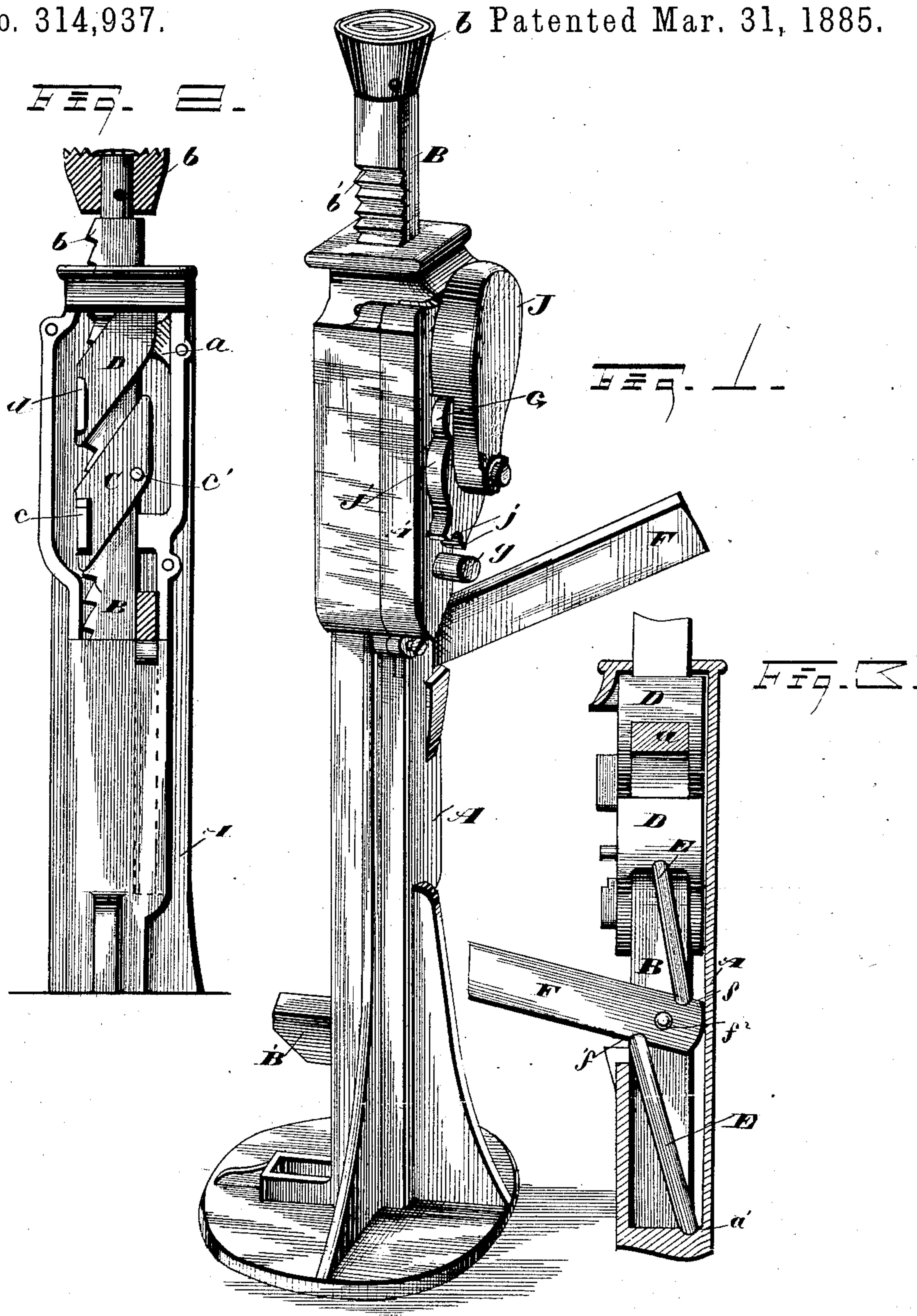


2 Sheets--Sheet 1.

LIFTING JACK.

Patented Mar. 31, 1885.



