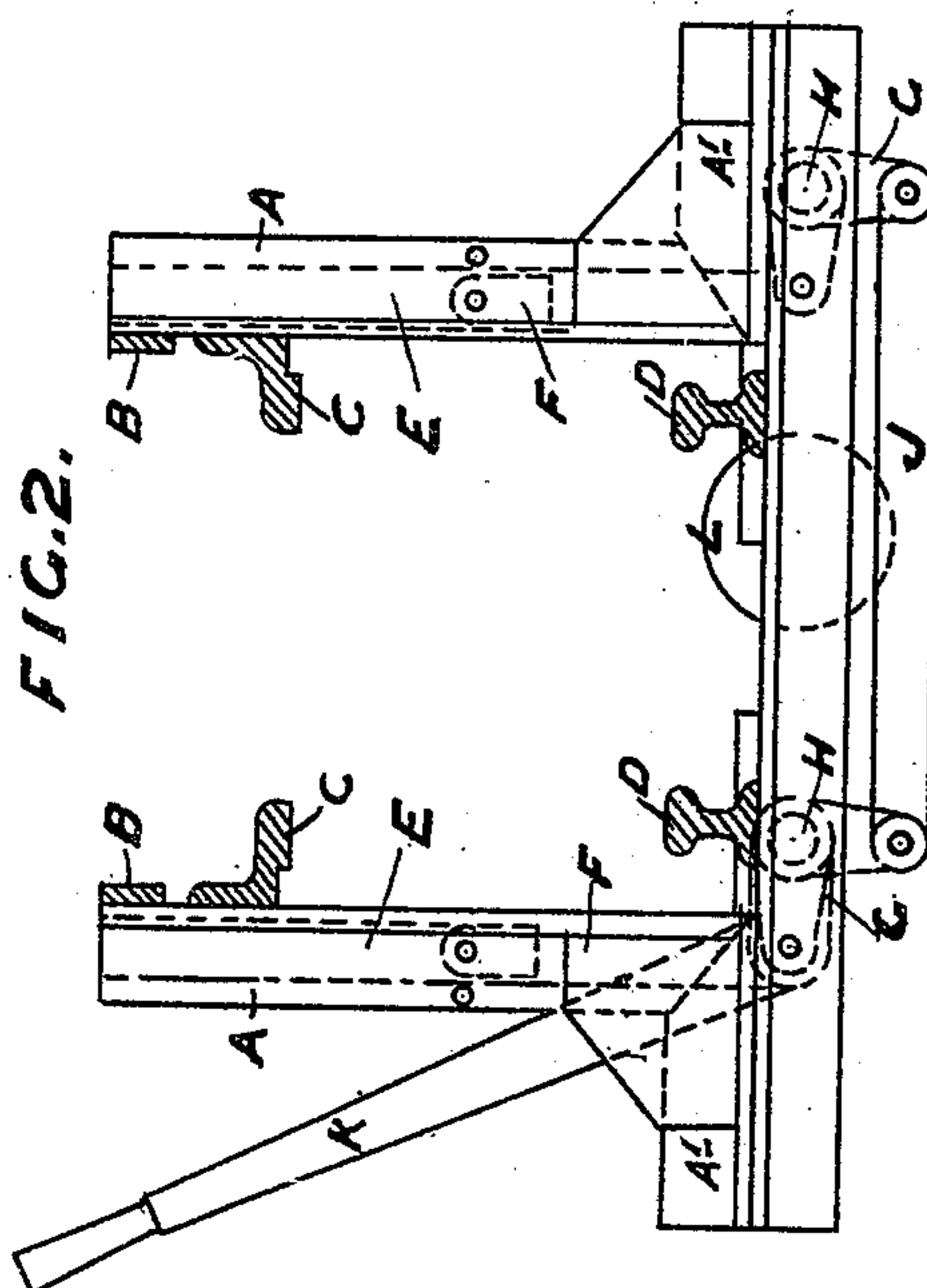
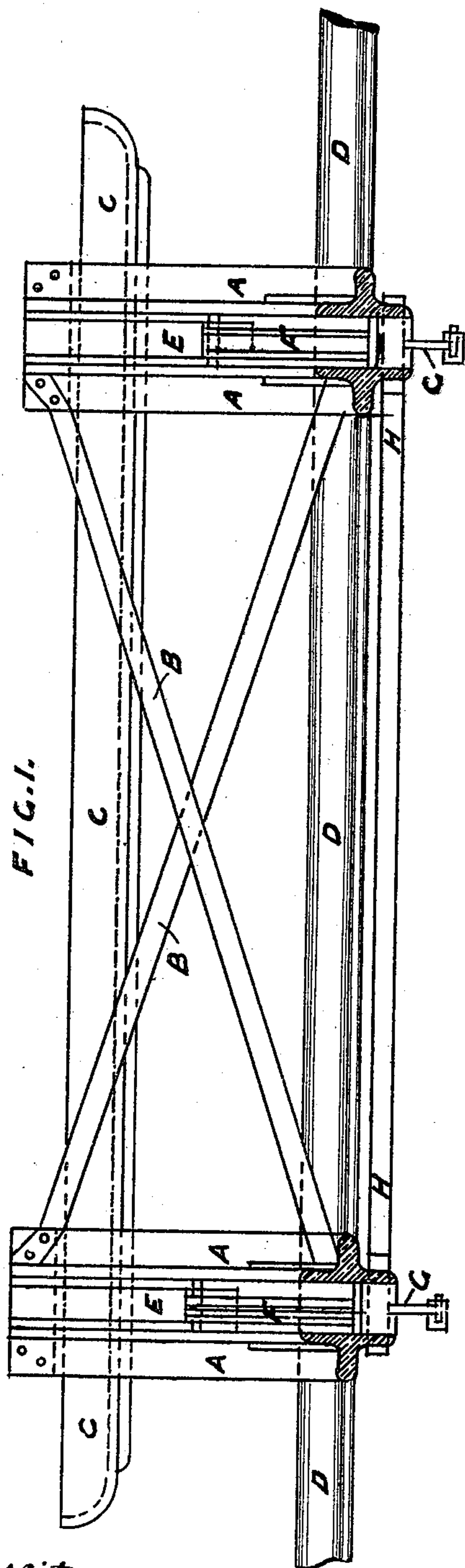


