(No Model.)

W. J. BATCHMAN.

SMOKE CONDENSER.

No. 463,184. Patented Nov. 17, 1891.

Fig. 1.

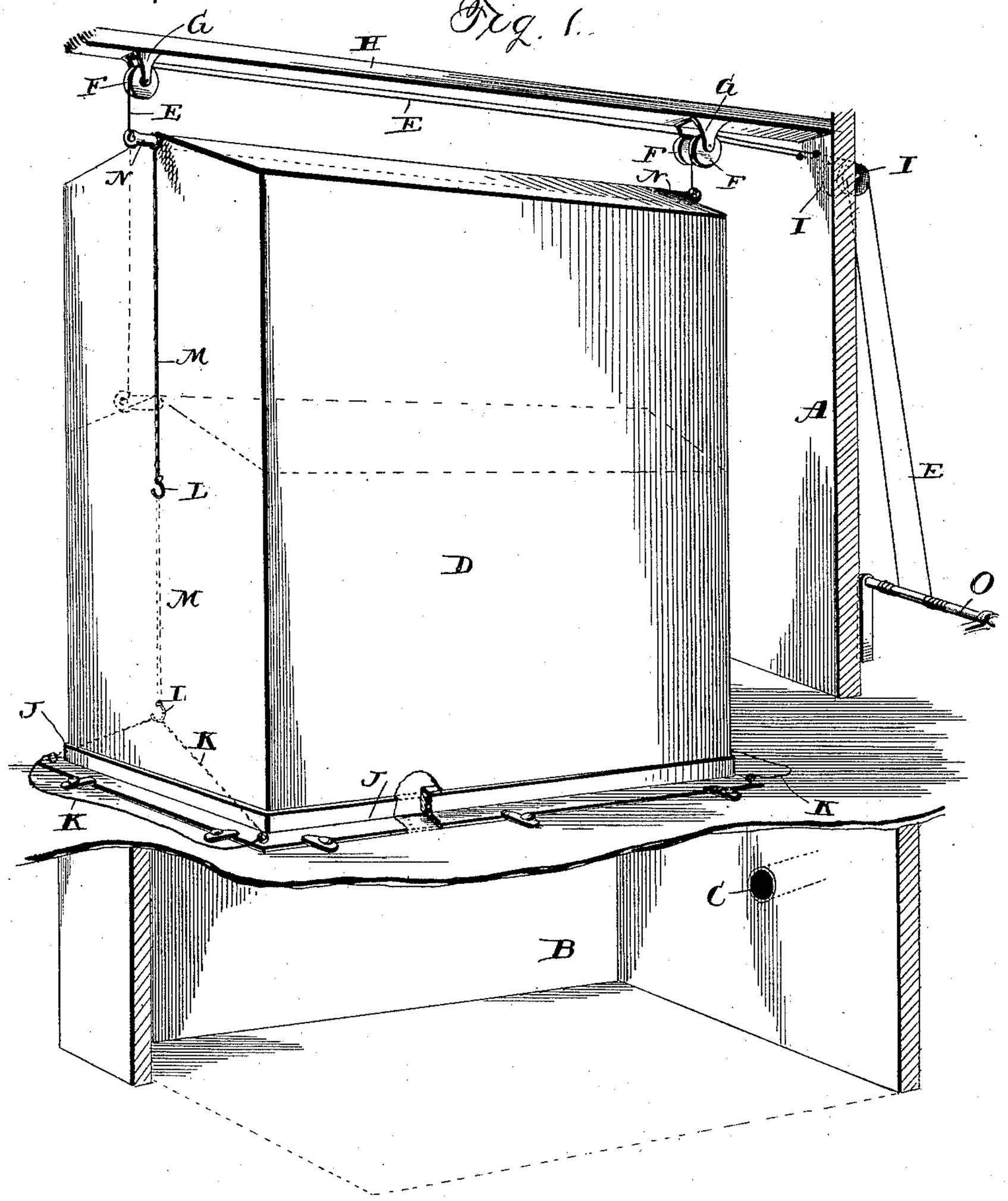
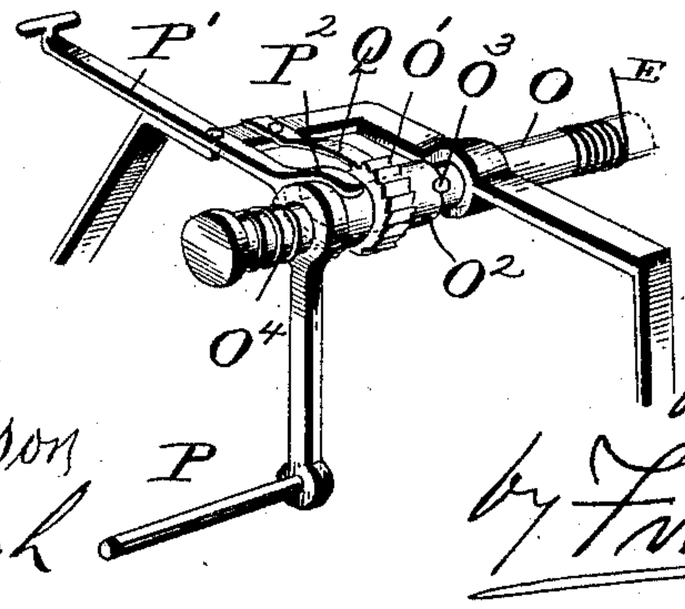


