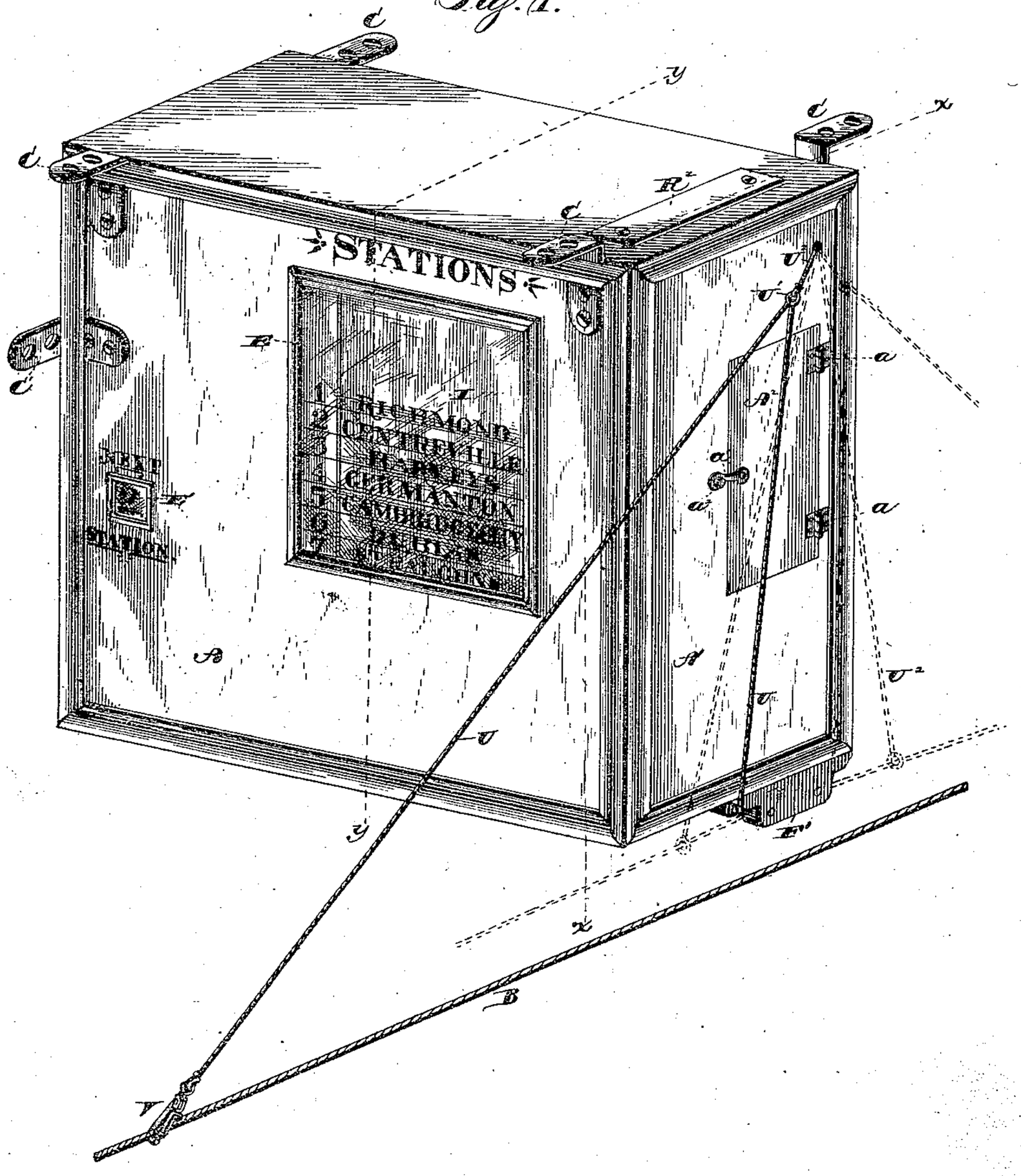
(No Model.) 3 Sheets—Sheet 1.

D. WILSON.

STATION INDICATOR.

No. 335,004. Patented Jan. 26, 1886.

Fig. 1.



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(No Model.)

3 Sheets—Sheet 2.

D. WILSON.

STATION INDICATOR.

No. 335,004. Patented Jan. 26, 1886.

Fig. 2.

