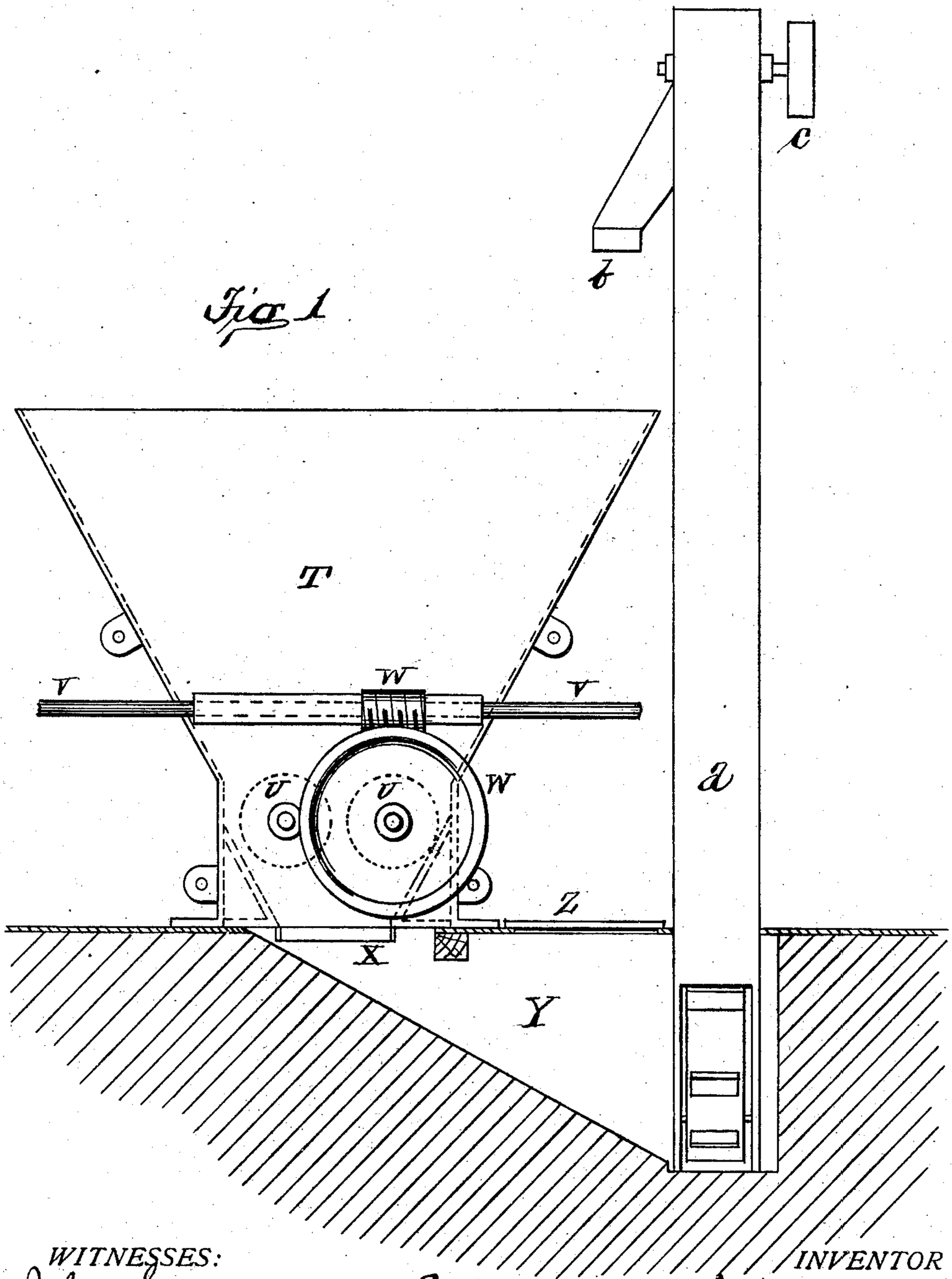
(No Model.) 3 Sheets—Sheet 1.

