J. M. KELLY.

Car-Brake.

No. 161,884. Patented April 13, 1875.

Fig: 1.

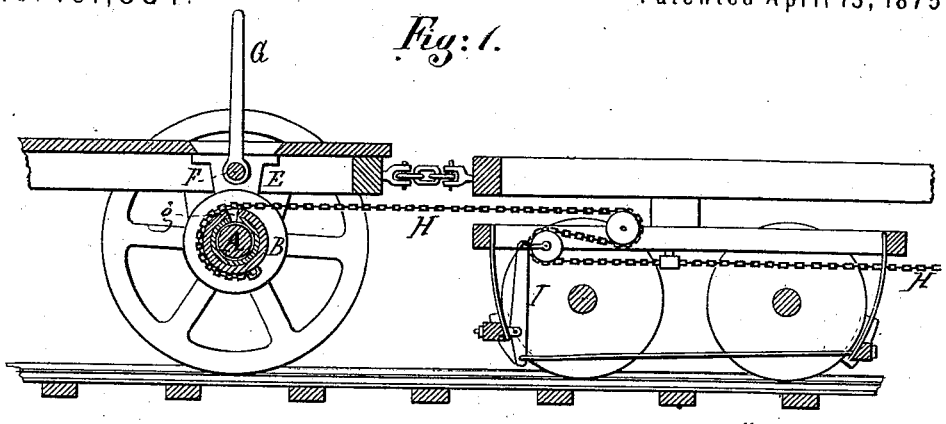



Fig: 2.

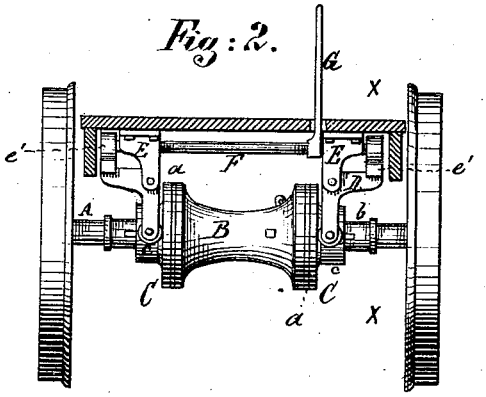



Fig: 3.

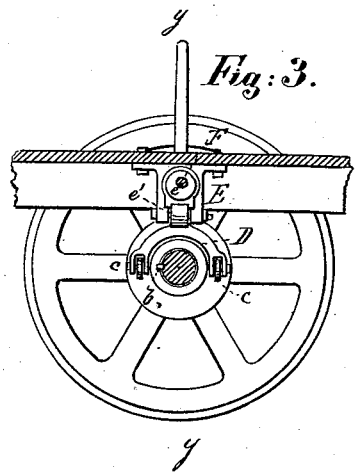
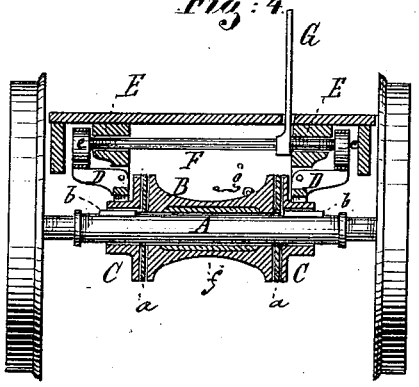



Fig: 4.

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# UNITED STATES PATENT OFFICE.

JAMES M. KELLY, OF AUSTIN, ILLINOIS.

## IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **161,884**, dated April 13, 1875; application filed December 21, 1874.

*To all whom it may concern:*

Be it known that I, JAMES M. KELLY, of Austin, in the county of Cook and State of Illinois, have invented an Improvement in Railway Train-Brakes, of which the following is a specification:

The nature of my invention relates to an improvement in car-brakes, of that class wherein a chain connected with the brake-levers of the train is wound upon the hind driving-axle of the locomotive, when it is desired to stop the train, and, more particularly, to that class wherein a spool is mounted upon said axle, and caused to rotate and wind up the chain by means of a friction-clutch sliding upon said axle. The invention consists in the combination, with a spool sleeved upon the driving-axle of a locomotive, of two friction-clutches feathered upon said axle, one at each end of said spool, and actuated by two forked bell-cranks, two eccentrics, a rock-shaft, and a lever projecting up through a slot in the foot-plate, as more fully hereinafter set forth.

Figure 1 is a partial longitudinal vertical section of the rear part of a locomotive and a tender-truck fitted with my improved brake. Fig. 2 is a side elevation of the rear axle of the locomotive, showing the foot-plate in transverse section. Fig. 3 is a cross-section at *x x* in Fig. 2. Fig. 4 is a transverse-section at *y y* in Fig. 3.

In the drawing, A represents the rear driving-axle of a locomotive, having a spool or drum, B, sleeved upon it, preferably made of cast-iron, with a friction surface or disk, *a*, at each end, made of wood or other suitable material, oiled or saturated with a lubricant. C C are two clutch-disks sleeved upon the axle, one at each side of the spool, and by a feather, *b*, each is caused to revolve with the axle. D is a bell-crank hung or pivoted at its angle in a hanger, E, pendent from the foot-plate over each clutch-disk. Each has its lower arm bifurcated or forked to straddle the hub or neck of the disk-clutch, with a friction-wheel, *c*, pivoted in each extremity, to press forward the disk against the spool without unnecessary friction. F is a rock-shaft journaled in and through bearings in the hangers E, with an eccentric, *e*, upon each end, having a strap, *e'*, around it, which is connected at the bottom to the horizontal arm of the bell-crank. G is a lever keyed on the rock-shaft, and passing up through a slot in the foot-plate. By throwing forward this lever the friction-disks will be forced against the ends of the spool, and thus will compel the latter to rotate with the axle. One end of the chain H is secured to the spool, and thence is led over pulleys under the several cars to the brake-levers I, which compress the brake-shoes upon the rims of their wheels when the chain is wound upon the spool. As the axle rotates in the spool when the brakes are off, it becomes necessary to lubricate it, and to this end the spool has an oil-receptacle, *f*, cored in it, which is to be filled with oil through an aperture drilled in one side of the spool, and closed by a screw-plug, *g*.

I am aware that a chain-spool sleeved on the axle and caused to take against a fixed collar on the axle was invented by, and Letters Patent issued on May 19, 1874, to A. F. Gue, and disclaim any lot or part in the invention thereof.

As the driving-axle of a locomotive has a certain amount of lateral motion or end play, the spool cannot slip if clamped by or between friction-clutches at both ends from such end play, if, as in the present case, the friction-clutches have a lateral movement on the axle.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a locomotive driving-axle, of a chain-spool sleeved on the same, a friction-clutch at each end of said spool feathered on said axle, a lever, a rock-shaft, two eccentrics, and two bell-cranks, substantially as described.

JAMES M. KELLY.

Witnesses:
WM. H. LOTZ,
J. W. COZZENS.