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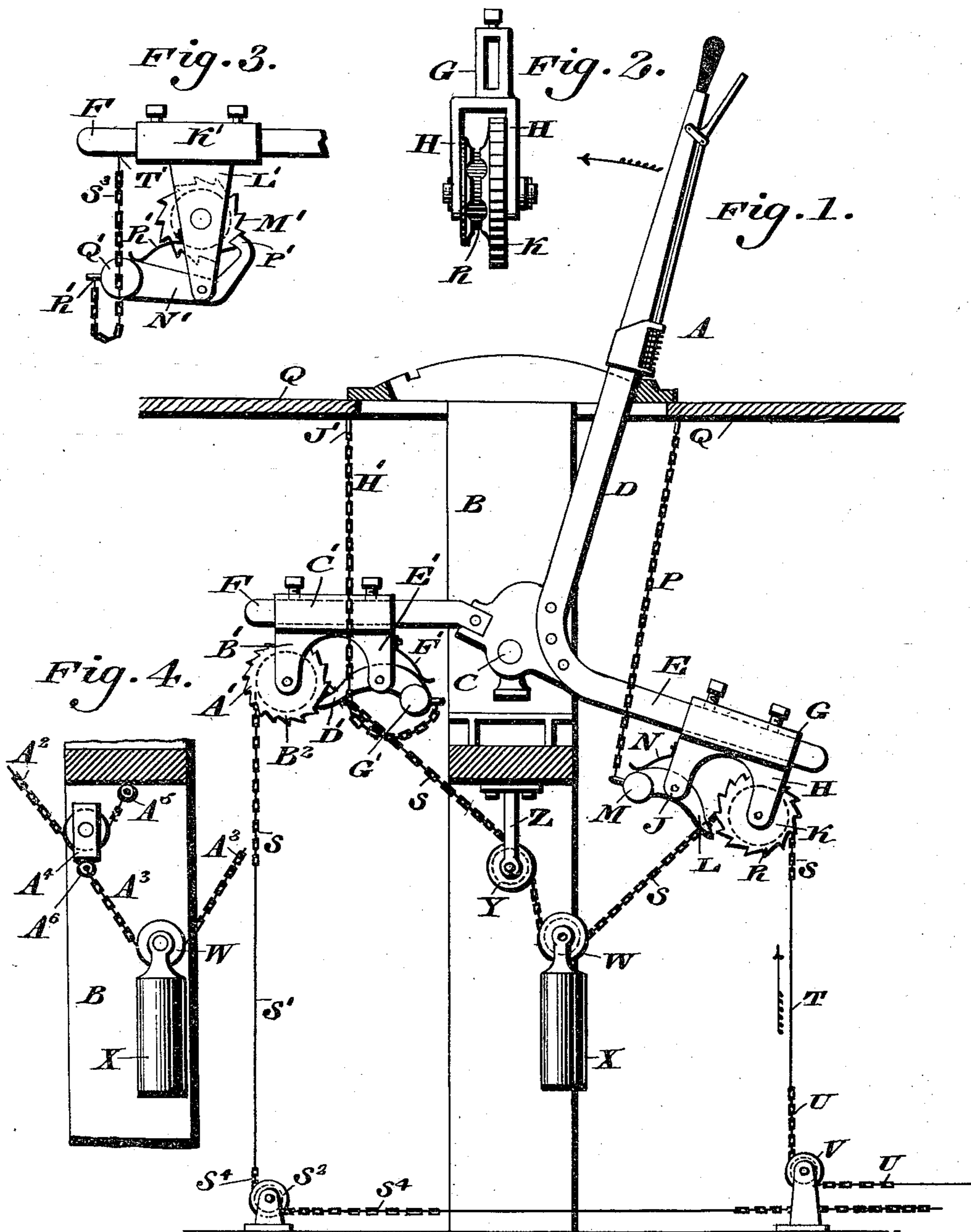
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J. R. JONES.

COMPENSATING DEVICE FOR RAILROAD SIGNALS, &c.

(Application filed Mar. 14, 1896.)

(No Model.)



WITNESSES:

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COMPENSATING DEVICE FOR RAILROAD-SIGNALS, &c.

SPECIFICATION forming part of Letters Patent No. 607,800, dated July 19, 1898.

