

*R. L. Currey,
Steam Brake.*

N^o 13,978.

Patented Dec. 25, 1855.

Fig. 2.

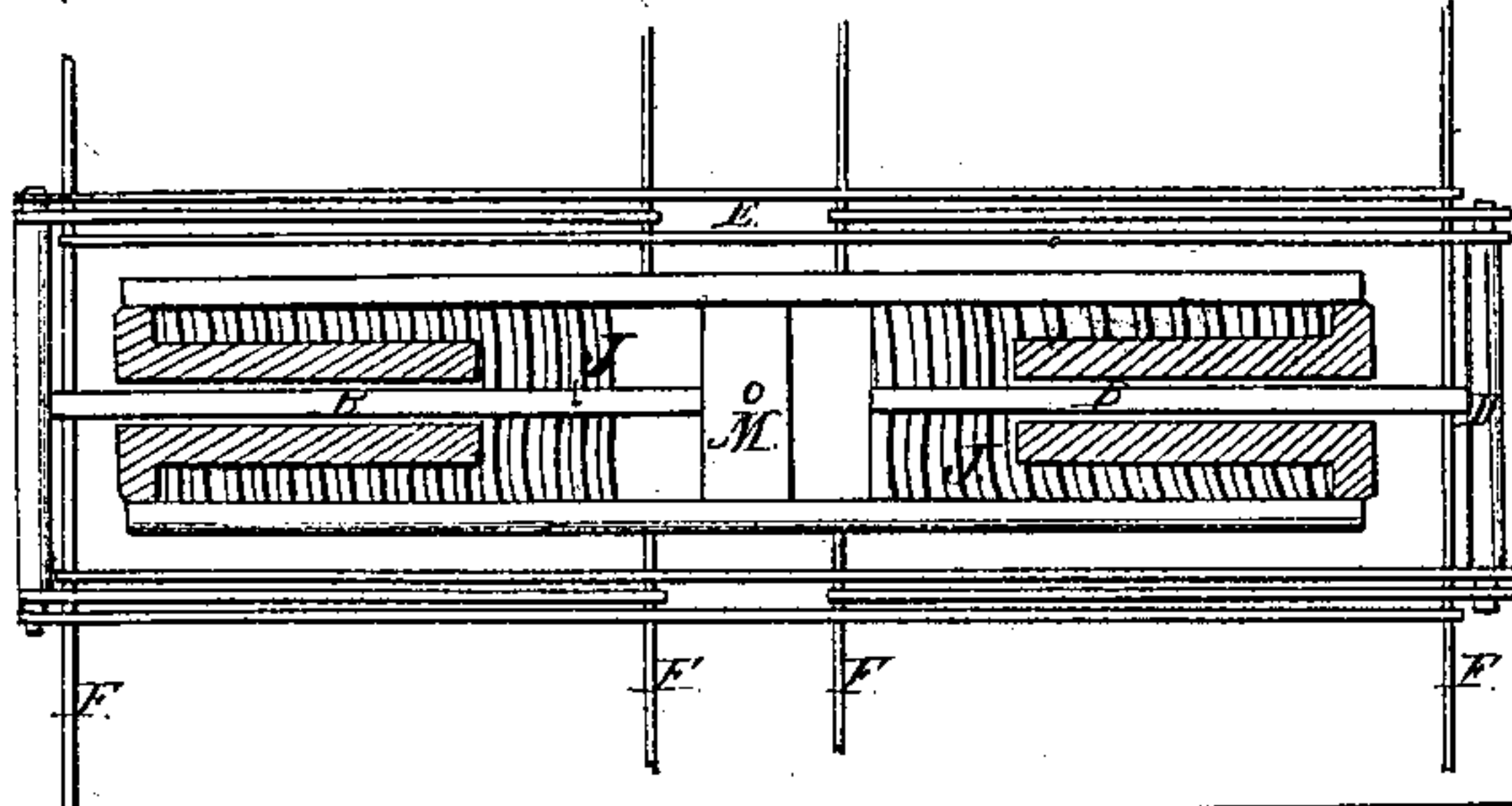


Fig. 1.

