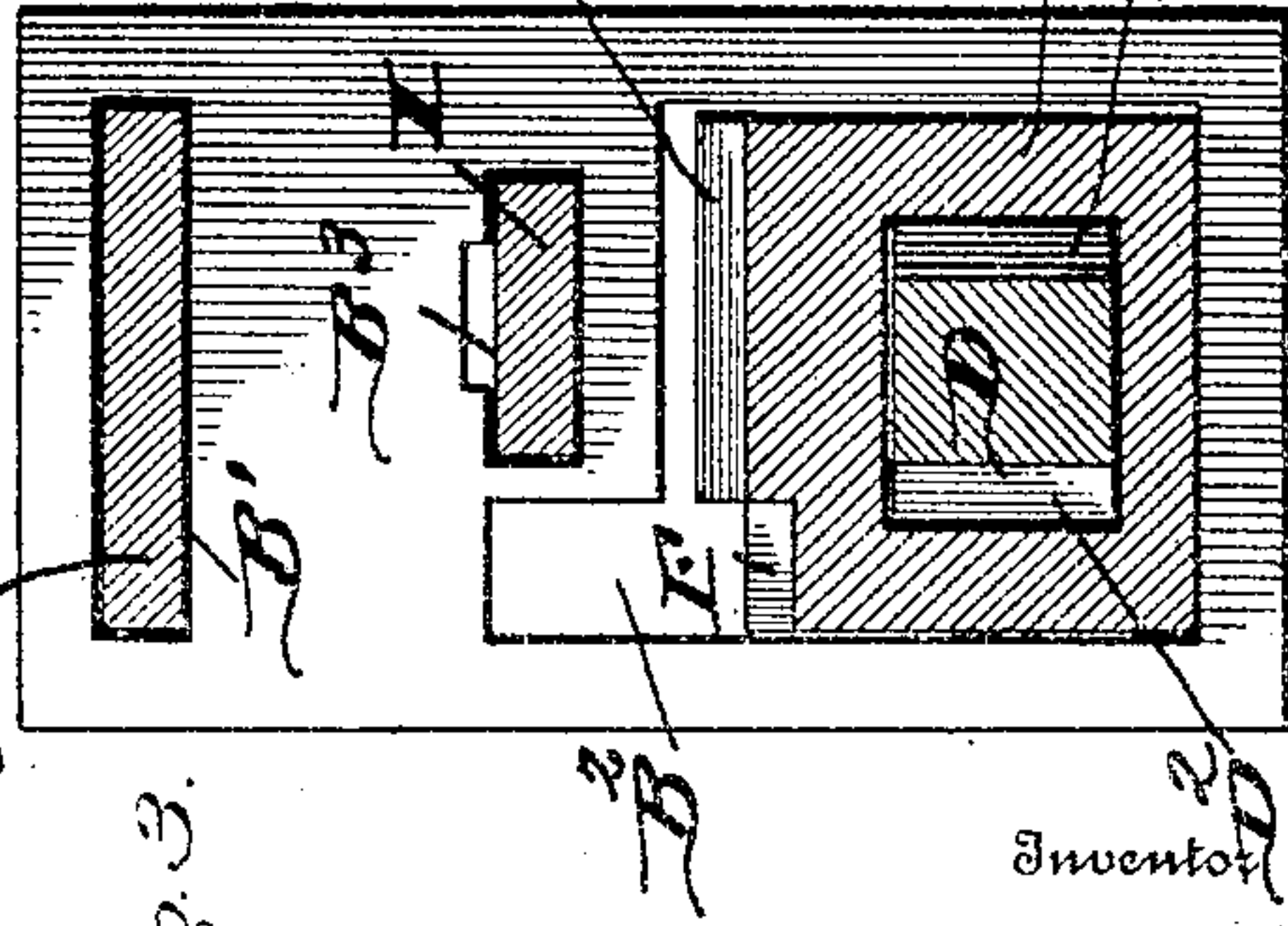
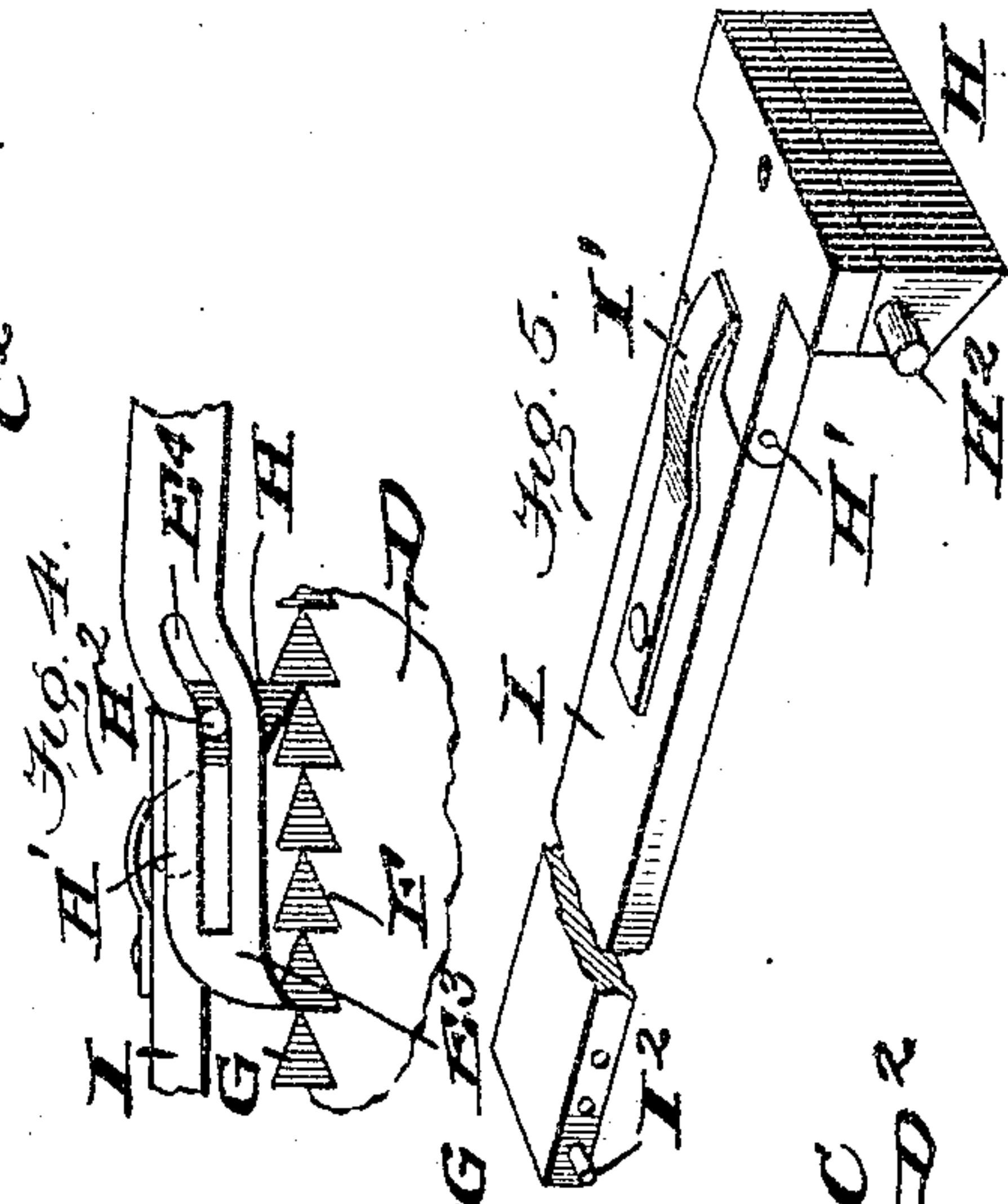
