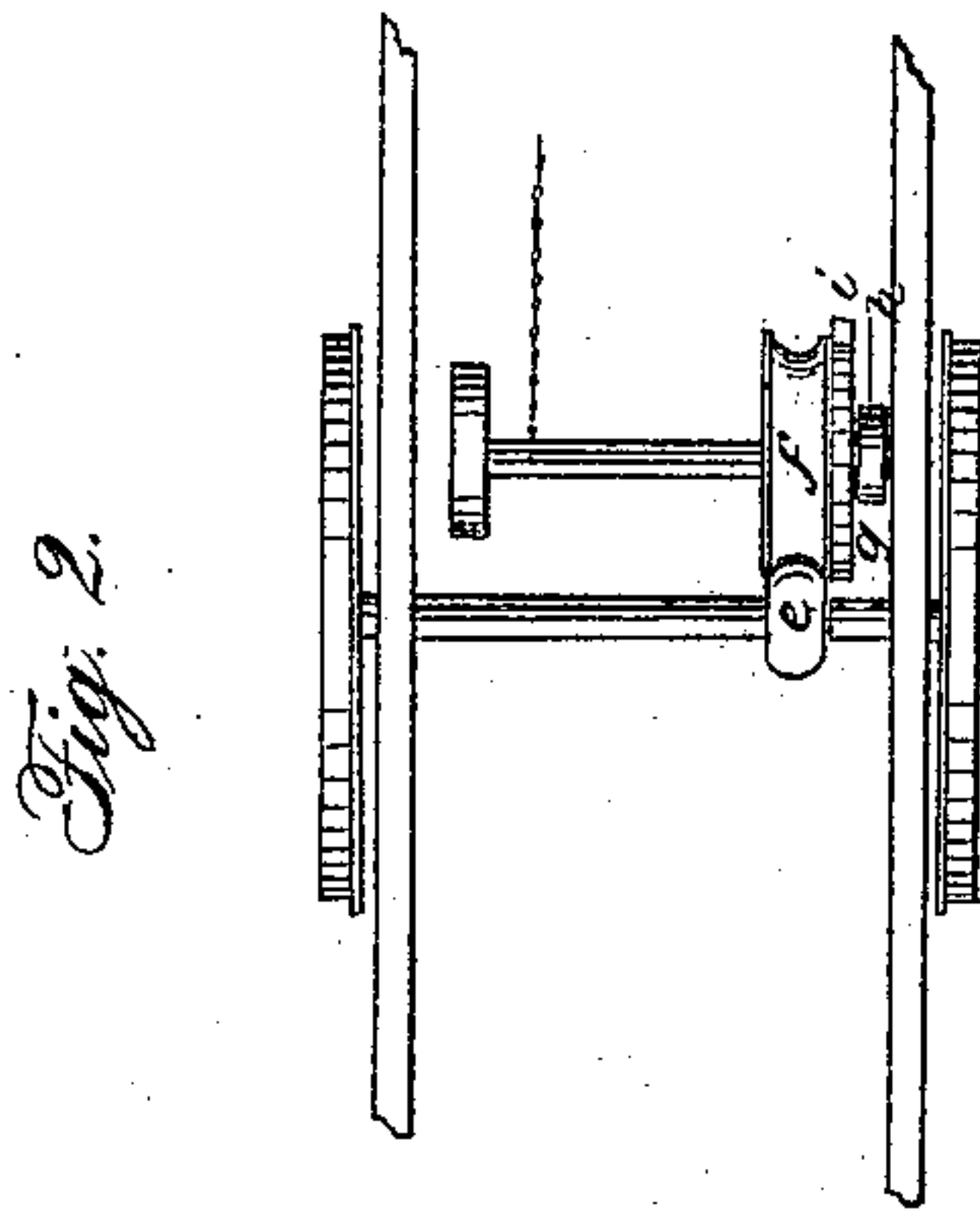
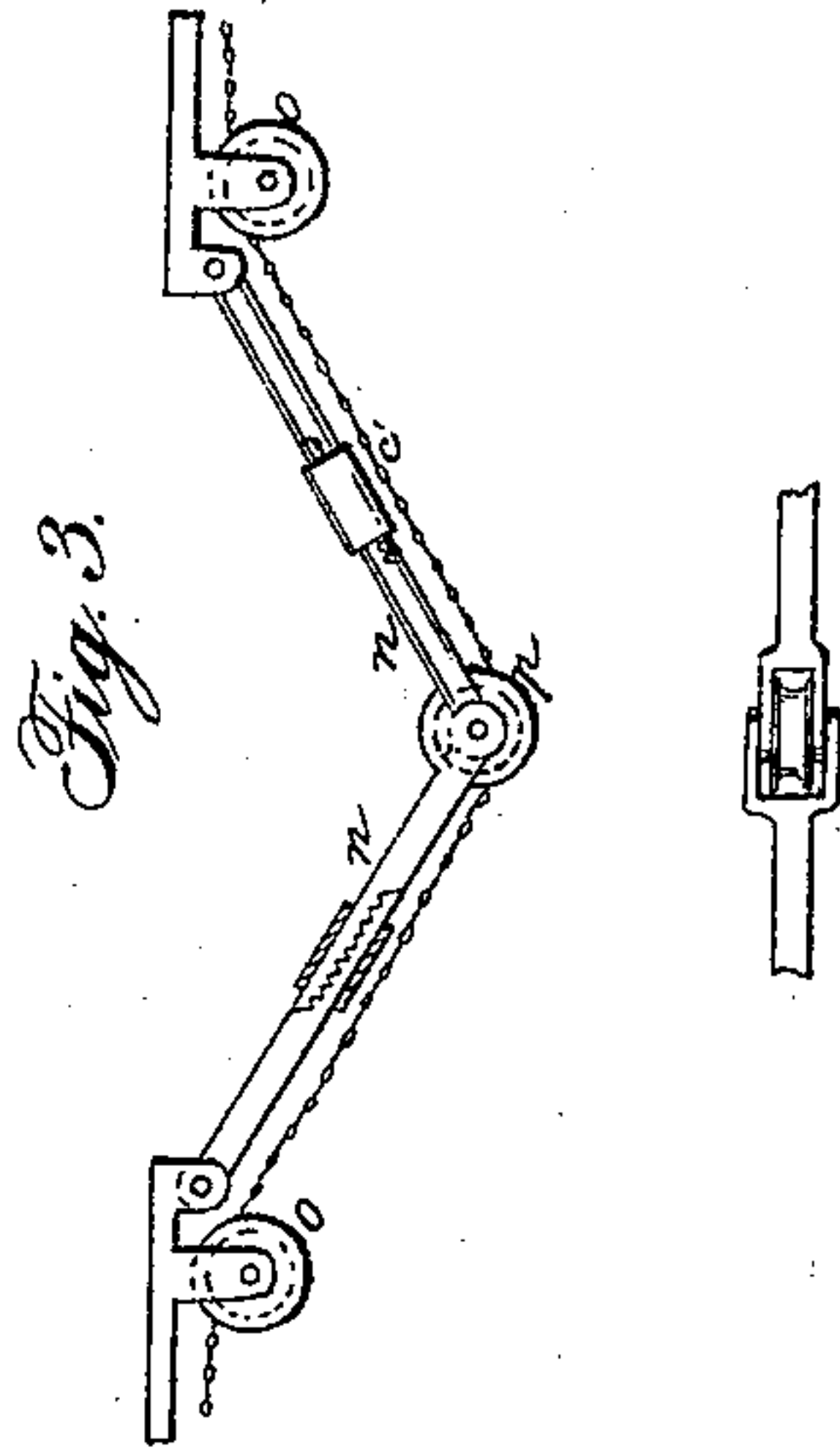