Y^{rs} M. Montae,

Geo. W. King

J. Wesley Howards
by

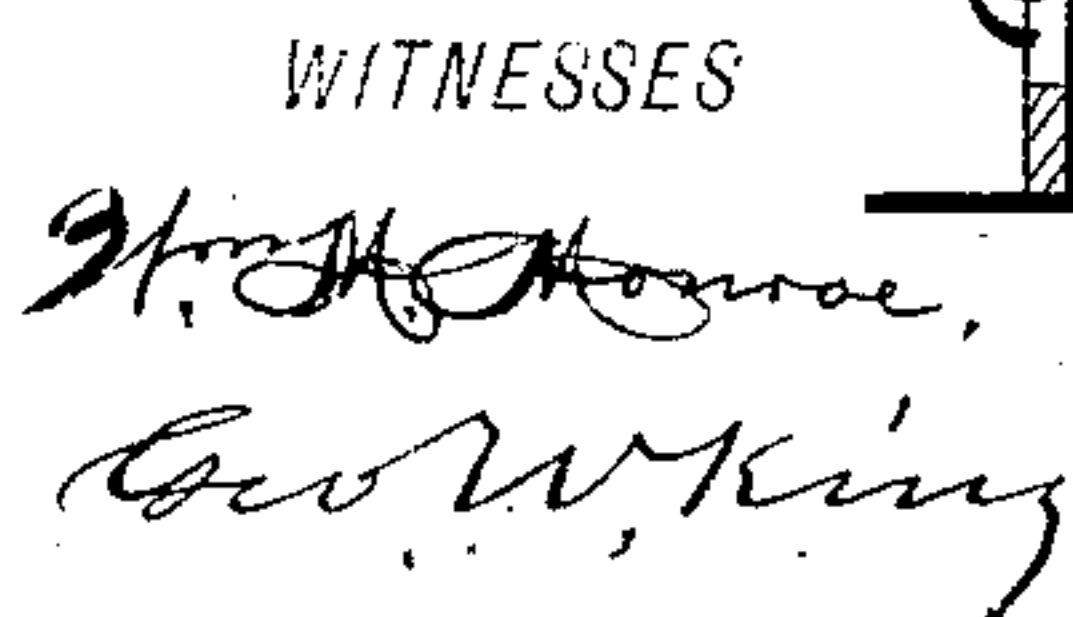
Leggett⁰⁴ - Leggett

Attorneys

2 Sheets—Sheet 2.

LIFTING JACK.

Patented Mar. 31, 1885.



INVENTOR
J. Wesley Hawkins
by
Leggett & Leggett
ATTORNEYS

UNITED STATES PATENT OFFICE.

J. WESLEY HAWKINS, OF GALION, ASSIGNOR TO THE RAILWAY SPEED
RECORDER COMPANY, OF KENT, OHIO.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 314,937, dated March 31, 1885.

Application filed February 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, J. WESLEY HAWKINS, of Galion, in the county of Crawford and State of Ohio, have invented certain new and useful
5 Improvements in Lifting-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

10 My invention relates to improvements in lifting-jacks, and is designed as an improvement on a device for which Letters Patent of the United States were granted to me, dated October 30, 1883, No. 287,539, the object being to
15 simplify and improve the mechanism for lowering the lifting-bar.

In the accompanying drawings, Figure 1 is a view in perspective of my improved lifting-jack. Fig. 2 is a front elevation with the cap removed from the casing. Fig. 3 is an elevation from the right-hand side, with the casing in section. Fig. 4 is a front view in elevation of the cap. Fig. 5 is a view in perspective of the weighted lever and attachment. Fig. 6 is
25 a rear elevation of the lever. Fig. 7 is a view in perspective of the tumbler, with the head thereof in section to show the sliding pin connected therewith. Fig. 8 is a front elevation of the weighted lever and cap, the former being turned to the left hand. Fig. 9 is a front elevation of the upper portion of the jack with the cap removed, showing the position that the internal mechanism would assume with the lever in the position shown in Fig. 8. Fig. 10
35 is a front elevation of the lever and cap, with the former inclined to the right hand, and showing in dotted lines the lever extending approximately horizontally. Fig. 11 is an elevation of the upper portion of the jack with the cap removed, showing the position of the mechanism corresponding with the position of the lever shown in solid lines in Fig. 10. Fig. 12 is an elevation showing the position of parts resulting from the lever assuming the
40 position shown in dotted lines in Fig. 10.

45 A represents a hollow standard with a broad base and a removable cap, A', on the front side. Inside the standard is the lifting-bar B, with a toe, B', extending out through a vertical slot

in the standard, and with a head, b, above 50 and a ratchet-face, b'.