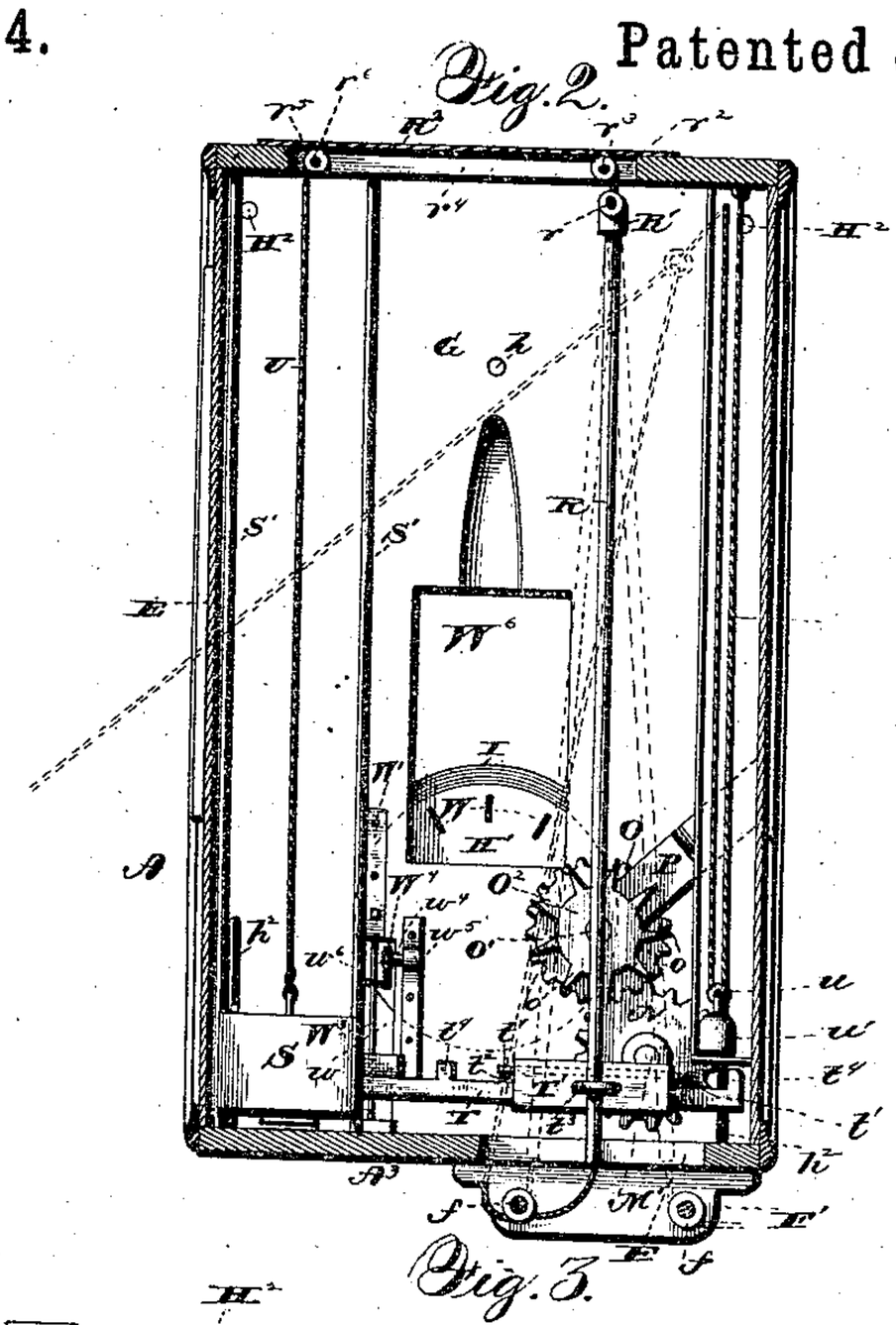
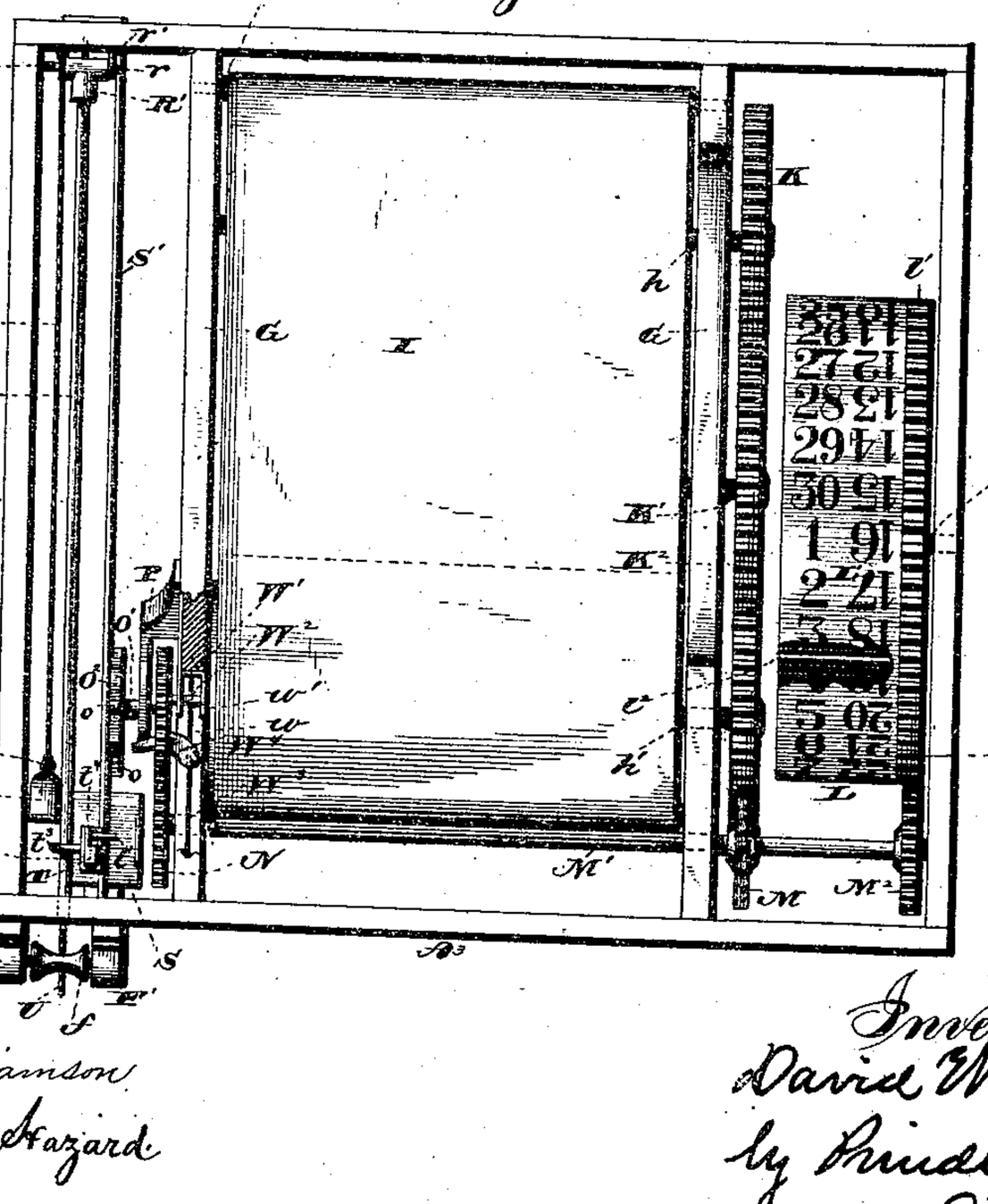


