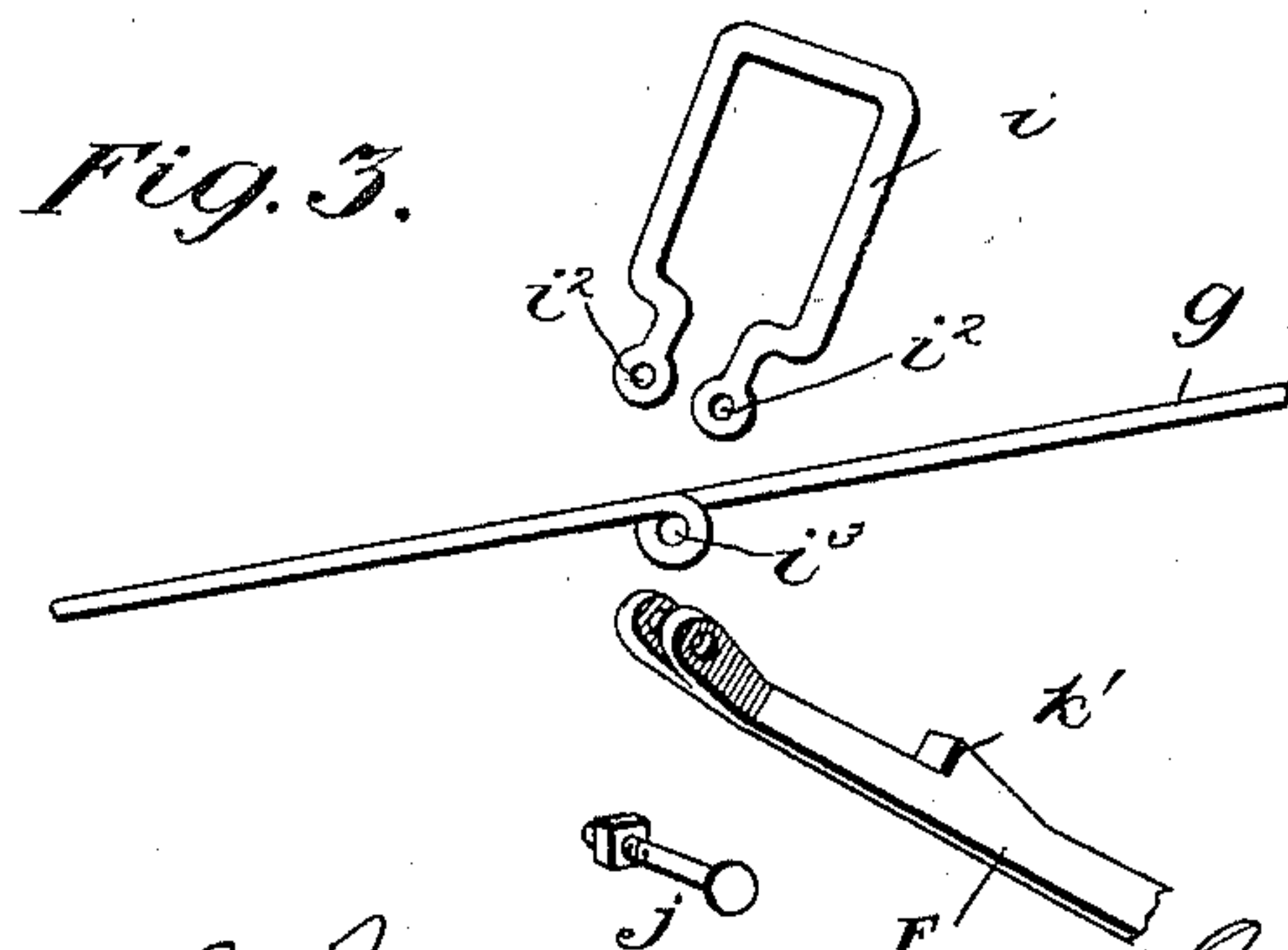
