

2 Sheets—Sheet 1.

No. 557,853.

Patented Apr. 7, 1896.

Fig. I.

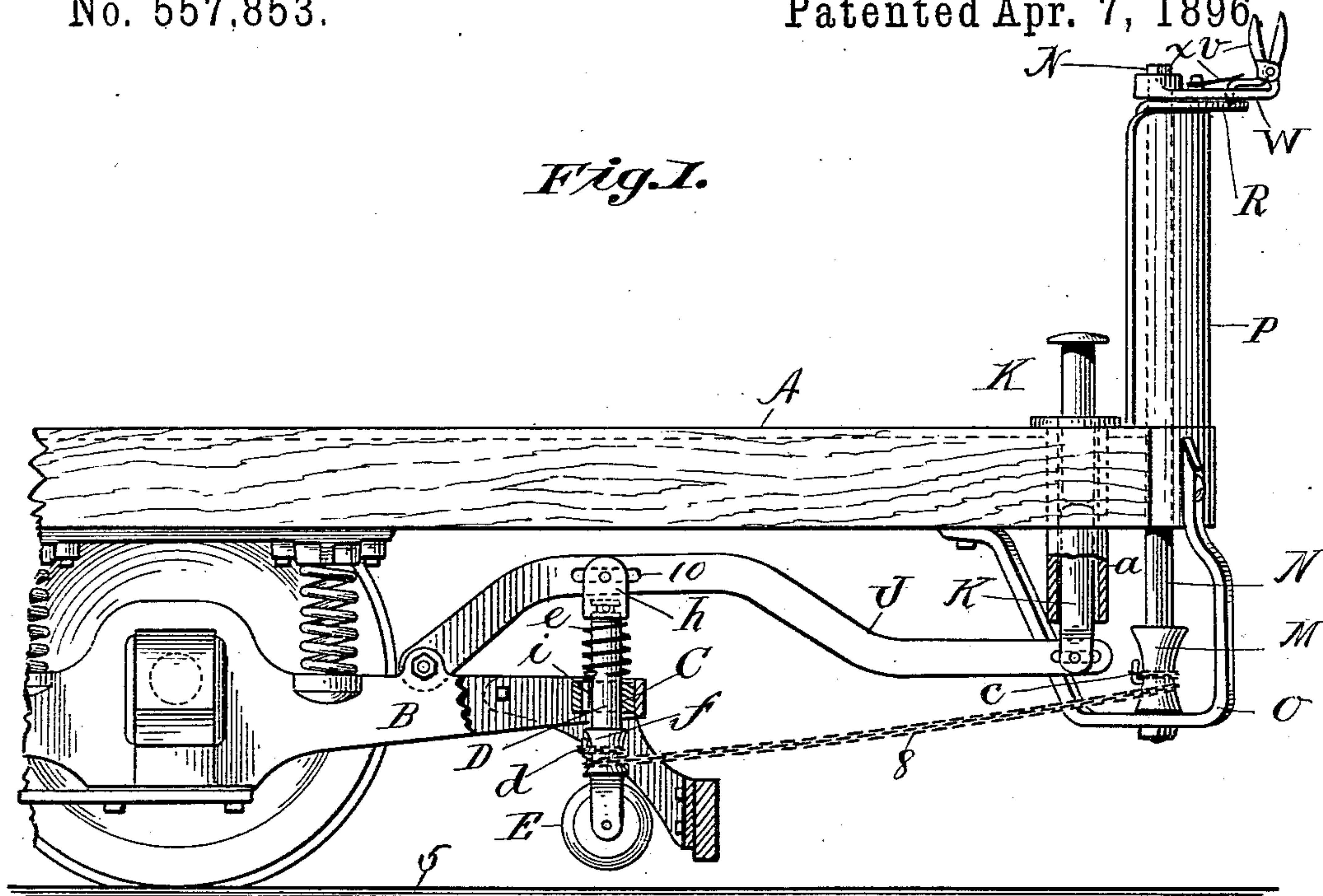
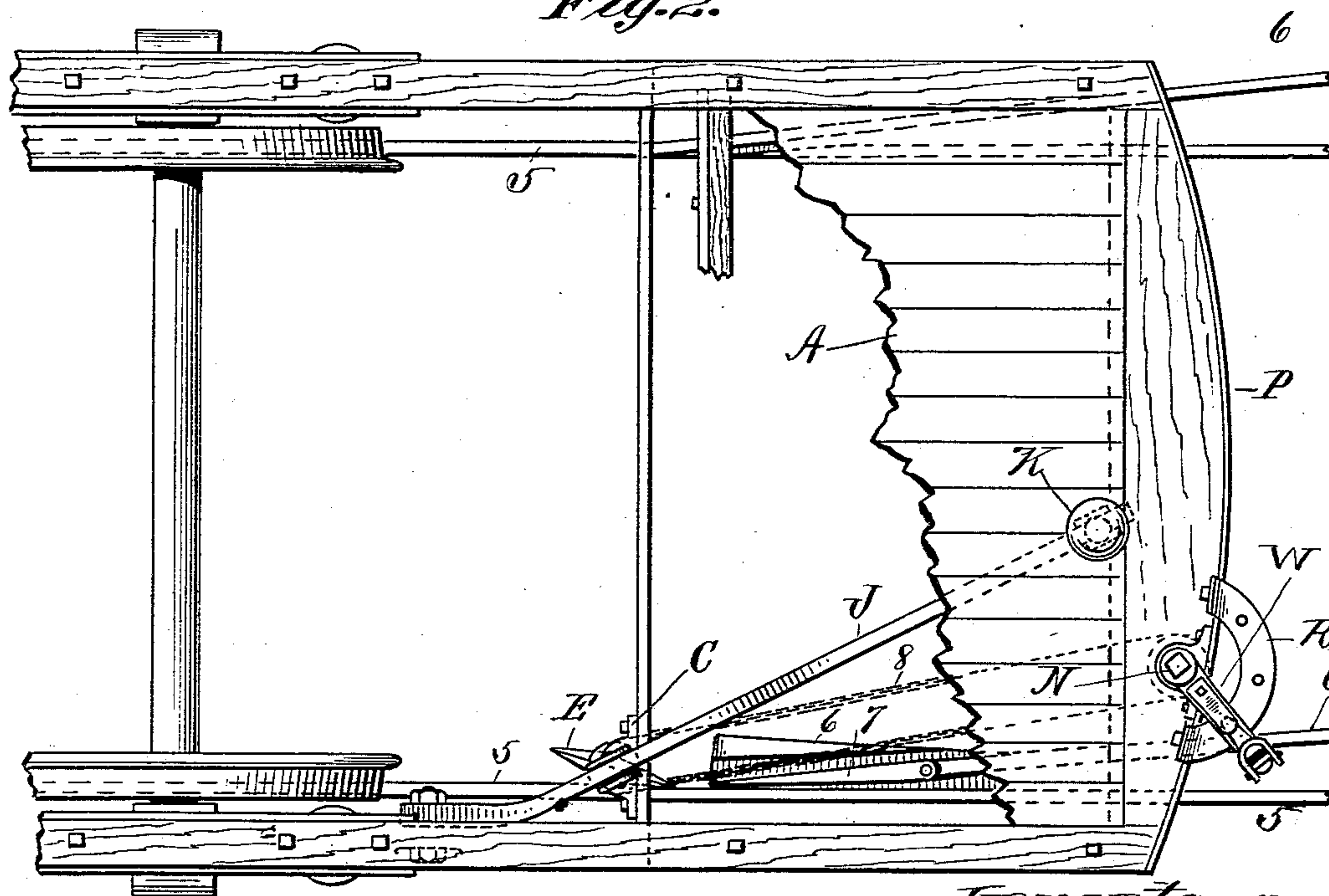