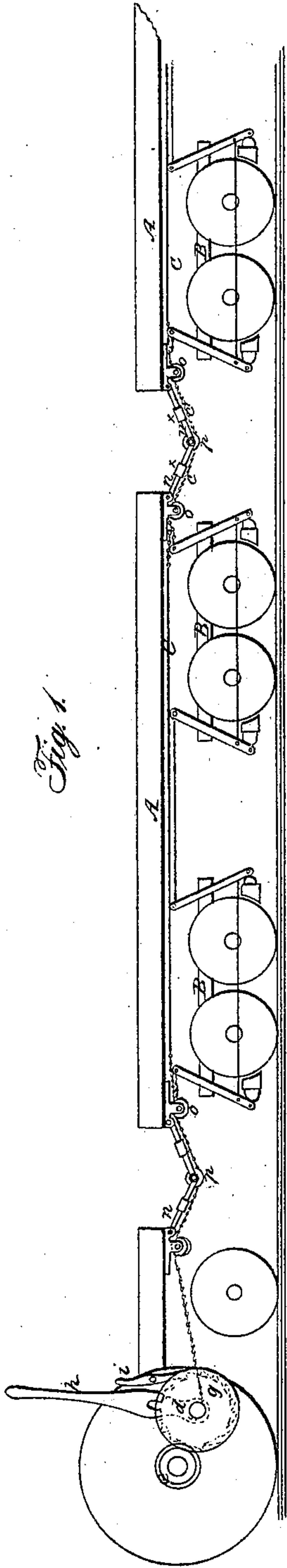


