

(No Model.)

2 Sheets—Sheet 1.

J. HAHN.

CAR BRAKE.

No. 370,190.

Patented Sept. 20, 1887.

Fig. 1.

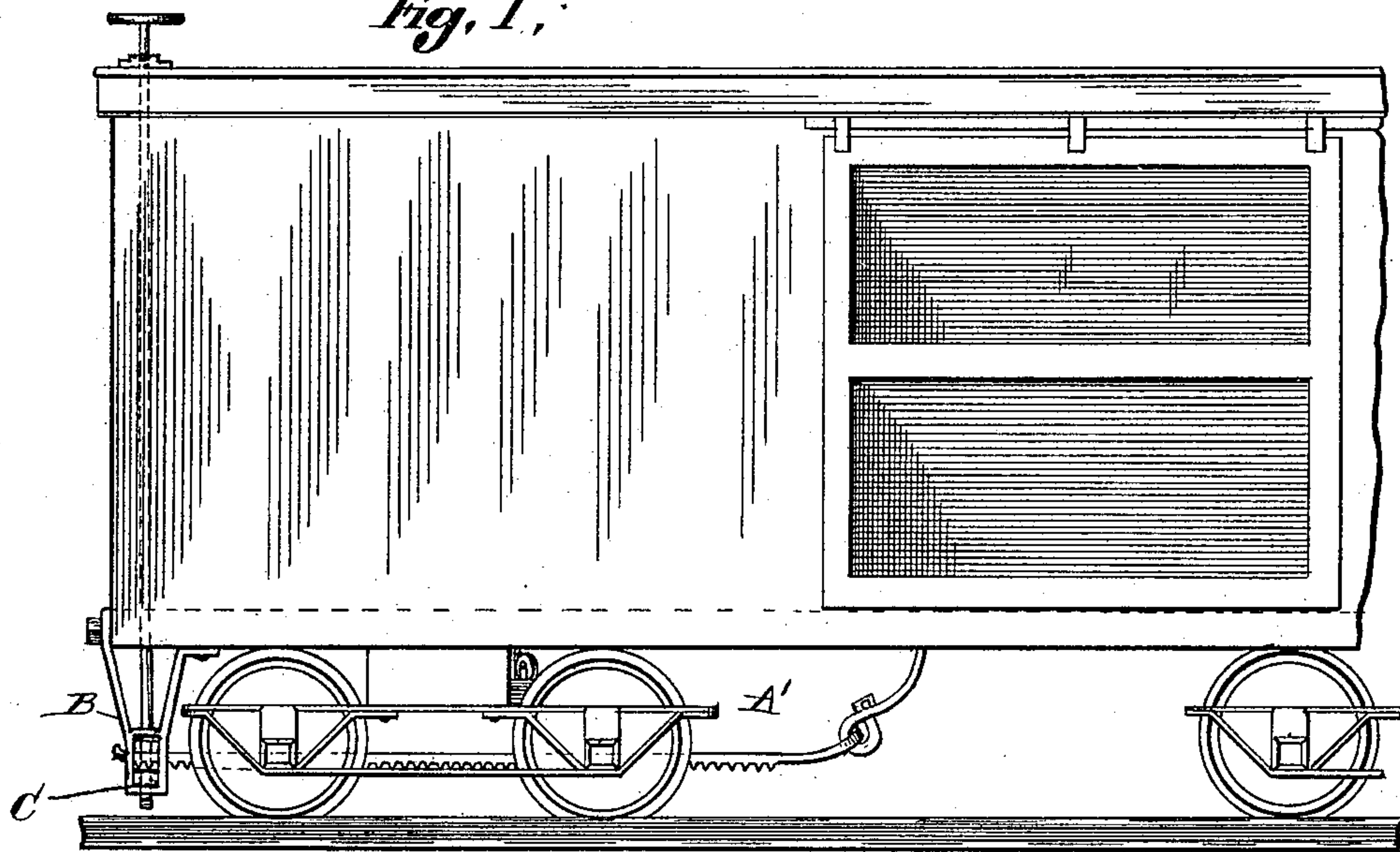


Fig. 2.