Fig. 2.



Witnesses:

J. D. Garfield
K. O. Clemons

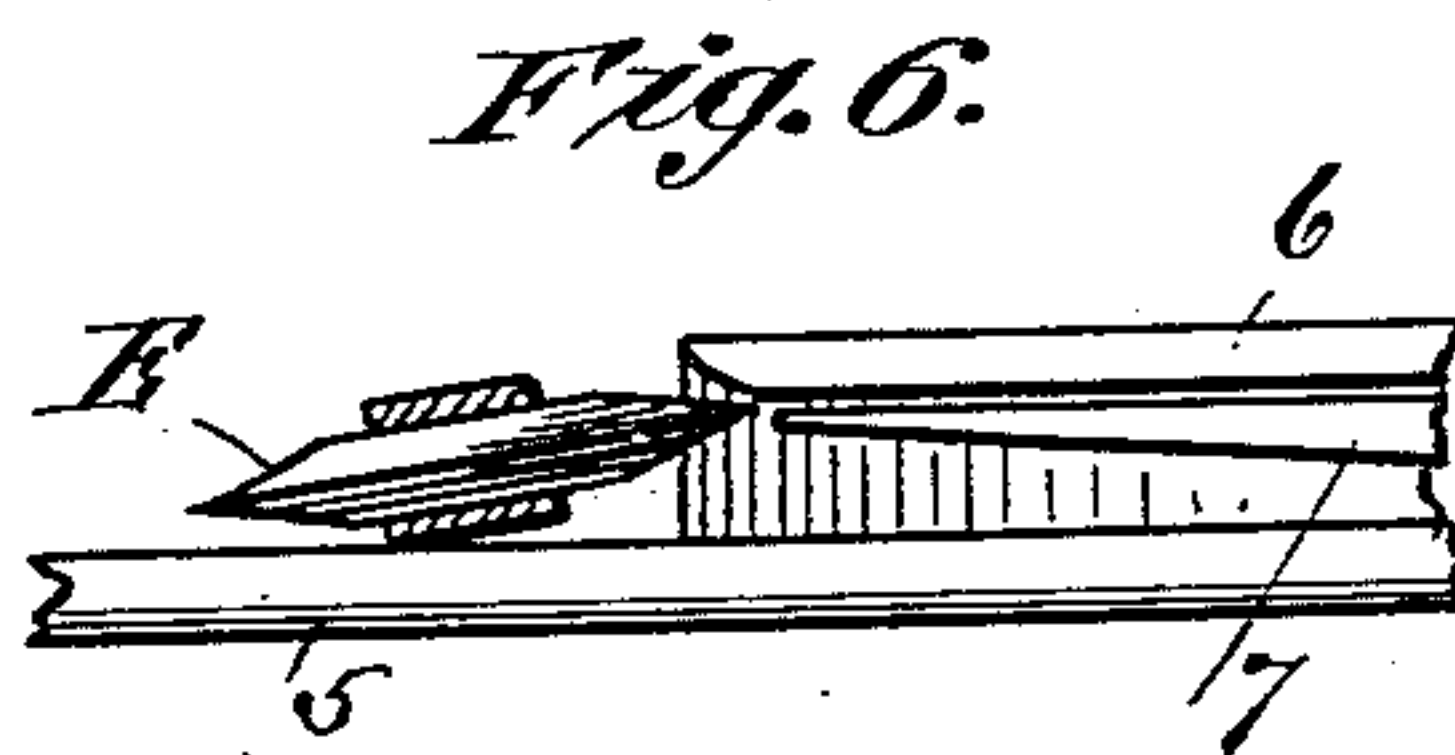
