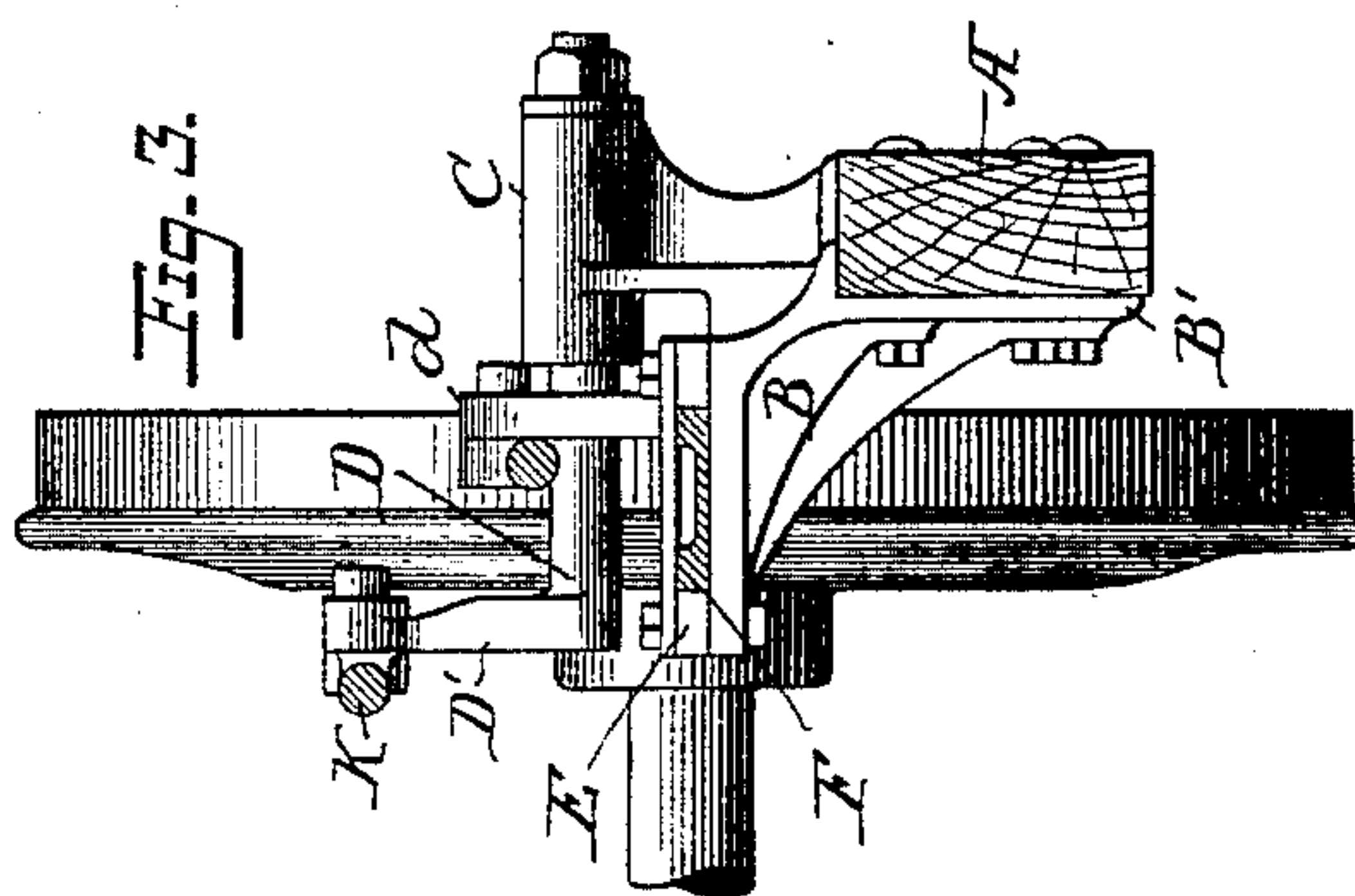
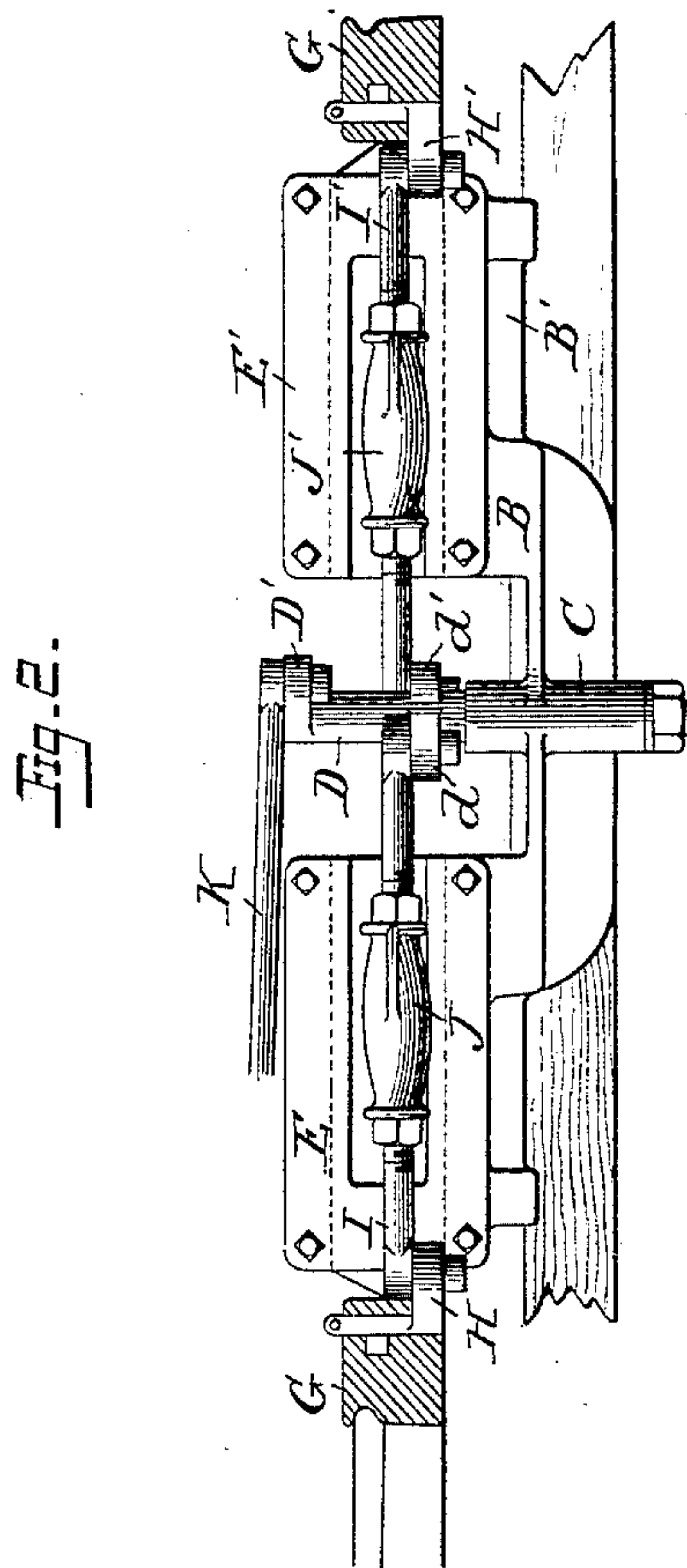