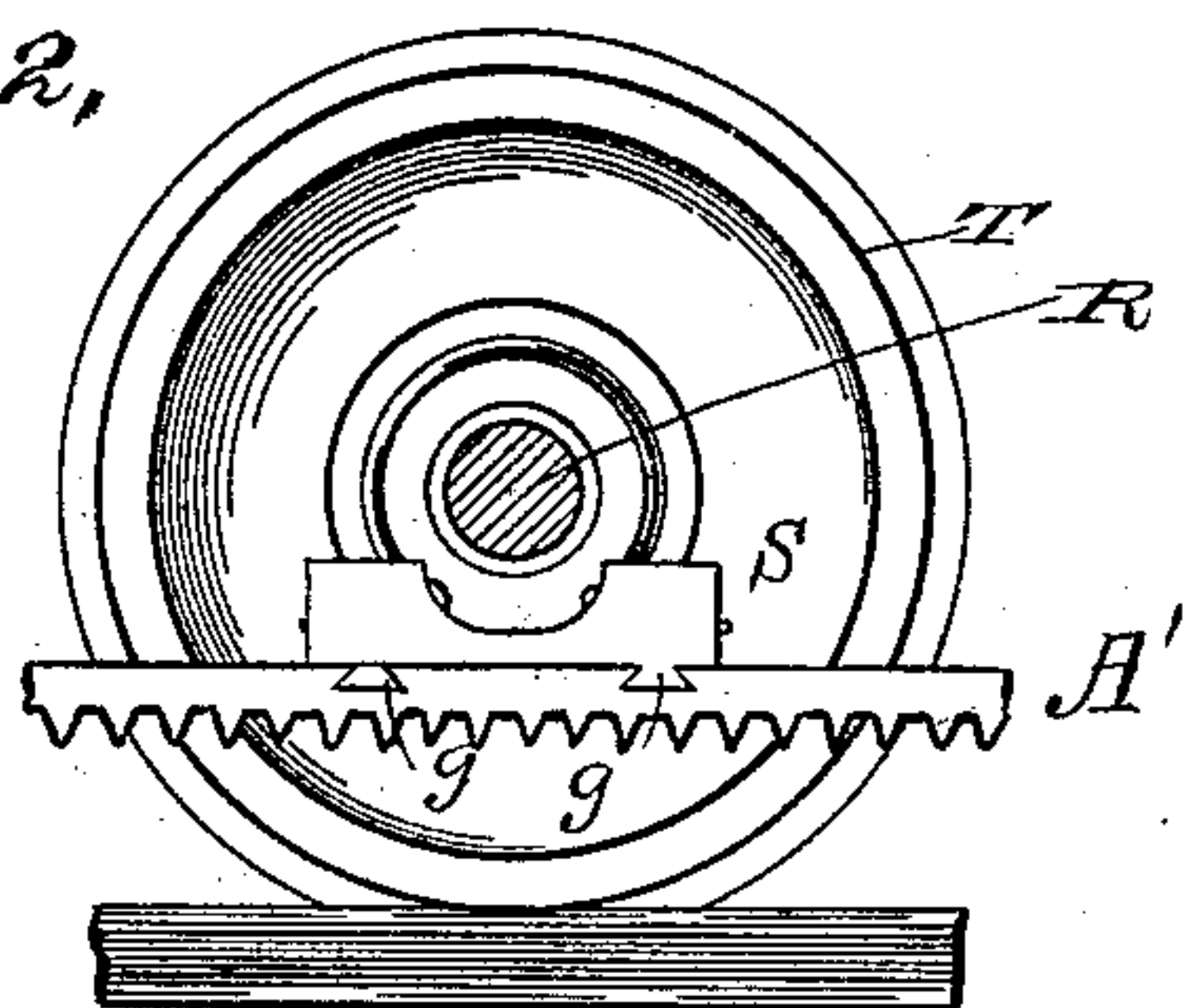


Fig. 3.