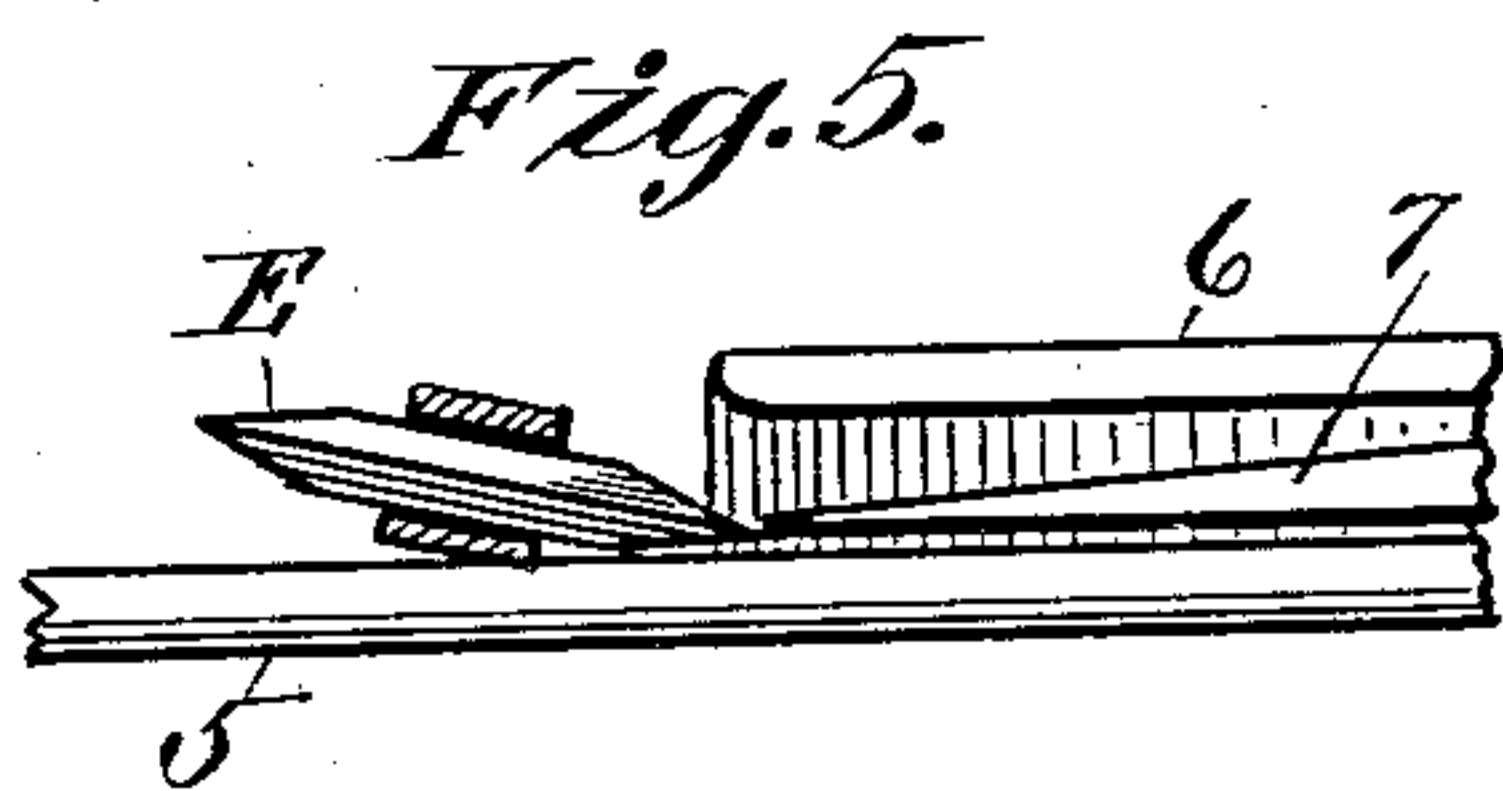
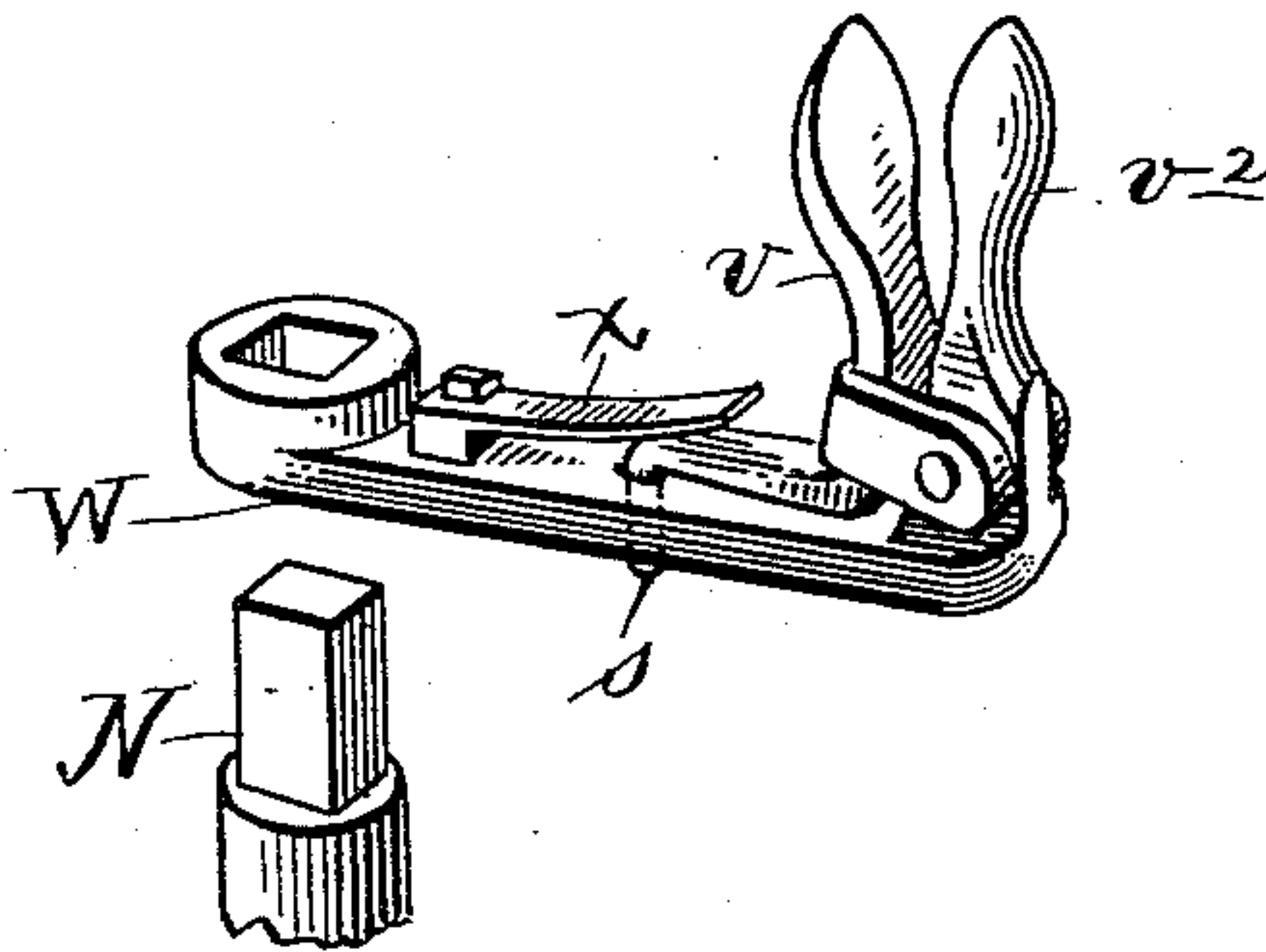
