

J. W. BRUCE.
WAGON BRAKE.

No. 437,281.

Patented Sept. 30, 1890.

Fig. 1.

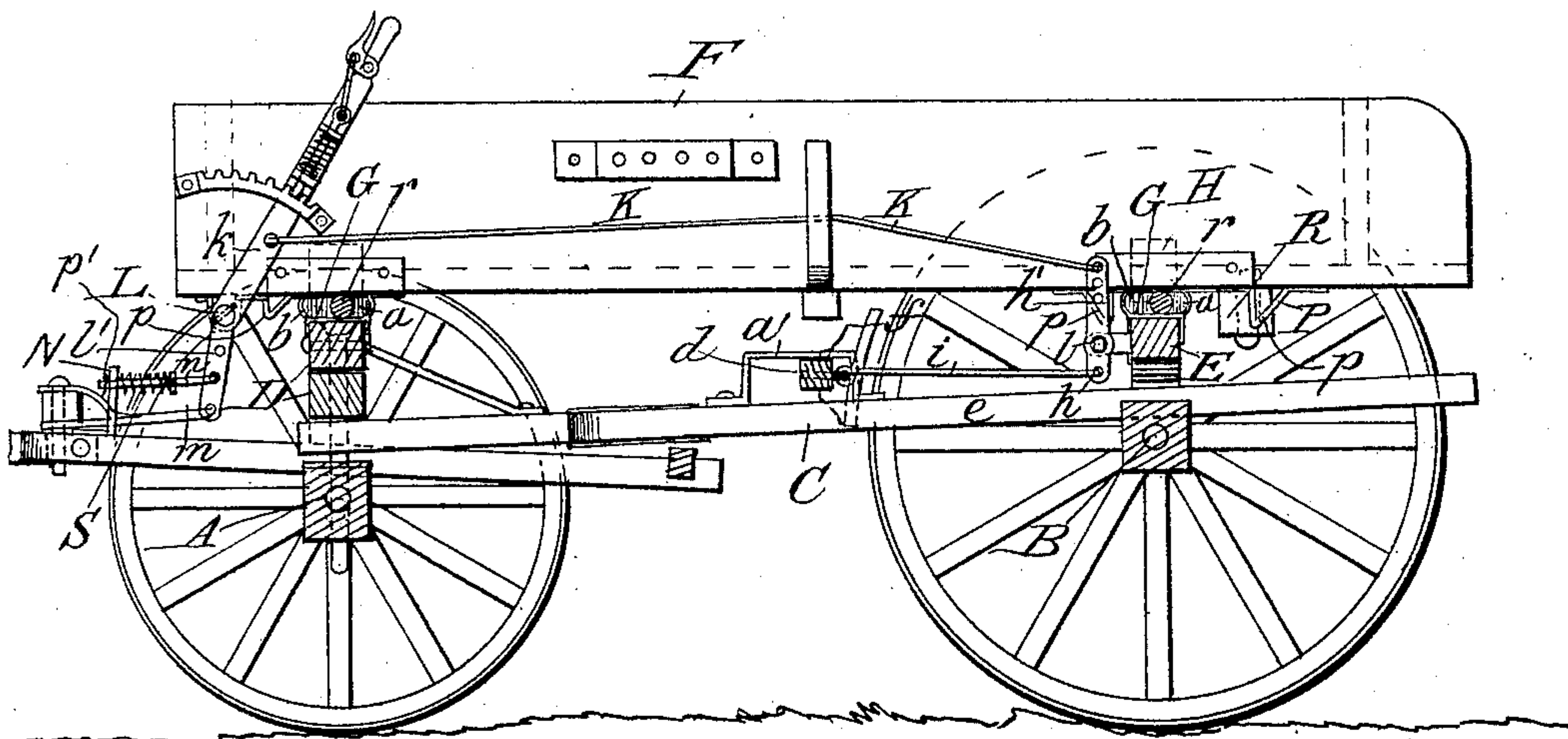
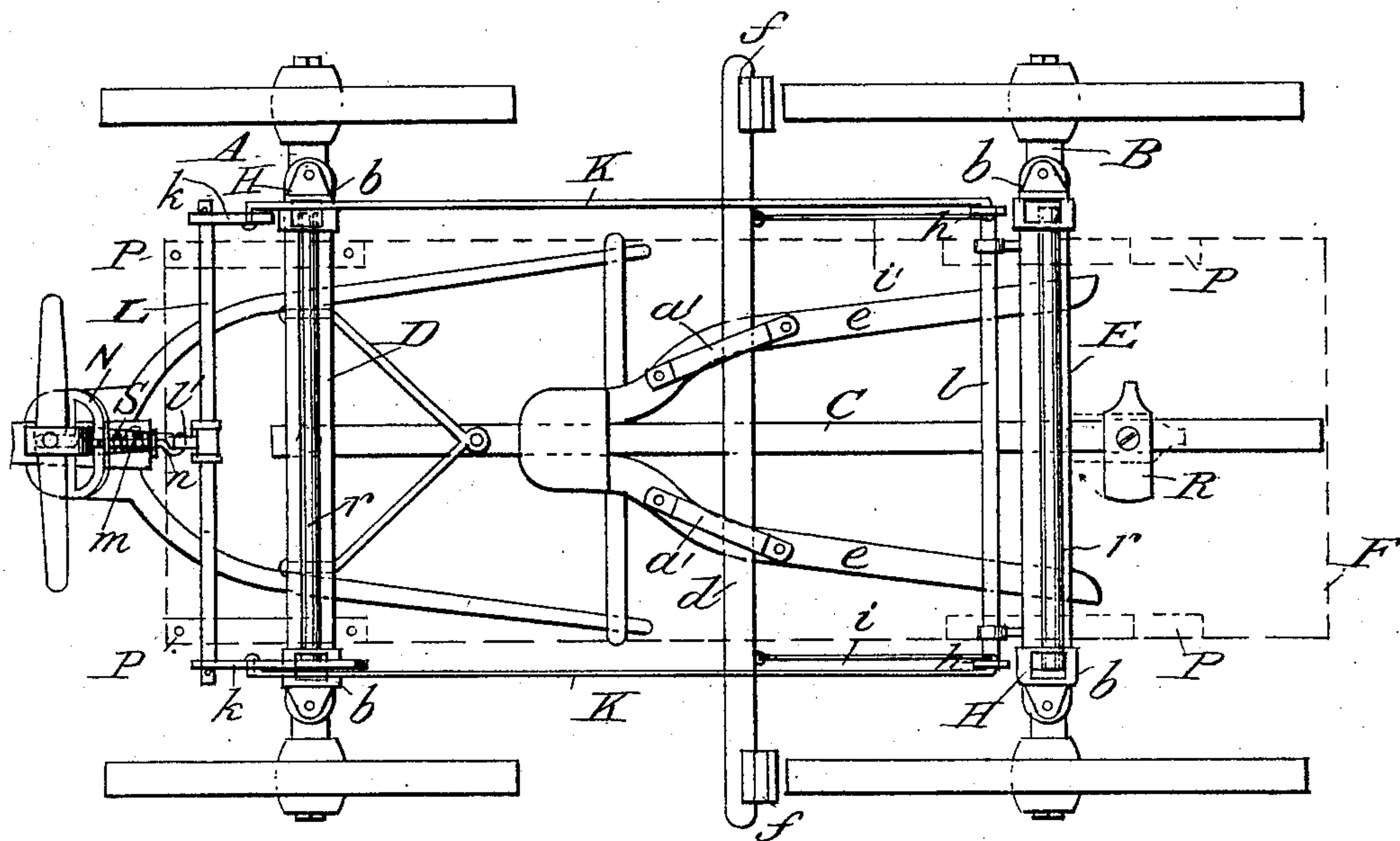