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

D. WILSON.

STATION INDICATOR.

No. 335,004. Patented Jan. 26, 1886.

Fig. 4.

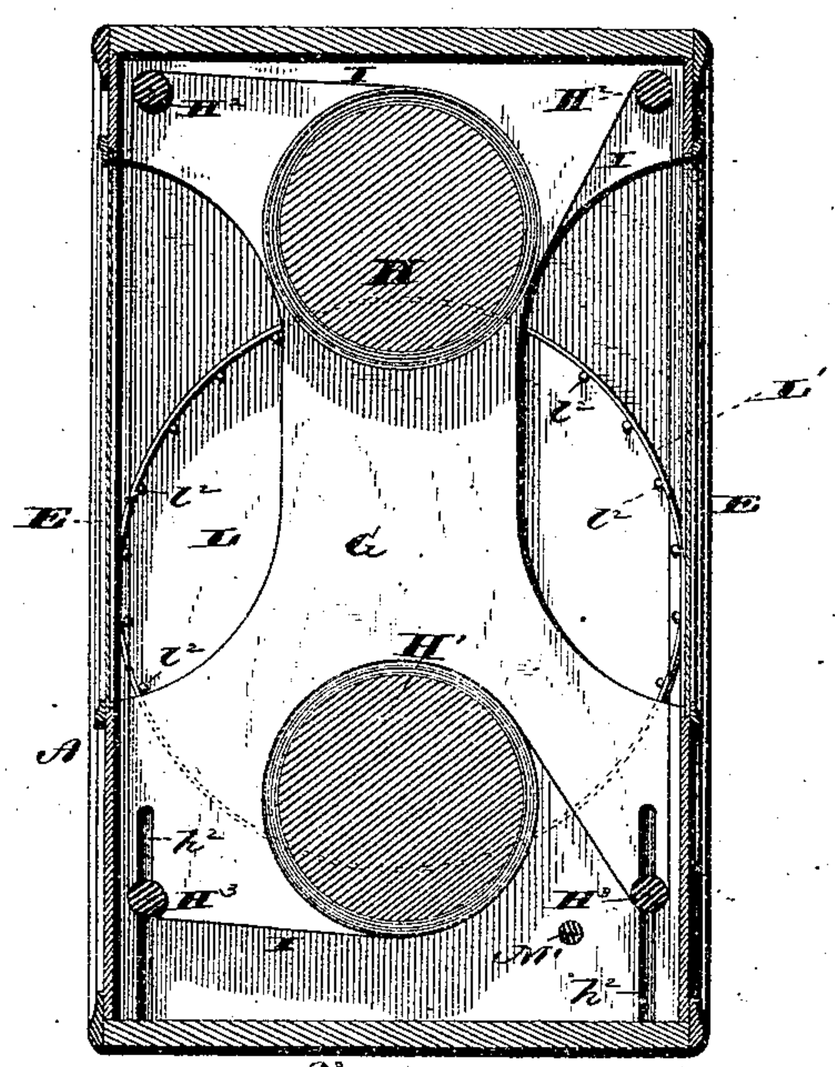


Fig. 5.