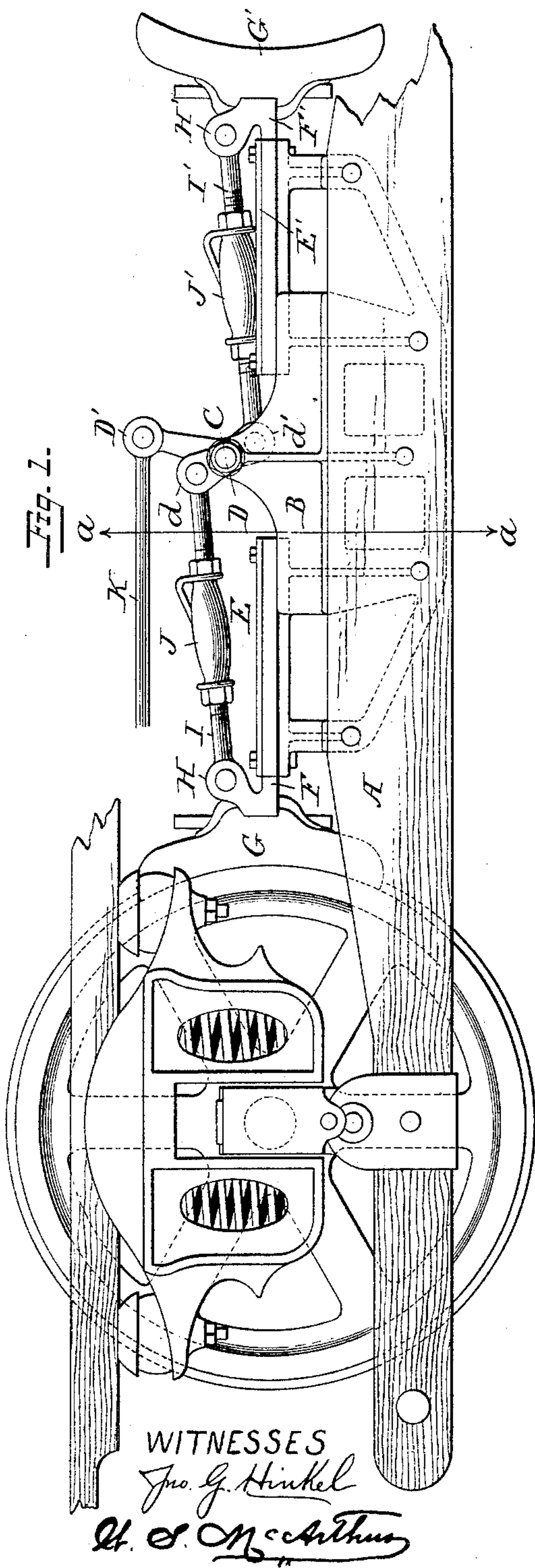


