

R. H. Emerson,
Locomotive.

N^o 6,401.

Patented May 1, 1849.

Fig. 1.

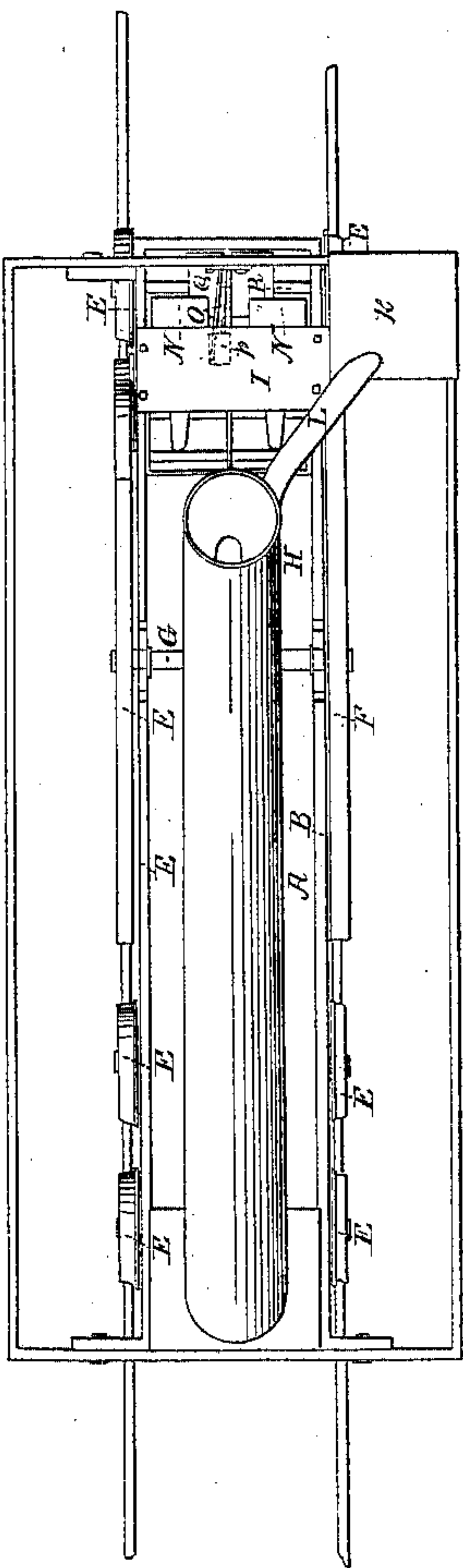


Fig. 3.