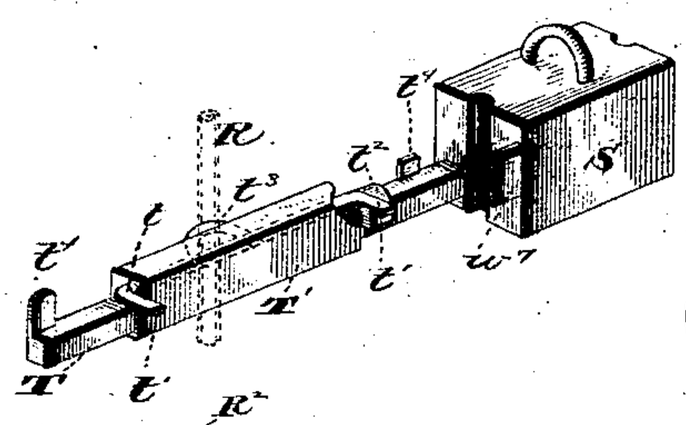


Fig. 8.

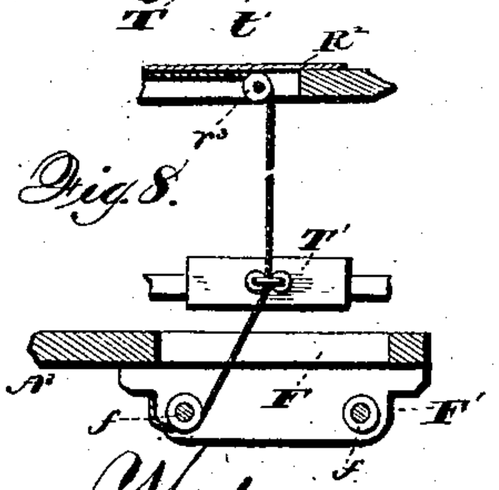


Fig. 7.

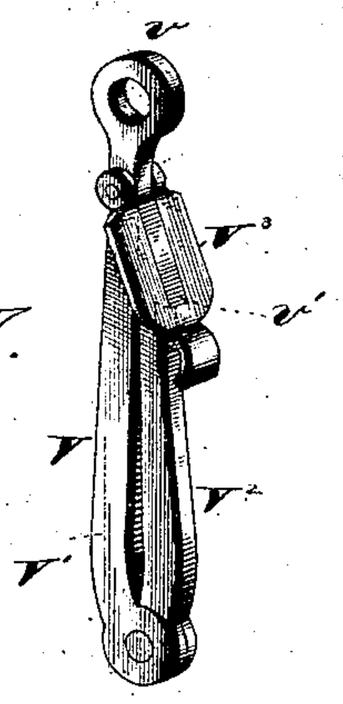
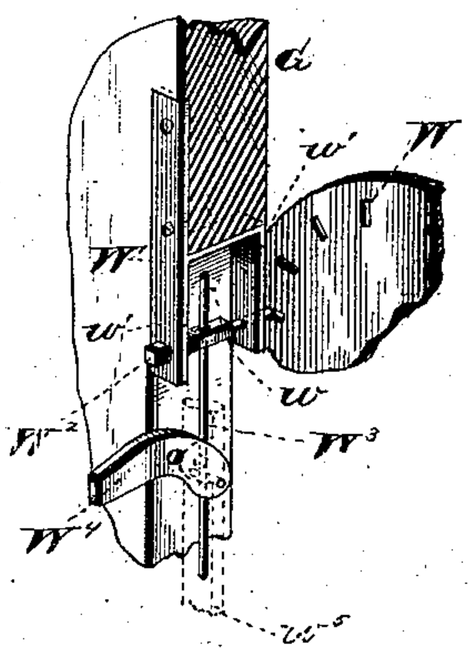


Fig. 6.



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UNITED STATES PATENT OFFICE.

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STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 335,004, dated January 26, 1886.

Application filed May 2, 1885. Serial No. 164,202. (No model.)

To all whom it may concern:

Be it known that I, DAVID WILSON, of Richmond, in the county of Wayne and in the State of Indiana, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a perspective view of my station-indicator; Fig. 2, a vertical sectional view of the same on line *x x* of Fig. 1; Fig. 3, a view in side elevation of the indicator with the side of the casing removed; Fig. 4, a transverse vertical section of the same on line *y y* of Fig. 1; Fig. 5, a detail perspective view of the weight with the attached arm and the pawl mechanism thereon; Fig. 6 a similar view showing the mechanism for locking and unlocking the lower roller; Fig. 7, a detail perspective view of the clamp used to connect the cord from the indicator with the bell-rope, and Fig. 8 a detail view of a modification of the pawl-slide-operating mechanism shown in Fig. 3.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved station-indicator adapted to be operated by a pull upon the bell-cord by the engineer, or from the front of the car or train, and so connected with such rope that it will not be operated by a pull from the rear upon the cord, and so will not interfere with or be operated by the conductor pulling the cord to ring the bell; and to this end my invention consists in the construction, arrangement, and combination of parts, and in the apparatus connected with the bell-rope, as hereinafter specified.

