

J. HALL & C. M. LANE.
Portable Steam Engine.

No. 237,181.

Patented Feb. 1, 1881.

FIG. 1.

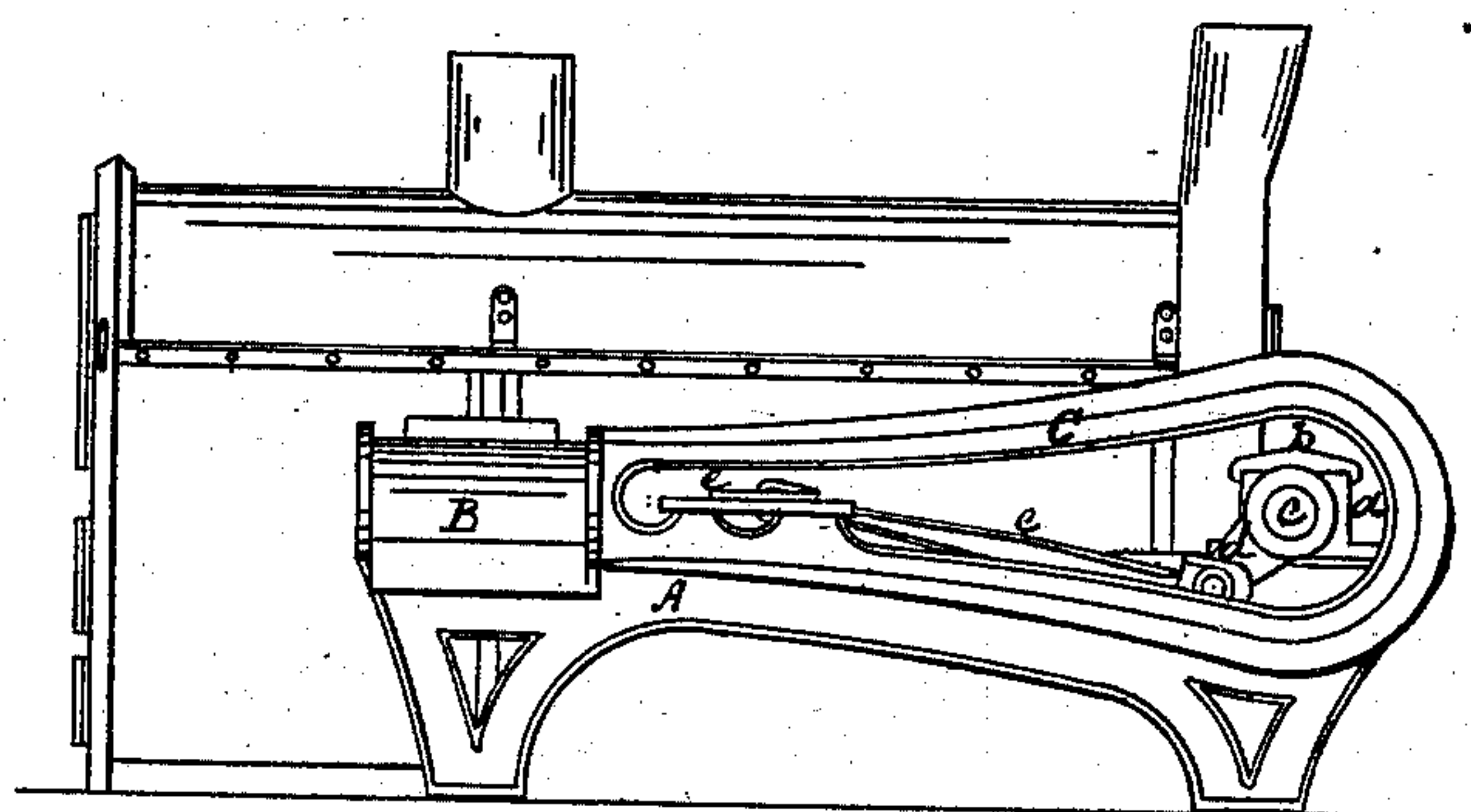


FIG. 2.

