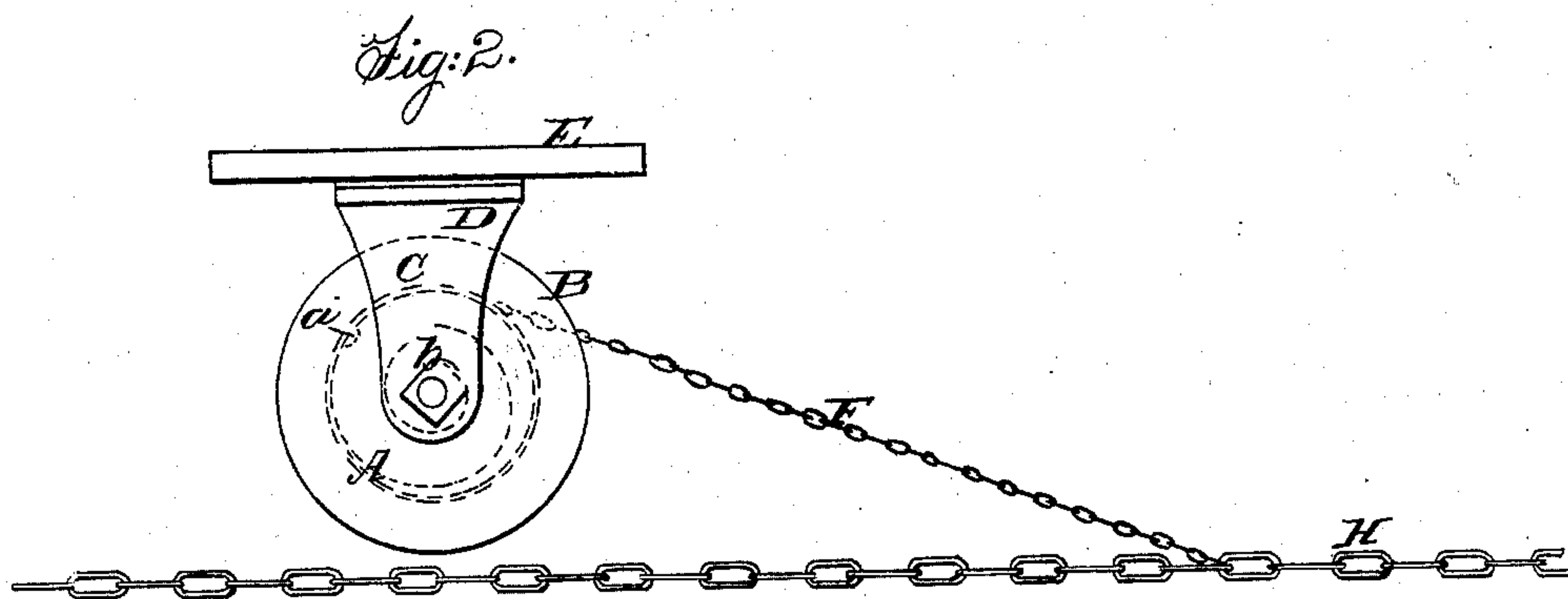
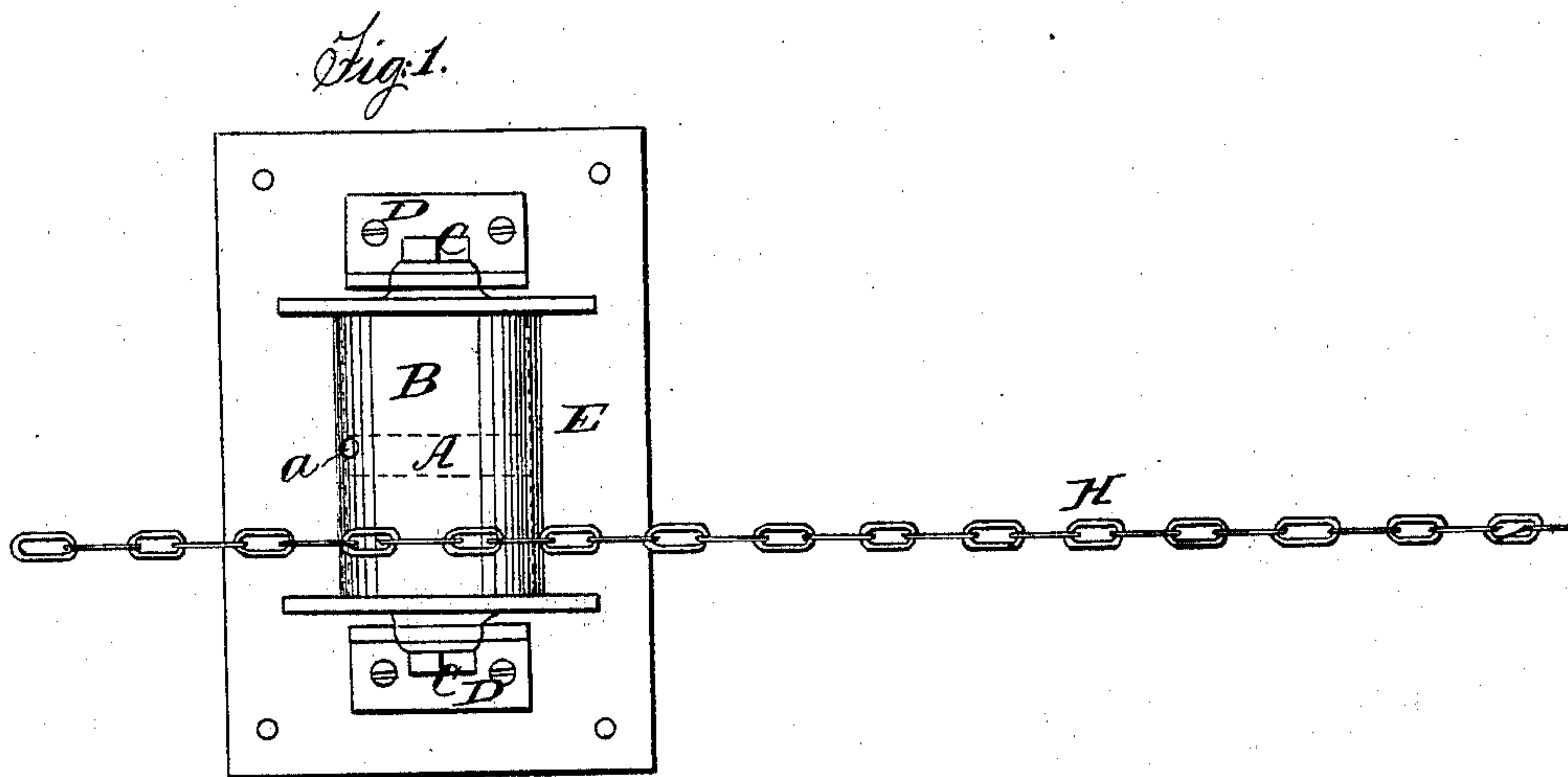