S. HAIGH.
Mechanical Stoker.

No. 242,771. **Patented June 14, 1881.**

Fig 1



WITNESSES:
John Lorenz
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INVENTOR
Samuel Haigh
by James M. See
ATTORNEY

(No Model.)

3 Sheets—Sheet 2.

S. HAIGH.

Mechanical Stoker.

No. 242,771. Patented June 14, 1881.

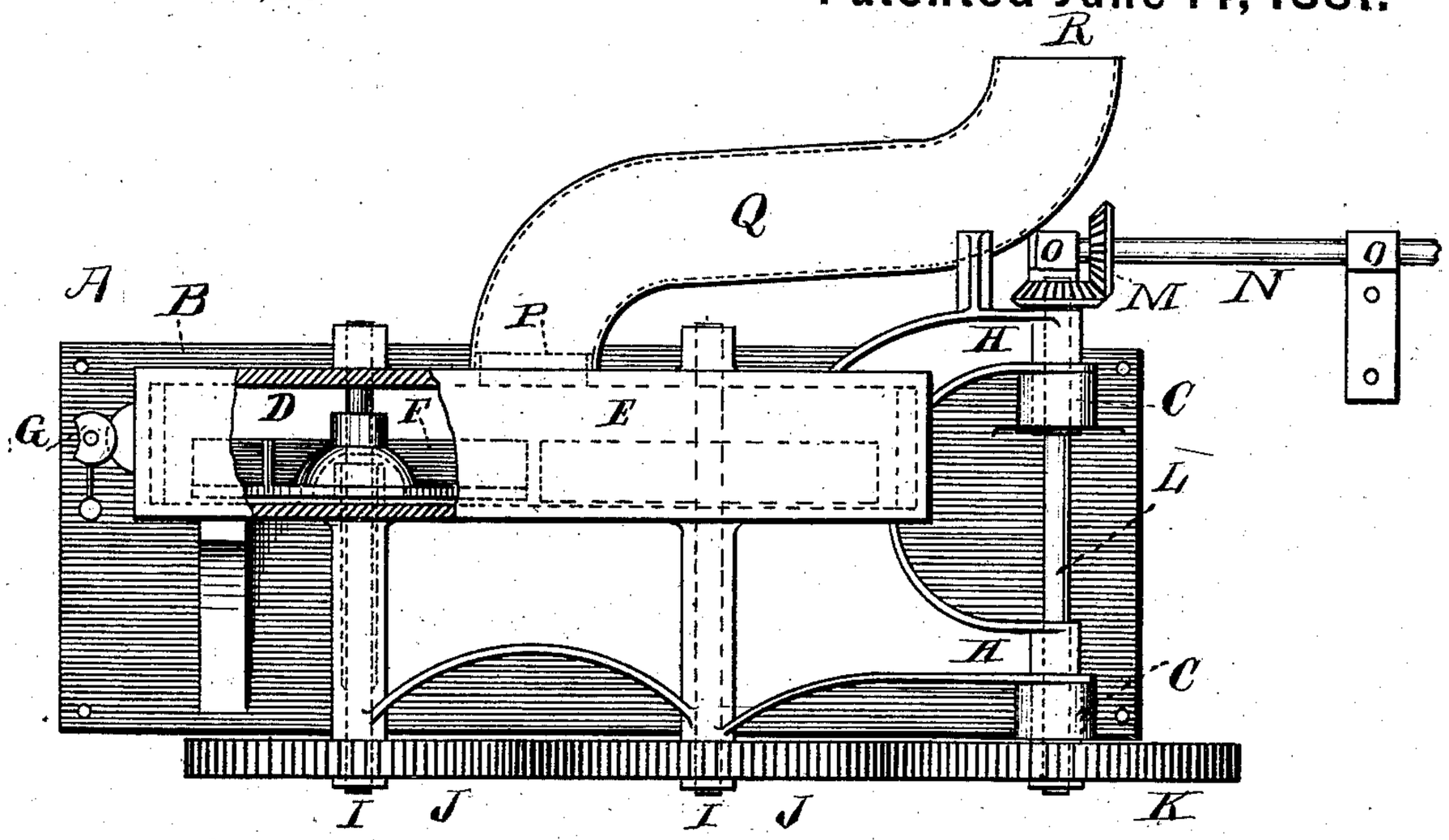

Fig 2

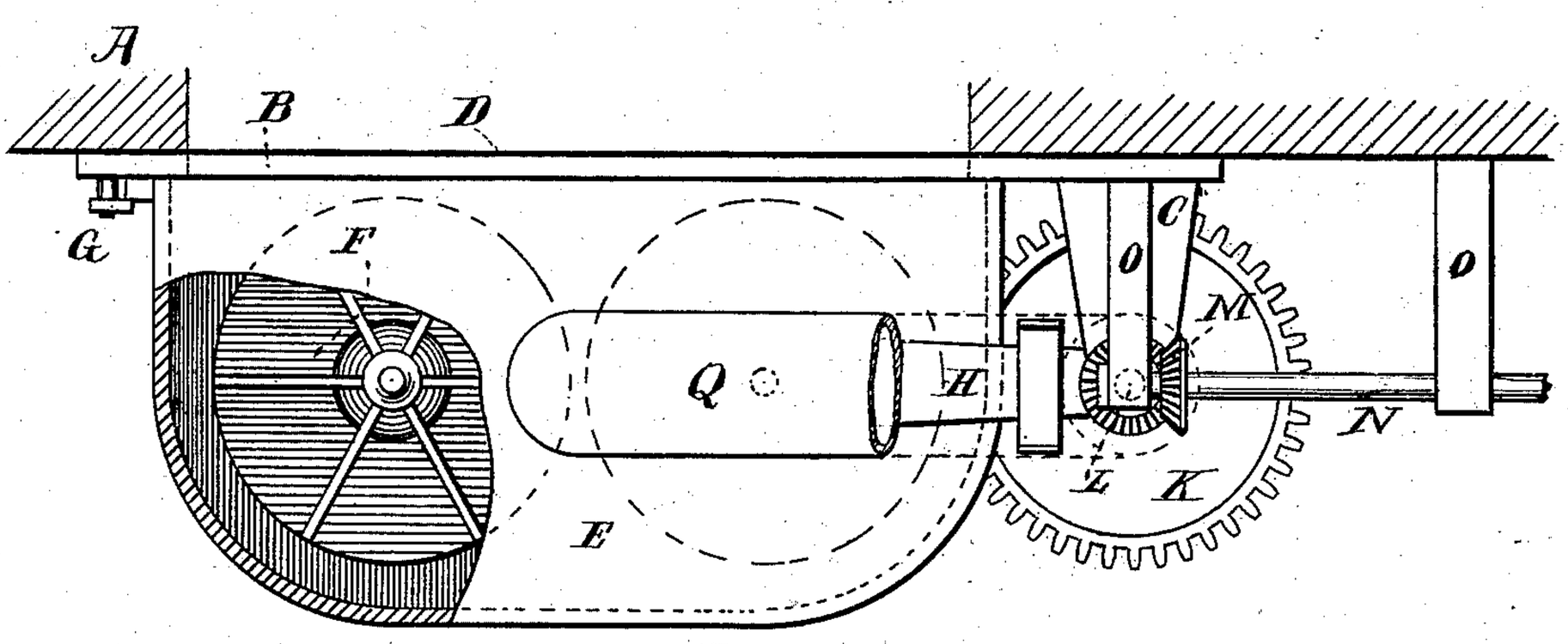

Fig 3

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(No Model.)

3 Sheets—Sheet 3.

S. HAIGH.

Mechanical Stoker.