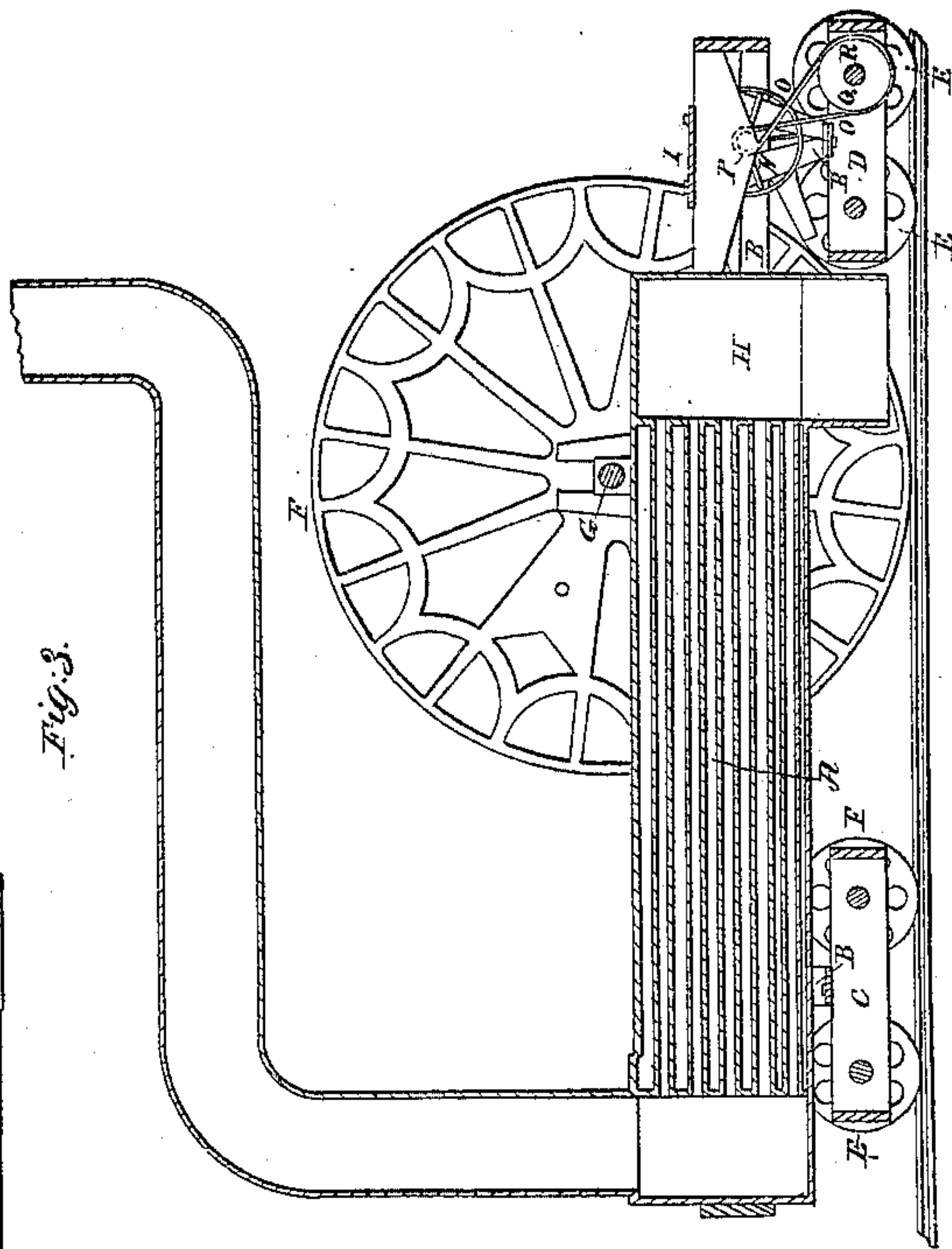
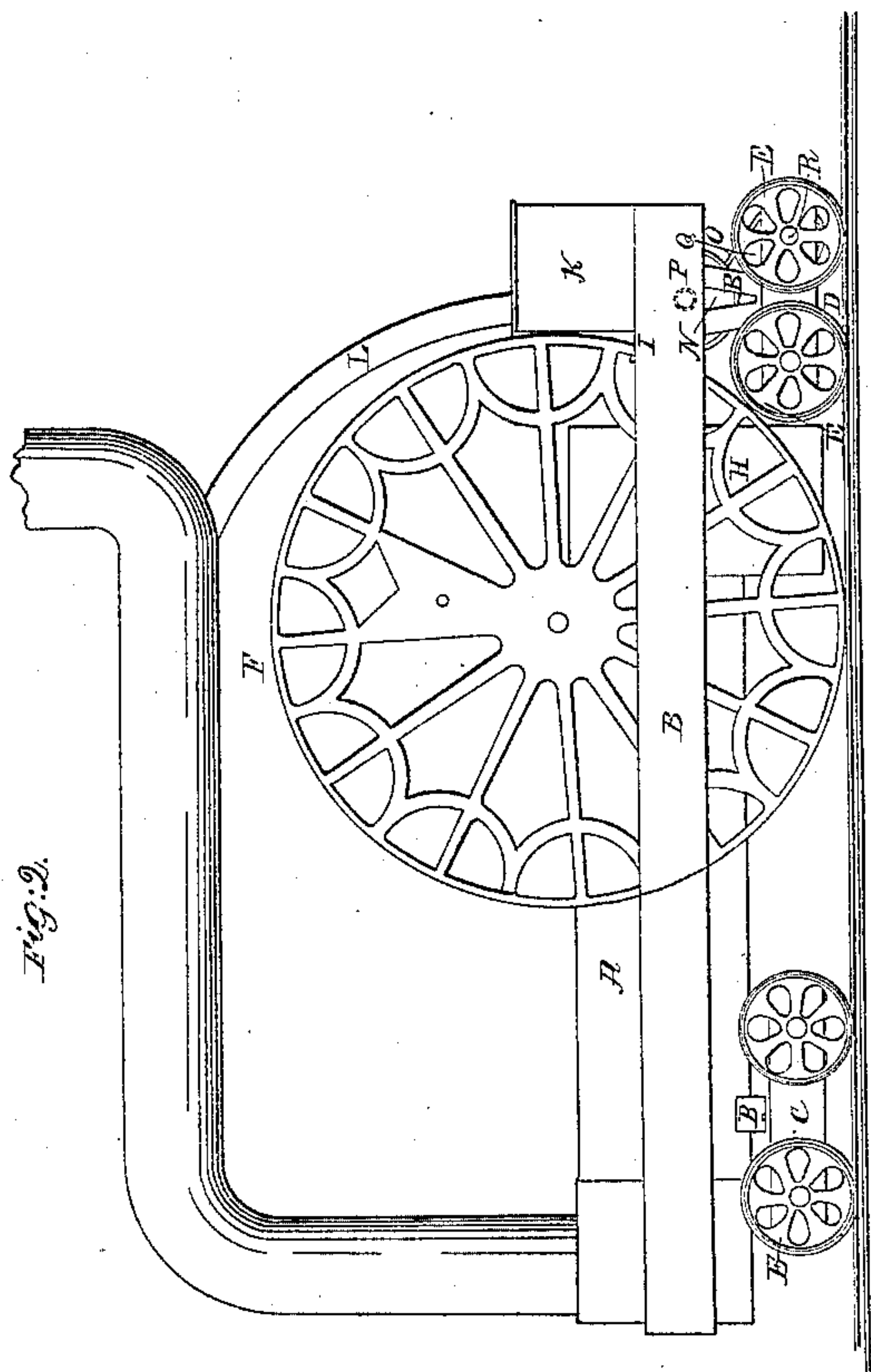


Fig. 2.