Fig. 2.



Attest:

J. H. Schott
A. Burroughs

James H. Bruce
Inventor
By W. C. Langan
Atty.

J. W. BRUCE.
WAGON BRAKE.

No. 437,281.

Patented Sept. 30, 1890.

Fig. 3.

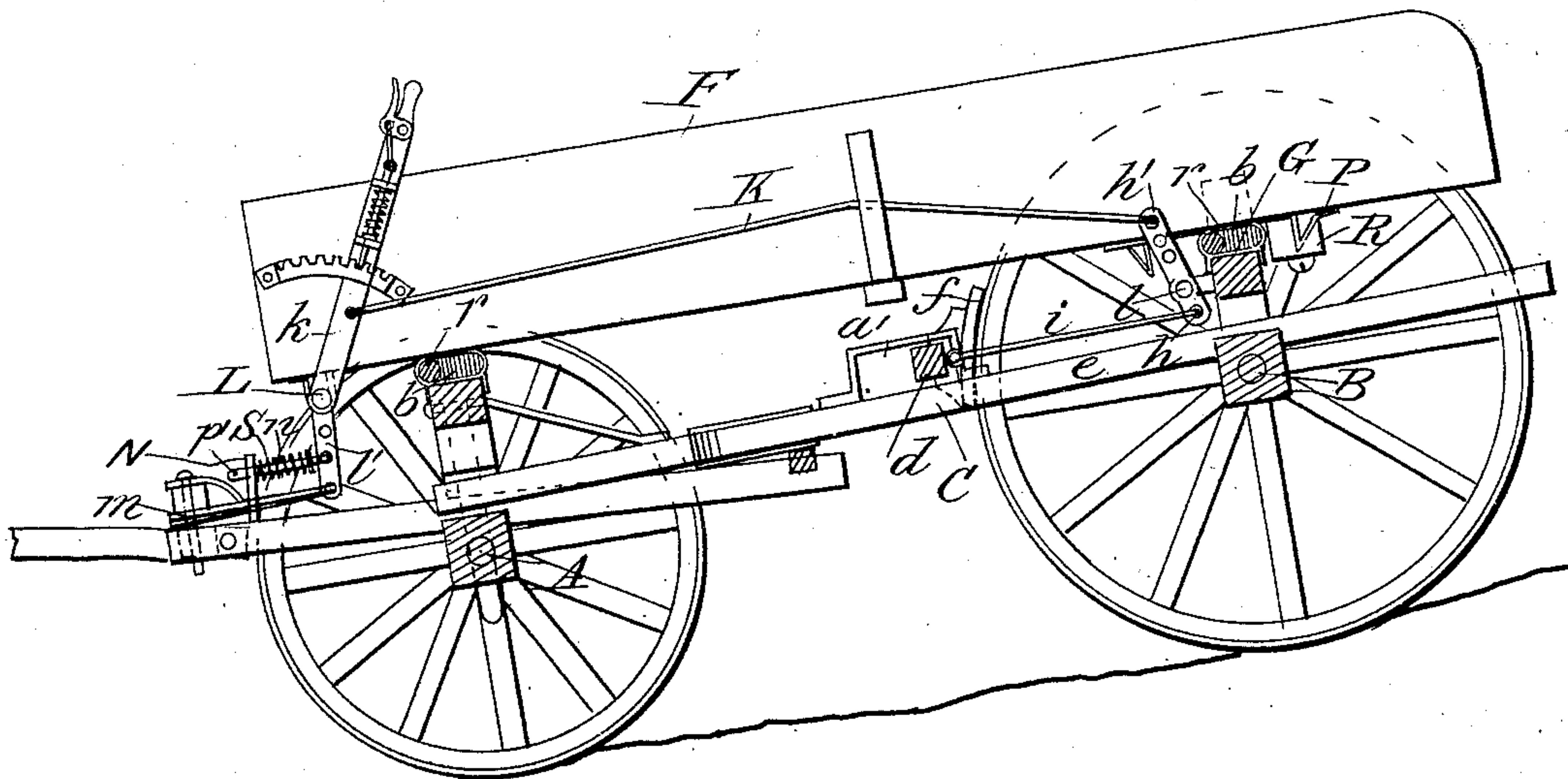
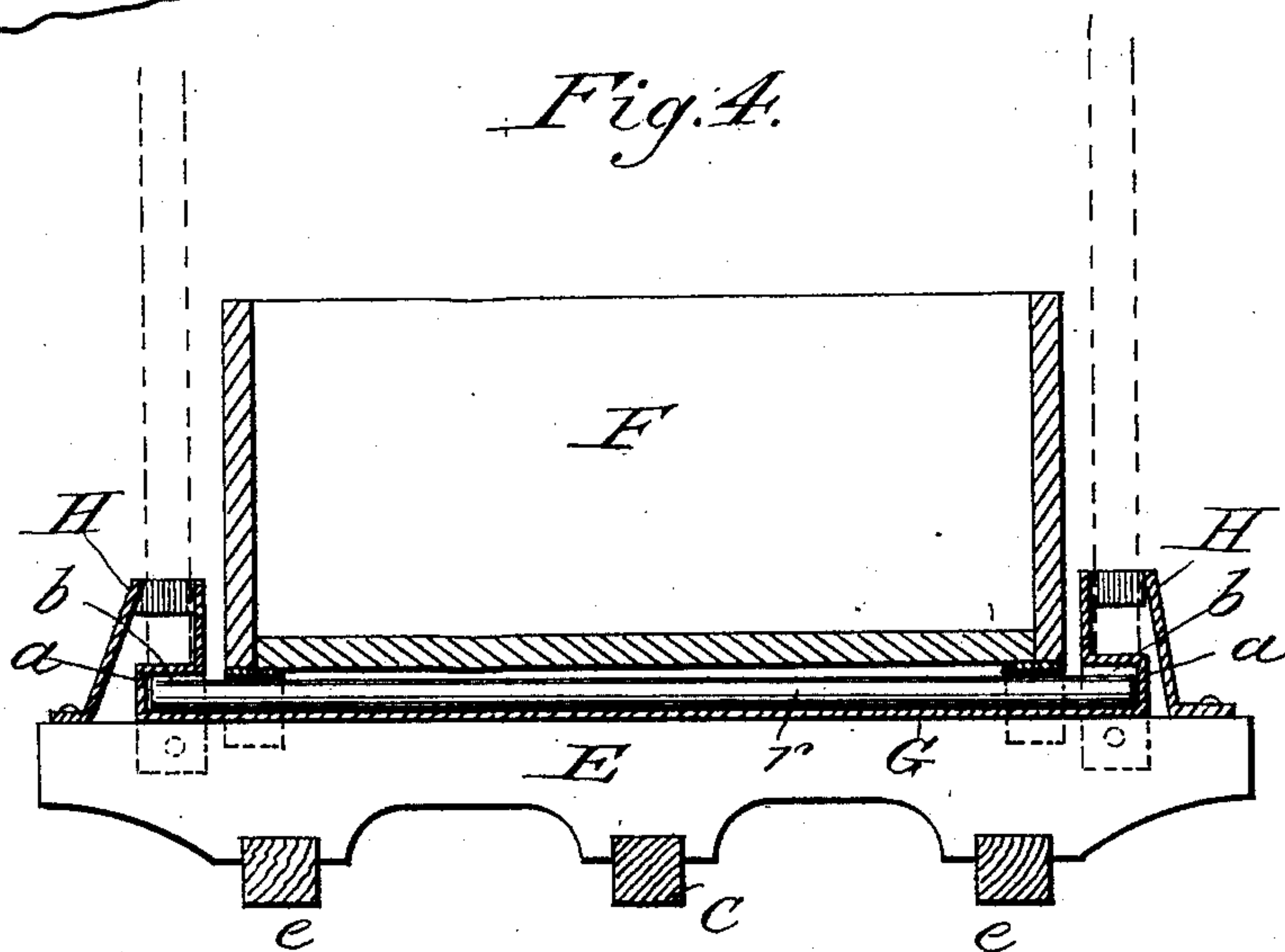


