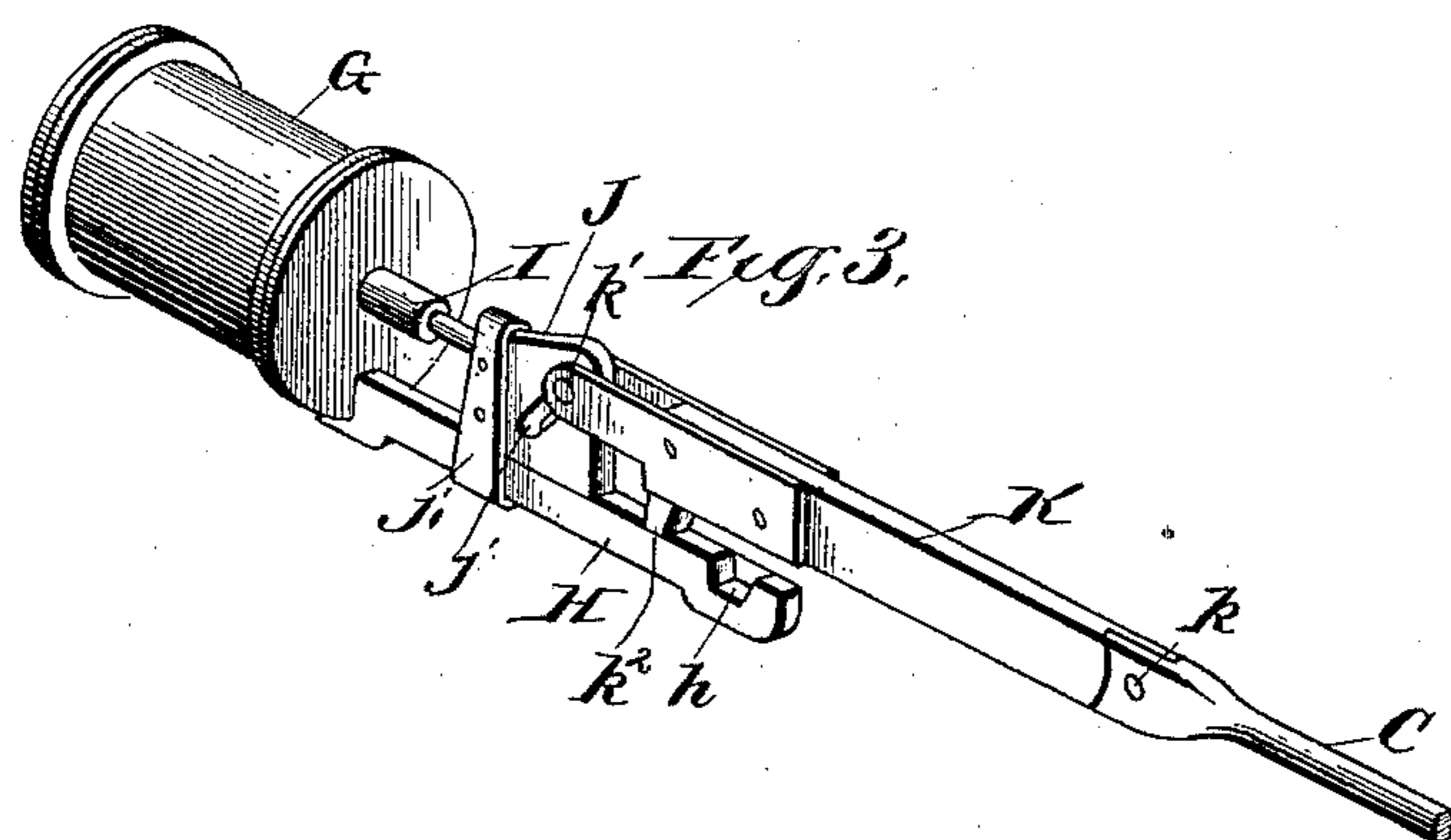
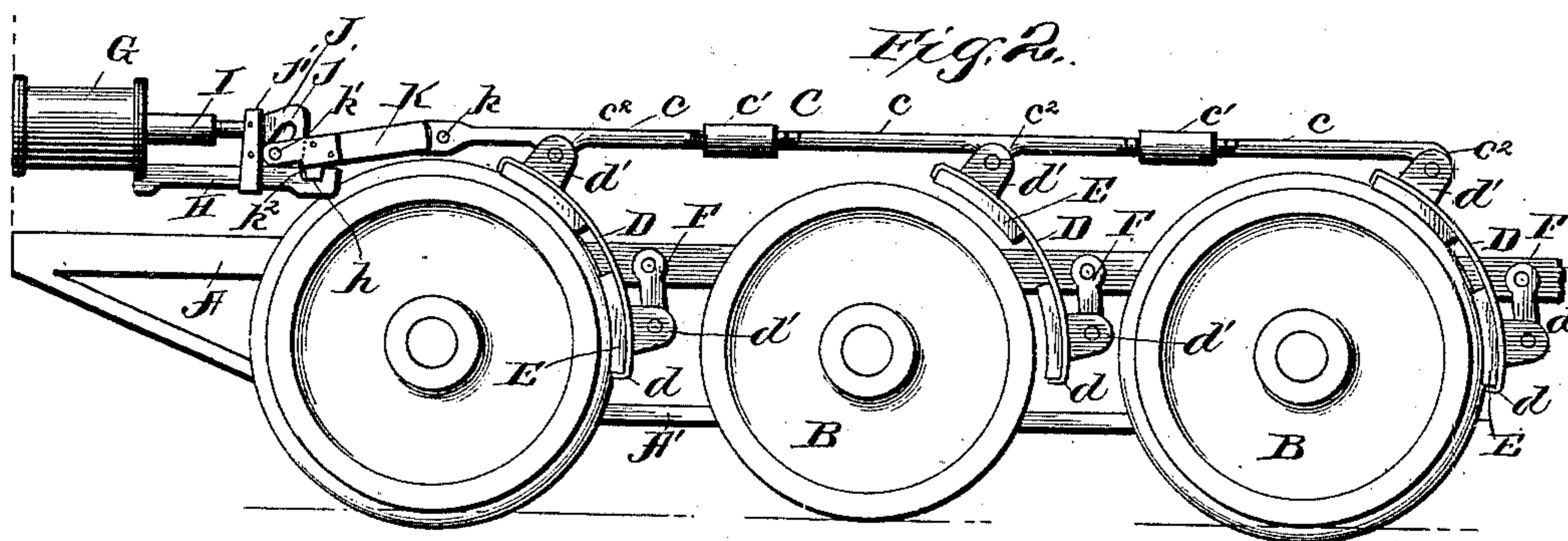