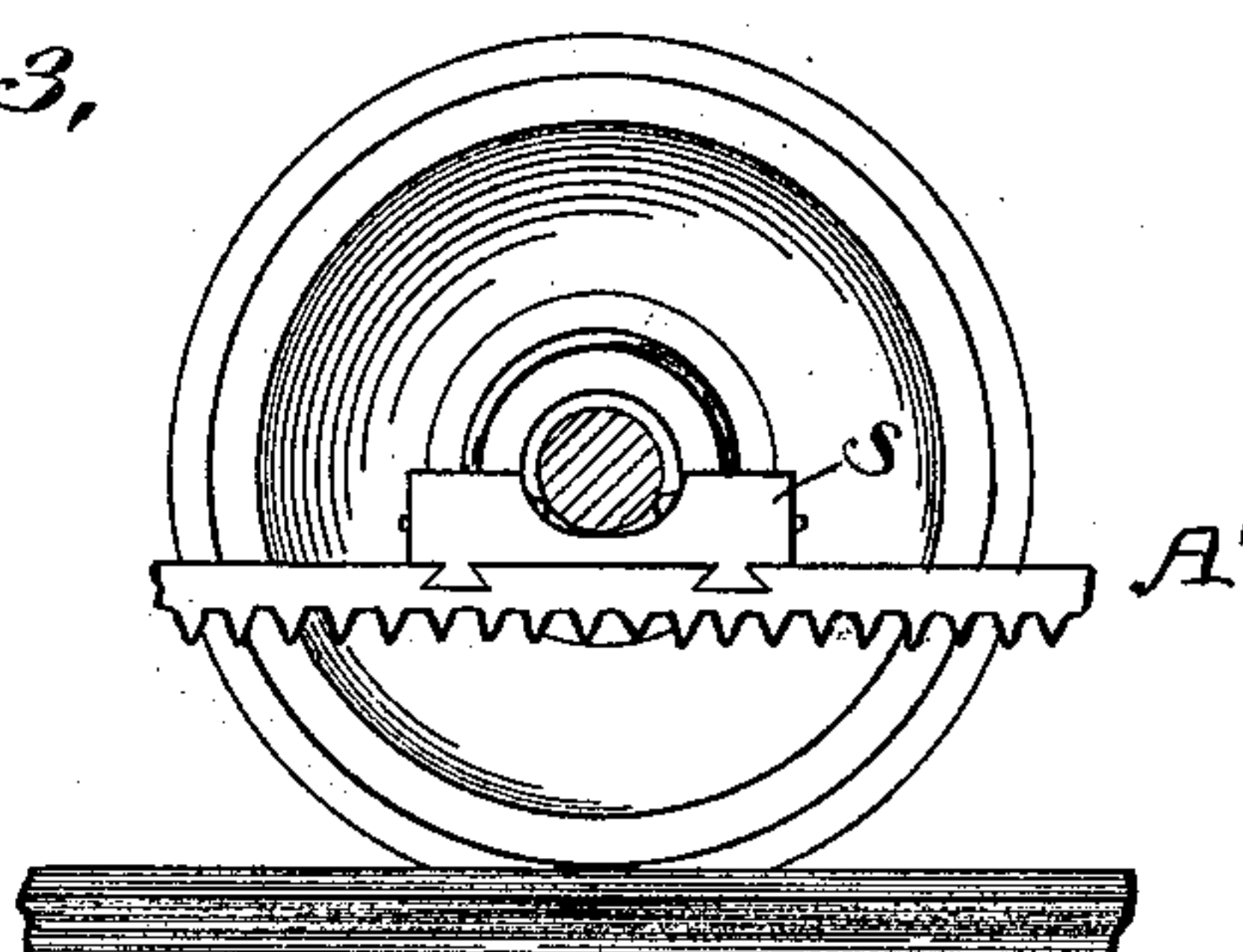
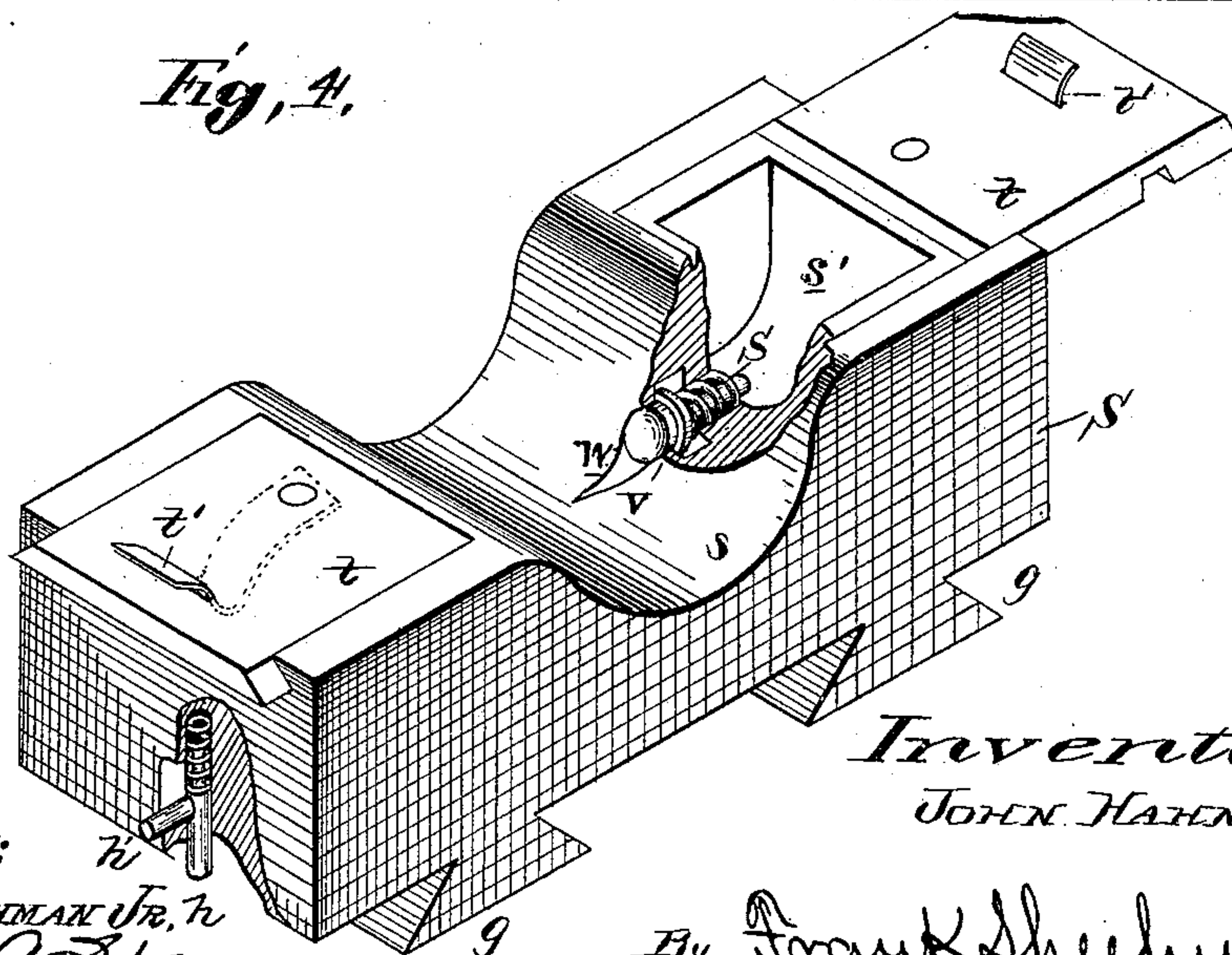


Fig. 4.