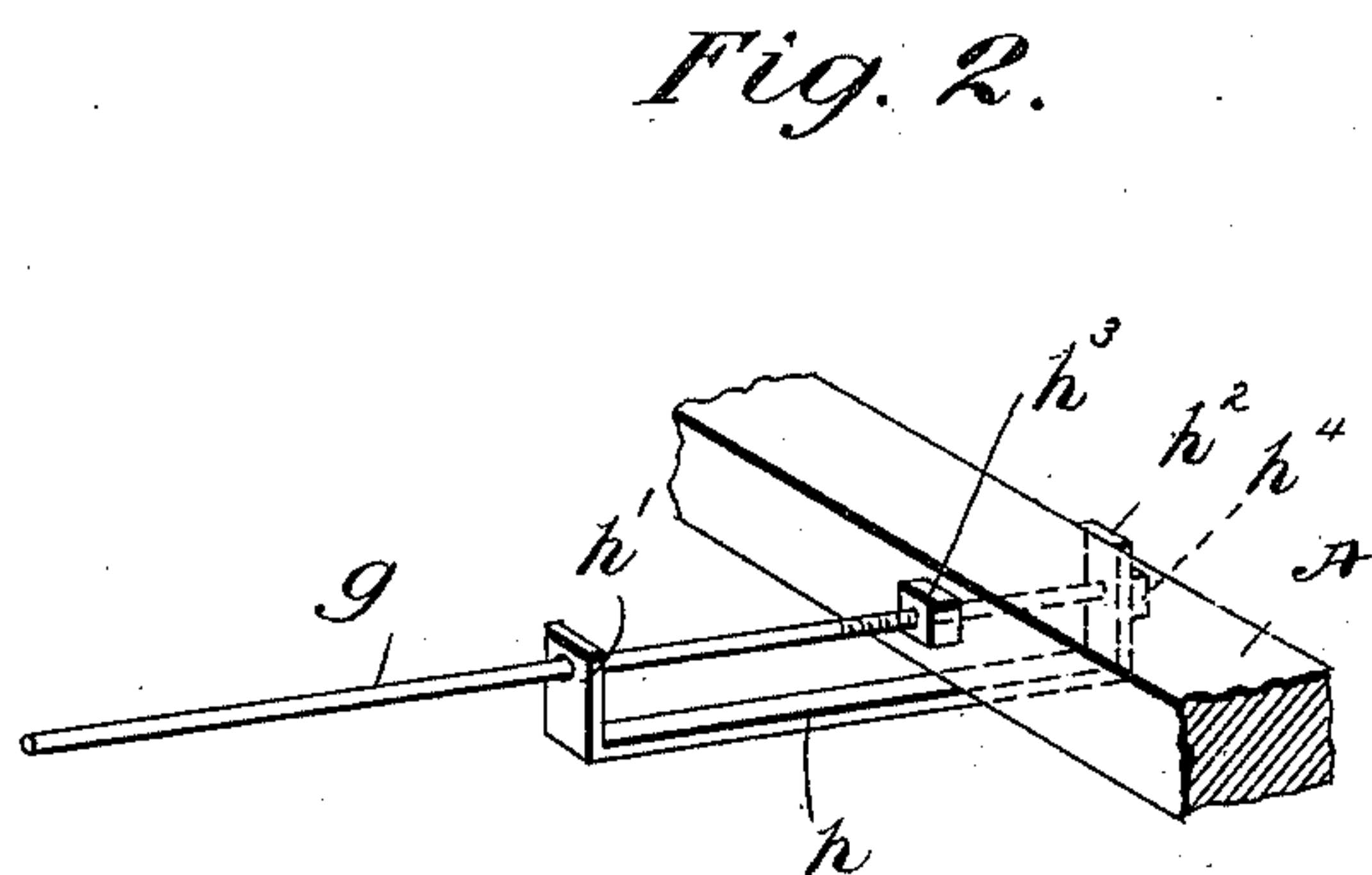