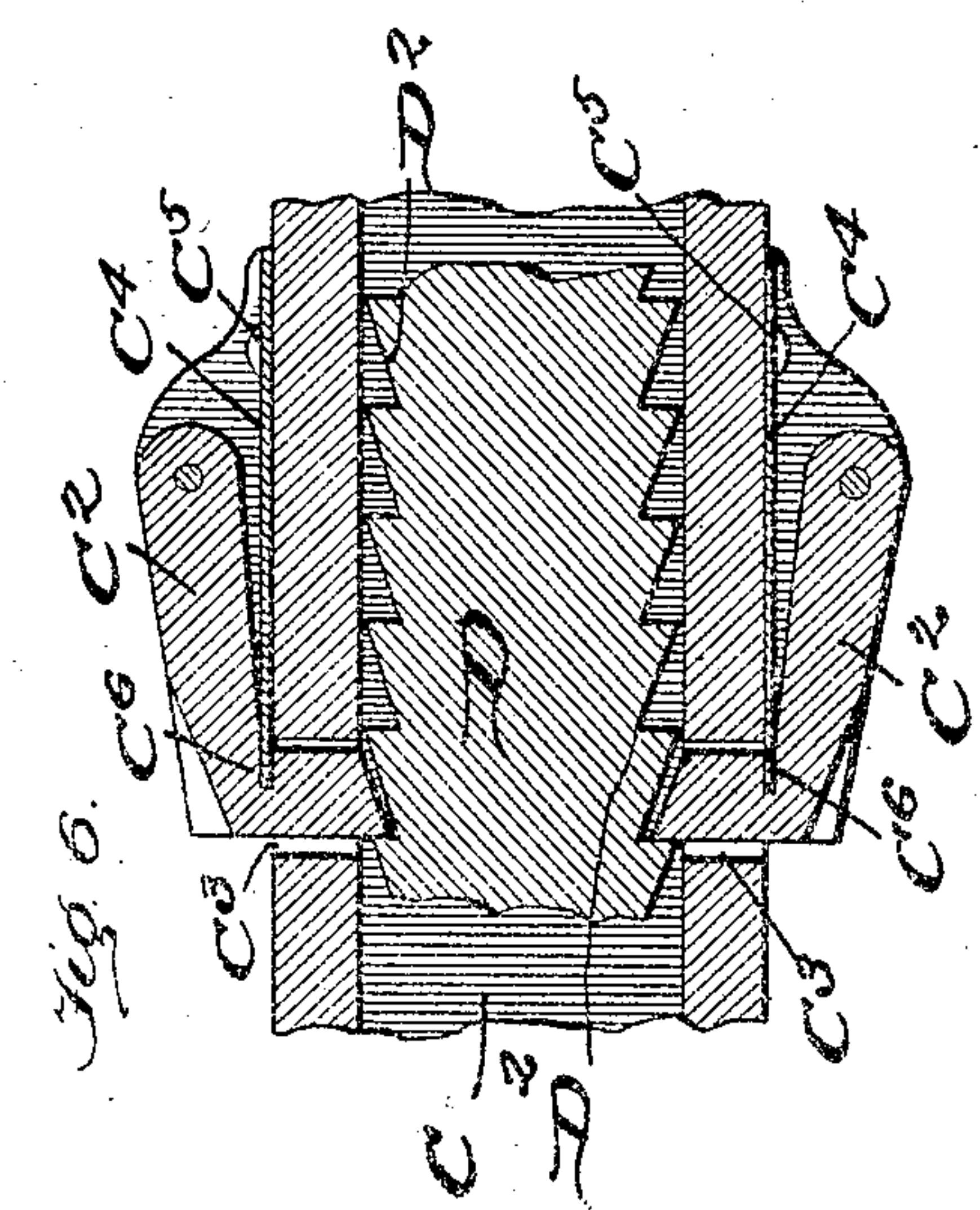