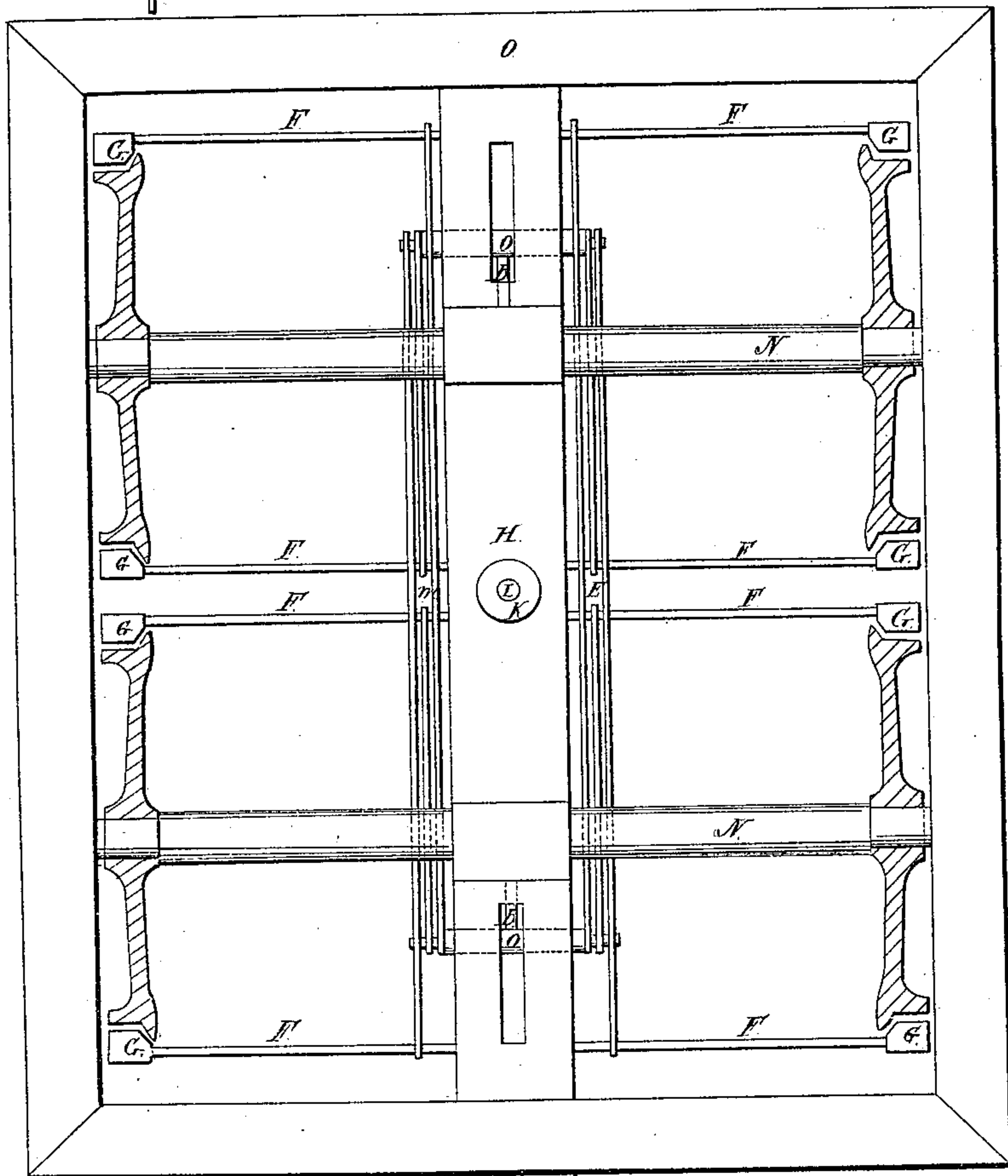
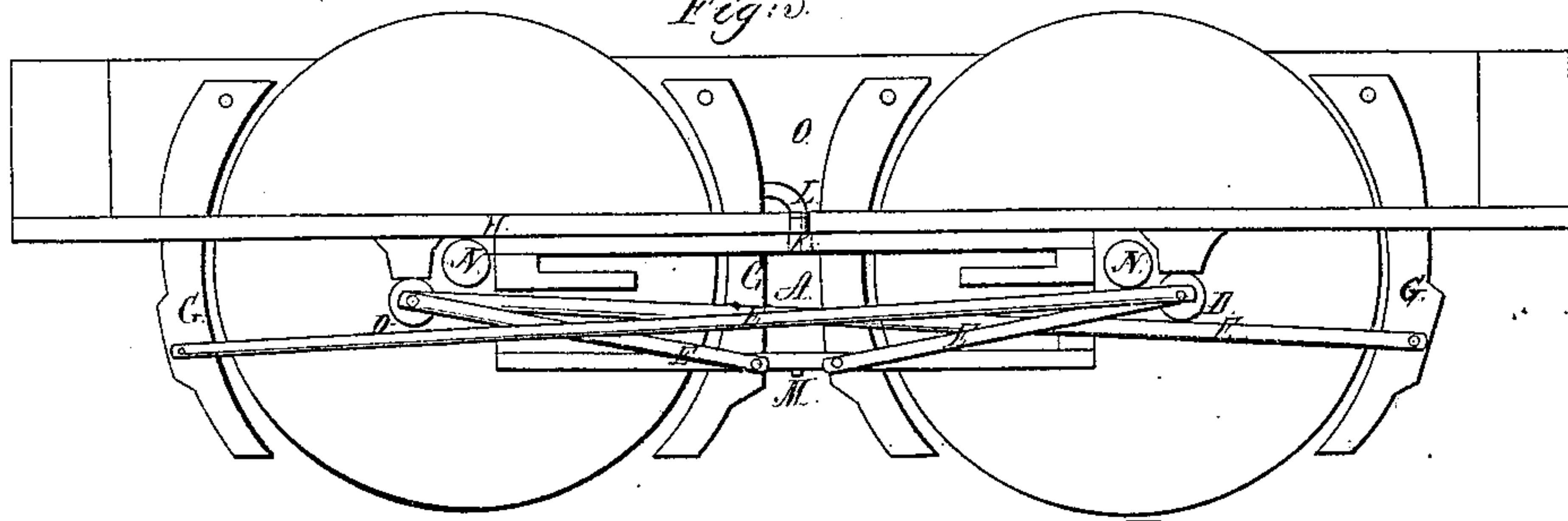