C is a lifting-pawl, and D a holding-pawl, both of which embrace the bar B somewhat like oblique bands, and each have teeth for engaging the ratchet-face of the lifting-bar. The
55 pawl D is suspended from the lug a of the standard. The pawl C has a notch or depression on the under side opposite the ratchet, that forms a seat for the upper end of the push-bar E. The lower end of this bar rests on a
60 notch, f, on top of the lever F. On the lower side of the lever is a similar notch, f', a short distance forward of the upper notch, that forms a seat for the upper end of the bar E', the lower
65 end of this bar resting in a seat, a', of the standard. The bar forms a swinging fulcrum for the lever F. The lever has a laterally-projecting steadying-pin, f², that slides in a groove (not shown) in the standard. The lever extends
70 forward through a slot in the standard, and by operating the lever the pawl C is made to lift the bar B and load. The pawls have lugs, respectively c and d, that extend forward to near the inner face of the cap A', for purposes
75 hereinafter shown.

The mechanism thus far is substantially the same as is fully described in my former patent aforesaid. The improvements are in connection with the reversing mechanism for lowering the lifting-bar either slowly with the pawls,
80 as in case the bar is sustaining a load, or by throwing out the pawls and allowing the bar to drop. These improvements are as follows:

The pawl C has a pin, c', extending forward toward the cap A'. This cap has a lateral slot,
85 a², the right-hand portion of which is inclined and the left-hand portion is about horizontal. Above and about midway over this slot is a small roller, G, mounted on a pin that extends forward from its cap. Above the roller is the
90 spring-detent G', with a blunt V-shaped end, and may be pushed back into its socket flush with the outer face of the cap. Below the slot a² is the pin or lug g, projecting forward from the cap.

95 H is a tumbler that is mounted on or integral with a spindle or rod, H', that extends through the slot a². The part H has an arm

extending downward and curving to the left hand, terminating in a blunt end, h . The upper and larger end of the tumbler has a shoulder, h' , below, and at the upper end a socket, h^2 , in which operates the sliding pin I, the left hand or larger end of which is an easy fit in the socket. The right hand is reduced in size, and passes out a suitable orifice at the inner end of the socket, and has a small head, I, riveted on the end, to limit the movement of the pin to the left hand. A spiral spring, i , engages the shoulder at the junction of the larger and smaller parts of the pin I, and abuts against the wall at the inner terminus of the socket, and presses the pin toward the left hand as far as the head I will permit; but the pin may be thrust back into the socket, of course compressing the spring by the operation. The spindle H' , next in front of the cap A' , has a depending lug, H^2 .

J is a short weighted lever with a lateral bore, and is mounted on the spindle H' in front of the cap, and fits easily on the spindle, so that the turning of the lever would not turn the spindle, except as hereinafter shown. The flange J' is integral with the handle, and the periphery thereof is concentric with the spindle H' , except where the two prongs j project below, and where a downward curve, j' , is located above, as shown in Fig. 6. Opposite the curve is a joint, j^2 , the handle on the rear side being recessed at this part, forming what might be called a "cam-groove," j^3 . A small V-shaped groove, j^4 , is engaged by the detent G' when the lever is about in a vertical position above the spindle, and holds the lever in this position; but the lever may be turned to the right or left, snubbing back the detent by either movement.

J^2 is a semi-annular groove or recess in the rear of the handle, concentric with the spindle H' , and bounded at the ends, respectively, by the shoulders j^5 and j^6 .

When the lever is in position on the spindle, the lug H^2 is in the recess J^2 , and when the spindle is in the upright position, in which it is held by the detent G' , the lug H^2 is about midway of the recess J^2 . The lever J may be turned some distance in either direction without moving the spindle; but when the lug H^2 engages one of the said shoulders j^5 and j^6 the movement of the lever, if continued, will turn the spindle in the same direction. When the lever J is in the upright position shown in Fig. 1, in which position it is secured, as aforesaid, by the detent G' , the point j^2 rides upon the roller G, raising the lever and spindle until the latter is in the upper end of the slot a^2 , and the shoulder h' is above the reach of the pin c' , and the tumbler and connected mechanism is inoperative, and it is with this position of parts that the jack is operated in lifting loads. When the bar B is raised and the load removed, if it is desired to let the bar drop, the lever J is turned to the left hand, as shown in Fig. 8, and with this movement the

point j^2 draws off of the roller G, and the lever and spindle descend by gravity, the spindle moving along down the inclined portion of the slot a^2 , and the relation of parts is such that the prongs j are brought astride the lug g , which acting as a fulcrum, the lever and spindle are carried to the left hand, the latter passing along the horizontal portion of the groove a^2 , so that when the lever has reached the position shown in Fig. 8 the spindle has reached the left-hand end of the slot a^2 , and carries with it the tumbler H, and the points h and I will have pressed back the pawls, as shown in Fig. 9, leaving the lever B free to descend. The bar B having no load, the pawls are easily disengaged from the ratchet, and in moving the lever to the left a little force added to the weight of the lever will easily accomplish this. After the bar B has been lowered the lever J is again brought to an upright position, ready again for work.