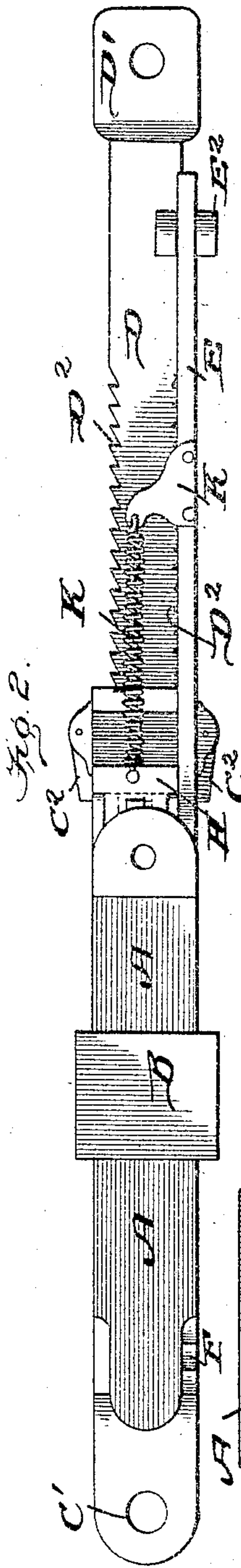
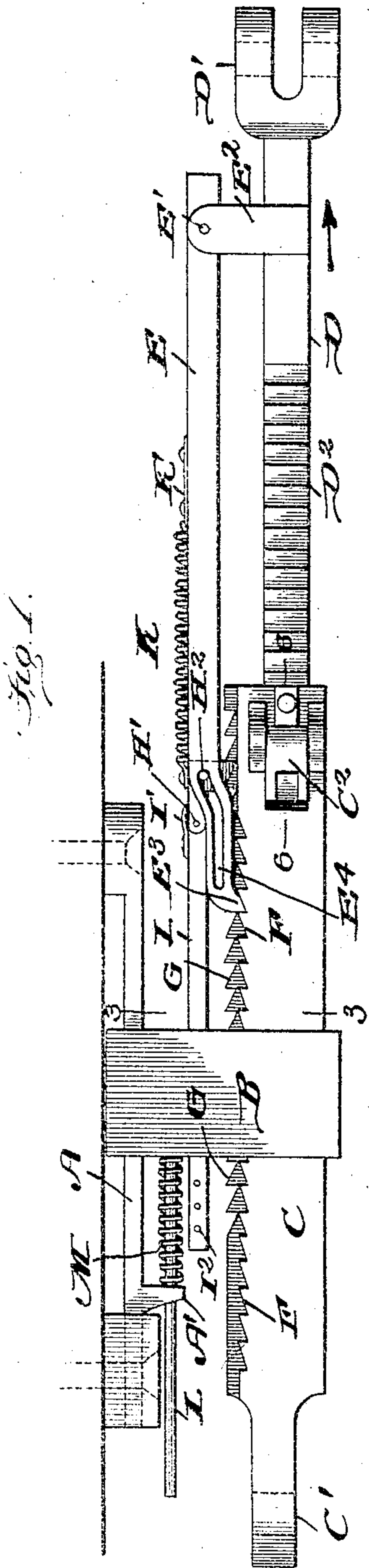


