

(No Model.)

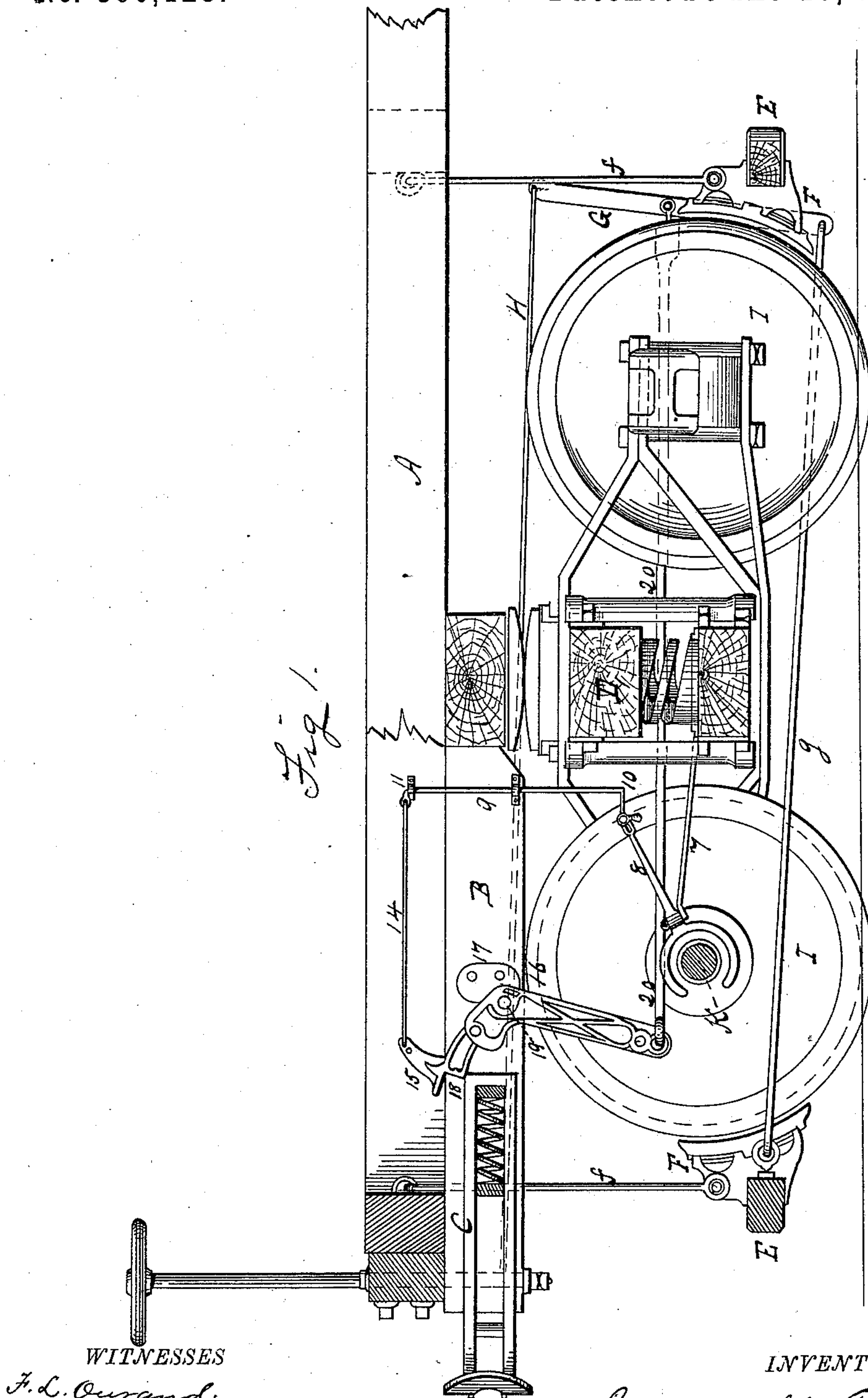
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G. H. POOR & C. J. SCHILLER.

AUTOMATIC CAR BRAKE.

No. 300,123.

