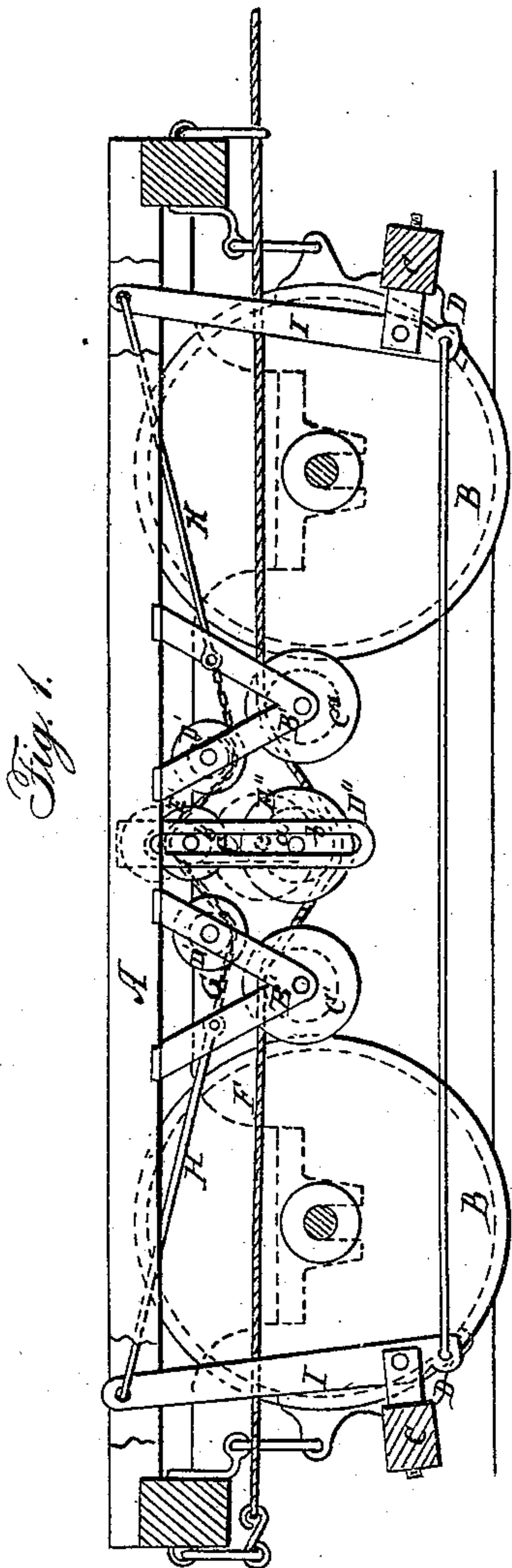


A. I. AMBLER.