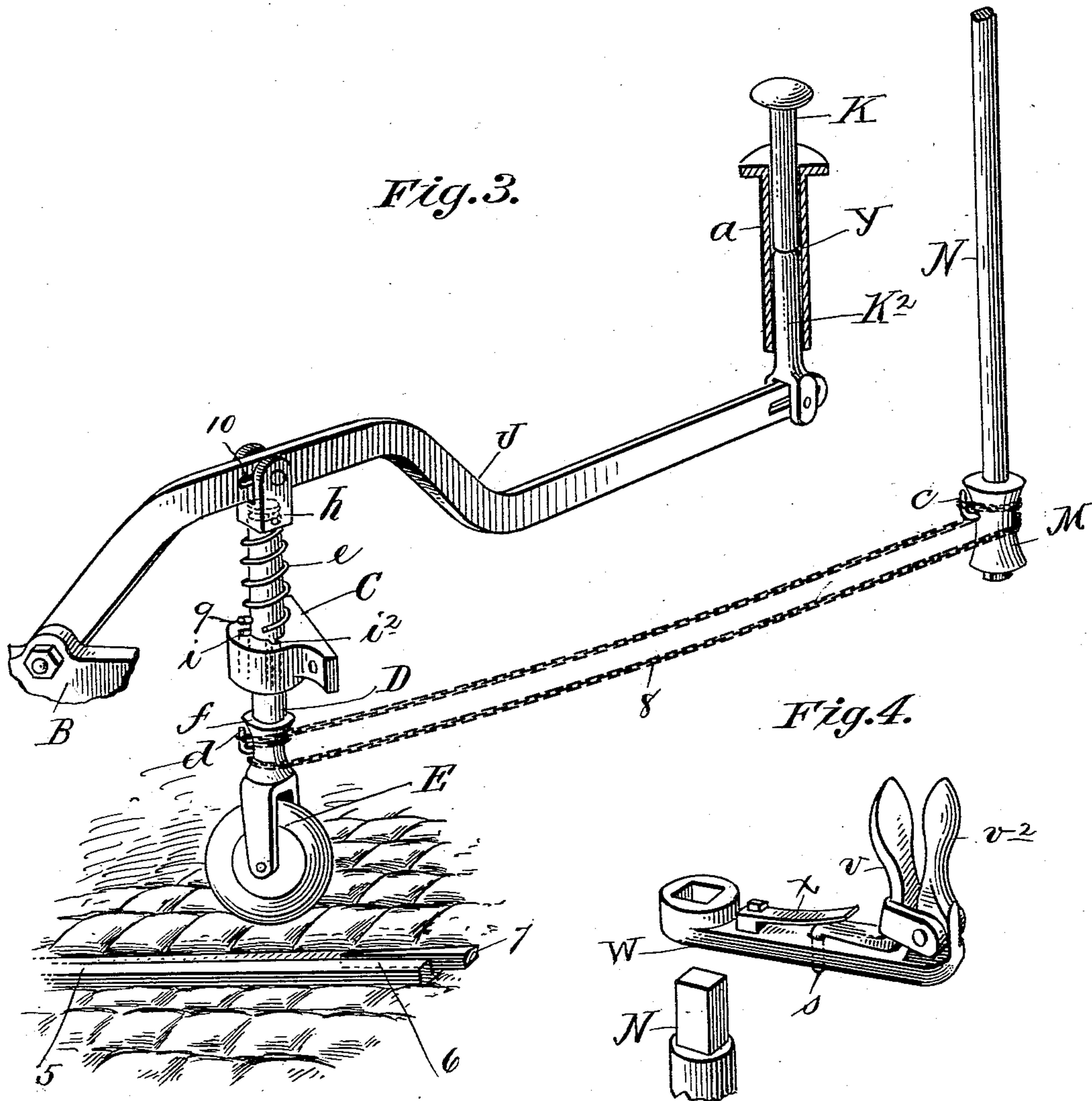
Inventors,
Samuel Messier and
David J. Bordeaux
by *Chapin*
Attorneys.