Patented June 10, 1884.



WITNESSES

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(No Model.)

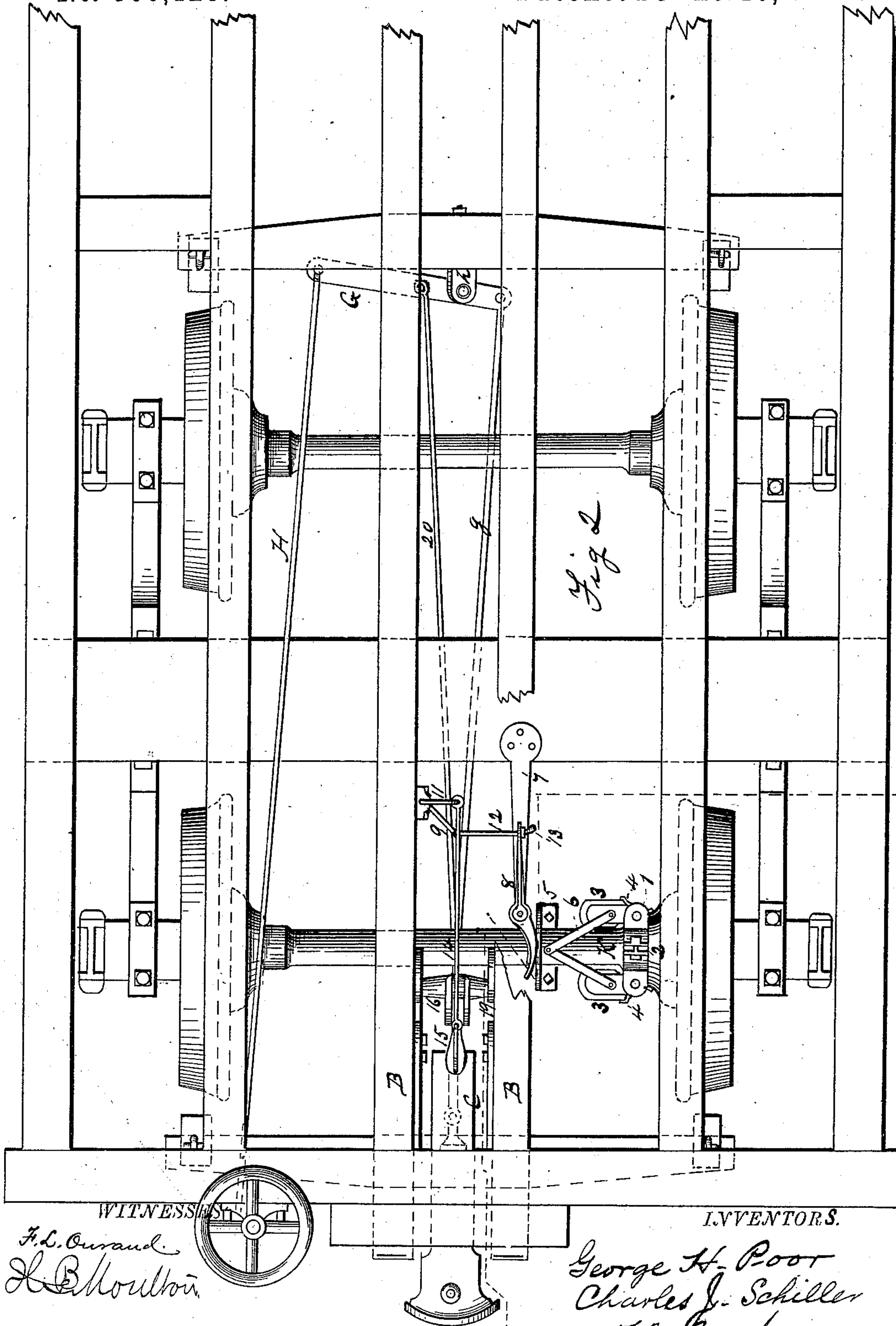
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UNITED STATES PATENT OFFICE.