S. JONES.

AUTOMATIC SLACK ADJUSTER FOR BRAKE RODS.

APPLICATION FILED MAR. 24, 1904.



Witnesses

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Fig. 3.

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UNITED STATES PATENT OFFICE.

SAMUEL JONES, OF FREMONT, OHIO.

AUTOMATIC SLACK-ADJUSTER FOR BRAKE-RODS.

SPECIFICATION forming part of Letters Patent No. 778,585, dated December 27, 1904.

Application filed March 24, 1904. Serial No. 199,758.

To all whom it may concern:

Be it known that I, SAMUEL JONES, a citizen of the United States, residing at Fremont, in the county of Sandusky and State of Ohio, have
 5 invented a new and useful Automatic Slack-Adjuster for Brake-Rods, of which the following is a specification.

This invention is an improved construction of automatic mechanism for taking up the
 10 slack of brake-operating parts brought about by the wear of the brake-shoe. These brake-shoes wear away quite rapidly, owing to the fact that the rim of the wheel is very hard, and the frequent application of the brakes
 15 quickly wears down the brake-shoes to a point where it is necessary to either replace the shoe or take up the slack in the brake-operating parts, as otherwise the limited travel of the air-brake rod will not be sufficient to ef-
 20 fectively apply the brakes, and it is with the idea of providing an efficient automatic mechanism for taking up this slack that the present invention has been devised.

The invention consists in the novel features
 25 of construction and combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a side elevation of the
 30 device. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Figs. 4 and 5 show details of construction, and Fig. 6 is a detail sectional view on the line 6 6 of Fig. 1.

In carrying out my invention I employ what I designate a "carrier" A, which is at-
 35 tached to the bottom of the car and upon which slides a guide B, having an opening B' in the top, through which the carrier passes.
 40 This carrier also has a peculiar-shaped opening B², in which works the hollow bar C, having an eye C' at one end, to which the brake mechanism is attached. Sliding in the hollow bar C is the solid bar D, having a clevis D' at
 45 its outer end, which is adapted to be attached to the rod leading to the air-cylinder. The solid bar D slides in the hollow bar C for the purpose of taking up the slack in the operative parts of the brake mechanism incidental to
 50 the wear of the brake-shoes, and the outward