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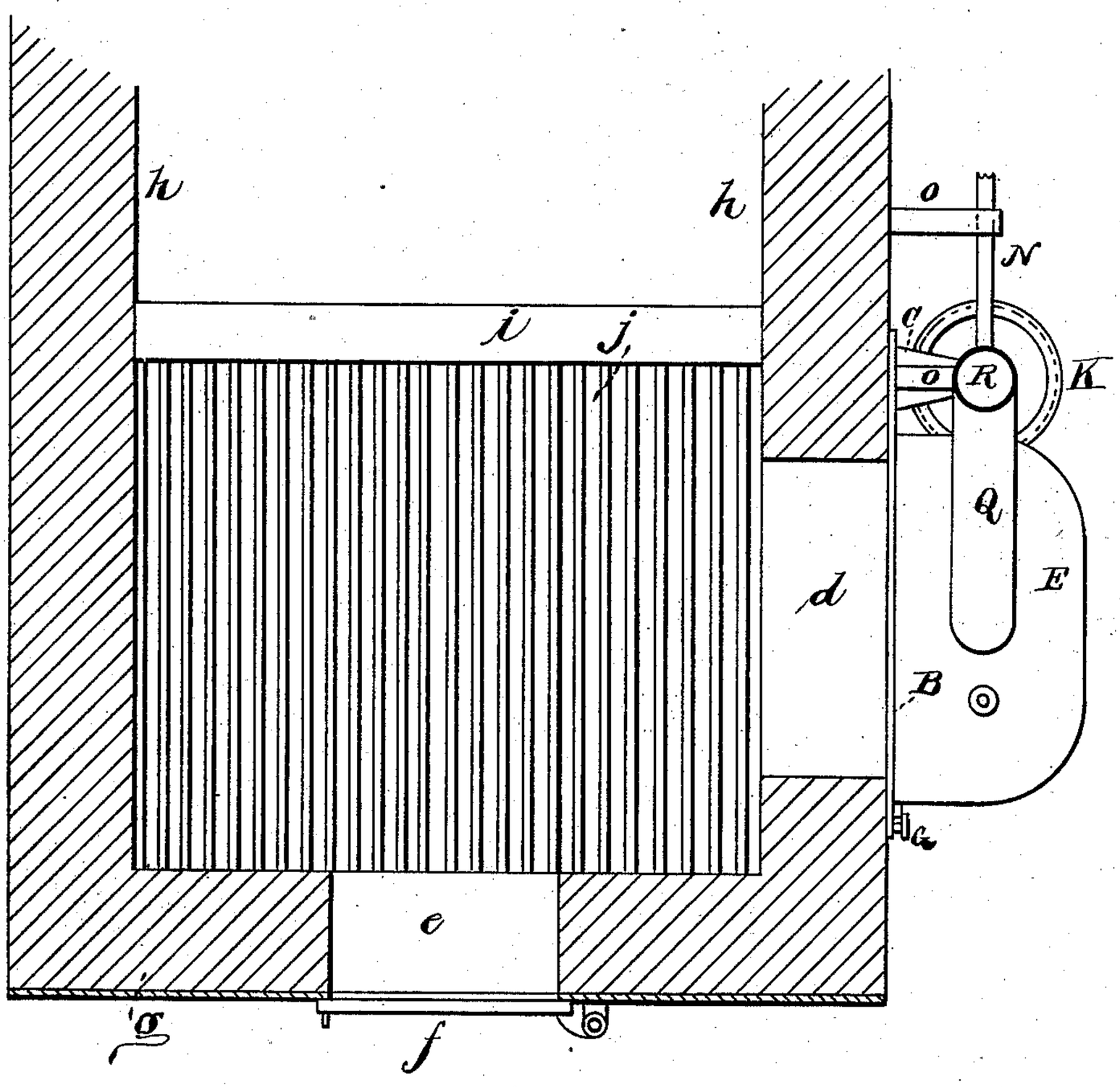

Fig 1

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UNITED STATES PATENT OFFICE.

SAMUEL HAIGH, OF CARTHAGE, OHIO.

MECHANICAL STOKER.

SPECIFICATION forming part of Letters Patent No. 242,771, dated June 14, 1881.

Application filed March 10, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HAIGH, a resident of Carthage, Hamilton county, Ohio, have invented certain new and useful Improvements in Mechanical Stokers, of which the following is a specification.

In the accompanying drawings, Figure 1 is a front elevation of the receiving and elevating devices; Fig. 2, a front elevation of the distributer; Fig. 3, a plan of the same, and Fig. 4 a plan of a furnace with distributer attached.

In Figs. 2 and 3, B is a plate having a feed-opening, D, and hinged lugs C. It is adapted to bolt to the wall of furnace, so that the opening D will lead to an opening in the furnace-wall for the admission of fuel.