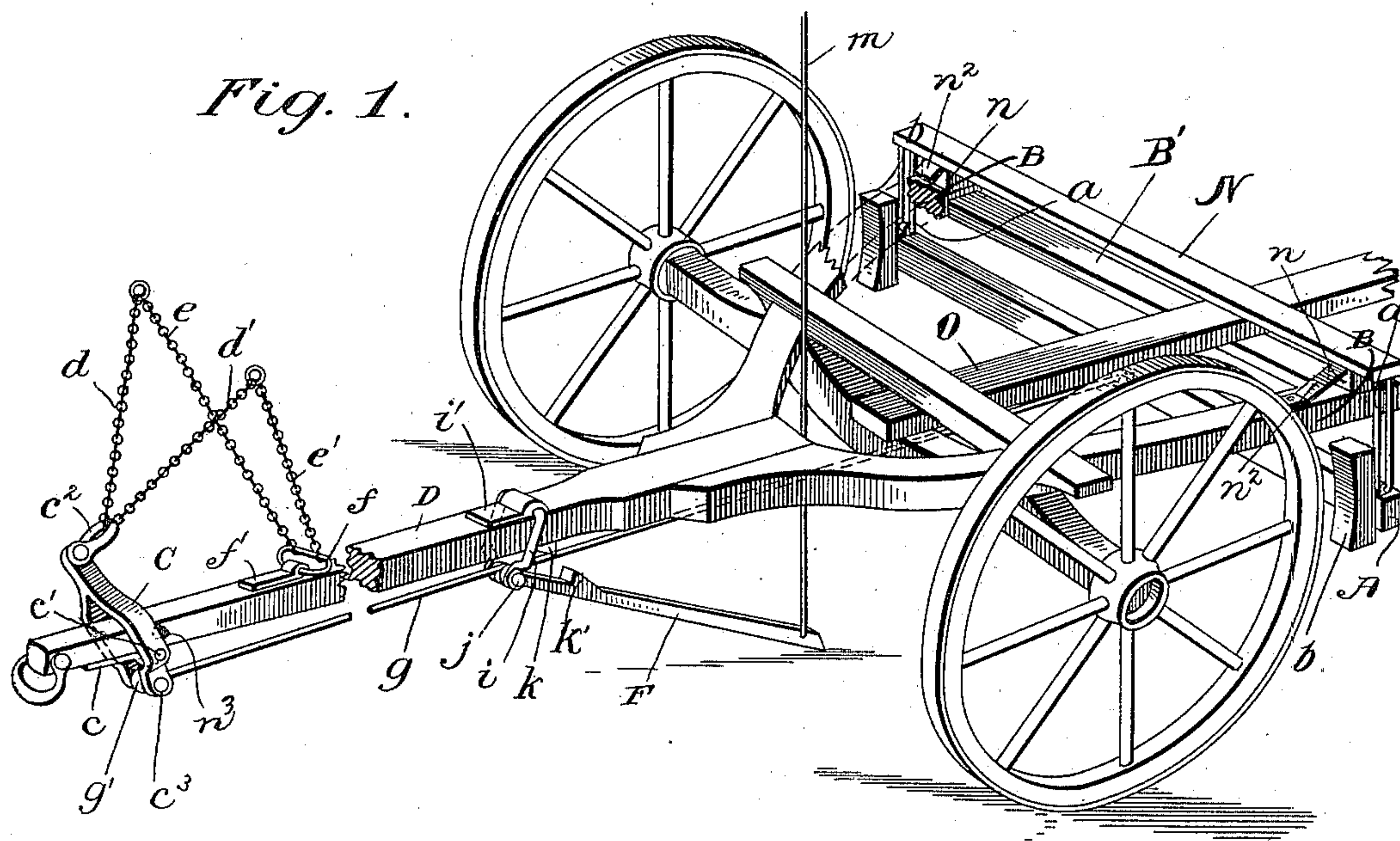


