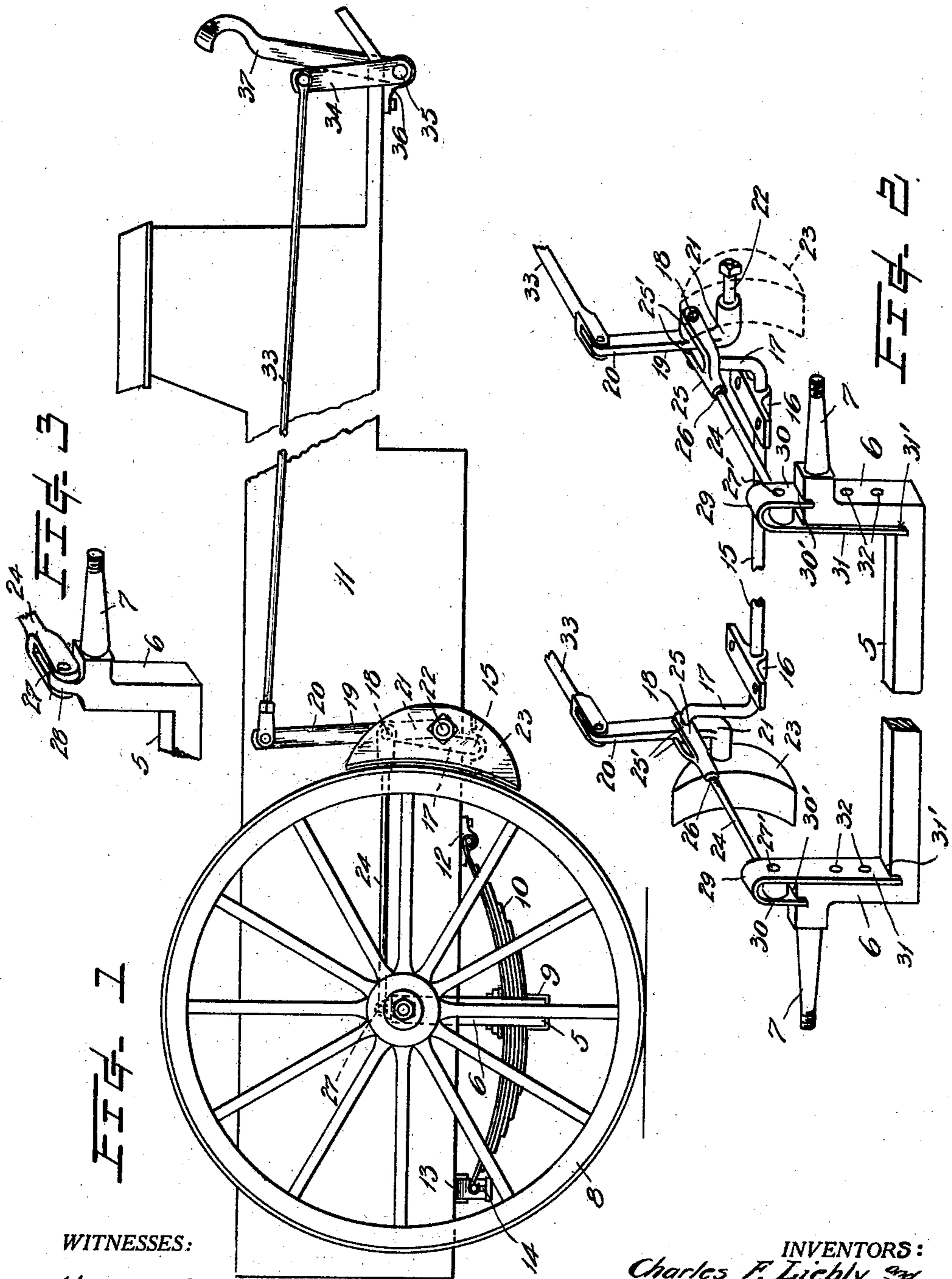


C. F. LEIBLY & C. C. WILSON.
WAGON BRAKE.

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WITNESSES:

Horace Barnes.
F. A. Cooke.

INVENTORS:

Charles F. Liebly and
Charles C. Wilson
BY

Pierre Barnes
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES F. LEIBLY AND CHARLES C. WILSON, OF SEATTLE, WASHINGTON.

WAGON-BRAKE.

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To all whom it may concern:

Be it known that we, CHARLES F. LEIBLY and CHARLES C. WILSON, citizens of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Wagon-Brakes, of which the following is a specification.

This invention relates to wagon-brakes and especially to that class which are applicable to wagons provided with crank-axles having superposed springs upon which the wagon-bed is sustained.

The object of our invention is the provision of brake-devices for this class of wagons and adapted to be operated from the driver's seat and have the brake-shoes retained at all times in effective operable positions and accommodate the same to both the horizontal and vertical movements of the bed with respect to the axle and the wheels journaled upon the latter.

The invention consists in the novel manner in which the brake-shoes are mounted together with the manner or means for influencing the same to effectually brake the wheels.

The invention further consists in the specific construction and adaptation of parts as will be hereinafter particularly described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a part of a wagon provided with brake appliances constructed to embody our invention. Fig. 2 is a perspective view of the rear wagon-axle with the brake-devices connected therewith. Fig. 3 is a fragmentary perspective view of the axle and the end of one of the radius rods to illustrate a modified manner of connecting the two.