M. McGEE.  
Car Brake.

No. 19,574.

Patented Mar. 9, 1858.



# UNITED STATES PATENT OFFICE.

MELVILLE MCGEE, OF JACKSON, MICHIGAN.

## MODE OF OPERATING BRAKES OF RAILROAD-CARS.

Specification of Letters Patent No. 19,574, dated March 9, 1858.

*To all whom it may concern:*

Be it known that I, MELVILLE MCGEE, of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Self-Acting Brakes; and I do hereby describe and ascertain said invention, together with the method of constructing the same, reference being had to the accompanying drawing, in which—

Figure 1, is a longitudinal section of a train of cars with the brake connections. Fig. 2, shows the apparatus for putting the brakes into action. Fig. 3, is a detailed and enlarged view of the connecting links for keeping the chains at the proper tension.

My improvement is for the purpose of giving to the engine driver power to instantly brake up an entire train of cars, bringing the brakes on each car into immediate and simultaneous action at will without the aid of brakes-men, and quicker than by signal could be done. I am well aware that many devices for this purpose have been essayed but hitherto no successful application of the system has been achieved owing to the imperfection of arrangement, principle or construction.

My improved apparatus is constructed as follows: The cars *a* and trucks *b* are made on any usual plan along under all the cars a chain runs or a rod *c* which extends from end to end of the car terminated by a chain *c'* at each end as represented in the drawing: at the front end of the train this terminates in a chain attached to a drum *d*, affixed to a short axle under the locomotive in such a way as to be brought into contact with a friction apparatus on the driving wheels axle, by which it is turned to wind up the chain.

The friction apparatus is composed of a small whirl *e* affixed to the driving axle, the face of the periphery of which is rounded so as to increase the contact friction with a whirl *f* concaved on its periphery that is connected with and forms a part of drum *d*; a ratchet wheel *z* upon the drum serves to hold the chain when wound up and thus keep the brakes in action by means of a detent or pawl *i* which catches in the teeth of the ratchet. The whirl *f* is brought in contact with the whirl *e* by which it is driven, by means of a lever *h* that serves as a bearing for one end of the axis of the drum *d* and its appendages, by this arrangement the chain can be wound up by the engine driver

or fireman on the locomotive and held by the detent *i* a projection from which rises above the platform by which it can be released. Between the cars the chain *c'* must be so arranged as to keep at all times equally tight while the cars have the usual freedom to vary their distance apart to effect this I employ what I denominate a flexible link which is composed of two bars *n n* jointed together at one end their other ends being jointed to the ends of the adjoining cars with swivel joints so as to turn with the cars as clearly seen in the Figs. 1 and 3, in the angle or joint where the bars *n* are connected there is a pulley *p* under which the chain *c'* passes and near each of the joints at the cars a pulley *o* is affixed, over which the said chain *c'* is drawn. The position of these pulleys *o* is a matter of much importance to enable them to compensate exactly for the taking up of the chain around the several pulleys when the cars are brought together; the points at which the pulleys *o o* should be placed relatively to the pivot of the bars *n n* where they are jointed to the cars I have determined to be the diagonal corner of a parallelogram the longest side of which is just the diameter of the pulley and the shortest side half that length. One or both of the bars can be separated into two parts, this is necessary to disunite the cars and it is also necessary to enable me to lengthen or contract the bars to take up the slack of the chain, to effect this I make the two parts of each bar so as to overlap each other as clearly figured in the enlarged view Fig. 3, the inner faces being serrated so that when bound together they cannot slip and over these I slip a band of metal which holds them firmly. To couple the braking apparatus I first connect the cars as usual then connect the two ends of the chain *c'* and then placing the pulley *p* upon the slack bear down until it comes tight when I bring the overlapping parts of bar *n* in contact and slip the band *r* over them this is very expeditiously done and when a train of any length is thus coupled the main connecting chain or rod *c* under every one of the cars will be moved exactly alike in any position of the cars, a matter absolutely necessary to effect the object of breaking up the whole train from one point a matter many times attempted but by more complex and less efficient means than this device of mine.



The brakes may be made in a variety of forms well known which can be moved by this center connection *c* one of which I have represented but as there is no novelty in it  
5 no further description is needed, and it will be obvious to any engineer that several other well known brakes may be substituted therefor.

Having thus fully described my improved  
10 brake operator what I claim as my invention and for which I desire Letters Patent is—

The compound adjustable link and pul-

leys herein specified in combination with the device upon the locomotive for operating the brakes the whole being constructed, 15 arranged and operated substantially in the manner and for the purposes above described.

In testimony whereof I have hereunto subscribed my name.

MELVILLE McGEE.

In presence of—

J. B. LIEREE,

G. T. GRIDLEY.