(No Model.)

el.) S. MESSIER & D. J. BORDEAUX.
OPERATING MECHANISM FOR STREET RAILWAY CARS.

No. 557,853.

Patented Apr. 7, 1896.



Witnesses:

J. W. Garfield
H. J. Clemons

*Inventors;
Samuel Messier and
David J. Bordeaux.*

by Chapin &
Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL MESSIER AND DAVID J. BORDEAUX, OF SPRINGFIELD, MASSACHUSETTS.

OPERATING MECHANISM FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 557,853, dated April 7, 1896.

Application filed October 8, 1895. Serial No. 565,017. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL MESSIER, a citizen of the Dominion of Canada, and DAVID J. BORDEAUX, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Switch-Operating Mechanism for Street-Railway Cars, of which the following is a specification.

This invention relates to switch-operating devices for street-railway cars, the object being to provide improved devices of this class to be operated by a person on the car and which are adapted both to turn the switch-points and to clean ice, snow, and other obstructions from the inside of the rail; and the invention consists in the novel construction and arrangement of the several parts of the device, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of one end of a car having applied thereto switch-operating devices embodying our improvements, this figure showing certain parts in section to more clearly illustrate the construction thereof. Fig. 2 is a top plan view of the parts shown in Fig. 1, the floor of the car being in this figure somewhat partly broken away. Figs. 3 and 4 are perspective views of the switch-operating devices separated from the car and of a portion of the road-bed and rail and switch. Figs. 5 and 6 illustrate portions of a street-rail and switch parts and a part of the switch-operating device in relation thereto, all as hereinafter described.