Attest; *h*
G. N. HINGHAM JR, *h*
Edmund A. France

Inventor;
JOHN HAHN.

By Frank Sheehy
attys.

(No Model.)

2 Sheets—Sheet 2.

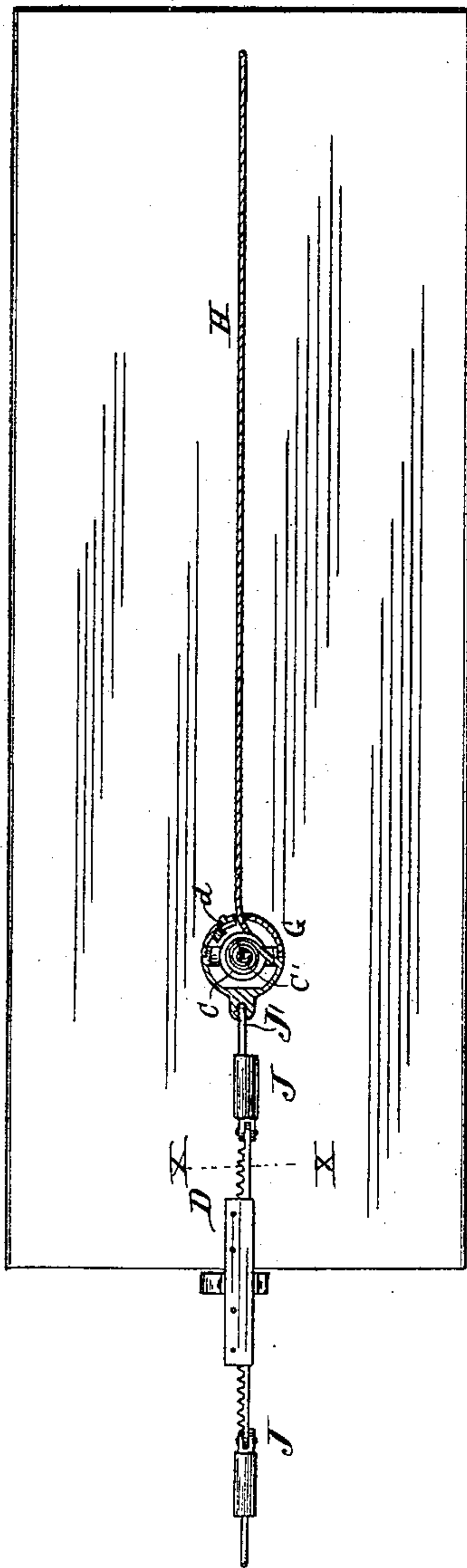
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Fig. 5.



Attest,
G. N. HITCHMAN, Jr.
Samuel A. Strasser

Fig. 6.

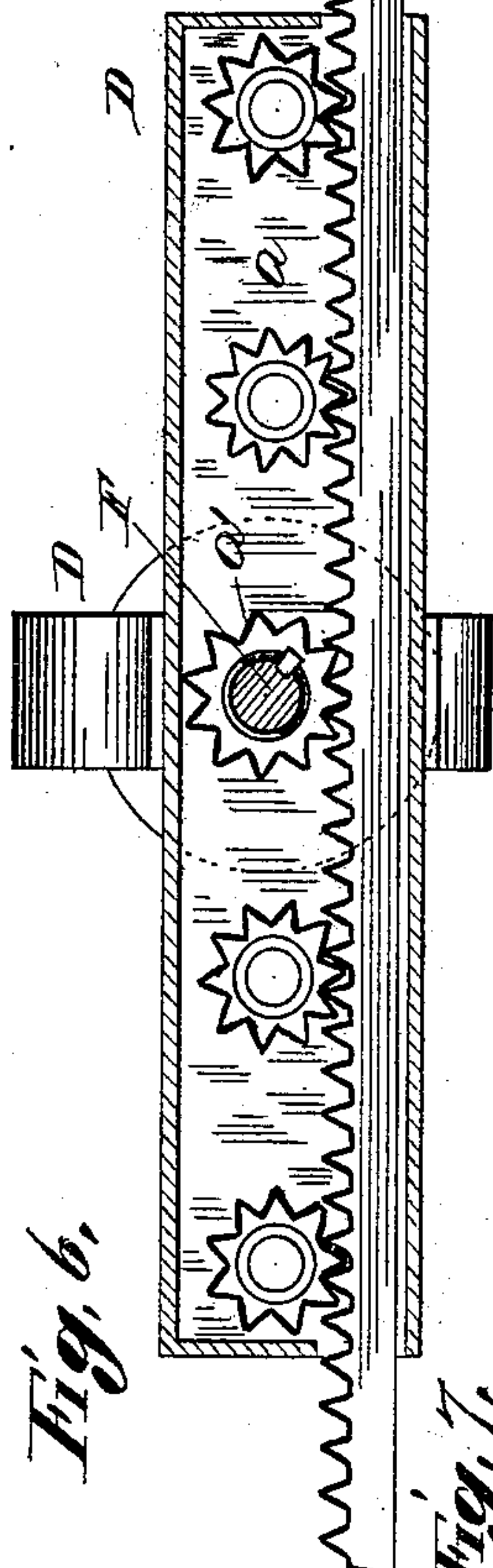


Fig. 8.