UNITED STATES PATENT OFFICE.

RICHD. H. EMERSON, OF PORTLAND, MAINE.

LOCOMOTIVE WITH DRIVING-AXLE ABOVE THE BOILER.

Specification of Letters Patent No. 6,401, dated May 1, 1849.

To all whom it may concern:

Be it known that I, RICHARD HENRY EMERSON, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in the Locomotive Engine Used on Railways; and I do hereby declare that the same are fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a top view of my improved locomotive engine. Fig. 2, a side elevation of the same. Fig. 3 a central longitudinal and vertical section.

My improvement consists in the manner in which the axle of the driving wheels, the boiler, and the bearing and running truck frames and their wheels, are disposed or arranged with respect to each other.

In the said drawings, A, denotes the boiler constructed essentially in the usual manner, and supported by a frame B, which rests on one, two, or more truck frames C, D, whose wheels on one side are represented at E, E, &c., in Fig. 2.

F, F, are the driving wheels, which are intended to be made of very large diameter, that is to say about ten feet in diameter and be made either with or without flanges and to rest on the rails beneath them, their axle G, being arranged above the boiler A, as seen in the drawings. They are to be connected with and operated by cylinders and pistons placed in some convenient position or positions on the carriage frame. The object I have had in view in my arrangement of the boiler, axle of the driving wheels, and the truck frames and their wheels, is to produce an engine fitted to move on a railway at a very high speed. For this purpose I have sought to increase the size of the driving wheels, beyond that at which they are ordinarily made, and also to keep the center of gravity of the boiler as low down toward the track as it can be conveniently arranged. The suspension of the boiler below the axle of the driving wheels enables me to effect the intended improvement. As the fire box of a locomotive engine must of necessity be as near to the tender as possible, it becomes requisite to place it at the rear end of the boiler, as seen at H, the smoke pipe being arranged at the front end thereof. As the engineman or per-

son who controls the operations of the engine, and supplies it with fuel, stands on the platform I, at the rear end of the engine, he generally suffers more or less annoyance from the sparks and smoke which escape from the chimney. To a certain extent this difficulty has been overcome by erecting a small cabin or hut over the platform, the said cabin being provided with windows in its front end, and so as to enable the engineman to see through them and ahead of the engine. By this means the evil above mentioned, is but partially cured, as the smoke and waste steam so often envelops the engine as to prevent the engineman from enjoying a clear view of the track ahead of the locomotive, a matter of great importance to him. In order that the smoke and surplus steam may be discharged in such manner as not to be of inconvenience to the engineman, I bend the smoke pipe backward, and make its mouth of discharge directly or about over the platform of the engine or place where the engineman stands, the said mouth of discharge being at the usual height above the head of the engineman. By such a construction or disposition of the smoke pipe or its discharging mouth, the smoke and waste steam escaping therefrom, will generally pass away so as not to obstruct the view of or be of annoyance to the person or persons who are on the platform of the engine.

The subtreasury box or receptacle for the sparks which do not pass out of the sparkers or smoke pipe, may be placed at the rear part of the engine as seen at K, and may be connected with the smoke pipe by a tube L, leading from one to the other. The fan blower or blast apparatus, I place directly over the rear truck frame and in rear of the boiler as seen at N, the fan thereof being driven by an endless band O, which passes around a pulley P, (on the shaft of the fan) and a drum Q, fixed on the axle R, of one pair of the truck wheels. The position of the subtreasury box or spark catcher enables the engineer to conveniently get access to the interior thereof and to remove the sparks and cinders that may be deposited therein, which may be thrown into the fireplace if desirable to do so.

There may be a spout or any convenient and proper contrivance applied to the fireplace opening and the platform of the engine, to enable the engine man to supply the

fireplace with fuel, and such may be made
removable if required so as to allow him ac-
cess to the ash pit. I do not represent any
such contrivance or contrivances, as they
5 make no part of my invention.

What I claim is—

The above described mode of arranging
the boiler, the axle of the driving wheels,
and truck frames of the supporting wheels,

whereby I am enabled to produce an engine 10
combining great speed and safety.

In testimony whereof I have hereto set my
signature this fourteenth day of August
A. D. 1848.

R. H. EMERSON.

Witnesses:

R. H. EDDY,

Y. GOULD.