(No Model.)

J. STEPHENSON.  
WHEEL BRAKE.

No. 450,850.

Patented Apr. 21, 1891.



INVENTOR  
John Stephenson  
by Foster & Freeman  
Attorneys.



# UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

## WHEEL-BRAKE.

SPECIFICATION forming part of Letters Patent No. 450,850, dated April 21, 1891.

Application filed January 7, 1891. Serial No. 376,991. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STEPHENSON, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Housed Wheel - Brakes, of which the following is a specification.

Car-wheel brakes with their shoe-suspensions connected with the car-body toward its ends have less efficiency because of lost motion occasioned by the distance at which the shoe (when not in service) must be removed from the wheels in order that it may not contact against the wheel, caused by the vertical motion of the car-body when teetering and with more or less load of passengers, the shoe at times varying on its vertical position before the wheel-face three inches, more or less. Another evil resulting from such mode of hanging the brake-shoe is the tossing of the car-body when brakes are applied, for when the shoe clings to the face of the front wheel the front end of the car is jerked downward and the shoe at the rear of the car when clinging to the wheel-face throws the back end of the car upward, sometimes tossing passengers from their feet. The brake-shoes placed between the wheels and not suspended from the car-body are free from these objections, and when the shoes are borne by the car-truck, or by a girder, which is free from vertical motion, the shoe needs only about one-sixth ( $\frac{1}{6}$ ) of the horizontal motion, increasing the efficiency of the operator in the same ratio, and the advantage is further increased by a mechanical movement by which the shoe against one wheel forms the butt or resistance for pressure against the other wheel.

My invention is for a new mechanical method of avoiding the evils above cited and of attaining the benefits suggested.

In the accompanying drawings, Figure 1 is a side view showing a portion of the running-gear for a street-car with a housed wheel-brake attached thereto. Fig. 2 is a plan view of a portion thereof, and Fig. 3 is a transverse section of Fig. 1 on the line *a a*.

I have shown my invention applied to a car construction which has a girder A, or, what may be the equivalent therefor, a truck borne

by the axle-boxes. Upon this girder A, I mount a housing B, having a vertical base-plate B', suitable for attachment to the vertical face of either the girder A or an equivalent portion of the truck. The head or upper part of the base-plate B' has a transverse cylinder C, in which is mounted a rock-shaft D, provided with arms *d d'*. Below the rock-shaft is a horizontal tunnel or channel E E', suitable for receiving at each end a flat bar F F', having freedom to slide therein. The upper end or head of each bar is formed to unite with and carry a brake-shoe G G', and each bar has also near its head an eye H H' or device for articulated connection with the end of the plunger-bar I I', whose outer end has likewise connection with an arm *d d'* of the rock-shaft D. Each plunger-bar is severed between its ends and united by a turn-buckle J J', by which the length of the plunger-bar can be adjusted as needed. The rock-shaft D has in addition to the two short arms *d d'*, in union with the plunger-bars, one long arm D' for connection with the energy-rod K, which may be connected to the two sections of the wheel-brake, one at each side of the car, and through which the energy of the operator is transmitted to the brake mechanism.

What I claim is—

1. A car-wheel-brake-housing vertical bed-plate having at its head a transverse cylinder with a rock-shaft chamber below which is a horizontal longitudinal conduit suitable for conducting two sections of a brake-shoe sliding bar, substantially as described.

2. A car-wheel-brake-housing vertical bed-plate with conduit in which are two sections of the brake-shoe sliding bar, with their outer ends holding each a brake-shoe with freedom for end motion, substantially as described.

3. A car-wheel-brake-housing bed-plate having at its head a cylinder within which is a rock-shaft and below a conduit with two sections of the brake-shoe bar, each section having a brake-shoe fitted for motion by connection with an arm of the rock-shaft, substantially as described.

4. A car-wheel-brake-housing bed-plate with cylinder at its head holding an armed rock-shaft, and a conduit in which are two

sections of the brake-shoe sliding bar, each  
section joined to a wheel-brake shoe, with its  
sliding bar connected to an arm of a rock-  
shaft, and another arm prepared to receive a  
5 connecting-rod for conducting the actuating  
power to the brake mechanism, substantially  
as described.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

JOHN STEPHENSON.

Witnesses:

JOSEPH B. STEPHENSON,  
S. A. STEPHENSON.