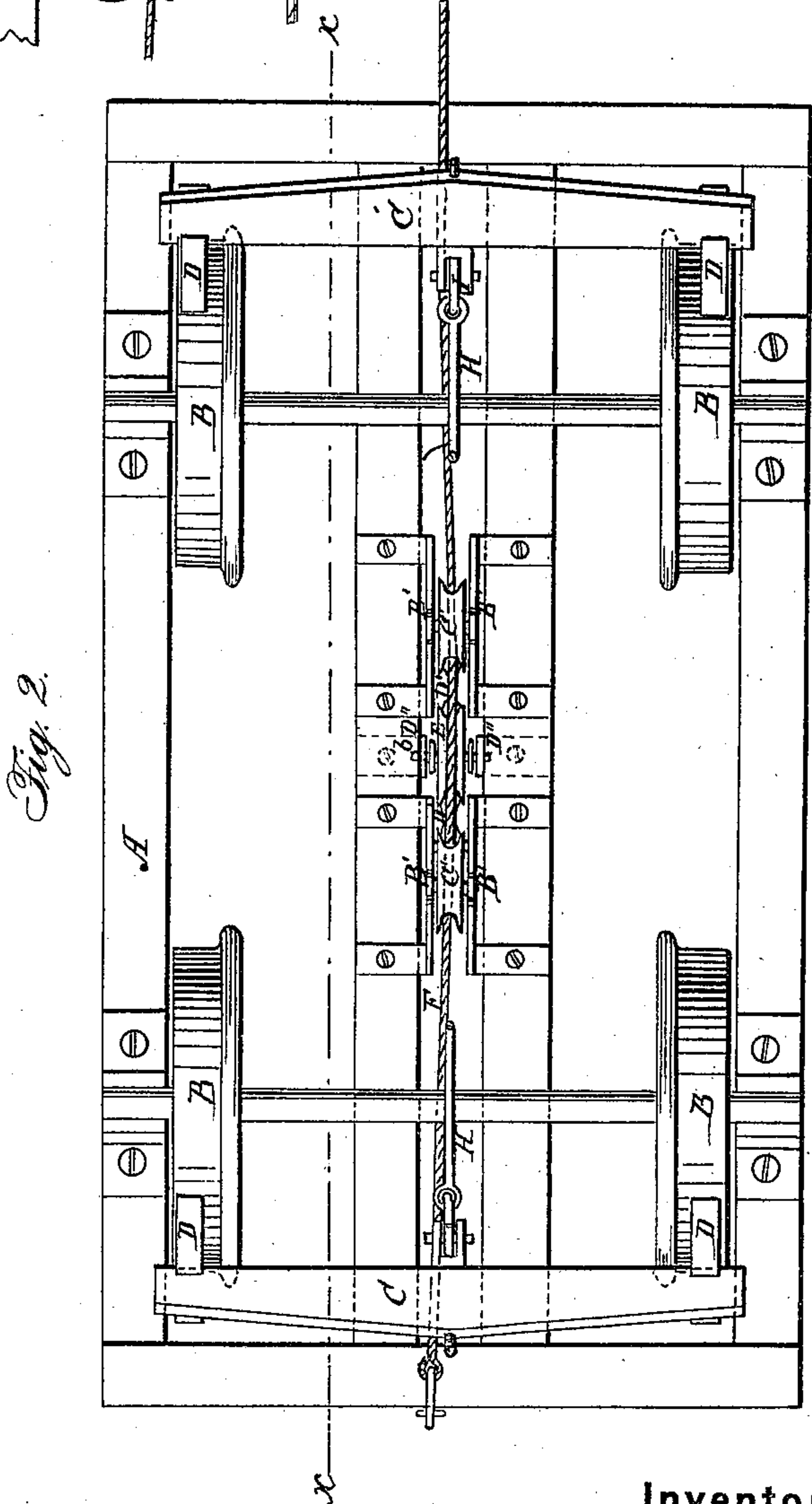
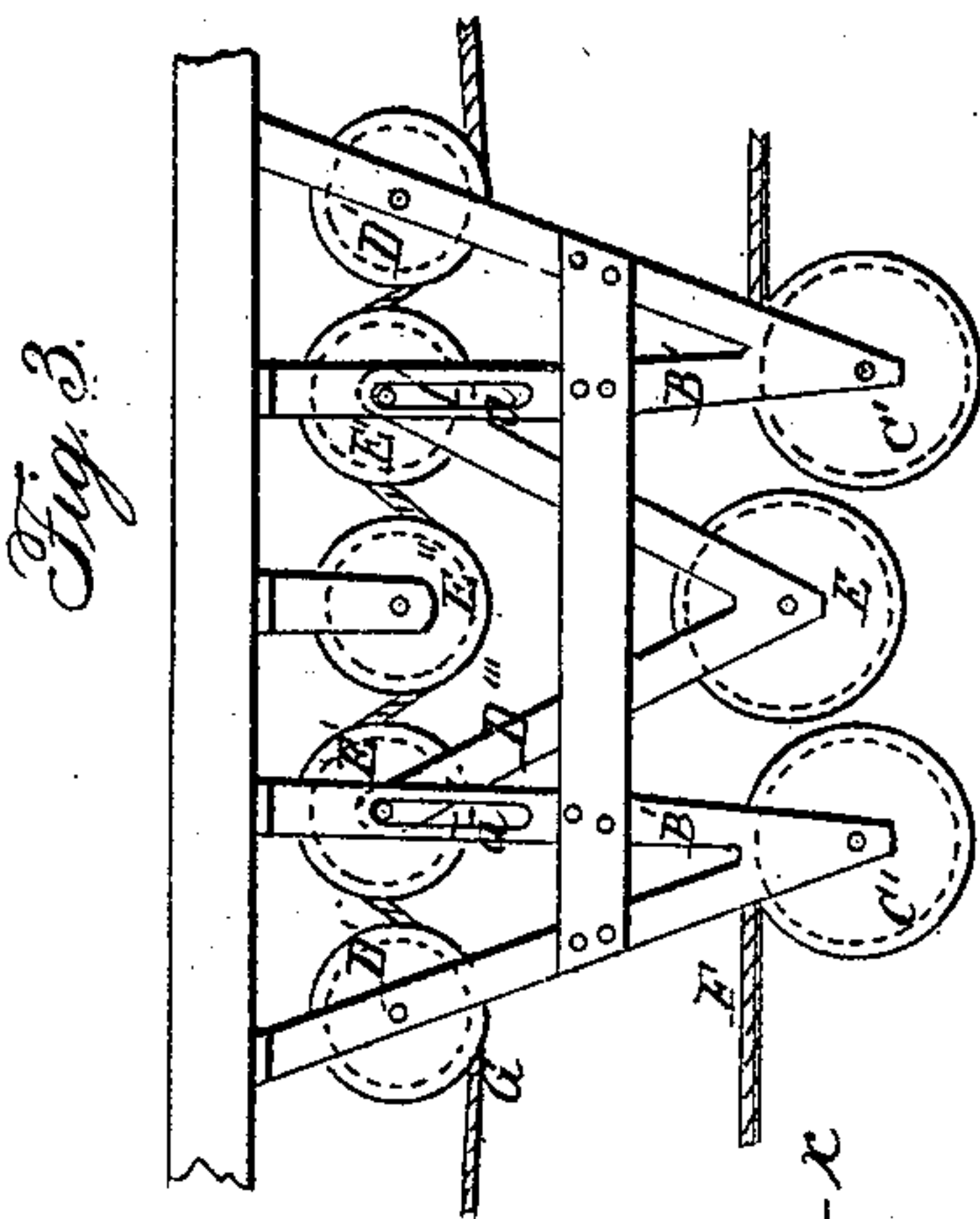
Car Brake.