Application filed March 14, 1896. Serial No. 583,254. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. JONES, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Compensating Devices for Railroad Signals, Switches, &c., which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to compensating devices for railroad signals, switches, &c.; and it consists of a novel construction of the same, whereby the cost of production is reduced to a minimum and the apparatus simplified and rendered more effective throughout, all as will be hereinafter fully set forth, and specifically pointed out in the claims.

Figure 1 represents a side elevation of a compensating device for railroad signals, switches, &c., embodying my invention. Fig. 2 represents a front elevation of a yoke employed, showing a ratchet-wheel provided with a sprocket-hub journaled therein. Fig. 3 represents a side elevation of a modified construction of yoke and its adjuncts to be hereinafter referred to, and Fig. 4 represents a detached view showing a modified manner of mounting and attaching the devices which take up expansion and contraction.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a portion of a compensating device for a railroad-signal, the same consisting of the upright B, which has fulcrumed thereon at the point C the operating-lever D, which is provided with laterally-extending arms F and E. G designates a yoke which is mounted on said arm E and is provided with the ears H and J. K designates a ratchet or toothed wheel which is rotatably mounted in said ears H, the teeth of said wheel being adapted to be engaged or locked by the nose of the gravitating pawl or dog L, which is pivotally mounted in said ears J and is provided with a counterbalance M. N designates a spring which has one end attached to said ears J or other fixed point, while its free end is adapted to bear upon said dog L, it being noted that the

action of the latter, through the medium of its spring and counterbalance, becomes automatic when its chain P is slackened. P designates a chain or other connection which has one end attached to said dog L—in the present instance at a point near its extremity—while the other end of said chain is attached in any convenient manner to the floor Q or other fixed point.

R designates a sprocket-hub which is located at one side of the ratchet-wheel K, as will be apparent from Fig. 2, it being understood that said sprocket-hub and wheel rotate in unison. S designates a chain which passes over said sprocket-hub and has its extremity at the right of Fig. 1 connected to an end of the wire T, the other end of the latter having the chain U attached thereto and passing under the chain-pulley V, and leading thence to a signal, switch, or other device which it is desired to operate. The chain S, after passing over the sprocket-hub R of the wheel K, passes under the pulley W, to which the weight X is attached, and thence over the roller Y, which is mounted in the arm or bracket Z, which is supported in any suitable manner, said chain S passing thence over the sprocket-hub B' of the ratchet-wheel A', which latter is journaled in the ears B', attached to the yoke C', which is carried on the arm F.

D' designates a gravitating dog or pawl similar to the dog L, which is pivotally mounted in the ears E', the relative position of said dog to the ratchet-wheel A' being assured by means of the spring F', and said dog D' being also provided with a counterbalance G'. H' designates a connection which has one end attached to said dog D', while its other end is attached at the point J' to the floor Q or other fixed point. The said chain S, after passing over the sprocket-hub of the ratchet-wheel A', as seen at the left of Fig. 1, passes downwardly and is connected to one end of the wire S', whose other end is connected to the chain S⁴, which passes under the chain-pulley S², said chain S⁴ afterward leading to the signal-arm, switch, or other device which it is desired to operate.

If desired, the form of yoke and its ad-

juncts seen in Fig. 3 may be employed in place of the construction seen in Fig. 1, said yoke being designated as K' and having depending therefrom the ears L', in which the ratchet-wheel M' is rotatably mounted, the teeth of said ratchet-wheel being engaged by the nose P' of the dog or pawl N', which is pivotally mounted in the lower portion of said ears L' and provided with a counterbalance Q' and has one end of a chain S³ attached thereto at the point R', while the other end of said chain is attached to a suitable fixed point, the wheel M' being provided with a sprocket-hub.

The operation is as follows: If we assume the parts to be in the position seen in Fig. 1, it will be evident that if the handle of the operating-lever be moved to the left the arm E will rise, and the chain P being then slackened the weight M and the spring N will tend to cause the nose of the dog L to automatically engage with the teeth of the ratchet-wheel K, thus locking the same and exerting an upward pull in the direction indicated by the arrow upon the chain S, wire T, and the chain U. The arm F in the meanwhile being lowered and the chain H' becoming tightened disengages the nose of the dog D' from the ratchet-wheel A', thus leaving the same free to revolve, all expansion and contraction being taken up through the medium of the weight X by reason of its novel arrangement relative to the roller Y and the chain S. It will of course be understood that when the lever D has been rocked to the extreme inferior left-hand position the dog D' and the wheel A' sustain the same relative position to each other as do the dog L and the wheel K in their present inferior position, as shown at the right of Fig. 1, it being of course evident that when the arm E is up, the dog L is in engagement with the teeth of the ratchet-wheel K. The operation of the construction seen in Fig. 3 is substantially the same, and it is thought will not require any further description.