If the bar B is elevated, and a heavy load is resting thereon that is to be lowered, it will not answer to let the lever fall, and it would be difficult to disengage the pawls so that it could fall. In such a case the lever J is turned to the right hand and left free, and assumes approximately one of the two positions shown, respectively, in solid and dotted lines in Fig. 10. When this occurs, the point j^2 will have passed off of the roller G, and the spindle will have descended to the bottom of the inclined portion of the slot a^2 , and in this position of parts, as the outer end of the lever F is depressed and the pawl C is consequently raised, the pin c' , engaging the shoulder h' of the tumbler, throws the upper end of the tumbler to the left hand, so that the pin I, abutting against the lug d , swings the pawl D out in the position shown in Fig. 11 away from the ratchet. This is easily accomplished, as the pawl D at the time will have no load. Now, if the end of the lever F is raised, the descending pawl C will carry the load so long as the pawl D is held from engaging the ratchet. As the pawl C descends to near the bottom of its stroke the pin c' leaves the shoulder h' , and the gravity of the lever J moves it down to the position shown in dotted lines in Fig. 10. In this movement of the lever the pin I is drawn away from the lug d , and the pawl D immediately engages the ratchet and arrests the descent of the bar B, and as this occurs the point h strikes the lug c , and the pawl C, having just been released from the weight of the lifting-bar, is easily forced back from the ratchet, as shown in Fig. 12. The weight of the lever J, pressing the point h against the lug c , accomplishes this result. The pawl C may now, by means of the lever F, be again raised without raising the bar B until near the upper end of its stroke, when the pin c' again engages the shoulder h and lifts the lever J and allows the pawl C to engage the ratchet, and will lift the bar B a trifle, so that the pawl D is released from the weight of the lifting-bar and is again

forced back, as already described. There is a moment of time when the pawl C has engaged the lifting-bar, but before it has raised the bar to release the pawl D, during which the latter could not easily be forced back, and the pin I during this movement is forced back into its socket; but as soon as the pawl D is released from the weight the recoil of the spring *i* thrusts the pin out of the socket and moves the pawl D back from the ratchet again to the position shown in Fig. 11. During these movements, while the lever J is turned to the right hand, this lever oscillates between the two positions shown in Fig. 10; but the spindle is prevented from moving along up the inclined slot α^2 by the action of the pin *c'* by reason of the roller G, that is above the flange *J'*, as shown in Fig. 10, and the spindle being thus held down the pressure of the pin *c'* upward on the shoulder *h'* and gravity of the lever oscillates the spindle and tumbler, as described, and produces the desired results, and the lifting-bar and load are slowly and steadily lowered.

What I claim is—

1. In a ratchet lifting-jack, the combination, with a tumbler arranged to engage simultaneously or alternately the lifting and holding pawls, of a weighted lever mounted on the spindle of the tumbler, with the arrangement

of parts such that with the weighted lever turned in one direction the tumbler will force both pawls from the ratchet, and when turned in the opposite direction the tumbler will engage the pawls alternately and reverse their action on the ratchet and cause the lifting-bar to descend, substantially as set forth.

2. In a ratchet lifting-jack, the combination, with the tumbler H, provided with the arm *h*, the shoulder *h'*, and the sliding rod I, of the pin *c'* and the weighted lever J, substantially as set forth.

3. In a ratchet lifting-jack, the combination, with the tumbler and connected spindle and depending lug, of a weighted lever mounted on the spindle, and the recess J^2 , substantially as set forth.

4. In a ratchet lifting-jack, the combination, with lever J, cam-groove j^3 , and prongs *j*, of the slot α^2 , roller G, and lug *g*, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 17th day of February, 1885.

J. WESLEY HAWKINS.

Witnesses:

GEO. O. RICE,
J. B. MILLER.