No. 44,036.

Patented Aug. 30, 1864.



Witnesses:
W. Coombs
G. W. Reed



Inventor:
A. I. Ambler
per Messrs Co
Attor

UNITED STATES PATENT OFFICE.

A. I. AMBLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND GUSTAVUS SHEPARD, OF NEW YORK.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **44,036**, dated August 30, 1864; antedated August 25, 1864.

To all whom it may concern:

Be it known that I, A. I. AMBLER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention taken in the line *x x*, Fig. 2; Fig. 2, an inverted plan of the same; Fig. 3, a view of a modification of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in that class of railroad-car brakes in which a tensional chain, or rods and chains, are used for operating or applying power from the locomotive to the brakes of a train of cars.

One of the chief difficulties to be encountered in the practical operation of a train-brake is the amount of slack required for each car when the brakes are off, in order to fully relieve the wheels from the brake-shoes, so that power may not be required to overcome the friction arising from such contact.

To overcome this difficulty I employ sliding sheaves, the movement of which is limited and arranged in such a manner as to effectually control the maximum and minimum power which may be applied to the brakes, as hereinafter set forth.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, Figs. 1 and 2, represents the framing of a car-truck; B, the wheels; C, the brake-bars, and D the shoes. These parts may be arranged in the usual way, and therefore do not require a minute description. To the truck-frame A there are secured four pendent frames, B' B', in the lower parts of which there are placed fixed sheaves C' C', one in each, and also a fixed sheave, D', directly above each sheave C'. Between the pendent frames B' B' there are two vertical bars, D'' D'', which are slotted longitudinally, as shown at *a*, and in these slots *a* the axes *b b* of two sheaves, E E', are fitted and allowed to slide freely up and down. The two sheaves E E' are con-

nected by bars *c c*, which keep the sheaves E E' always in the same relative position with each other, or at the same distance apart.

F represents a tensional chain, which passes over the sheaves C' C' and underneath the lower sheave, E, one end of said chain being applied to the motor or mechanism, by which power is communicated to the brakes and the opposite end attached to the rear car. This chain F, it will be understood, extends through the whole of a series of car-trucks, constituting a train of a greater or less number.

G represents a chain which passes underneath the upper sheaves, D' D', and over the sheave E', the ends of said chain being connected to rods H H, the outer ends of which are attached to the levers I I of the brake-bars C.

From the above description it will be seen that when power is applied to the chain F the two sheaves E E' will be raised, and the upper sheave E' as it rises, will force upward the chain G between the sheaves D' D' and set or apply the brakes, the shoes D being pressed against the wheels B. The pressure of the shoes D on the wheels B is limited by the upward movement of the sheaves E E', and the latter cannot extend upward any farther than the slots *a* will allow the axle *b* of the upper sheave E to rise. The maximum pressure of the brakes, therefore, is obtained when the axle of the sheave E' reaches that point, but this maximum pressure may be modified or varied by having the chain G connected to the rods H H by screw-links, so as to take up or let out said chain. In adjusting the parts for operation this feature is to be observed.

In order to take off the brakes the tensional chain F is released, and the back action, in connection with the brake-springs, the gravity of the sheaves E E', &c., will cause the sheaves E E' to fall, and the slack of the tensional chain F will be taken up, the axis *b* of the sheave E being at the lower ends of the slots *a*. By this arrangement it will be seen that when the tensional chain F is operated the chain G will have a similar movement imparted to it, or, in other words, both chains will be moved alike; but in cases where desirable the chain G may have a quicker movement imparted to

it from F by having two sheaves, E', connected with the sheave E, and a stationary sheave, E'', placed between the upper fixed sheaves, D', as shown in Fig. 3, the frame D'' of the sheaves E E' E'' being provided with slots *a* to receive the axles *b* of the sheaves E E'. In this way the chain G will have double the movement of chain F; but the same principle is involved in both plans.

I may observe that it is intended in practical use to place this device in the center of the body of the car, between the two trucks, so as to operate the levers of each truck with the application of this device singly to each car.

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

1. The employment or use in connection with a tensional chain, F, and a brake-chain, G, of

fixed and sliding sheaves arranged substantially as herein shown, or in any equivalent way, so that by operating the tensional chain F a movement will be imparted to the brake-chain G to set or apply the brakes, and the slack of the tensional chain be taken up by the falling of the sliding sheaves when the power is taken off from said tensional chain.

2. Limiting or controlling the maximum power of the brakes by limiting the rising and falling movement of the sheaves E E', by having the axles *b* of said sheaves fitted in slots *a* in the bars D'' D'', or other fixtures, substantially as set forth.

A. I. AMBLER.

Witnesses:

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C. D. WOLF.