In the drawings, A designates the casing of my indicator, which, as shown, is preferably rectangular, but can be made of any other desired shape without departure from my invention. It is designed to be situated at or about the middle of the car instead of the end, though I do not limit myself to any position for it in the car. I prefer to fasten it to the top of the car within the elevated portion of the roof of the car, at the sides of which are the ventilators. It occupies a portion of this ventilator-space, its inner end being in or nearly in line with, but above the usual bell-cord, B, passing through the center of the car below the ventilator-space within the car-roof. Where circumstances or the construction of the car make it necessary, I contemplate, of course, having the indicator differently situated, to bring it into proper relation to the bell-cord. At the upper corners of the casing are the bracket-arms C C, adapted at their upper ends to be fastened to the top of the elevated portion of the roof described. The outer ones are lower, but shorter than the inner ones, to compensate for the slope or arch of the roof. The outer end of the casing is also provided with a bracket-arm, C′, at each side adapted to be screwed to the side of the elevated or ventilator part of the roof.

In each side of the indicator-casing A is a large rectangular opening, E, preferably closed with glass, through which are displayed the names of a number of the consecutive stations to be stopped at by the train, printed or otherwise put upon strips or flexible belts, to be moved past the openings within the casing, as hereinafter described. In the opposite sides of the casing are two smaller openings, as indicated by E′ in Fig. 1, situated between the openings E E and the outer end of the casing. These smaller openings, E′ E′, which, like openings E E, are to be closed with glass, are at the same height above the bottom of the casing, but are not in line with each other, one being nearer the end of the casing than the other, for a purpose to be hereinafter set forth. In the inner end, A′, of the casing is an opening closed by door A^2, hinged at *a a*, and provided with a hook or catch, *a′*, engaging a stud or button, a^2, to hold the door tightly closed. In the bottom A^3 of the casing, at its inner end, is a slot or opening, F, parallel to the inner edge of the bottom, as shown. To the casing below, and on the outer and inner sides of the opening F, are fastened the cleats or blocks F′ F′, in which, below the ends of opening F, are journaled the pulleys *f f*, preferably grooved.

Within the casing A, parallel to but at some distance from the ends thereof, are the vertical partitions G G. In these partitions, near their upper and lower ends, are pivoted the

shafts *h h'* of the upper and lower cylinders or rollers, H H'. Close to each side of the casing, near its top, is a small roller, H^2, journaled at its ends in the partitions G G. Vertically below each of these rollers is another similar roller, H^3, having its ends or the ends of its shaft journaled in vertical slots h^2 h^2 in the opposite partitions, G G. Two strips or bands, I I, of flexible material, passing up over the rollers H^2 H^2, and then inward, are wound around the upper roller, H, in the same direction, so that as the roller turns to wind one of the strips or bands upon it the other band will also be wound on over the other. As the roller turns to unwind the strips, they will be unwound together equally. These bands extend down around the small rollers H^3 H^3, and then inward, around the lower large roller, H', being wound thereon in the same way as the bands are wound around the upper roller, H, but in the opposite direction. One of the bands always overlaps or rolls upon the other as the bands are rolled up upon either roller, as shown in the drawings.

Upon the outer ends of the journal-shafts of rollers H H', beyond and close to the outer partition, G, is a gear-wheel, K, and pivoted upon a stud, K', on the partition, is an intermediate gear-wheel, K^2, meshing with both the gear-wheels on the shafts of the rollers. With this construction, as one of the rollers is rotated the other roller will obviously be caused to rotate an equal amount, and at the same rate of speed in the same direction. As the belts I I are both wound upon the upper roller, H, in one direction, and both upon the lower roller in the other direction, it follows that as the rollers are rotated in the same direction the belts will be wound up on one roller and unwound from the other at the same time, the direction of the rotation determining, of course, which roller the belt will be wound upon. Upon each of these belts or bands are marked, printed, painted, or otherwise put the names of the stations on the road to be traveled over in their regular consecutive order, and also opposite each name the number of the station in its regular order. These belts, with the names of the stations consecutively arranged in the same way on each side, and marked with numbers indicating the order of the stations, pass, as shown, close to the sides of the casing and past the openings E E in the casing side through the glasses, in which the names and numbers can be readily seen and read by the passengers forward or in rear of the middle of the car. These openings are purposely made large enough to display a number of the names on the belts at once, and to leave considerable spaces above the upper names on the belts when the belts have been wound up on the lower roller, H', as before, starting from one end of the trip.

To indicate which one of the several names displayed at once through each opening E is the next station, I provide the numbered roller or wheel L. This wheel consists of a disk or wheel journaled upon a stud, *l*, on the inner side of the outer end of the casing, provided with gear-teeth *l' l'* around its edge. From the inner side of this disk project the pins or small rods or wires l^2 l^2, arranged around the edge of the disk in a concentric series. Over these pins, which, as shown, are provided with the axis of rotation of the disk, is stretched the band L', preferably of transparent or semi-transparent material. Upon this band are printed or marked two circular series of numbers, so arranged that the beginnings or one-marks of the two series are situated on diametrically opposite sides of the wheel. The consecutive numbers of the series run in opposite directions from the starting-points, and the numbers of one series are inverted with reference to those of the other. With this construction the numbers of one of the series on the wheel are displayed consecutively as the wheel revolves through the small opening E' on one side of the casing, while the corresponding numbers of the other series are displayed through the similar opening in the other side of the casing. The lower roller, H', and so through the gearing described, the upper roller, is rotated by the pinion M on the shaft M' meshing with the gear-wheel on the shaft of the roller. As the shaft M' is rotated then in one direction or the other by the means to be described, the rollers will be rotated to make the belts I I pass upward or downward past the display-openings E E.