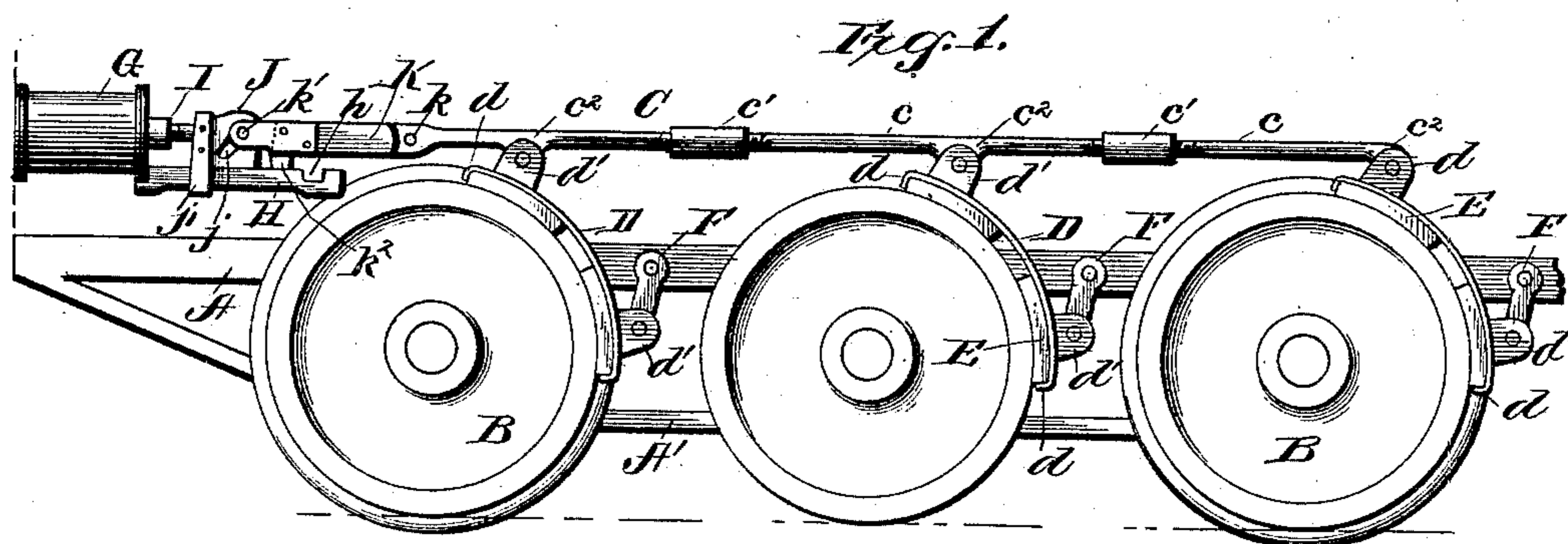