Fig. 4.



Attest:

H. H. Schott
J. Burroughs.

James W. Bruce
Inventor
By H. C. Langan
Atty.

UNITED STATES PATENT OFFICE.

JAMES WESLEY BRUCE, OF AITCH, OHIO.

WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 437,281, dated September 30, 1890.

Application filed February 12, 1890. Serial No. 340,162. (No model.)

To all whom it may concern:

Be it known that I, JAMES WESLEY BRUCE, a citizen of the United States, residing at Aitch, in the county of Monroe and State of Ohio, have invented certain new and useful Improvements in Automatic Brakes for Wagons; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 This invention relates to improvements in automatic brakes for wagons and carriages, and especially to that shown and described in Patent No. 410,400, granted to me September 3, 1889.

20 The invention has for its object the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

25 In the accompanying drawings, in which similar letters of reference designate corresponding parts, Figure 1 is a side elevation of a wagon embodying the invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section of the wagon. Fig. 4 is a sectional view.

Referring to the drawings by letter, A represents the front and B the rear axles of a wagon.

35 C is the reach connecting said axles.

D and E are the front and rear bolsters.

F represents the wagon-body, carried upon the bolsters and having interposed between them the rollers *r r*, which rest on the broad smooth upper surface of the bolsters. A wear-plate G is interposed between the roller and bolster, which has its ends *a* turned up a short distance to prevent any lateral movement of the rollers. To confine the play of the rollers and to form boxes for the journals on their ends, the elongated metal loops *b* are provided. From the inner edge of the top of this loop and immediately over the same and from the end of the bolster extends the standard H.

50 In the top of this standard is formed a receptacle for an additional standard, when it is desired to use such. The loop and the stand-

ard may be made integral of sheet metal, and when so constructed is more substantial than when made of several parts. 55

The rollers allow the body of the wagon to move longitudinally to a limited degree. To confine this movement, the wear-plates P, placed between the ends of the rollers and the bottom of the wagon, are provided with 60 projections *p*, extending on both sides of the bolster, confining the movement of the wagon-body to the space between the projections. These plates are features to be applied especially to the rear bolster, and may or may not 65 be used on the front one.