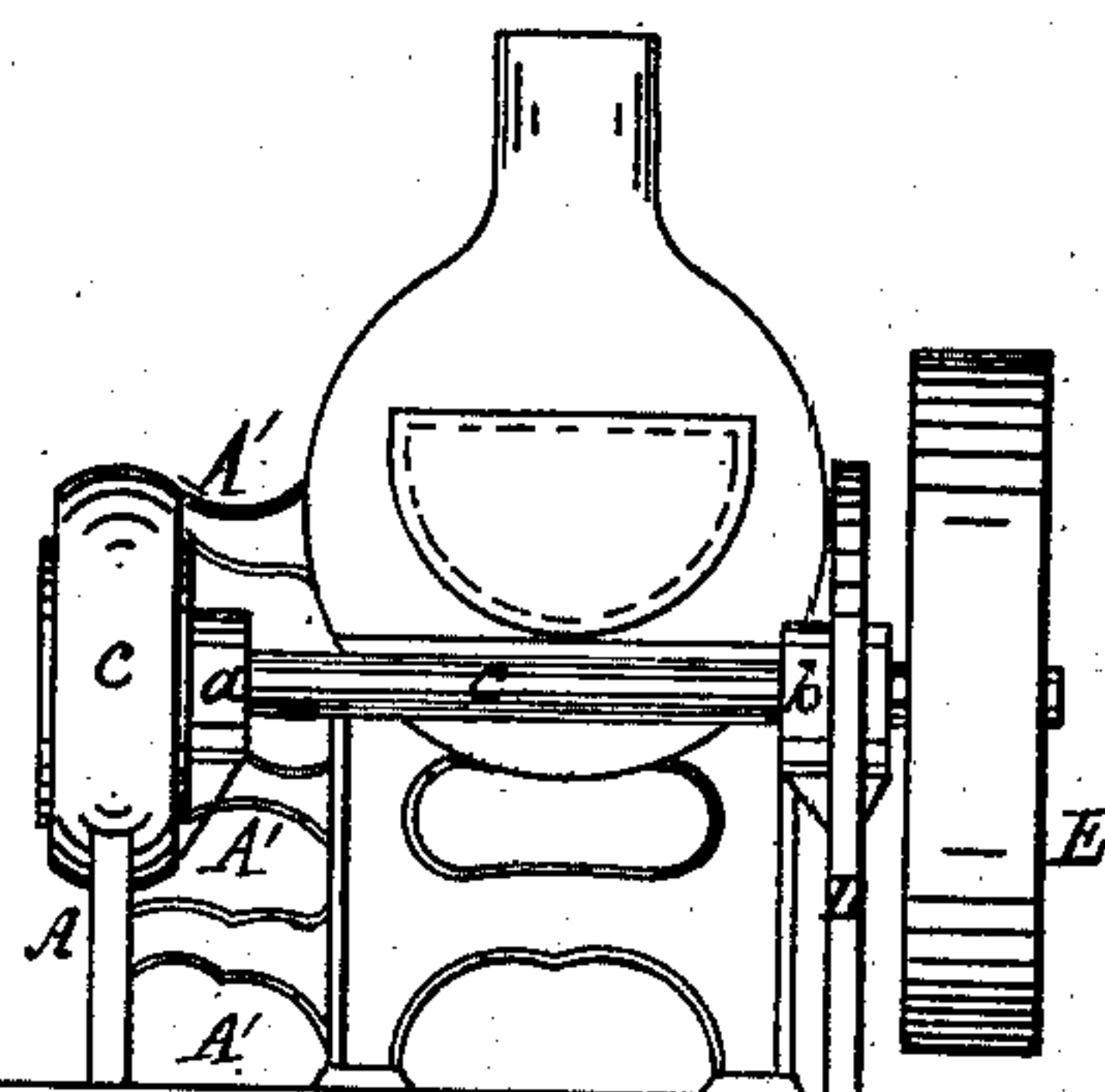