To cause the numbered wheel or roller L to correspondingly rotate so as to bring the numbers of the stations to the openings E E at the right time to show the number of the next station at any time, I provide the shaft M' with another gear-wheel, M^2, meshing with the teeth on roller or wheel L, and so proportioned in shape with relation to wheel L as to turn such wheel the proper distance to bring each time a new number opposite each of the openings E E. This shaft M' is journaled in the two partitions, G G. At its inner end, just beyond the inner partition, it is provided with a gear-wheel, N, meshing with the gear-wheel O on the short shaft O', journaled in the inner partition, and in a bracket-arm, P, fastened to the partition. Beyond such arm this shaft is provided with a wheel, O^2, having the long teeth or radial arms *o o*.

Pivoted at or near the top of the casing, directly over the middle of the slot or opening F in the bottom of the casing, is the tube R. For properly supporting it one of the well-known T-shaped coupling-pieces for branching pipes is used. This piece R' has at its top an opening in line with the bore of the tube R, and the ends of its cross-piece are provided with bearing-pins *r r*, journaled, respectively, in the end of the casing, and in a bearing loop or lug, *r'*, attached to the casing-top. With this construction the tube, whose lower end projects down into the slot of the casing-bottom, can swing toward one end or the other of the slot.

Above the upper end of tube R is an opening, r^2, in the top of the casing, and a pulley, r^3, journaled at the side thereof. In the top of the casing, extending from such opening across the casing-top to a point near the other side thereof, is a groove, r^4, covered usually by plate R^2. At the end of this groove is another opening, r^5, with a pulley, r^6, journaled at its side toward opening r^2. Within the casing directly below opening r^5 is the weight S, guided in its rising and falling movements by vertical guide-rods S′ S′ in the sides of the weight. From one side of this weight a rigid arm, T, preferably rectangular in shape, extends across within the casing in such position that as the weight rises the arm will pass up close to the face of the wheel O^2. Sliding on the arm is the sleeve T′, having pivoted in and extending longitudinally through its upper portion the rock-shaft *t*, having its ends turned at a right angle, so as to form arms *t′ t′*, projecting beyond the arm and sleeve, as shown best in Fig. 5. These arms with the rock-shaft form a double pawl, for the purpose to be described. To normally keep the rock-shaft turned, so that these pawls shall project longitudinally from the sleeve, and support them in such position, I provide the weight t^2, attached to or made in one piece with one of the pawl-arms and adapted to strike against and rest upon arm T when the pawl-arms are horizontal.

On the outer side of the slide or sleeve T′ is a horizontal loop, t^3, down through which extends the lower end of the swinging tube R. Such loop is so situated that as the tube R hangs perpendicularly down from its pivot the middle point of the slide will be in the same vertical plane with the center of the toothed wheel a^2. The pawls *t′ t′* on the slide then stand at equal distances beyond the sides of the toothed wheel, so that if the slide were raised vertically neither pawl would engage the teeth on the wheel. If the slide be moved along the bar in one direction or the other, one or the other of the pawls will, if the slide be raised, engage one of the teeth on the wheel. Stops t^4 t^4 on the bar or arm T serve to limit the movement of the slide, and stop it when it has been slid far enough in either direction to bring either of the pawls *t′ t′* in position to engage the teeth on the wheel O^2. A cord, U, attached to weight S, passes up over pulley r^6 and pulley r^3, and then down through the swinging tube R. From there it passes up through the ring U′ on the end of the cord U^2, and then downward and forward to the bell-rope, to which it is connected by clamp V. Such clamp consists of the long arm V′, having at one end a loop or eye, *v*, to which the end of the rope or cord U is attached, the short arm V^2, pivoted to the long arm, and provided with a shoulder, *v′*, near its free end, and the swinging loop V^3, pivoted to the long arm and adapted to be swung so as to embrace a portion of the free end of the arm V^2 and engage the shoulder thereon, so as to hold the arms together and clamp and hold the cord or rope between them near their hinged ends. The cord U^2 passes inward through a hole in the casing, then downward within a vertical box inside the casing, around a pulley, *u*, attached to a weight, *u′*, and then upward to the top of the casing, where its end is fastened, as shown.