GEORGE HAMILTON POOR, OF PORTLAND, MAINE, AND CHARLES JOHN SCHILLER, OF ST. LOUIS, MISSOURI, ASSIGNORS TO THE AMERICAN BRAKE COMPANY, OF ST. LOUIS, MISSOURI.

AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 300,123, dated June 10, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that we, GEORGE H. POOR, residing at Portland, in the county of Cumberland and State of Maine, and CHARLES J. SCHILLER, residing at St. Louis, in the State of Missouri, citizens of the United States, have invented certain new and useful Improvements in Automatic Car-Brakes; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation, partly in section, of a truck and portion of a car-body having our invention applied. Fig. 2 is a plan view of the sill-timbers, &c., and truck, the flooring having been removed, showing the arrangement of the automatic brake mechanism.

Like letters refer to like parts wherever they occur.

Our present invention relates to that class of automatic car-brakes wherein the momentum of the train is applied, through a movable draw-bar and intermediate mechanism controlled by a governor, to the brake beams and shoes, so as to apply the brakes automatically immediately upon the arrest or retardation of the motion of any one or more of the preceding cars of a train.

Heretofore the mechanism interposed between the brakes and the movable draw-bar, though effective for the purposes intended, has always been of a more or less complicated character, which detracted from its durability and rendered it liable to become deranged where committed to the care of unskilled operatives. Furthermore, it has generally been of a character which required skilled labor to fit or adjust it to the different class or build of cars, and where constructed for applying the power to outside brake-shoes was not as effective without alteration for applying the brakes when arranged between the wheels.

The object of the present invention is, first, to reduce the number of parts, simplify the mechanism, and thus render it more durable, more readily applied and fitted to the various build of cars, and easily kept in order; and, also, to so construct the lever through which the brake mechanism is operated that the brakes may be applied either outside or between the wheels, as preferred, without loss

of power, the special configuration of the lever admitting of certain improvements in construction and operation of the parts associated therewith, which will be more fully explained hereinafter.

To this end the invention consists, first, in the combination, with an L-shaped operating-lever pivoted back of and in line with the movable draw-bar and connected directly with the brake mechanism, of a latch pivoted to the short arm of the operating-lever, and controlled, through the medium of a rock-shaft or bell-crank rod, by a governor located on the axle; and, secondly, in giving to the pivoted operating-lever a bent or general L form, whereby when the short arm is in the same horizontal plane with the movable draw-bar the long arm of the operating-lever will project down and forward, so as to clear the axle and give effective leverage upon the brakes, whether the same be suspended outside of or be between the wheels.

We will now proceed to describe our invention more specifically, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates a car-body; B B, the usual draft-timbers, between which is a movable draw-bar, C. D indicates the truck; E, the brake-beams, having shoes F, suspended by the usual hanger-link, *f*; *g*, a rod attached at one end to one of the brake-beams and at the other to the short arm of lever G, which is connected to the other brake-beam by a fulcrum-bolt, *h*, and H a rod connecting the long arm of lever G with the hand-brake. I indicates the wheels, and K the axles thereof.

The parts thus far mentioned may be of any well-known and approved pattern, and the brake-heads and their connecting-rods may be arranged and connected in any of the well-known ways, as said devices or their arrangement form no part of the present invention.

Upon the axle we secure a centrifugal governor, which may be composed of the axle-clamp 1, consisting of a sectional collar firmly secured to the axle by bolts, which pass through lugs 2, and on the collar we pivot governor-balls or centrifugal weights 3, which, when the axle is at rest, are held against the same by springs 4, or equivalent means.

5 indicates a sliding collar, connected to the governor-balls 3 by toggle-links or straps 6 in such manner that when the centrifugal force separates the governor-balls from the axle the collar 5 is drawn toward the wheel, and when the governor-balls hug the axle the collar is forced away from the wheel.

Secured to the truck, and projecting forward toward axle K, is a truck-bracket, 7, upon which is pivoted a bifurcated or forked lever, 8, which is so arranged that its fork or bifurcation incloses the axle K in the path of the sliding collar 5, while its other end extends backward toward the truck, and preferably toward the king-bolt, so that the motion between the car and truck shall affect the devices as little as possible.