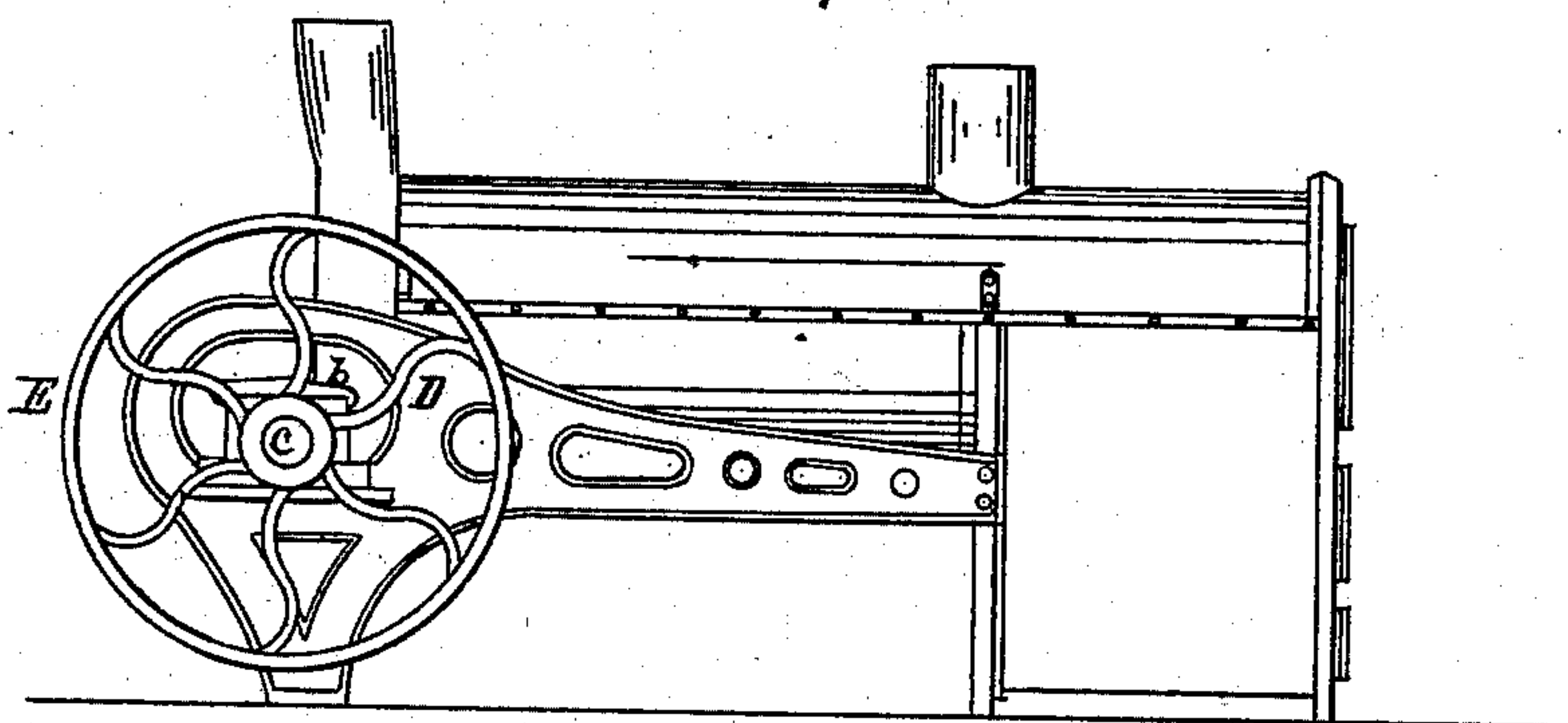