The operation of my indicator mechanism as far as described is as follows: The cord U being attached to the bell-rope forward of the indicator, as shown in Fig. 1, if the engineer or fireman should pull the rope forward when stopping or waiting for passengers, the cord U will first be pulled down and straightened out, the cord U^2, by means of the ring U′, through which cord U passes, being pulled out, as shown in dotted lines in Fig. 1. As the pull on the bell-rope is continued, the cord U will then be pulled forward, swinging the tube R to the front, and so moving the slide T′ until the pawl-arm *t′*, at its rear end, comes in line with the teeth on the rear side of the wheel O^2 above. As the cord U is then pulled forward, it will be pulled out through the tube R, and the weight S will be raised, carrying the arm up with it, so that the pawl engages one of the teeth on wheel O^2, and turns the latter to rotate the band-carrying rollers to move the bands I I, with the names of the stations on, and also the roller or wheel L, a sufficient distance to bring opposite the openings E′ E′ the number designating which of the names on the bands is the next one. With this arrangement, as the openings E E are, as described, large enough to display a number of the names on the bands I-I at a time, and as at each stop the numbered wheel is turned to display the ordinal of the next station, the passengers can at any time not only ascertain from the indicator what the next station is, but can always see the names of several stations ahead, so that some time before the desired station is reached they can see its position in the order of stations to be passed before reaching it. They can then tell about when to prepare to get off, and can consequently be ready to move without delay when the station is reached. The openings E E are made not only large enough to display the names of several stations at once, but so as to have considerable space, as shown in Fig. 1, above the top, first, or upper-name in the series when the bands have been rolled up on the lower roller, as at the beginning of a trip one way. The leaving of this space is necessary, as the upper roll will increase in diameter as the bands are rolled thereon, so as the rolling up goes on the belt will be rolled up faster, though the rolls rotate at the same speed. The name of the next station would then not always be shown at the same height in the display-openings, but would gradually be raised as the belts were moved to display new names. The space in the openings above the names, as shown in Fig. 1, is to allow for this and make certain that the name of the next station, with several others, shall always be in sight. As the rollers H H′ necessarily revolve at the

same rate of speed, because of the connecting-gearing described, but change in size as the bands are rolled on to and off of the other, one roller will, except at the time when an equal amount is wound on both rollers, wind up or give off more than the other. To compensate and allow for this I provide the rollers under which the belts or bands pass, and which, being journaled at their ends in the vertical slots h^2 h^2, can rise and fall to take up the slack in the bands and serve to keep the upright portions of the belts just back of the openings sufficiently taut and parallel to the sides of the casing. When the bell-rope has been pulled to the front, as described, to operate the indicator, and is then let go, the weight S, with its pawl-sleeve-carrying arm, falls and draws back the cord, and the weight u' also falls to draw in the cord U^2 and the ring thereon, and so take up the slack in cord U, as shown in full lines in Fig. 1. As the weight S falls, the pawl-arm t' on the rock-shaft striking the teeth on wheel O^2 swings freely upward until it passes below the wheel, when the weight turns the rock-shaft to bring the pawl-arms horizontal again. When the trip is to be made in the opposite direction, the clamp V on cord U is unfastened from the bell-rope, and being carried to the other side of the indicator, which side is now to be the front, is attached again to the bell-rope. A pull upon the bell-rope from that side will then cause the tube R to swing to that side, so as to slide the pawl-slide on the weight-arm to bring the other pawl-arm into position to engage the teeth on the other side of wheel O^2 and turn it in a direction opposite to that in which it was turned before. The bands I I and the numbered wheel will then be turned to indicate the stations in proper order for the return-trip.

Instead of having the swinging tube R, I contemplate, also, if desired, doing away with it, and having the cord U itself engage the loop t^3 on the pawl-slide or anti-friction pulleys thereon, as shown in Fig. 8. The cord, as it is pulled from one direction or the other, will then cause the pawl-slide to move in precisely the same way as the tube. I prefer, however, using the swinging tube, as described.

To lock the lower band-roller, and so the upper roller and the numbered wheel from accidental turning, I provide the latch mechanism. (Shown best in Figs. 3 and 6.) On the end of the lower roller, toward the inner end of the casing, and just within the partition G, I make a concentric series of notches, W. Through the partition I make a vertical opening, w. In the upper end of such opening is the forked metal bearing-piece W′, fastened to the partition. In the fork-arms w' w' of this piece are guide-openings for the opposite ends of the sliding latch-block W^2, so situated that one of its ends, preferably reduced in size, is adapted to engage the notches W on the roller when the block is slid toward the roller end. Up through an opening in this latch-block or bolt passes the upper end of spring W^3, tending to keep the latch-block normally pressed toward the roller to engage the notches thereon. The lower end of the spring can be fastened in a block on the casing bottom or in the partition at the lower end of the opening w.

Pivoted on a screw or stud, w^4, on a block, w^5, on the partition beside opening w, is the small weighted lever W^4, having a pin, w^6, normally resting against the side of spring W^3, toward the roller end. The other end of the lever extends out, so as to be in the track of the lug w^7 on the weight S as the latter is raised by the pull of the cord U, as described. As the weight is pulled up this lug engages the end of the lever W^4 and raises it, thus swinging the end with the pin w^6 downward and away from the end of the band-roller, and so forcing the spring W^3 in the same direction to remove the latch from engagement with the notch in the roller just before the pawl on the pawl-slide begins to engage and turn the wheel. As soon as lever W^4 is released from the lug on the weight, the spring and latch fly back and the lever, because of its weighted end, returns to its normal position again.

In the partition G, I make a large opening W^6, in which can be placed, if desired, a lamp to illuminate the indicator from within. The other partition has portions of its sides cut away, as shown in Fig. 4, to allow light from the lamp to strike the inside of the portions of the numbered band on the wheel L, which are opposite the display-openings in the casing-sides.