(No Model.)

E. R. POWELL.
AUTOMATIC WAGON BRAKE.

No. 600,928.

Patented Mar. 22, 1898.



WITNESSES

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EDWARD ROWE POWELL, OF HUSTONVILLE, KENTUCKY.

AUTOMATIC WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 600,928, dated March 22, 1898.

Application filed October 7, 1897. Serial No. 654,442. (No model.)

To all whom it may concern:

Be it known that I, EDWARD ROWE POWELL, a citizen of the United States, residing at Hustonville, in the county of Lincoln and State of Kentucky, have invented certain new and useful Improvements in Automatic Wagon-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to brakes for wagons, and more particularly wagons having poles and adapted to be drawn by two or more horses.

The type of brake to which the invention relates is that wherein the brake-shoes may be pressed against the wheels automatically either by the holding back of the team or by the engagement of a drag-bar with the ground.

The object of the invention is to perfect a brake apparatus of this kind by obviating certain objections heretofore found to exist, such as excessive complication of parts and consequent impracticability and proneness to become disordered.

My invention aims to combine in a simple and practical manner team-operated and drag-bar-operated brake mechanisms, at the same time providing for locking the brake against application by either of these mechanisms.

With this general object in view the invention consists in certain novel features of construction and combinations of parts, which are specifically described hereinafter and their essential elements recited in the appended claims.

The drawings which accompany and form part of this specification illustrate one form of embodiment of the invention.

Of said drawings, Figure 1 represents a perspective view of the front portion of the running-gear of a wagon with my invention applied thereto and some parts broken away. Fig. 2 represents a perspective view of a detail of construction, and Fig. 3 represents a group of perspective views of details.

The wagon shown in the drawings is of a common type and needs no special description. A brake-beam A is suspended from the rear ends of the hounds B by rectangular

links *a*, pivotally connected with the said parts, so that the brake-beam may tend by gravity to assume a position sufficiently removed from the wheels to separate therefrom the brake-shoes *b*, carried by said beam. This method of supporting the brake-beam is particularly advantageous in that when the brake-shoes are moved into contact with the wheels by the forward and upward swing of the brake-beam forward movement of the wheels tends to increase the pressure of the brake-shoes against them in an obvious manner.

I shall now describe the connections between the brake-beam and the harness, whereby the said beam may be moved forward to apply the brakes by the holding back of the team hitched to the wagon.

A lever C is pivotally connected with the tongue D at a point near the front end of the latter, the connection being effected by means of a hinge member *c* fastened to the under side of the tongue, and a bolt or pintle *c'*, passed through the said hinge member and through the lever, which, in the present instance, is shown as bifurcated and extending on each side of the tongue. The upper end of the said lever, which is a single arm, has fastened to it a clevis *e*², to which are coupled a pair of chains *d d'*, these chains being adapted to be connected to suitable portions of the harness—as, for example, the collars. There are also connected with the collars, preferably by the same means as connect the chains *d* and *d'* therewith, a pair of chains *e* and *e'*, which at their lower ends are coupled to a clevis *f*, pivotally connected with a hinge member *f'*, fastened to the upper side of the tongue. It is to be here observed that separate chains are provided—viz., the chains *e* and *e'*—for purposes of guiding the vehicle, these chains being distinct from the brake-applying chains *d* and *d'*, so that the draft on the tongue in guiding has no effect to apply the brake, this being an advantage over some previous devices wherein a single set of chains is employed both for braking and guiding purposes.

The arm of the lever C, which extends below the tongue, is connected by a long rod *g* with the brake-beam A, the coupling between this rod and the lever C being preferably

effected by means of an eye g' , formed at the front end of the rod, and a bolt or pintle c^3 , passed through the said eye and through the two sides of the lever. The connection between the said rod g and the brake-beam A is preferably effected by means of the devices illustrated in detail in Fig. 2. Here it will be observed that an angular metal piece or bracket h is applied to the brake-beam A and suitably fastened to the same, the said bracket extending some distance in front of the brake-arm and having upturned ends h^1 and h^2 , the former being perforated for the free passage of the rod g therethrough, and the said rod also extending through the brake-beam and being screw-threaded for a sufficient distance to permit longitudinal adjustment. Nuts h^3 and h^4 are applied to the screw-threaded portion of the rod in front of and behind the brake-beam A, the nut h^3 bearing against the front side thereof, and the nut h^4 bearing against the upstanding arm h^2 . By this mode of connection the rod g is kept in proper relation to the brake-beam A, and at the same time longitudinal adjustment of said rod may be had when necessary.