# McCAMBRIDGE & MARTIN.

Car Brake.

No. 58,115.

Patented Sept. 18, 1866.



*Witnesses*  
*Jonathan Stetzel*  
*William D. Hughes*

*Inventors;*  
*Samuel McCambridge*  
*Edward G. Martin*  
*By their attorney*  
*Stephen Ustick*

# UNITED STATES PATENT OFFICE.

SAMUEL McCAMBRIDGE AND EDWARD G. MARTIN, OF PHILADELPHIA, PA.

## IMPROVED CAR-BRAKE.

Specification forming part of Letters Patent No. 58,115, dated September 18, 1866.

*To all whom it may concern:*

Be it known that we, SAMUEL McCAMBRIDGE and EDWARD G. MARTIN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved mode of unwinding the continuous chain which operates the brake-levers of a train of cars from the chain-shaft; and we do hereby declare that the following is a full and exact description of the construction and operation thereof, reference being had to the annexed drawings, and to the letters of reference marked thereon.

The nature of our invention and improvement consists in combining a coil-spring, by means of a chain and cylinder, with each car of a train and the continuous chain which operates the brake-levers, in such a manner that the instant the engineer lets go his lever connected with the machine for operating said continuous chain the coil-springs wind up their respective chains, and thus unwind the continuous chain from the chain-shaft, thereby taking off the strain from the brake-springs, so that their strength is only required to free the check-blocks from their respective wheels. Hitherto the work of unwinding the chain from the chain-shaft has been effected by the action of the brake-springs upon the brake-levers, thereby requiring the springs to be made of great additional strength, in consequence of the great weight of chain on a long train to be unwound, to release the check-blocks, and also of the springs operating through the short arms of the levers; but as our arrangement acts directly upon the continuous chain, without any loss of leverage, we require but little weight of springs to accomplish the purpose, and only use the brake-springs for their legitimate object of releasing the check-block from the wheels.

To enable others skilled in the art to which our improvement appertains to make and use our invention, we proceed to give a description thereof.

In the accompanying drawings, Figure 1 is a view from beneath of one of a series of apparatus for unwinding the continuous chain from the chain-shaft. Fig. 2 is a side elevation of the same.

Like letters in both the figures indicate the same parts.

A is a coil-spring within the hollow cylin-

der B. One end of the spring is secured by means of the screw *a* to the inner periphery of the cylinder, and the other end is confined to the stationary shaft C by means of the screw *b*. Said shaft is fastened at its ends in the hangers D D, the hangers being confined by means of screws to the plank E, which we usually bolt to the lower side of the floor of the car. We sometimes dispense with the plank E, and bolt the hangers directly to the floor or to any other convenient part of the cars.

F is a chain, the end 1 of which is confined, by means of the bolt *c*, to the outer periphery of the cylinder B. The other end of the chain is connected to the continuous chain H, above referred to.

An apparatus like the one we have described we connect with each car of the train, having all connected with the continuous chain in like manner.

When the brakes have been applied, and the continuous chain is wound around the chain-shaft, the chains F are drawn out from the cylinder B, as represented in the drawings. Then, when the engineer lets go his lever to release the brakes, the coil-springs A draw up the chains F and wind them around the cylinders B, the united action of the springs unwinding the continuous chain from the chain-shaft, so as to take the strain off of the springs of the brakes that the said springs may instantly release the check-blocks from their respective wheels.

Having thus fully described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

The combination of a series of coil-springs with a train of cars and the continuous chain which operates the brake levers by means of the cylinders B, shafts C, and chains F, the several parts being arranged and operating substantially in the manner described, and for the purpose specified.

In testimony that the above is our invention we have hereunto set our hands and affixed our seals this 23d day of June, 1866.

SAMUEL McCAMBRIDGE. [L. S.]

EDWARD G. MARTIN. [L. S.]

Witnesses:

STEPHEN USTICK,

JOHN WHITE.