FIG. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JONATHAN HALL AND C. MARCELLUS LANE, OF KEENE, ASSIGNORS OF
ONE-THIRD TO GEORGE F. LANE, OF SWANZEY, NEW HAMPSHIRE.

PORTABLE STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 237,181, dated February 1, 1881.

Application filed October 1, 1879.

To all whom it may concern:

Be it known that we, JONATHAN HALL and C. MARCELLUS LANE, of Keene, county of Cheshire, State of New Hampshire, have jointly
5 invented new and useful Improvements in Portable Steam-Engines; and we do hereby declare that the following is a full, clear, and exact description of our invention, enabling
10 others skilled in the industry to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters and figures of reference marked thereon.

The object of our invention is to provide portable
15 steam-engines which are cheaply built, and, although being connected to the steam-boiler or steam-generator, are supported by and attached to independent rests or standards for the boiler proper, and do not derive
20 any support whatever from the boiler, although they both may be moved and transported together.

In order to clearly describe our invention, it will be necessary to describe, briefly, the construction of the portable steam-boilers to which
25 our improved steam-engines are best adapted.

The steam-generators are constructed of a cast-iron fire-box and a combined back-rest and smoke-stack base, which are connected
30 together by aid of a semi-cylinder, which forms the cradle or receiver for the steam-generator proper.

In order to more fully describe our invention we refer to the drawings, in which—

35 Figure I is a side view of our improved portable engine connected with a portable steam-boiler, as above described, showing the cylinder and its attachments. Fig. III is another side view, showing the fly or band wheel
40 and its connections; and Fig. II is a back view of the same.

A is a standard or rest, bolted to the side of the fire-box of the portable steam-boiler and to the back-rest for the same. At the front of
45 the boiler the standard A is attached, through the medium of strong stays A', and is thus held off at sufficient distance to accommodate other parts of the device.

To the top of the standard A is bolted the
50 cylinder B, or they may be cast together, and

the guard C is also bolted as well to the standard A as to the cylinder B; or they may be cast in one piece, as may be preferred. This guard C is formed horseshoe shape, and has the open ends extended far backward, where
55 it meets and is attached to cylinder B. The guard is so arranged as that the journal-bearings shall find a lodgment in the broad curved end thereof, and its sides run down the side of the boiler and entirely protect the connecting-rod and the race. 60

On the opposite side of the steam-generator is the standard or rest D, which is bolted to the back-rest of the hereinbefore-described portable steam-generator. The rest D is provided at the rear end with a large bulge, which
65 nearly corresponds to the guard on the opposite side, and furnishes a rest for the journal-bearing on this side and allows the shaft to pass through it. 70

To the back part of the standards A and D are bolted the journals *a* and *b*, in which is placed the axle *c*, provided at one end with a crank, *d*, and at the other end with a fly or band wheel, E. The connecting-rod *e* is connected with the crank *d*, and thus gives motion to the axle *c* and the fly or band wheel E. *e* is the slide-rest for the piston-rod. By this arrangement the crank and connecting-rod, as well as the slide-rests and the piston-rods, are
75 all placed within the guard C, and are thus protected from injuring themselves or causing injury—an evil to which all unprotected moving parts of an engine are liable. 80

It will also be seen that the parts are so arranged that the cylinder cannot come out of line with the crank-axle, and that the engine is not influenced by expansion or contraction of the steam-boiler. 85

We are aware that portable steam-engines
90 have been made and used which resemble ours; but they do not have the same fashioned guard which ours has, and which is peculiarly adapted to protect the working parts; nor do they have the same means of attaching the standards to the boiler which ours has, which at once secure the utmost strength and greatest facility of detachment. 95

The above-described framing possesses advantages peculiar to itself. In extending above 100

the working parts of the engine it furnishes a protection for said parts which will defend them against all accidental blows and ward off persons or things. This naturally tends
5 to preserve and keep in good working order these parts, and at the same time, to a great degree, prevents accidents to attendants and others about the engine. The shape of the guard C and rest D at their rear ends, and the
10 adaptation they present for supporting journal-boxes, make a very firm framing.

What we claim is—

The combination of the movable framing for portable steam-engines herein described, con-

sisting of the standard A, supporting the cyl- 15
inder B, the guard C, formed in the shape of a horseshoe with extended sides, and arranged to afford a rest for the journal-bearing at its rear end, and the standard D, provided with the broad swell at its rear end, affording a rest 20
for the journal-bearing, all constructed and arranged substantially as shown and set forth.

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