Just forward of the rear wheels the brake-beam *d* crosses the vehicle, supported by the rail-hounds *e e* and confined to its place by the straps *a' a'*. To each end of the beam is 70 attached in any suitable manner a shoe *f*, which, when it is desired to retard the motion of the wagon, is brought in contact with the wheel in the manner hereinafter described.

In front of the rear bolster and to it is jour- 75 naled the rock-shaft I. To the ends of this shaft are attached the crank-arms *h h*, extending downward a short distance, and are connected to the brake-beam by the rods *i i*. Longer arms *h' h'* extend upward from the 80 rock-shaft, and are connected by the rods K K with the arms *k k*, attached to and extending upward from the ends of the rock-shaft L, journaled in bearings attached to the under side of the wagon-body forward of the 85 front bolster. The arm *k* on the right-hand side of the wagon-body is extended to form the lever ordinarily used for applying the brakes, and has the toothed arc and ratchet commonly used for holding it in position. 90

About midway of the shaft L directly back of the tongue is attached the crank-shaft *l'*, extending downward. The rod *m* connects the free end of this crank with the double-tree, the outer end of the rod being bifurcated 95 for the reception of the same. This rod passes through an opening formed in the upturned edge of the plate N. A rod *n* connects the upturned lip or edge of the plate with the crank *l'* above where the rod *m* is attached, 100 and is secured to the plate by the pin *p'*. Encircling the rod *n*, between the plate and the crank, is the coiled spring S, to act as a buffer in the manner hereinafter described.

Back of the rear bolster is a cam-stop R, attached to the under side of the wagon-body, for holding it in such a manner as to prevent the automatic operation of the brakes.

5 From the construction described it will be apparent that when the wagon begins to descend a hill that, by force of gravity, the wagon-body will move forward on the rollers and apply the brakes. The spring-catch on
10 the hand-lever, placed on either side of the wagon-body, always holds the same in engagement, so that when it moves forward in relation to the running-gear the lever will also be forced forward with the body and apply
15 the brakes.

The hand-lever may be used independently to apply the brakes when the cam-stop is turned or in going uphill.

When level ground has been reached after
20 descending a hill, a pull brought to bear on the doubletree, by means of the crank *l* and the rod connecting it with the doubletree, forces the wagon-body backward and relieves the wheels of the brakes. The spring
25 S is provided to prevent any sudden strain from coming on the crank. When the crank *l* is forced forward, the rod *n* is also forced forward, and the spring S, surrounding it, is compressed, acting as a buffer, preventing any
30 sudden pull which might be exerted upon the doubletree from wrenching or injuring the apparatus.

When it is desired to do away with the automatic-operating mechanism and use the hand-
35 lever alone, the cam-stop R is turned, forcing the wagon-body backward and holding it in that position. The brakes may be also applied without the cam-stop being in position to hold the wagon-body by drawing forward
40 the lever. This will force the wagon-body

back as far as it will go, and then apply the shoes to the wheels.

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

1. In an automatic brake for wagons, the
45 combination of the running-gear, the movable body mounted on rollers carried on the bolsters of said gear, the cam-stop for restricting the movement of said body, the brake-beam,
50 the rock-shaft connected to said beam by rods *i i* and the arms *h h*, the rock-shaft attached to the forward part of the wagon-body, having arms *k k*, the rods connecting said crank-arms with the arms on the shaft I, the bifur-
55 cated rod *n*, connecting the crank-arm *l* with the doubletree, the plate N, the rod *n*, connecting the crank-arm *l* with said plate, and the coiled spring S, surrounding said rod *n*,
60 substantially as and for the purpose specified.

2. In an automatic brake for wagons, the combination of the running-gear, the movable body mounted on rollers carried on the bolsters of said gear, the brake-beam *d*, the rock-
65 shaft I, connected with said beam by the rods *i i* and the arms *h h*, the rock-shaft L, having arms *k k*, the rods K K, for connecting said crank-arms with the arms *h' h'* on the shaft I, the bifurcated rod *m*, connecting the crank-
70 arm *l* with the doubletree, the plate N, the rod *n*, connecting the crank *l* with said plate, and the coiled spring S, surrounding said rod *n*, substantially as and for the purpose specified.

In testimony whereof I affix my signature in
75 presence of two witnesses.

JAMES WESLEY BRUCE.

Witnesses:

F. P. SHRIEVE,
W. V. A. POLEN.