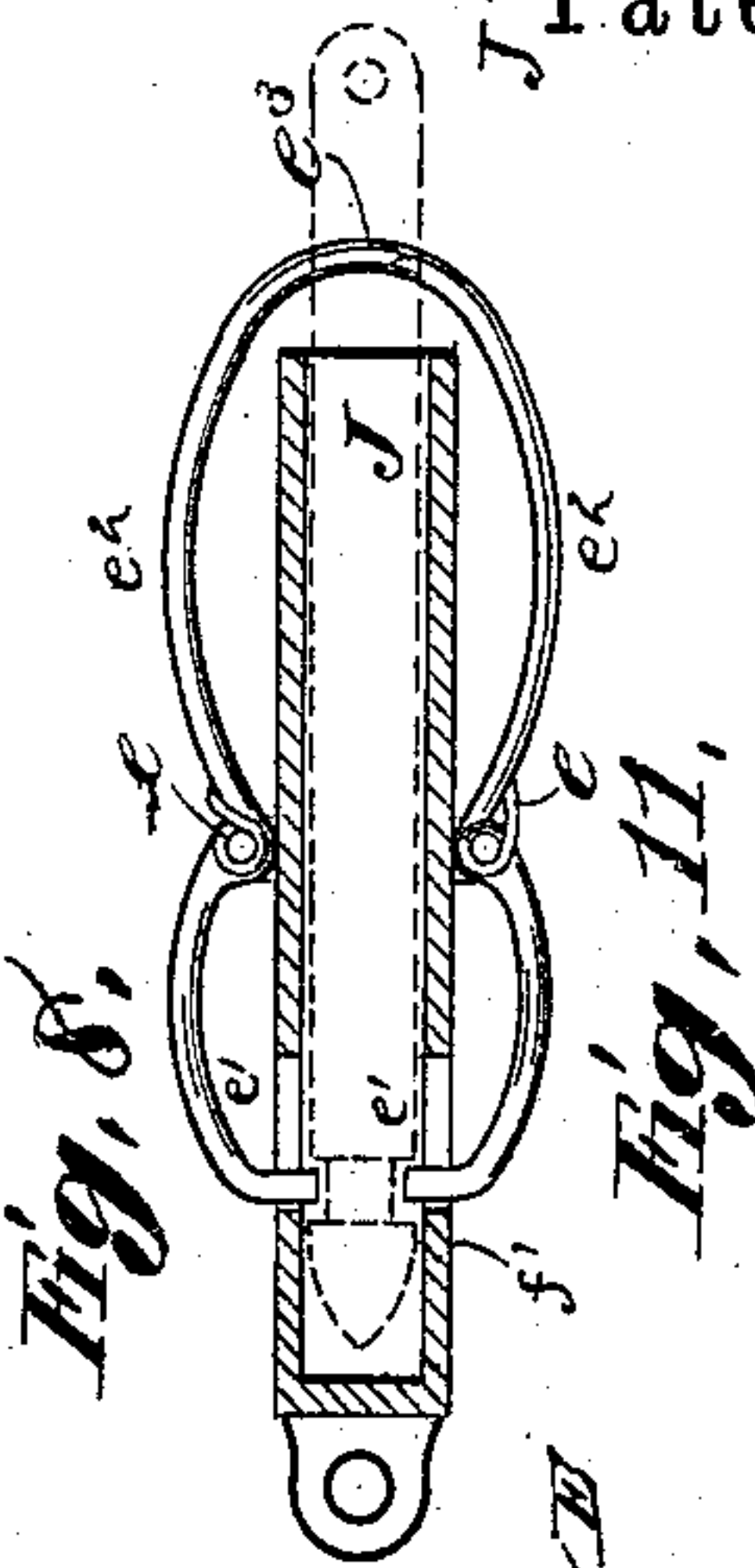


Fig. 11.