It will now be seen that through the connections described a holding back of the team hitched to the wagon will result in an application of the brakes, such holding back having the effect of turning the lever C and thereby exerting a forward pull upon the rod g and drawing the brake-beam A forward and pressing the brake-shoes against the wheels. At an intermediate point of the rod g a drag-bar F is associated therewith, the said drag-bar being suspended from the tongue in such a manner as to permit its bodily movement forward and back and also its pivotal movement up and down. The construction here illustrated for connecting the said drag-bar with the tongue and with the rod g is of the following description: A clevis i embraces the tongue at a point near its rear end and is pivotally connected therewith by passing through a hinge member i^1 , fastened to the top of the tongue. The said clevis depends a short distance below the tongue and is formed with eyes i^2 , and the rod g is also formed with an eye i^3 , which is in alinement with the eyes i^2 . The drag-bar is bifurcated at its upper end, and the two arms f thus formed are provided with perforations to be brought into alinement with the eyes i^2 of the clevis i and also the eye i^3 of the rod g . A bolt or clevis j is passed through the said alining parts, and thereby the drag-bar is pivotally connected with the clevis and the brake-rod, so that it may be moved freely up and down. It will be observed that the clevis i , being pivotally connected with the tongue, permits a bodily movement of the drag-bar forward and back. On the under side of the tongue, a short distance in the rear of the clevis i , there is a projection or shoulder k , and the drag-bar F is formed or provided with a corresponding projection or shoulder k' .

When the drag-bar is in its lowermost position resting upon the ground, these projections or shoulders are disconnected, as clearly illustrated in the drawings; but when the drag-bar F is raised to its highest position the shoulder k' is carried behind the shoulder k , so that forward movement of the drag-bar, and consequently of the brake-rod g , is prevented. Hence the lifting of the drag-bar to its highest position has the effect of locking the brake. A cord m or other suitable manipulating device is attached to the free end of the drag-bar and passes upwardly, so that a person seated in the vehicle can conveniently manipulate the same. When it is desired to lock the brake, it is only necessary to pull upward on the cord m sufficiently to carry the shoulder k' on the drag-bar behind the shoulder k on the tongue, and if this adjustment of parts is to be maintained for any length of time the cord can be fastened in any suitable manner.

It will now be seen that in addition to the team-operated brake-applying mechanism I also provide for applying the brakes by means of a drag-bar, the latter by engagement at its free end with the ground under a backward movement of the vehicle having the effect of exerting a forward pull upon that portion of the brake-rod g extending between the drag-bar and the brake-beam, so that the latter is drawn forward and the brake-shoes pressed against the wheels.

In order to prevent the brake-shoes being separated from the wheels by a lifting of the tongue under backward movement of the vehicle, with the drag-bar engaging the ground, I fasten a bar N across the rear ends of the hounds with interposed blocks n to separate it from the hounds, allowing free space for the reach O between said bar and the bar B', connecting the hounds. It will be seen that the bar N by passing over the top of the reach in close proximity thereto will prevent upward movement of the tongue. The said bar is suitably braced by pieces n^2 , fastened to it and to the hounds, as shown, and I preferably extend said bar outwardly beyond the hounds at each end and support the brake-beam from these extensions. The advantage of this is that the brake-beam can maintain a higher position with less likelihood of encountering obstructions, such as stumps, over which the wagon may pass.

