(No Model.)

C. E. CORPORAN.

SLACK ADJUSTER FOR AIR BRAKES.

No. 483,802. Patented Oct. 4, 1892.

Fig. 1.

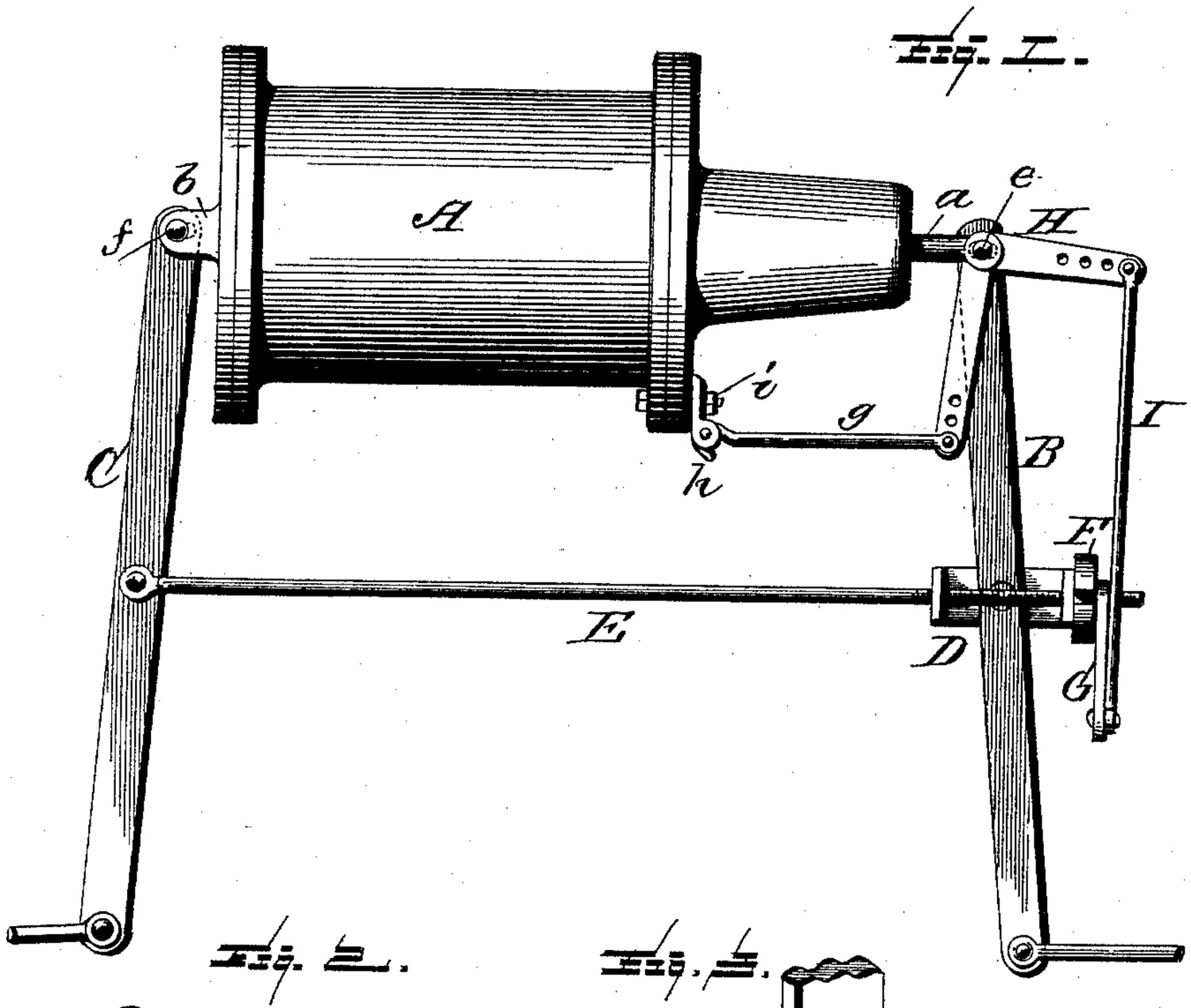


Fig. 2.