In the drawings, A is the platform, and B is a portion of the truck of a street-car, P indicating the usual dasher thereon. On said truck B, directly opposite thereto or supported thereon through the medium of a supporting-bearing C, bolted thereto, is placed a post D, which is adapted to have a vertical and a reciprocatory rotary movement by means of devices hereinafter described. The lower end of said post D is fork-shaped, and between said fork elements a switching-disk E, having a periphery of the form illustrated in the drawings, is hung, as shown, whereby it is adapted to rotate through contact with the

rail 6 or with the switch devices hereinafter described. On the upper end of said post D is placed a swiveling yoke *h*, which is slotted to receive a lever J, the latter being pivotally attached to said yoke by a pin which passes through a slot 10 in said lever, whereby the said lever has the requisite freedom of motion in operating said post. The said post-support C is provided with two vertical slots *i i*² within the walls of its perforation surrounding said post, and the latter is provided with a guide-pin 9, which engages in either one of said slots according to the position which the post may be brought to rotatively before moving the said switching-disk completely to an operative position relative to the switch devices of the road or to the rail thereof, the purpose of the engagement of said pin 9 with either one of said slots being to provide means for rigidly holding the said post and switching-disk in operative positions temporarily independently of the devices for operating the same, which are manipulated from the platform of the car. A spring *e* is applied to the said post D between said support C and the swivel-yoke *h*, which acts to lift said post and the switching-disk upwardly and maintain the same normally in an upward position, as in Figs. 1 and 3, said spring being compressed when the switch-operating devices are moved downward by the operator. A chain-sleeve *f* is fixed on said post D and has a chain-hook *d*, to which the operating-chain 8 is attached to prevent the latter from slipping on said sleeve. The said lever J is pivoted by one end to the truck B, that extends under the platform of the car nearly to the end thereof. A plunger in two parts K K² (said parts being divided at *y*, Fig. 3) extends through a sleeve *a*, fixed in the platform A. The lower section K² of said plunger is pivotally attached to one end of said lever J, and the section K of said plunger, which has a head on it, as shown, rests by its weight on the upper extremity of said lower section K². This construction of said plunger provides for removing the upper section thereof when the car-operator leaves his position, so that said switch devices cannot be inadvertently operated.

A rod N, whose lower end is supported in

a yoke-frame *o*, secured under the platform *A*, extends upward through the latter about to the upper edge of the dasher *P* and has its upper extremity squared, as shown in Fig. 4, to receive a crank *W*, the latter being removable at pleasure. Said crank has a fixed upturned handle part *v*² and a pivoted handle part *v*, which has a lower arm extending along the face of said crank, the extremity of which extends through the crank and constitutes a pin *s*. A spring *x* on said crank acts against a part of said handle part *v* to cause the end of said pin *s* to project beyond the under side of said crank. Said crank *W* occupies the position relative to the switch devices illustrated in Figs. 1 and 2.

A perforated metallic segment *R* is bolted to the dasher *P* and has perforations therein to receive said pin *s*, whereby upon turning the rod *N* by means of said crank the rod is locked in any of three or more positions by the entrance of said pin into one of said perforations. By grasping the parts *v* *v*² of the crank, the part *v* being pivotally attached to the crank, the said pin *s* is drawn upwardly and out of engagement with said segment *R*. Upon releasing the part *v* said spring acts, provided the crank is in proper position, to carry the pin *s* into one of said perforations in segment *R*. The said rod *N* has fixed thereon a chain-sleeve *M*, substantially like said sleeve *f* on the said post *D*, and like said sleeve *f* it has a chain-hook *c* thereon for engagement with the said chain *8*, to the end that the rotary movement of the rod *N* may result in a positive drawing action on said chain.

In Figs. 2, 5, and 6, 5 indicates a part of a street-railway rail, and 6 in said figures indicates the switch-bed of said rail, and 7 the ordinary pivoted or swinging switch-points.

The operation of the above-described devices is as follows: The adjustments of the lever *J* as to vertical movement produced by placing the foot of the operator on the foot-post *K* are such that when the lever is operated to move the post *D* and the switching-disk *E* toward the rail 5 said disk will be carried downward only to such position as may be necessary to insure the engagement of its periphery between the rails 5 and the switch-point 7 or with the inside of said rail. Before operating said lever *J*, as just described, the operator, by turning the rod *N*, by seizing crank *W*, turns the post *D* and the switching-disk *E* to one of the positions shown in Figs. 5 and 6, or to a position tangential to the side of said rail, for the purpose of engaging whichever side of the switch-point 7 it may be necessary to do to give the car the proper direction on the track, and immediately that said switch-point has been operated, as desired, the lever *J* is freed to allow the spring *e* to lift said lever and the post *D* and the disk *E* up away from the rail, as shown in Figs. 1 and 3.