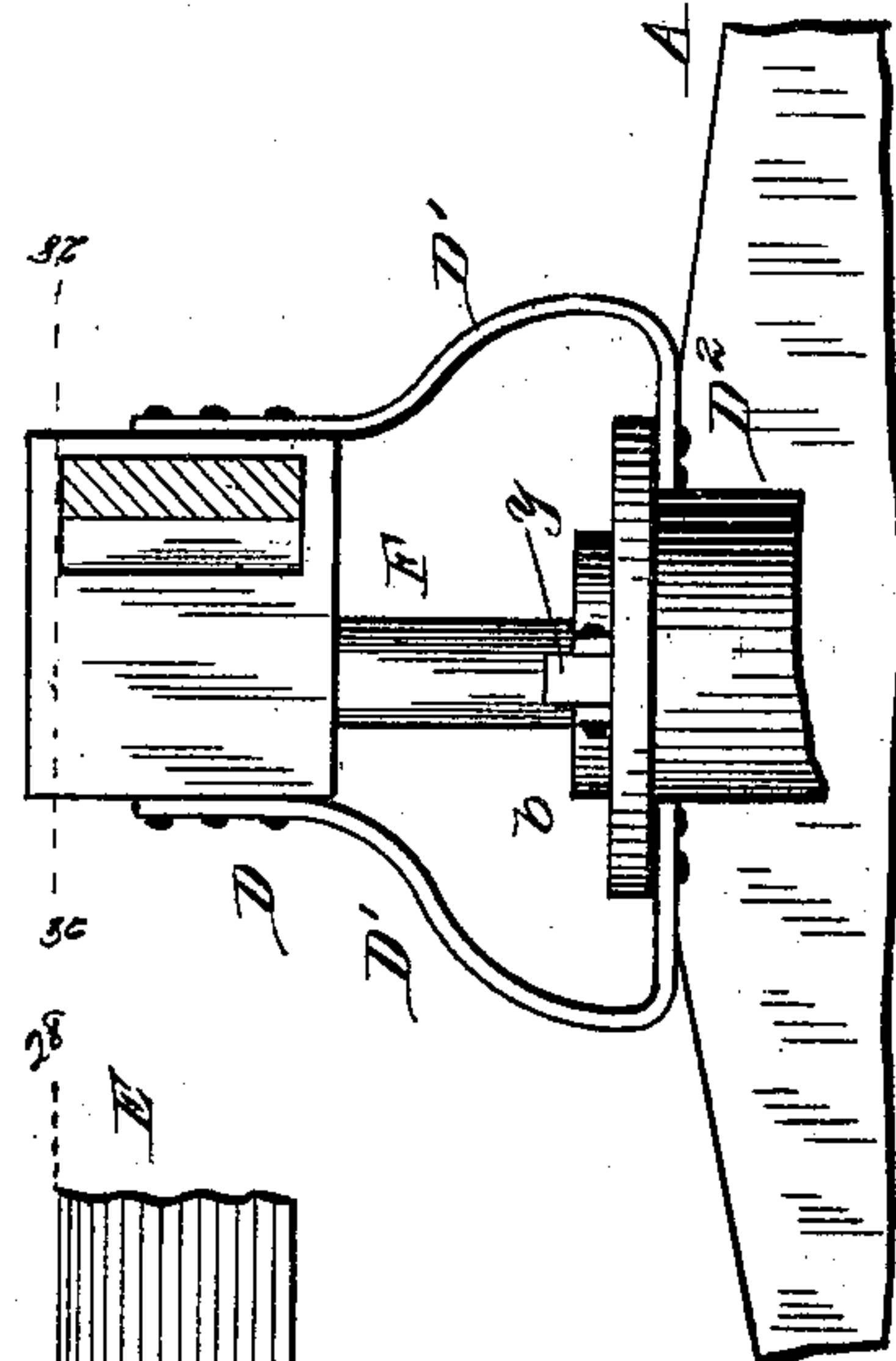


Fig. 7.

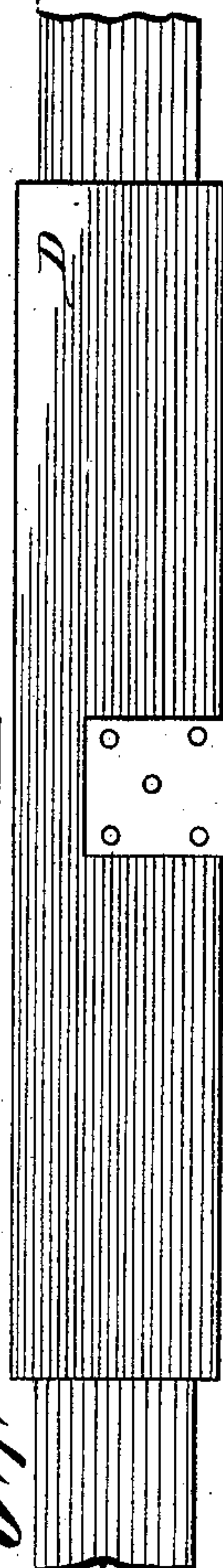
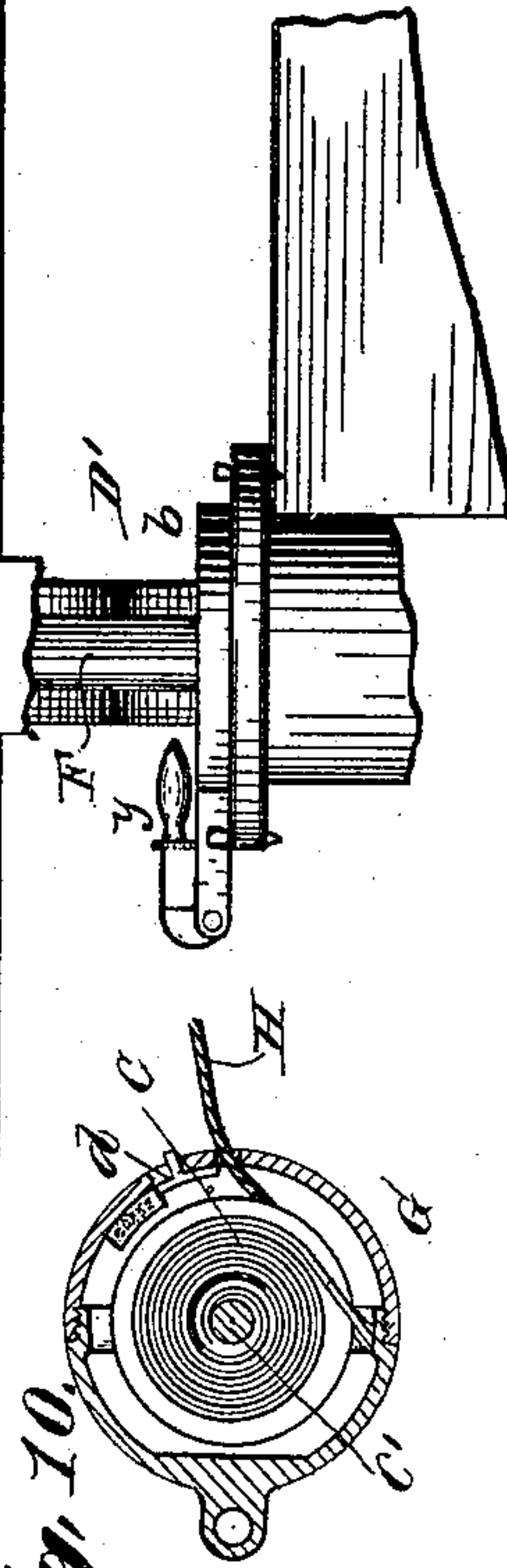