The reference numeral 5 designates the body of a wagon-axle terminating in upstanding parts 6, from the upper ends of which extend the conical spindles 7 which afford journal bearings for the rear wheels 8 of a wagon. Secured to the axle body by clips, such as 9, which are situated in proximity of the axle-parts 6 are longitudinally arranged springs 10 whose office is to support the superposed wagon-bed 11. The forward ends of these springs are connected to cleats, such as 12, which are fixedly secured to the wagon-bed, while the rear ends of the springs are yieldingly connected to the bed to accommodate the elongation of said

springs when flattened through the sinking of the bed under a load. The connections between the bed and the rear ends of the springs may consist of a transversely arranged spring 13 connected intermediate of its length to the bed and having its ends hung from the adjacent ends of the springs 9 by suspension straps, as 14.

All of the aforescribed parts are, or may be, as hitherto utilized in the construction of wagons of that type with which our invention is intended to be employed. It is to be noted, however, that the fall and rise of the bed with respect to the axle, or the wheels carried thereupon, effect corresponding forward and rearward movements of the bed with respect to the wheels.

According to our invention we employ a shaft 15 which is disposed transversely of and connected with the underside of the bed 11 by journal-boxes 16 which are rigidly secured to the latter so that the axis of the shaft will be parallel with the axle body and at a short distance in advance of the most forward portions of the peripheries of the wheels 8. The ends of the shaft are formed with cranks 17 which extend upwardly and terminate in pins 18 whose axes are in alinement and parallel with that of the main portion of the shaft. Each of these pins 18 has fulcrumed thereupon a lever 19 with arms 20 and 21 of unequal lengths, desirably. Upon the lower arms, 21, of each of these levers is a stud 22 which projects laterally outward with respect to the bed and mounted thereupon is a brake-shoe 23 of ordinary, or suitable, shape. A radius rod 24 also connects the respective crank-pins 18 with the upper ends of adjacent upstanding parts 6 of the axles. The connections with said pins is preferably made by bifurcated members 25 which straddle the respective levers and have the branches 25' apertured to receive the crank-pins and are formed with a screw-threaded socket 26 for adjustable connection with the threaded ends of the respective rods 24. These rods, as shown in Fig. 3, may have their opposite ends connected by a pivotal pin 27 with a lug 28 formed integral upon each of the upstanding parts 6 of the axle, and in such devices would desirably be employed where the wagon axle is specially constructed with a view to the use of the present invention. In order to afford means to otherwise use our brake-devices, that is on cranked-axles of ordinary construction and upon such as are already

installed, we utilize the axle-attachments illustrated in Fig. 2. These attachments are each comprised of a strap 29 formed to the shape of an inverted U but with the limbs 30 and 31 thereof of unequal lengths, and, severally recessed as at 30' and 31' to respectively receive the body and the top of the upstanding parts 6 of the axle and are further secured to the latter by bolts or rivets 32 extending through parts 6. The straps project somewhat above the axle to house the ends of the respective rods 24 by bolt or pin connections 27' extending through apertures provided in the rods and the strap-limbs.

Connected to the lever arms 20 upon the opposite sides of the wagon bed are reach-rods, as 33, to operatively connect the same with the crank-arms 34 of a transverse shaft 35 mounted in bearing-boxes 36 secured to the wagon-body near the forward end. Upon the shaft is a handle, or, as shown, a tread-arm 37 whereby the brake appliances are made operative.

The operation of the invention is extremely simple: When the tread-arm 37 is tilted forwardly by pressure exerted through the foot of the driver the shaft 35 is given a partial rotation to correspondingly tilt the arms 34 which through the medium of the reach-rods upon both sides of the wagon, actuate the levers 19 which carry the brake-shoes 23 to force the latter against the wheel tires and thereby brake the wheels. A reverse movement of the tread arms will withdraw the shoes from the wheels. The levers 19 being fulcrumed to the crank pins 18 of the shaft 15 which is connected for oscillation to the wagon-bed, the pivotal connections, the pins 18, are influenced by the connecting radius rods 24 to be maintained at a substantially uniform distance from the axis of the wheels at the various positions which the wagon-bed assumes with respect to the axis of the wheels. Consequently the rocking of the shaft 15 accommodates itself to the various changes in the elevation of the bed, the levers 19 being actuated in unison from force applied from the operating shaft 35, cause the brake-blocks to move in unison. Furthermore, and from the manner of jour-

naling the shaft 15 in bearing-boxes which are rigid with the wagon-bed there is no liability of the shaft swerving out of its transverse position, which would interfere with the proper working of the brake.

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

1. In combination with a wagon-bed, a cranked axle therefor, and wheels journaled upon the axle, of a shaft having cranked ends provided with crank-pins, boxes rigidly secured to the underside of said bed and affording bearings for said shaft, a lever fulcrumed upon each of said pins, an arm of each of said levers being provided with a stud, a brake-shoe carried by each stud, a radius rod connecting each said pin with the adjacent end of said axle, a shaft provided with devices for manually exerting oscillating movement thereto and provided with crank-arms, and reach-rods individually connecting the last named arms with the arms of said levers which are unprovided with studs.

2. In a wagon-brake, the combination with the wagon-bed, an axle therefor which is provided with upstanding parts from which extend laterally projecting spindles, the wheels journaled upon said spindles, and springs interposed between the axle and the bed, of bearing-boxes secured to said bed, a shaft journaled in said boxes and provided with crank arms having crank-pins, a strap connected with the upstanding part at each side of the axle, a radius rod connecting each said strap with the respective crank-pins, a lever fulcrumed to each of said crank-pins and carried in a substantially upright position, a brake-shoe carried by the lowermost of the arms of the respective levers, and means operatively connected with the upper arms of the levers for actuating the same to cause the brake-blocks to be operative.

CHARLES F. LEIBLY.
CHARLIE C. WILSON.

Witnesses:

HORACE BARNES,
L. M. MORRIS.