(No Model.)

J. C. HERON.  
LOCOMOTIVE DRIVER BRAKE.

No. 465,060.

Patented Dec. 15, 1891.



Witnesses

Inventor

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# UNITED STATES PATENT OFFICE.

JAMES C. HERON, OF ST. PAUL, MINNESOTA.

## LOCOMOTIVE-DRIVER BRAKE.

SPECIFICATION forming part of Letters Patent No. 465,060, dated December 15, 1891.

Application filed August 20, 1891. Serial No. 403,213. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. HERON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Locomotive-Driver Brake, of which the following is a specification.

My invention relates to locomotive-driver brakes; and it has for its object to provide a brake of this character that when applied to the wheels of a locomotive relieves all downward strain from the engine-springs and the driving-boxes, and to so locate the same in a convenient position upon the engine as will provide an easy access for adjustment and repairs, and also to provide means whereby very heavy brake-shoes may be supported and operated by the brake-cylinder, and thereby greatly increasing the frictional area; and with these objects in view the invention consists in the construction hereinafter more fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of the drivers and a portion of the frame-work of a locomotive provided with a brake mechanism constructed in accordance with my invention, the same in its locked position against the periphery of the drivers. Fig. 2 is a similar view showing the brake mechanism released from the wheels and held locked in its released position. Fig. 3 is a detail in perspective of one end of the brake-cylinder and the locking and operating mechanism projecting therefrom.

Referring to the accompanying drawings, A A' represent the longitudinal stringers comprising a portion of the side frame-work of an ordinary locomotive, and between which are journaled the ordinary drivers B. Extending longitudinally over the top of said drivers is the operating-brake or pull-rod C, comprising the small sections c, adjustably jointed together by means of the right and left threaded adjusting-nuts c', engaging the oppositely-threaded ends of each of the rod-sections, and by means of which the length of pull of said rod may be easily regulated and adjusted. Each of said sections c is provided with depending perforated lugs c<sup>2</sup>, which are designed to support the upper end of the

brake-shoe bands D. Said bands are constructed of suitable metal and are curved to correspond with the periphery of the drivers, directly over which the same are located. The bands D are provided with the end and side flanges d, between which are inclosed the brake shoes or blocks E, rigidly secured within said bands and designed to be thrown against the periphery of the wheels in a manner to be presently described, any number of said shoes being secured to said bands, according to the weight and the friction deemed necessary and desired. Each of said bands is provided near each end with the upwardly-extending perforated lugs d', those at the upper end of said bands being designed to pivotally engage the perforated lugs c<sup>2</sup> upon each of the pull-rod sections, while the lowermost of said lugs are designed to pivotally engage the hangers or links F, the other ends of which hangers or links are pivotally secured to the upper stringers A, comprising a portion of the side frame-work of the locomotive, by which connection the said brake bands and shoes are freely suspended from both the links and said pull-rod.

