From the end of the air-trunk O a pipe, P, leads to the forge R attached to the side of the frame A.

This machine produces a steady current of air on the fire when in motion. The crank and wheel for producing the motion may be dispensed with when any other power is used by merely attaching a belt on the wheel H on the shaft I. The forge is attached by hooks or other suitable means to the frame, making it a combined portable bellows and forge, which can be moved to any place where desired to be used.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the air-cylinders K K with partitions *b b*, having valves *d d*, forming central chambers L L, the pistons M M with valves *e e*, and the bars N N, having their ends bent inward, and the piston-rods attached to said ends, all substantially as herein set forth.

2. The combination of the air-cylinders K K, pistons M M, the mechanism for operating the pistons, the air-trunk O, pipe P, and forge R, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 21st day of October, 1871.

ABRAHAM MILLER.
URIAH FARIS.

Witnesses:

J. M. SINCLAIR,
WILLIAM MYERS.