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOHN HAHN, OF ST. LOUIS, MISSOURI.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 370,190, dated September 20, 1887.

Application filed May 18, 1886. Renewed July 26, 1887. Serial No. 245,363. (No model.)

To all whom it may concern:

Be it known that I, JOHN HAHN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain
5 new and useful Improvements in Mechanism for Operating Brakes, Railway-Switches, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as
10 it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 Figure 1 is a side view of a freight-car, showing my improved brake-shoe combined with an adjustable rack. Fig. 2 is a detail showing the brake-shoe released from the axle. Fig. 3 shows in detail the brake applied. Fig.
20 4 is a perspective view of the hollow brake-shoe, indicating by broken parts the automatic oiler and the device for carrying off the débris of the oil. Fig. 5 is a top view of a car or railroad-carriage, showing the central
25 brake-actuating device thereon. Figs. 6 and 7 are details of the rack, its casing, and transmitting-gear. Fig. 8 is a sectional view of a coupling for the line rope or chain. Fig. 9 is an end view of the coupling, showing the
30 beveled split grasping portions of the locking device. Fig. 10 shows in section a spring-barrel take-up for the line ropes or cables. Fig. 11 is a detail of the front part of a carriage, showing in vertical cross-section the
35 rack which actuates the brakes.

This invention relates to certain improvements in railroad-car brakes, wherein I employ an adjustable rack bar or bars substantially like the bar which I have fully described
40 in my application marked "Case A," bearing even date with the filing of this, which rack-bar is not herein claimed, broadly, as the teeth thereof for the present purpose may be omitted.

45 The object of the invention is, mainly, to automatically apply the brakes and lubricate the axle; also, to provide for effecting a coupling of the line-ropes and to take up the slack thereof.

50 Other features of my invention, together with those above briefly referred to, will be

fully understood when taken in connection with the claims and the annexed drawings.

A designates, for example, part of a freight-car in side elevation, showing the adjustable
55 rack-bar A' applied to the bed thereof. I contemplate applying the rack-bar to a locomotive, a tender, and also to any of the carriages of a railroad. The front or free end of this rack is preferably upturned, and I
60 shall employ on the road-bed engaging bevel-ended spur-wheels, (not shown in the drawings,) which I have fully explained in my case lettered "A," and not herein claimed.

B designates a hanger, which is one of the
65 guides for a horizontal transverse bar, C, upon which the free end of the rack A is supported. This bar C, together with its rack, is vertically adjustable. The lifting-bar which I am now describing is preferably located below
70 and at or about the middle of the length of the truck-shafts, and it is given vertical vibrating movement by the following devices, which may be under the control of the engineer in his cab.

75 D designates a case or housing, which is suitably secured to the roof of the car or carriage, in which are guides for a rack, E, which is connected by ropes or chains H, that extend through the train of carriages and are coupled
80 together, as I will hereinafter explain.

By reference to Figs. 6 and 7 it will be seen that inside of the case D, I have a series of spurred wheels, *a a'*, adapted to engage with and to guide straightly a rack, E. The spur-
85 wheel *a'* is keyed near a vertical shaft, F, which may have a hand-wheel, *b*, on its upper end, as shown in Fig. 11, by which a person on the roof of a carriage may turn this shaft. The lower part of shaft F is screw-
90 threaded, and is tapped through the bar C for the purpose of giving vertical movement thereto, and thereby adjusting one end of the rack A' up and down for proper engagement
95 with a spur-wheel on the roadway which actuates the switch, as fully explained in my application marked "Case A" and bearing even date with the filing of this.