No. 640,138.

Patented Dec. 26, 1899.

G. F. LABRAM.
BRAKING APPARATUS.
(Application filed July 7, 1899.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE F. LABRAM, OF KIMBERLEY, CAPE COLONY.

BRAKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 640,138, dated December 26, 1899.

Application filed July 7, 1899. Serial No. 723,083. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FREDRICK LABRAM, a citizen of the United States, engineer of The De Beers Consolidated Mines Company, Limited, of Kimberley, South Africa, residing at Kimberley, in the Colony of the Cape of Good Hope, have invented certain new and useful Improvements in Braking Apparatus for Trucks, Wagons, Tubs, or Similar Vehicles on Rails or Tramways; and I do hereby 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.

The apparatus is specially adapted for application where trucks, wagons, tubs, or like vehicles are required to be gradually brought to rest at some fixed point and is intended to obviate the wear and tear of the wheel-rims, axles, and bearings and the chances of accidents, breakage, and loss of time by a truck or trucks being derailed, as frequently happens by the use of "sprags" in the wheels, which act to instantly stop the revolution of the wheels, causing them to "skid" or slide on the rail, by which the tires are worn into flat places, which soon causes them to run untruly on the rails and causes great strains upon the axles and bearings. The operation of "spragging" requires some skill and involves the employment of more men, and sprags themselves cost money and are soon destroyed.

On the accompanying two sheets of drawings the apparatus is shown as I propose to carry it into practical application and in the form in which I have found it work efficiently in the mines under my charge.

Figure 1 shows a side elevation, and Fig. 2 an end view to a scale of one inch per foot.