E is a case hinged to the plate B by the hinge-arms H. Its back closes against the plate B, over the opening D. The latchment G holds the case in closed position. The back of the case is open and the plate-opening D thus leads to the interior of the case. The case may at any time be unlatched and swung open, so that access to its interior may be had, and so that the interior of the furnace may be inspected through the opening D.

Within the case E are arranged the distributers F, constructed, as usual, with disks and radial wings, to throw through the opening D any fuel which may be placed upon them.

Q is a conduit for the passage of fuel onto the distributers. It receives fuel at R. This point is located in line with the axis of the case-hinges. The case, in being swung open, does not alter the receiving-point R of the conduit Q.

N is the shaft to which motion is applied. This main shaft may receive motion by belting or gearing from any convenient motor.

L is a vertical shaft, whose axis coincides with the axis of the case-hinges. It receives motion from the motion-shaft N by means of bevel-gears M, though, if desired, the motion may be applied by belt direct to the shaft L, a pulley being placed at any convenient point of its length. Motion is transmitted from the axis-shaft L to the distributer-shafts I I by spur-gears J J K, as shown, though a bevel-geared horizontal shaft might obviously be used as a substitute for the spur-gears.

It will be seen that the case can be swung open without disturbing the driving mechanism, and that the distributers may remain in motion while the case is open. The axial location of the conduit-point R permits the case to be opened without disturbing any parts; but a flexible or detachable conduit would permit the case to open without disturbing the driving mechanism. This distributing device is adapted to attach to any ordinary boiler-furnace. The usual breeching is a serious interference to the application of any of the ordinary forms of distributers.

In Fig. 4, *g* is the front wall, *h h* the side walls, *e* the firing-opening, *f* the fire-door, *i* the bridge-wall, and *j* the grate, of an ordinary boiler-furnace, arranged to fire by hand or mechanically. B is the frame-plate, and E the case, of the distributer previously described, and *d* is the mechanical fire-hole in the side wall. This arrangement permits hand-firing when the distributer is not used. It allows the hand-firing door to be used as a sight-hole when the distributer is in use. It keeps the grate-bars parallel with the direction of hand-firing and presents them crosswise to the direction of mechanical firing, so that fuel is less apt to be thrown directly between and through them. A proper fuel, like fine coal, fed into the conduit Q will be distributed to the best advantage.

In Fig. 1, Y is a receptacle for fine fuel, adapted to be carried by the distributers. The elevator *a* is to take the fuel from the receptacle Y and deliver it through *b* to the distributer-conduit. Z is a covered opening, through which fine fuel may be put into the receptacle Y. The fuel-receptacle Y is shown as a pit below the floor-level, but may, if desired, be in the form of an above-ground structure. U U are the rolls of a crusher, constructed as usual. T is the hopper; V, the driving-shaft, transmitting motion to the crushers through worm and gear W. Fuel too coarse to work through the distributers is put into the hopper T and is delivered into the pit Y. If fine coal only is used, the crushing device will not be needed, and the regulation will be affected by the quantity passed to the distributers by the elevator *a*. In case the crusher is set above the level of the distributers the elevator *a* will not be needed, the crusher delivering its pro-

duct directly into the distributer-conduit, the crusher-rolls, whether fine or coarse coal be used, acting as the regulator of the quantity of fuel fed to the distributers.

I claim as my invention—

1. The combination of opening D, hinge-lugs C, case E, hinged to said lugs, distributers F, provided with suitable driving mechanism, and the conduit Q, having axial point R, substantially as and for the purpose specified.

2. The combination of opening D, hinge-lugs C, case E, hinged to said lugs, distributers F, distributer-shafts I I, and axial shaft L, substantially as and for the purpose specified.

3. The combination of opening D, hinge-lugs C, case E, hinged to said lugs, conduit Q, having axial point R, distributer-shafts I I, and axial shaft L, substantially as and for the purpose specified.

SAMUEL HAIGH.

Witnesses:

J. W. SEE,

WILLIAM LAWSON, Jr.