In using the above-described devices in con-

nection with the disk *E* it is found that the latter is very useful when brought to the tangential position relative to the rail 5, as shown in Figs. 2 and 5, for removing ice, snow, and other obstructions from the inside of the rail, and when said disk is so used, and thus required to be held in the same position for a considerable time, the engagement of said pin 9 in the post *D*, which carries said disk *E*, with one of the slots *i* *i*² assists, essentially, in rigidly retaining the said disk in the operative position shown in Figs. 2 and 5 relative to rail 5, the said disk then acting as a rolling scraper or cutter having a shearing action against the side of the rail. The arrangement of said two slots for the reception of said pin 9 provides for holding the said disk *E* either in the position shown in Fig. 5 or that shown in Fig. 6. It is obvious that the engagement of the pin *s* on the crank *w* with said segment *R* would tend to hold the said disk *E* more or less rigidly in one of the positions just referred to in connection with Figs. 5 or 6; but when the said disk is used to clean the rail it is desirable that it shall be under a rigid control and not subject to variations of position, which would be occasioned by the slackness of the chain *8*.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a switch-operating device, an operating rod, or shaft, extending up along the dashboard, means for locking the rod or shaft in any desired position, and a connection extending from the rod or shaft to the rotating post, combined with a lever pivoted at its rear end to the truck of the car, a vertically-moving rod, under the control of the driver, and connected at its lower end to the front end of the lever; a vertically-moving partially-rotating post loosely connected to the lever at its upper end and provided with a switch-moving device at its lower one, and a spring for returning the post to position after having been depressed, substantially as shown.

2. In switch-operating devices for street-railway cars, a vertically-moving and rotatable post attached to the car-truck, having a switching-disk with a wedge-shaped periphery hung to the lower end thereof, combined with a lever pivoted by one end to said truck and having a foot-post connected to its opposite end extending upwardly through the platform of the car, a spring maintaining said post and disk normally in an upward position, clear of the railway-track, combined with a rod having a chain connection with said switching-disk post whereby said disk is turned to different positions relative to the car-track, and a crank on said rod and means for temporarily engaging the same with a fixed part of the car, substantially as set forth.

3. In switch-operating devices for street-railway cars, a vertically-moving and rotatable post having a switching-disk with a wedge-

shaped periphery hung to the lower end thereof, a support for said post attached to the truck of the car having therein vertical slots *i*, *i*², a laterally-projecting pin on said post for engagement with either one of said slots, combined with a lever, a foot-post and a spring for imparting to said switching-disk post vertically-reciprocating movements, and a crank-operated rod having a chain connection with said switching-disk post whereby the latter is turned and the plane of rotation of said disk is tangential to the line of said rail, substantially as set forth.

4. The vertically-moving rotatable post having a switching-disk *E*, hung to rotate on the lower end thereof, by contact with the car-track, a chain-sleeve *f*, fixed on said post having a chain-hook *D*, projecting therefrom, a spring for holding said post and switching-disk normally clear from said track, a lever *J*, and connections for operating the same on the platform of the car to move said post and disk downward, combined with a crank-operated rod supported in a vertical position on the platform of the car, and a chain connect-

ing said crank-rod and rotatable post, substantially as set forth.

5. In a switching device, a vertically-movable and partially-rotating post, journaled upon the car-truck, and provided at its lower end with a switch-moving device, a pin projecting from the post, a bearing on the car-truck provided with an opening through which the post moves, and which opening is provided with vertical grooves in which the pin catches to lock the post in an operative position, and a spring applied to the post for returning it to position, combined with a lever, pivoted at its rear end to the car-truck, a rod for depressing the front end of the lever, a shaft journaled upon the end of the platform, and a connection between the shaft and the post for causing the post to revolve, substantially as set forth.

SAMUEL MESSIER.
DAVID J. BORDEAUX.

Witnesses:

H. A. CHAPIN,
K. I. CLEMONS.