movement of the solid bar is arrested by providing ratchet-teeth D² upon the sides of said bar, which are adapted to be engaged by the
 pawls C², pivoted upon the exterior of the hol-
 low bar C adjacent the end, the ends of said
 55 pawls passing through openings C³, produced in the sides of the hollow bar. The springs C⁴, which hold the pawls in engagement with the ratchet-teeth, are fastened at C⁵ to the side of
 60 the bar and have their free ends in recesses C⁶, produced adjacent the ends of the pawls. The formation of the ratchet-teeth permit the solid bar to be pushed into the hollow bar, but prevent the said solid bar being drawn
 65 outwardly when the said solid bar is moved in the direction of the arrow, which is the direction of movement when the brakes are applied. The inward movement of the solid bar is prevented by means of an arm E, which
 70 is pivoted at E' to a bracket E², rigidly connected to the solid bar adjacent its outer end, the said arm E having a downwardly-extending finger E³, which engages one of a series of ratchet-teeth F, produced upon the upper face
 75 of the hollow bar C, at one side, the abrupt or straight faces of said teeth being arranged adjacent to the outer end of the hollow bar. The remaining portion of the upper face of the hollow bar is provided with a series of
 80 ratchet-teeth G, which are arranged exactly opposite of the teeth F—that is, their abrupt or vertical faces are arranged toward the inner ends of the hollow bar. The ratchet-teeth G are adapted to be engaged by a dog H,
 85 which is pivoted at H' to a sliding rod I, which slides in an opening B³, produced in the guide B, said dog being normally held in engagement with the ratchet-teeth G by a leaf-spring I', attached to the sliding bar I and bearing at
 90 its free end upon the dog. This dog also carries a laterally-projecting pin H², which engages an obtuse angular slot E⁴, produced in the finger E³. The rear end of the sliding rod I also carries a laterally-projecting pin I², which
 95 is adapted to engage the rear side of the guide B and limit the movement of the said sliding rod. A coil-spring K connects the dog H to the bracket-arm K', carried by the arm E, the purpose of said spring being to produce a
 100 quick and positive action of the dog H and

finger E³. A guide-rod L is connected to the guide B and extends through a depending lug A', connected to the carrier A, and surrounding the said guide-rod, between the guide and
5 and lug, is the coiled buffer-spring M.

In operation the solid and hollow bars are adjusted to the proper point, so that when the brakes are applied the said solid and hollow bars will act as a single rod or bar for the
10 purpose of applying the brakes, it being understood that the said rods move in the direction indicated by the arrow when the brakes are applied. When the brake-shoes wear, the cylinder-rod will have a somewhat longer
15 stroke, and the pin I² will then contact with the guide B, and the pin H², traveling in the angular slot E⁴, will cause the dog H to be lifted, so as to disengage the ratchet-teeth G, said dog being moved back one or more teeth,
20 and at the same time lifting the finger E³ out of engagement with ratchet-teeth F, and the spring K will immediately force the solid bar D inwardly, and the pawls C² will lock it after such inward movement, and by this time the
25 dog H has been brought into engagement with the teeth G and the finger E³ with the teeth F, it being understood, of course, that these movements which effect the taking up of the slack being accomplished immediately upon
30 the release of the brakes.

It will thus be seen that I provide an exceedingly simple and efficient automatic means for taking up the slack of the brake-operating mechanism.

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

40 1. The combination with the hollow bar, having oppositely-disposed ratchet-teeth upon its exterior, of the solid bar sliding in the hollow bar, and provided with ratchet-teeth, the spring-actuated pawls carried by the hollow bar, and adapted to engage the ratchet-teeth

upon the solid bar, a guide in which the hollow bar travels, means for limiting the inward movement of the solid bar, together with means carried by the guide for disengaging said means for limiting the inward movement of the solid bar, as set forth.

2. The combination with a guide and means 50 for carrying the same, of the hollow bar sliding in the guide, and having oppositely-disposed ratchet-teeth, the solid bar sliding in the hollow bar, and provided with ratchet-teeth, an arm carried by said solid bar, and 55 adapted to engage one set of teeth upon the hollow bar, a sliding rod carried by the guide, and provided with a dog, adapted to engage the other set of teeth, together with means for disengaging the arm, and spring-operated 60 means for forcing the solid bar inwardly, as set forth.

3. The combination with a carrier, of a guide, arranged thereon, the hollow bar having two sets of ratchet-teeth, the solid bar 65 having ratchet-teeth, the pawls for engaging said teeth, the slide carrying a spring-actuated dog, an arm having a slotted finger, the pin carried by the dog, for engaging the said slotted finger, a pin carried by the sliding 70 rod adapted to engage the guide, and a spring connecting the dog, and the arm as set forth.

4. The combination with the solid and hollow bars provided with ratchet-teeth as set forth, of the guide, in which the hollow bar 75 slides, a sliding rod working in the guide, and having a pin at one end, and a spring-actuated dog at the other end, said dog carrying a laterally-projecting pin, an arm carried by the solid bar, and having a slotted finger, and 80 the spring connection between the arm and sliding rod, as set forth.

SAMUEL JONES.

Witnesses:

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