In Fig. 4 I have shown the preferred manner of mounting and attaching the devices which take up expansion and contraction, it being noted that the chain S, instead of being continuous, as shown in Fig. 1, is made in sections, the same being now designated by A² and A³, it being understood that the chain A³, after passing over the sprocket-hub R of the wheel K, passes under the pulley W of the traveling weight X and has its extremity A⁶ attached to a suitable portion of the traveling pulley A⁴, which latter is carried on the chain A², which, it will be understood, passes over the sprocket-hub of the ratchet-wheel A', said chain A² having its terminal attached to any fixed point, as the eyebolt A⁵, which latter is secured to the standard V in any suitable manner.

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

1. In a compensating device, an arm, a ratchet-wheel rotatably mounted thereupon, a dog pivotally supported, and adapted to engage said wheel, and a chain or other connection having one end attached to said dog, and its other end secured to a fixed point, in combination with a weighted chain passing over said wheel and adapted to lead to a signal-arm, switch, &c., substantially as described.

2. In a compensating device for railroad-signals, a yoke, a ratchet-wheel journaled therein, and a dog pivotally mounted and adapted to engage said wheel, the latter having a sprocket-hub, and a chain passing over the same, in combination with a connection having one end attached to said dog, and the other end secured to a fixed point, substantially as described.

3. In a compensating device, an operating-lever, arms extending laterally therefrom, yokes mounted on said arms, ratchet-wheels journaled in said yokes and provided with sprocket-hubs, weighted chains passing around said hubs, dogs pivotally supported and adapted to engage said wheels, and connections leading from said dogs to a fixed point, whereby one of said dogs and its wheel are in engagement when in elevated position and disengaged when in depressed position, substantially as described.

4. In a compensating device of the character described, an operating-lever having laterally-extending arms thereon, yokes mounted on said arms having ratchet-wheels provided with sprocket-hubs, gravitating dogs adapted to automatically engage said wheels, connections leading from said dogs to a fixed point, weighted chains passing over said sprocket-hubs, and connections from said chains adapted to lead to a signal-arm, switch, &c., substantially as described.

5. In a compensating device of the character described, an operating-lever provided with laterally-extending arms, yokes mounted on said arms, dogs and ratchet-wheels mounted in said yokes, sprocket-hubs on said wheels, connections from said dogs to a fixed point, springs and counterbalances for said dogs, and weighted chains passing over the sprocket-hubs of said ratchet-wheels, and adapted to lead to a signal, switch, &c., substantially as described.

6. In a compensating device of the character described, a yoke, a ratchet-wheel journaled in ears attached thereto, a pawl or dog pivotally mounted in said ears below said ratchet-wheel, a counterbalance attached to said dog, a spring bearing thereon, and a chain having one end attached to said dog and the other to a fixed point, substantially as described.

7. In a compensating device, laterally-extending arms, yokes mounted thereon, ratchet-wheels journaled in said yokes, dogs adapted to engage said wheels, springs bearing on said dogs, connections from the latter to a fixed point, and weighted chains passing over the

hubs of said wheels, substantially as described.

8. In a compensating device for railroad-signals &c. a plurality of ratchet-wheels suitably supported, and provided with sprocket-hubs, means for locking either wheel in its raised position, and means for releasing said wheel when in inferior position, in combination with chains or other connections passing over said sprocket-hubs, one of said connections being secured to a fixed point and carrying a traveling pulley, and the other of said connections having an end secured to said pulley and carrying a traveling weight, substantially as described.

9. In a compensating device for railroad-signals, &c. laterally-extending arms, compensating devices mounted on each arm, and chains adapted to lead to a signal, switch, &c.

passing over each of said devices, one of said chains being attached to a fixed point and carrying a traveling pulley, while the other of said chains is attached to said pulley and carries a traveling weight, substantially as described.

10. In a compensating device, laterally-extending arms, ratchet-wheels suitably journaled thereupon, gravitating dogs, adapted to automatically engage and lock said wheels, connections leading from said dogs to a fixed point, weighted chains passing over the hubs of said wheels, and connections from said wheels adapted to lead to a signal-arm, switch, &c., substantially as described.

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Witnesses:

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