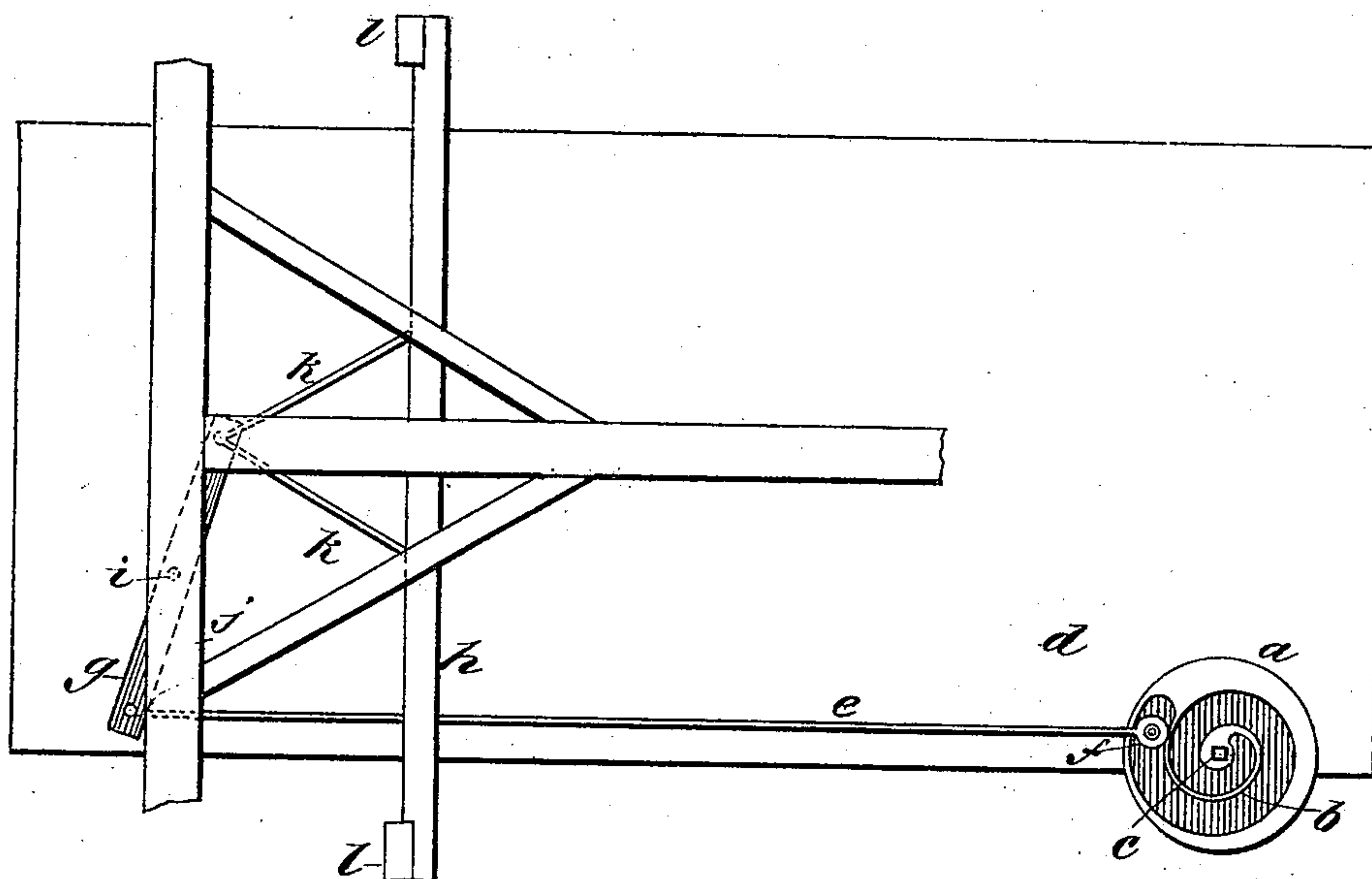


(No Model.)

E. R. KUGLER.  
BRAKE FOR VEHICLES.

No. 270,815.

Patented Jan. 16, 1883.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EPHRAIM R. KUGLER, OF KINGWOOD, NEW JERSEY.

## BRAKE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 270,815, dated January 16, 1883.

Application filed October 20, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EPHRAIM R. KUGLER, of Kingwood, in the county of Hunterdon and State of New Jersey, have invented a new and Improved Brake for Vehicles, of which the following is a full, clear, and exact description.

My invention consists of the employment of a spiral wheel, in connection with the brake-shaft and connecting-rod of a vehicle-brake, to transmit the motion of the said shaft, the object being more especially to provide a contrivance that will work the connecting-rod positively both ways and hold it in any position without the ratchet mechanism, and will avoid the necessity of a spring to detach the brakes, as is required in the common arrangements; but the device is also desirable because it is simpler and more durable than others. The form of spiral wheel which I prefer to use consists of a disk with a spiral groove in one side, in which the rod is connected by a friction-roller; but it may consist of a spiral thread or flange on the face of the disk, to which the rod may be connected by a notched head, or any equivalent arrangement may be employed.

Reference is to be had to the accompanying drawing, forming part of this specification, in which the figure represents a wagon bed or bottom and part of the running-gear inverted, with my improvement in brakes.

*a* represents the disk, having the spiral groove *b* in its lower face, and being mounted on the lower end of the vertical shaft *c*—such as is commonly employed with a hand-wheel or crank for working the brake—said shaft being mounted on the bed *d* of the wagon in any suitable way, and extending upward therefrom, or from the platform of a car, as is usual, for being conveniently operated by the brakeman.

*E* represents the connecting-rod, on the end of which is a friction-roller, *f*, fitted in the groove *b*, and to be secured in any approved way against dropping out.

*g* is a lever, to which the connecting-rod is attached to work the brake-bar *h*, said lever having a fulcrum at *i* on the axle *j*, and being

connected to said bar by rods *k*. The bar *h* carries the usual brake-shoes, *l*, to work against the wheels. (Not shown.) The arrangement of the brake, however, is immaterial, except in respect to the spiral wheel for coupling the hand-shaft to the connecting-rod, which constitutes my invention, and which, besides holding the brake without other fastening, as before described, is also an improvement over other contrivances, because the power increases with the increase of the resistance by the approach of the friction-roller toward the center of the disk in forcing the brakes on the wheels. By turning the hand-wheel backward the brakes will be detached from the wheels without the aid of a spring, the action of the spiral wheel being alike—that is to say, positive—in both directions.

It is to be understood that this brake mechanism is applicable to wagons, railroad and street cars, or to any other vehicle on which brakes are used.

I am aware that it is not new to reciprocate the brake-lever rod by bending its end and pivoting the bend to a disk on the hand-shaft at a greater or less distance from the center of motion; but the pivoted end remains always at the same distance from the center of motion during the whole of its forward stroke, so that the power does not increase gradually to the end of the forward stroke, like mine. This is an important matter and is fully accomplished by my spiral movement.

What I claim as new and of my invention is—

The hand-shaft of a vehicle-brake combined with the brake-rod *e* by means of the disk *a*, having spiral groove *b* on the shaft, and a friction-roller, *f*, on the end of said rod to work in said groove, whereby in putting on the brake the leverage is increased as the shoes approach the wheel by the gradual approximation of the roller *f* to the center of motion, as described.

EPHRAIM R. KUGLER.

Witnesses:

WILLIAM K. HEATH,  
ISHMAEL BRINK.