Fig. 3.



UNITED STATES PATENT OFFICE.

ROBERT L. CURREY, OF PHILADELPHIA, PENNSYLVANIA.

DOUBLE-ACTING STEAM-BRAKE.

Specification of Letters Patent No. 13,978, dated December 25, 1855.

To all whom it may concern:

Be it known that I, ROBERT L. CURREY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a
5 new and useful Machine for Preventing Collisions on Railroads, by which the cars can be immediately stopped upon the appearance of danger from open switches or draws or any obstruction on the road, which I call
10 "Currey's Double-Acting Steam-Brake;" and I do 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 annexed drawings,
15 making a part of this specification, in which—

Figure 1 is the top view, Fig. 2 a side view, Fig. 3 a dissected view of the interior of the machine.

20 A, is a cylinder placed lengthwise beneath the car.

B, is the piston rods, operating in opposite directions.

C, is the piston heads.

25 D, is the crossheads.

E, is the connecting rod.

F, is the brake rods; G, the brakes; H, the cylinder plate to support it; I, the springs placed in the cylinder to cause the
30 brakes to recede from the wheels when not in use; K, the steam entrance to cylinder; L, the supply pipe, and M, the exhaust cock.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.
35

I attach to a locomotive, or tender, brakes, either beside the driving or running wheels, two of which I place on one side between the two wheels, and two upon the
40 outside of the same two wheels, and on the opposite side of the car, I make the same disposition of brakes, which I connect across the car by connecting rods. I then construct and place beneath the locomotive
45 or tender, a cylinder of any given dimensions, suited to the size of the locomotive, supported by a bed or cylinder plate, which is firmly attached to the lower part of the

truck frame. I then construct and place inside the cylinder two pistons with heads, 50 which shall meet in the center of the cylinder, within one diameter thereof. Upon the end of each piston rod, which shall project from each end of the cylinder, a proper distance across and below the car axle, I place 55 cross heads, parallel with the car axle, one of which shall be longer than the other, sufficient to permit the connecting rods to pass each other. Upon each end of each cross head I put two connecting rods, one of 60 which shall be shorter than the other, reaching to the first brake rod connecting the brakes between the wheels, the longer connecting rod extending beyond the shorter one to the brake rod outside the wheel. I 65 then place in the center of the cylinder, a pipe, which shall connect with the locomotive boiler, at the most convenient place for the engineer to supply the cylinder with steam, which shall enter between the two 70 piston heads, forcing the pistons and cross heads in adverse directions, thereby drawing the brakes onto the wheels while in motion, and instantly checking their speed, by giving a powerful, simultaneous, immediate 75 and equalized pressure of brakes upon the wheels. I attach to the bottom of the cylinder, and in the center, an exhaust cock, which may be opened by the engineer to discharge the steam. I affix to each end of the 80 cylinder a head, between which, and the piston head, I place a spring, which will relieve the wheels from the brakes, when not required to be in use.

I do not claim to have invented a double 85 acting steam cylinder with steam and exhaust at its center between two pistons, but

I do claim—

The employment of such a cylinder in combination with the brakes on both sides 90 of the wheels in the manner and under the arrangement herein set forth.

ROBERT L. CURREY.

Witnesses:

EDGAR E. PETIT,
J. L. HUSBAND.