The apparatus consists of a frame comprising four uprights, preferably of double angle-irons A, two at each end, attached firmly to the sleepers and rails of the permanent way by clamps A' at a convenient distance apart and stiffened by diagonal braces B. In the spaces between each pair of angle-irons, which form guides, are beams C, one on each side, parallel with and above the rails D and of sufficient length to extend over the wheels of one or more trucks, as may be required. These

beams form the brakes and are curved upward at each end to allow the truck-wheels to enter under them and move vertically in the guides of the frames A by guide-blocks E, to which they are attached, and these blocks are connected by links F to the ends of bell-cranks G on weigh-bars H, running the whole length of the apparatus and working in suitable bearings at each end, and the bell-cranks G at each end are coupled together by links J, so that the brake-beams work simultaneously in their guides. At one end of one of the weigh-bars H is keyed a hand-lever K with a counterweight L on its tail end, and the man in charge by depressing the lever causes the brakes to be applied gradually as the trucks run into the apparatus, the counterweight automatically releasing them when required.

In some cases, as of very long and heavy sets of tubs or wagons, the apparatus may be duplicated at one or more points of the line, and two or more may be worked by the same man by chains or other connections along the line operated by separate levers or simultaneously by hand and foot.

The operation of the brake or brakes is very simple. As the first tub or wagon of a set arrives the brake-beams are slightly depressed upon the tops of the wheels and retard the speed, still allowing the wheels to revolve, then another following is similarly retarded, and so on until the whole set is brought to rest, and then only the wheels cease to revolve entirely. Manual power is preferable, as the hand is sensitive to the amount of pressure put upon the wheels by the brake-beams, and a certain degree of elasticity is allowed to gradually reduce the revolution of the wheels without stopping them.

In an experimental application the brake apparatus has been quite a success, a considerably greater number of tubs or wagons having been handled by one man than before with three men, the cost of "sprags" saved, and the risk of one sprag sticking in the wheel causing serious delay and often a smash, resulting in a tub or wagon being upset on the line, besides the preservation of the wheels, axles, and bearings from shock and strains.

The brake-beams C may have on their faces some yielding frictional material, such as

strips of leather, to give them greater holding power.

I claim—

1. A braking apparatus, comprising a frame
5 fixed upon the side of and extending longitudinally of the permanent way and provided with vertical guides, movable supports mounted in said guides, brake-beams mounted in
10 said supports and means for actuating the said brake-beams, substantially as described.

2. A braking apparatus, comprising a frame
fixed to the permanent way, braced longitudinally and provided with vertical guides,
15 guide-blocks sliding vertically in said guides, a pair of longitudinal brake-beams carried by said guide-blocks and means for actuating
said brake-beams, substantially as described.

3. A braking apparatus comprising a frame
fixed to the permanent way, braced longitudinally and provided with vertical guides,
20 guide-blocks moving vertically in said guides, a pair of longitudinal brake-beams mounted on said guide-blocks, an actuating-lever and means for transmitting the power therefrom
25 to said brake-beams, substantially as described.

4. A braking apparatus, comprising a frame
secured to the permanent way, movable supports carried by said frame, longitudinal

brake-beams carried by said movable supports, longitudinal weigh-bars, bell-cranks
30 mounted on said bars, links connecting the said bell-cranks together, links connecting the said bell-cranks to the said movable supports and a lever connected to said bell-cranks
35 for actuating the brake-beams, substantially as described.

5. The combination of parts constituting the braking apparatus, consisting of vertical
frames A, fixed on each side of and parallel
40 with the permanent way D, braced together longitudinally by stays B, and having vertical guides E; a pair of longitudinal brake-beams C, sliding vertically in guides E, connected by links F, to bell-cranks G, on weigh-
45 bars H, and coupled together by links J; a hand-lever K, keyed on one of the weigh-bars H, which being depressed applies the brakes and being released automatically releases
50 them by a counterweight L, which overbalances the weight of the brake-beams.

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

GEORGE F. LABRAM.

Witnesses:

T. L. ANGEL,

D. BLACKBEARD.