The drag-bar F can be raised, so as to remove it from contact with the ground and yet not bring its shoulder k' behind the shoulder k on the pole, sufficient clearance being allowed for this purpose, as clearly shown in Fig. 1, so that, if desired, the brake-bar can be lifted from operative position without locking the team-operated brake appliances.

Retraction or recovery of the brake mechanism after operation may be limited by means of a shoulder on the tongue, against which the lever C may abut, or in any other suitable manner, and provision may be made

for locking the brake mechanism otherwise than by lifting the brake-bar F—as, for example, by inserting a pin into a hole n^3 in the tongue just behind the brake-lever C.

5 It will now be seen that the form of embodiment of the invention here illustrated and described thoroughly accomplishes the objects primarily stated. However, the invention is not limited to this form of embodiment, as it
10 is susceptible of numerous variations without departing from the spirit and scope thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

15 1. In a wagon-brake, the combination of a brake-beam movable toward and from the wheels and carrying shoes to act against the same, and a drag-bar pivotally supported from the wagon and coupled to said brake-
20 beam, said drag-bar operating to check backward movement of the wagon by engagement with the ground and to simultaneously apply the brake through its connection with the brake-beam.

25 2. In a wagon-brake, the combination of a brake-beam movable toward and from the wheels and carrying shoes to act against the same, a drag-bar pivotally suspended from the tongue, and a coupling between the said
30 drag-bar and the brake-beam for operating the latter by the engagement of the drag-bar with the ground, substantially as described.

3. In a wagon-brake, the combination of a brake-beam movable toward and from the
35 wheels and carrying shoes to act against the same, a brake-lever on the tongue with connections for attachment to the harness, connections between said lever and the brake-beam, and a drag-bar coupled to said connec-
40 tions to move the same in a brake-applying direction by its engagement with the ground upon backward movement of the wagon.

4. In a wagon-brake, the combination of a brake-beam movable toward and from the
45 wheels and carrying shoes to act against the same, a brake-lever on the tongue with connections for attachment to the harness, connections between said lever and the brake-beam, a drag-bar coupled to said connections
50 between the brake-lever and the brake-beam, and locking devices to prevent a forward movement of the drag-bar when elevated and consequently preventing an application of the brakes, substantially as described.

5. In a wagon-brake, the combination of the 55 tongue having a projection or shoulder on its under side, a drag-bar pivotally suspended from the tongue with provision for longitudinal movement, said bar having a projection to coact with that on the tongue and lock the
60 bar against forward movement, and brake mechanism connected with said drag-bar.

6. In a wagon-brake, the combination of the tongue having a projection or shoulder on its under side, a drag-bar pivotally suspended
65 from the tongue with provision for longitudinal movement, said bar having a projection to coact with that on the tongue and lock the bar against forward movement, a brake-beam movable toward and from the wheels and carrying shoes to act against the latter, and a rod
70 connecting the brake-beam and the drag-bar.

7. In a wagon-brake, the combination of the tongue having a projection or shoulder on its under side, a drag-bar pivotally suspended
75 from the tongue with provision for longitudinal movement, said bar having a projection to coact with that on the tongue and lock the bar against forward movement, a lever on the tongue with provisions for connection with
80 the harness, a brake-bar movable toward and from the wheels and having shoes to bear against the latter, and connections between said lever and the drag-bar and between the latter and the brake-bar, substantially as and
85 for the purpose described.

8. In a wagon, the combination with a tongue, hounds and reach, of a bar fastened across the hounds and extending over the reach, a brake-beam suspended from the
90 hounds, and a drag-bar coupled with the tongue and suitably connected with the said brake-beam.

9. In a wagon, the combination of a tongue, hounds fastened thereto, a reach extending
95 between the hounds, a bar fastened across the hounds and extending over the reach, a brake-beam suspended from said bar, a drag-bar pivotally connected with the tongue, and operating connections between said drag-bar
100 and the brake-beam, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD ROWE POWELL.

Witnesses:

RANDOLPH COFFEY,
J. E. WRIGHT.