G G designate cases, in each one of which is a convolute spring, *c*, secured to the case or
100 barrel at one end and to the shaft *c'* at the other end. The object of the spring *c* is to

wind up the line-rope H and hold it under proper tension. This compensating device accommodates itself to the lateral shucking and endwise motion of a train of cars, and it is provided with a spring-actuated pressure-slide, *d*, which bears on the rope or chain H, and by frictional contact therewith serves as an auxiliary in maintaining the tension of this rope. This device is represented enlarged by Fig. 10 and attached to the rope H and bolt J'.

By reference to Figs. 9 and 10 it will be seen that I employ, in combination with the rope H, a coupling therefor. This coupling consists of a case or tube, J, having an eye on one end, which is pivoted to the rack-bar E and transversely slotted at *e e'*. At *e* gripping-arms are pivoted to ears on the outer side of the tube or sheath J, and so connected to the contracted ends of grasping-handles *e²*, which are beveled at *e³*, that by compressing these handles the hooking-arms will be thrown outwardly. The sheath or tube J is adapted to receive a bolt, J', having a pointed end and an annular groove, *f*, posterior thereto, as shown in dotted lines, Fig. 8. By this device a coupling or uncoupling of the line-rope can be effected quickly, and the coupling when made is secure.

The rack-bar (or bars) A' is dovetailed transversely, and thus adapted to receive corresponding tenons, *g*, which are formed on the bottoms of chambered brake shoes or blocks S. Each brake-shoe S is scored out at *s* to fit snugly against the axle R of the truck-wheels T; or a friction-collar may be formed integral with or shrunk on the axle R, to afford a braking-surface for the shoe or block S. This shoe is prevented from lateral displacement on its rack A' by means of a spring-actuated bolt, *h*, having a finger-piece, *h'*, extended through a slot made through one end of the shoe, as shown in Fig. 4. On opposite sides of the scores of this shoe are chambers *s'*, which may communicate with each other below the wall of the scored portion, and which are provided with beveled sliding covers *t t*, having spring-catches *t' t'*. For the purpose of automatically lubricating the axle or collar thereon when the shoe is caused to impinge against it, I combine with the shoe S an oil-supply valve, *v*, which consists of a stem having a button-head and guided by ears fixed to the block S in a feed-channel, *w*, communicating with the oil-receptacle *s'*. The button-head of this valve *v* protrudes into the scored space *s*, so that when the rack A' is raised in the act of applying the brakes the said head will impinge against the axle (or a collar thereon) and be forced inward, thus allowing the oil in chamber *s'* to flow upon the axle. When the brake-shoe is depressed, the spring *s²* will retract the valve *v* and cut off the oil-supply.

My object in supplying oil as above described is mainly to prevent undue heating and grinding of the brake-shoe and axle.

In lieu of a hand-wheel (shown in Fig. 1) on the shaft F, which is used for raising and depressing the rack A', I contemplate mounting the casing D upon supports D', rigidly secured to the carriage, as shown in Fig. 7, and using a guide, D², and a collar fixed to its upper end provided with a pivoted or folding handle, *y*, for the purpose above described.

The rack-bar A', which is adjustable up and down by the means described, is used not only as a support for a brake-shoe, but also as the means by which the engineer can engage it with a spur-wheel on the road-bed, as above mentioned.

Having described my invention, I claim—

1. The combination, with a railway-carriage, of a vertically-movable bar bearing a brake-shoe, of the rack E, the screw-threaded shaft, its pinion, and the line-rope connected to said rack, substantially as described.

2. The combination, with the shaft F, for raising and lowering the bar bearing the brake, of the spur-wheel keyed on this shaft, the endwise-movable rack engaging said wheel and guided in a case secured to the top of the car, the case J, attached to said rack and slotted, as shown, a pointed bolt, J', annularly grooved, and the pull-rope H, all constructed and adapted to operate with a spring-actuated gripping device, substantially as specified.

3. The combination, with the line-rope H on top of the car, and the brake-shaft F, bearing a spurred pinion, of the rack engaging therewith, a coupling device, as described, and the spring-actuated tension device connected to the coupling pin or bolt J', and also to the line-rope H, substantially as described.

4. A brake-shoe chambered as described, in combination with a brake-bar, fastening devices for the shoe, and an automatic oil-supply valve, substantially as described.

5. A brake-shoe chambered and provided with an oil-supply valve, as described, in combination with a bar which is allowed to vibrate vertically, and which is adjustable by means substantially as described.

6. The combination of a vertically-vibrating bar pivoted to the bed of a railway-carriage, a brake-shoe chambered and provided with an automatic supply-valve, and devices for raising said bar, as described.

7. The chambered brake-shoe, scored as described and provided with an oil-supply channel, in combination with a spring-actuated valve in this channel adapted to be opened by contact with the axle or a collar thereon, substantially as described.

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

JOHN HAHN.

Witnesses:

B. W. FERGUSON,
JAMES J. SHEEHY.