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM J. BATCHMAN, OF GLENDALE, SOUTH DAKOTA.

SMOKE-CONDENSER.

SPECIFICATION forming part of Letters Patent No. 463,184, dated November 17, 1891.

Application filed June 24, 1891. Serial No. 397,346. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BATCHMAN, a citizen of the United States, residing at Glendale, in the county of Hand and State of South Dakota, have invented certain new and useful Improvements in Smoke-Condensers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in that class of apparatus which is designed for use in connection with blast and smelting furnaces and which serve to condense the smoke and gases and separate therefrom the metals which would otherwise be carried away with the products of combustion.

The invention has for its object to generally improve upon this class of appliances and to provide an apparatus of the character mentioned which will be cheap of construction, easily manipulated, and which will serve to effectually condense the smoke and gases and will separate therefrom the solid matter, thus preventing the evil effects which would otherwise ensue to the health of the people living in the vicinity and at the same time reduce the loss of metals to a minimum.

To these ends and to such others as the invention may pertain, the same consists in the peculiar construction and in the novel combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating like parts throughout the several views, and in which drawings—

Figure 1 is a central longitudinal vertical section through a building provided with my improved smoke-condensing apparatus. Fig. 2 is a detail in perspective, upon an enlarged scale, of a portion of a windlass used in operating the smoke-condensing chamber or tent.

Reference now being had to the details of the drawings by letter, A designates a building of suitable size and construction, which is erected at a convenient point adjacent to the blast or smelting furnace. The lower portion of the building is provided with a compartment B, which I term the "smoke-cellar." This compartment is connected by means of a pipe or flue C with the outlet-passages for the escape of the products of combustion from the blast or smelting furnace, and the smoke is forced, by means of fans or other apparatus adapted to the purpose, through the passage C into the smoke-cellar. As the blast apparatus which is employed in this connection forms no part of the present invention I have not shown the same in the accompanying drawings.

D is a cloth tent, which is provided with a suitable device adapted to retain the tent in position. This tent is suspended from the ceiling of the apartment by means of cables or chains E, which are passed through pulleys F, suspended by means of brackets G from the ceiling H of the apartment. These chains or cables E are passed through openings formed in the side wall of the apartment over the pulleys I and thence to a capstan O. The capstan consists of a shaft journaled within suitable bearings. Upon one end of the shaft is placed a gear or notched wheel O′, which is secured to a collar O^2, said collar having at its inner end a notch adapted to engage a pin or projection O^3 upon the shaft, when the said collar is thrown inwardly by the tension of the spring O^4, thereby locking the collar to the shaft, as will be readily understood. Secured to the outer end of the collar O^2 is a crank P. A lever P′, having at its inner end arms P^2, which embrace the collar O^2, serves as a means whereby the said collar may be disengaged from the shaft by moving the same outward against the tension of the spring O^4, which normally holds the said collar at the extreme limit of its inward throw, and a pawl or latch Q, which

engages the notches in the wheel O′, serves to prevent back movement of the shaft when locked to the collar.

It will be readily seen that by the construction shown the tent may be raised to any desired height by means of the crank P, and when it may be desired to shake off from the interior of the tent such solid matter as may have become attached thereto, resulting from the condensation of the gases and smoke, it may be readily accomplished by throwing the capstan out of gear by means of the lever P′, thus allowing the tent to suddenly drop, shaking the solid matter into the cellar beneath, where it may be collected and removed.

As at times it may be necessary to remove the condensing-tent from the floor of the apartment, I attach to the lower edge of the tent a light iron frame J, so arranged as to permit of its ready detachment from the floor. At the ends of the tent at its lower edge I provide the chains K, with which engage hooks L, secured to the lower ends of the chains M, the upper ends of which are attached to the rod N at the upper end of the condensing-tent.

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

The combination, with the furnace, the apartment adjacent thereto and connected with the furnace by means of pipes, a canvas chamber suspended within the apartment and adapted to receive the smoke and fumes from the furnace, a capstan, and connections, as the rope or chain E, between the capstan and chamber, whereby the chamber may be raised or lowered, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. BATCHMAN.

Witnesses:
FRANK F. BEASOM,
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