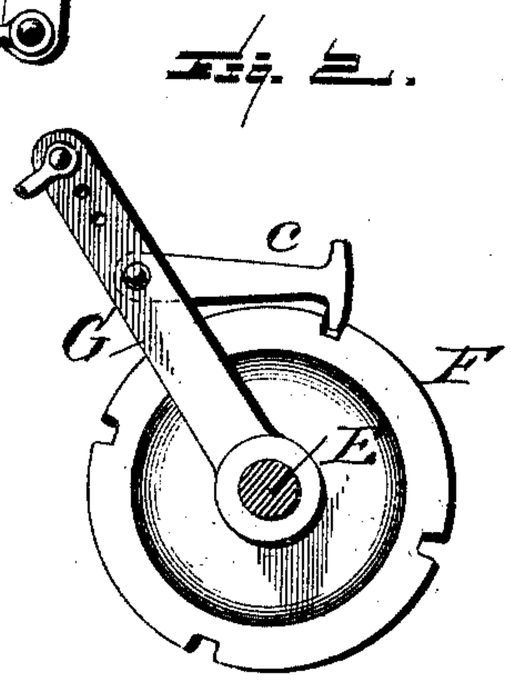


Fig. 3.

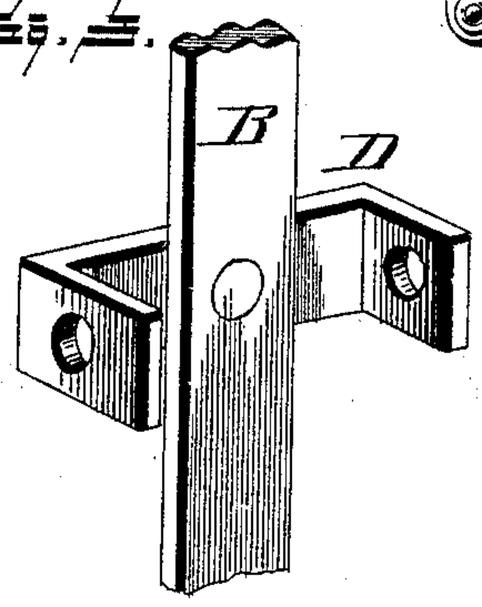
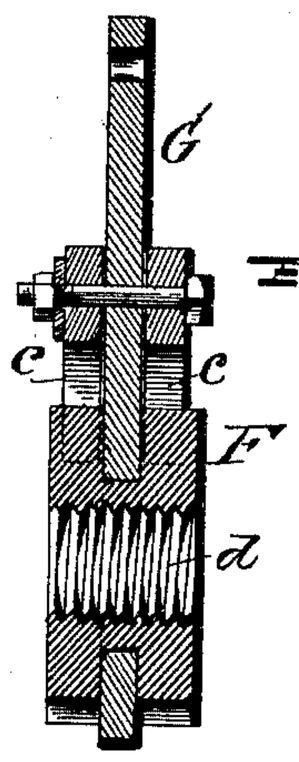


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES E. CORPORAN, OF COLORADO CITY, COLORADO.

SLACK-ADJUSTER FOR AIR-BRAKES.

SPECIFICATION forming part of Letters Patent No. 483,802, dated October 4, 1892.

Application filed February 20, 1892. Serial No. 422,312. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CORPORAN, a citizen of the United States, residing at Colorado City, in the county of El Paso and State of Colorado, have invented certain new and useful Improvements in Air-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings represents a side elevation illustrating my invention; Fig. 2, a detail view, on an enlarged scale, of the ratchet-wheel and connections; Fig. 3, a detail view in perspective of the bracket and a portion of the lever to which it is attached; Fig. 4, a sectional view showing a double ratchet-wheel and pawl in place of the construction shown in Fig. 2.

The present invention has for its object to provide a device for taking up the slack in air-brakes; and it consists in the several details of construction, substantially as shown in the drawings and hereinafter described and claimed.