The brake-cylinder G is of the ordinary construction and is attached to the locomotive-frame near one end thereof, and, as illustrated, is located horizontally upon the same in order that the piston therein may work in line with the pull-rod, which is actuated by the piston working in said cylinder, which may be either operated by air, steam, or a vacuum. Secured to the under side of said cylinder and projecting horizontally out from one end thereof is the horizontal guide-bar H, provided at its outer end with a squared locking recess or notch h. The piston-rod I, extending horizontally without the cylinder and operated in the usual manner, is provided with an enlarged plate or head J, provided with a diagonally-inclined slot j and a clamping-band j', encircling both said plate and the under side of said guide-bar H, over which the enlarged head or plate is designed to travel in the back and forward movement of said piston, and is held thereto in its sliding movement thereon by means of said encircling clamping-band slidingly therewith. A connecting bar or arm K is pivoted at k to the inner end of said pull-rod, while its other

end slidingly engages the diagonal slot *j* in said plate or head by means of the pin *k'* passing therethrough and said slot. The said connecting bar or rod *K* is further provided  
 5 with a depending lug *k*<sup>2</sup>, that is adapted to alternately engage the squared locking-notch *h* of the guide-bar *H* as the brake-shoes are thrown upon and off from the periphery of the drivers by the action of the piston-rod in  
 10 the ordinary manner. In their normal position off from the periphery of the wheel the pull-rod is in such position so that the depending lug of the connecting rod or arm is in engagement with the notch of the guide-  
 15 bar, and thus securely holds the brakes off from the wheel and prevents the same from accidentally dropping upon the wheels by the rattling or jarring of the train, in this position the pin working in said diagonal slot being at the bottom thereof. When the power  
 20 is applied to the brake-cylinders to draw the pull-rod inwardly to throw the brake-shoes against the periphery of the wheels, the action of the piston-rod, drawing upon the pull-rod,  
 25 forces the connecting-pin up the diagonally-inclined slot, thus throwing the depending lug out of its locked engagement with said locking notch or recess, and by the continued inward drawing of the piston-rod the said  
 30 pull-rod is drawn over the guide-bar and firmly draws the brake-shoe against the periphery of the wheels. The reverse motion of the piston-rod throws the suspended brakes away from the wheels and locks the  
 35 same in such position, as has already been described.

The construction and operation of my improved brake are now thought to be apparent without further description.

40 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a brake, a brake-rod, a brake-block pivotally secured at one end to said rod, and  
 45 a swinging link or hanger pivoted to the other end of said brake-block, substantially as set forth.

2. In a brake, a brake-rod, a brake-block pivotally secured at one end of said rod, a  
 50 swinging link or hanger pivoted to the other end of said brake-block, and means for automatically locking said brake in its unengaged position, substantially as set forth.

3. In a driver-brake, a brake-rod, a series  
 55 of brake-blocks pivotally secured at their upper ends to said brake-rod, a series of swinging links pivoted to the lower ends of said

brake-blocks and to the engine-frame, and means for actuating said rod and holding the blocks in their disengaged position, substantially as set forth. 60

4. In a driver-brake, a brake-rod comprising a series of horizontally-adjustable sections, a series of curved brake-bands pivotally secured at their upper ends to said rod, a  
 65 series of swinging links pivoted to the lower ends of said bands and to the engine-frame, brake blocks or shoes secured to said bands, and means for actuating said rod, substantially as set forth. 70

5. In a driver-brake, a brake-rod comprising a series of horizontally-adjustable sections, a series of curved flanged brake-bands pivotally secured at their upper ends to said rod, a series of swinging links or hangers pivoted to the lower ends of said bands and to the engine-frame, brake-shoes secured within  
 75 said bands, and means for actuating the said rod and holding the brakes locked in their disengaged position, substantially as set forth. 80

6. In a driver-brake, the combination of a brake-rod provided with a locking-lug at its inner end, brake-blocks pivotally secured at one end to said rod, swinging links supporting the lower ends of said blocks, a brake-  
 85 cylinder provided with a guide-arm having a notch or recess adapted to engage the brake-rod lug, and the piston terminating in an enlarged head adapted to engage said brake-rod and control the same, substantially as set forth. 90

7. In a driver-brake, the combination, with the brake-rod and a series of brake-blocks loosely suspended from the same, of the brake-cylinder provided with a horizontally-extending guide-bar having a squared notch or recess, a piston-rod working in said cylinder and terminating in an enlarged head or plate adapted to slide upon said guide-bar and provided with a diagonal slot and a retaining-  
 100 band encircling the same and said guide-bar, and a connecting-arm pivotally secured to said brake-rod and slidingly engaging said slot and provided with a depending lug adapted to engage said notch or recess, substantially as set forth. 105

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES C. HERON.

Witnesses:

E. J. DARRAGH,  
 H. W. WACK.