Journalled on the draft-timbers B B is a bell-crank rod or rock-shaft, 9, having two arms, 10 and 11, arranged vertically, so that the lower arm shall be substantially in the plane of the forked lever 8, to which it is connected by a link-rod, 12, which may be provided with a nut, 13, so that by screwing up the nut any slack between rock-shaft 9 and forked lever 8 may be taken up to insure the proper operation of the parts. The upper arm, 11, of the bell-crank rod or rock-shaft 9 is connected by a link or rod, 14, with a latch, 15, pivoted on a jawed lever, 16.

17 indicates cheek-plates bolted to the inside faces of the draft-timbers B B, just back of the movable draw-bar C; and 16 indicates an operating-lever arranged between the cheek-plates, in line with and just back of the movable draw-bar. The operating-lever (or jawed lever) is of general L shape, pivoted at its angle on a bolt which passes through the lever 16 and cheek-plates 17, so that its long arm extends down and forward, while its short arm extends up and forward into the path of the movable draw-head. The short arm is bifurcated, and between the upper ends of the jaws thus formed is pivoted the short dog or latch 15, which is notched, as at 18, to permit it to engage with the end of the draw-bar. The jawed lever 16 may be provided with bosses 19, and, in addition thereto, washers may be employed, when required, to center the lever and fill the space between the cheek-plates. The lower or long arm of lever 16 is connected directly with the long arm of brake-lever G by a suitable chain or rod, 20.

The devices, being substantially those specified, will operate as follows: While the train is at rest or moving slowly the devices will occupy the position shown in the drawings, and the latch 15 will be held up out of the way of the draw-bar C, which can then move in or out freely without operating the brakes; but when the train has reached a sufficiently high rate of speed the centrifugal force will drive the governor-balls 3 away from the axle, which, through the straps or toggle-links 6, will draw the sliding collar 5 toward the wheel. This permits the bifurcated arm of forked lever 8 to move toward the axle or follow the

collar 5, and the consequent rotation of the bell-crank rod or rock-shaft 9, which slackens rod 14 and permits the latch 15 to drop back of the movable draw-bar C. If, now, the motion of the locomotive or any of the preceding cars of the train be suddenly retarded or arrested, the momentum of the train will force the cars together and drive in the draw-bars, which, acting through the latch on the pivoted operating or jawed lever 16, will turn the same on its pivot, so as to force forward the lower end of its long arm, and thus, drawing on rod 20, will apply the brakes automatically. When the speed of the trains falls below that required to operate the governor, the governor-balls 3 will be forced against the axle by the springs 4, (or equivalent devices.) This will force the sliding collar away from the wheel, carrying with it the bifurcated end of forked arm 8, thus rotating the rock-shaft, which will draw on rod 14 and lift latch 15 above the draw-head C, which latter can then move in or out without actuating the brakes.

The advantages of our invention are to be found in the greatly reduced number of parts, their extreme simplicity, non-liability to get out of order, and the ease with which they may be applied to the ordinary build of cars, irrespective of the arrangement of the brakes.

It will be seen that in consequence of the upper end of the operating-lever being extended to project forward of its fulcrum a much shorter latch can be used, thereby reducing the distance through which the forked end of lever 8 is required to travel to lift the latch. Another advantage of this construction is that as the point at which power is applied to the operating-lever (the heel or pivot of the latch) approaches the vertical plane of the fulcrum of the lever the power is proportionately increased.

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

In an automatic car-brake of the character described, the combination, with the movable draw-bar and the brake mechanism, of an L-shaped operating-lever fulcrumed in rear of the draw-bar, with its short arm extending upward and toward the draw-bar and its long arm terminating forward of the wheel-axles, and a short latch pivoted at one end to the upper end of said short arm, and having its free end connected, through suitable intermediate devices, with an automatic regulator secured to the wheel-axle, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE HAMILTON POOR.
CHARLES JOHN SCHILLER.

Witnesses:

W. E. TAYLOR,
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E. B. LEIGH,
JOHN B. GRAY.