In the accompanying drawings, A represents the air-cylinder, the piston *a* thereof being of the usual construction and operating in the ordinary manner, said cylinder and its connections being located under the car and held in position by any well-known means. To the outer end of the piston-rod *a* is pivoted or connected in the ordinary manner the brake-lever B, and to the cylinder-head is a lug *b*, to which is similarly connected the brake-lever C, which levers are connected in the usual manner to the brake mechanism upon a train of cars. To the lever B is rigidly connected a bracket D, and through this bracket passes the screw-threaded end of a rod E, the screw-threads thereon engaging with the screw-threaded hole *d* in a ratchet-wheel F. Engaging with the ratchet-wheel F is a pawl *c*, which pawl is pivoted to an arm G, and this arm is connected to the rod E and also to a bell-crank lever H through the medium of a rod I. This bell-crank lever H is pivoted to the end of the piston-rod *a*, the same bolt *e* pivoting both the bell-crank lever and the brake-lever B to the piston-rod. The bolt *e* passes through a slot in the end of piston-rod, as shown in dotted lines, and the bolt *f*, which forms a pivotal connection between the brake-lever C and lug *b*, passes through a slot in said lug, as shown in dotted lines, thereby allowing the neccessary lateral movement of the levers.

The threaded end of the rod E, which engages the screw-threaded hole *d* in the ratchet-wheel F, is for the purpose of drawing levers B C together, so that the piston-rod *a* will not have to travel so far to set the brakes, and thereby securing a uniform travel of the piston. Say the piston is set to travel a certain distance, it will be readily understood that as the brake-shoes wear away the piston must necessarily travel farther to accomplish the work. This is remedied by taking up the slack, which is accomplished by drawing the levers B C nearer together by means of the screw-threaded rod E and the screw-threaded hole in the ratchet-wheel F with which it engages. Thus when the piston travels the distance to which it has been set, it will throw the arm G back until the pawl *c* is near the ratchet-wheel F, but does not engage therewith. When the piston travels beyond the distance at which it has been set, the pawl engages with the ratchet, and upon the return of the piston the levers B C are drawn nearer together. A rod *g* connects one arm of the bell-crank lever with one of the cylinder-heads, said rod having a hooked end *h* for engaging with a bracket-loop *i* on the cylinder-head.

As will be noticed, the rod I is adjustably connected to the arm G, as are also the rods *g* I, adjustably connected to the arms of the bell-crank lever H, holes being made in the arm of the lever and the arm G for this purpose, so that the necessary adjustment and throw of the parts may be controlled.

It is evident that many changes may be made in the details of construction without departing from the principle of my invention, and I reserve the right to make any changes in the device as would come within ordinary mechanical skill.

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

1. In a slack-take-up for air-brakes, a suitble piston and cylinder and brake-levers con-

nected therewith, in combination with a pawl-and-ratchet device and a screw-rod connecting the brake-levers together and engaging with a screw-threaded hole in the ratchet-wheel, substantially as and for the purpose set forth.

2. In a slack-take-up for air-brakes, a suitable air-cylinder and piston and brake-levers connected therewith, in combination with a rod connecting said levers together and having its free end screw-threaded, a ratchet-wheel having a screw-threaded hole with which the screw-threaded end of the rod engages, an arm connected to the rod and carrying a pawl, and a rod connecting the arm with a bell-crank lever, substantially as and for the purpose described.

3. In a slack-take-up for air-brakes, a suitable air-cylinder and piston and brake-levers connecting therewith, in combination with a screw-threaded rod connecting said levers together, a bracket connected to one of said levers and through which the screw-threaded end of the rod passes, a pawl-and-ratchet device upon the end of the screw-rod, a bell-crank lever, an intermediate connection between it and the pawl-and-ratchet device, and an intermediate connection between it and a fixed arm, substantially as and for the purpose described.

4. In a slack-take-up for air-brakes, a suitable cylinder and piston, brake-levers connected thereto, a pawl-and-ratchet device upon the end of a rod that connects the levers together, and a bracket upon one of the levers through which the screw-threaded end of the rod passes, in combination with a rod adjustably connected to an arm of the ratchet-wheel and to a bell-crank lever and a rod adjustably connected to the bell-crank lever and a fixed arm, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES E. CORPORAN.

Witnesses:
JOHN R. WATT,
W. S. SWIFT.