In coupling my indicator to the bell-rope an amount of slack, preferably about six feet, is pulled to the rear end of the rear car. This is the usual amount of slack. The cord from the indicator in each car is then connected, as described, by means of the clamp with the bell-cord forward of the indicator.

In coupling the indicators to the bell-rope, slack from three to twelve inches in excess of the usual amount of slack allowed in bell-ropes as used where there are no indicators to be operated is allowed to the rear of the indicator in the last car. The cord of each indicator is of such length and so connected with the bell-rope that as the usual slack is pulled forward the cord will be straightened out, and then as the remainder of the slack, being the amount in excess of what is usual, is pulled forward the cord will operate the indicator-mechanism in the manner set forth above.

Instead of numbers, of course other signs or marks could be used to designate the names of the stations on the straps; but I prefer the numbers.

The amount of slack in the bell-rope and length of indicator-cord can of course be varied, as desired, from the amount given above without departure from my invention.

The indicator-cord can be made any length, provided it is of sufficient length from the indicator, so that as the conductor pulls all

the slack out of the signal-rope in ringing the bell the cord of the indicator will slacken back, so that the conductor cannot operate the indicator by his rearward pull upon the bell-rope.

Where the trip is to be a very long one, so that more stations will be passed than it will be convenient to put numbers for on a number-wheel of moderate or convenient size, I contemplate numbering the name of the station succeeding the one indicated by the highest number on the wheel No. 1, and so on through the successive names. Thus the numbers on the wheel can be made as the wheel rotates to indicate properly the stations on the band or strip, however long the list of names may be.

I have in the foregoing specification described the indicator-cord as being attached to the bell-rope.

Where the signal-rope, as on some roads, is not attached to a bell, but to the whistle, so that the latter will be sounded when the conductor pulls the rope, the indicator-cord is to be attached to such rope in the same way, as it has been described as being connected with the bell-rope hereinbefore.

My indicator mechanism, as described and shown, is obviously capable of use with any of the signal-ropes by which the conductor operates a signal for the engineer by a rearward pull on the rope.

Having thus described my invention, what I claim is—

1. In a station-indicator, in combination with a surface having on it the names of several consecutive stations, and marks to designate and distinguish the names apart, an indicator provided with corresponding marks adapted to display such marks consecutively, substantially as and for the purpose specified.

2. In a station-indicator, in combination with a belt or strip provided with the names of the stations in their order, and with numbers or marks designating the different names, a wheel provided with the marks or numbers corresponding with those on the belt, and means, substantially as described, for rotating the wheel to bring the numbers or marks thereon to a display-opening, substantially as and for the purpose described.

3. In a station-indicator, in combination with a band or strip having on it in regular order the names of the stations and numbers opposite the names, the casing provided with a display-opening large enough to show several of the names at once, mechanism for moving the strip or band past the opening, a wheel or roller having on it the numbers of the stations, and means, substantially as described, adapted to rotate the wheel to bring its numbers consecutively opposite a suitable display-opening, substantially as and for the purpose described.

4. In a station-indicator, in combination with two rollers and a band or strip wound thereon having printed or otherwise marked on it the names of the stations in their order and numbers designating the station, the casing provided with a display-opening large enough to allow several of the names to be seen at once, suitable gearing connecting and driving the rollers at the same speed, a wheel or roller marked with numbers corresponding in arrangement with those on the belt, gearing for driving the wheel connected with that for driving the band-rollers, and means substantially as described, adapted to drive the gearing to rotate the band-rollers intermittingly and to turn the numbered wheels in either direction desired, so as to bring its numbers consecutively opposite a suitable display-opening in the casing, substantially as and for the purpose described.

5. In a station-indicator, in combination with the casing having a display-opening in each side, the two rollers, the two bands carrying the names of the stations wound upon the upper roller in the same way from opposite sides, and having their lower ends similarly wound upon the lower roller, but in a direction opposite to that in which the bands are wound on the upper roller, and means for turning the rollers in the same direction, either way, as desired, substantially as and for the purpose described.

6. In an indicator, in combination with the casing provided with a display-opening in each side, the upper band-roller and the lower band-roller, the two indicator-bands adapted to be moved past the opposite openings in the casing having their upper ends both wound upon the upper roller in the same way and their lower ends also wound upon the lower roller in the same way, and means for rotating the rollers so that the belts will be wound up on one roller and unwound from the other, substantially as and for the purpose described.

7. In combination with the indicator adapted, substantially as described, to be operated in either direction, as desired, to indicate the stations in their order from either end of the trip, the operating-cord attached, substantially as described, to the operating mechanism so that as it is pulled toward one end of the car it will cause the mechanism to be turned in one direction, and if pulled in the other will cause the mechanism to turn in the opposite direction, the bell or signal rope, and means, substantially as described, whereby the operating-cord can be connected with said rope toward either end of the car from the indicator, as desired, all substantially as and for the purpose described.

8. In a station-indicator, in combination with the disk and means for rotating it, the concentric series of pins projecting from one side of the disk, and a band of transparent or semi-transparent material stretched over the pins and provided with numbers or indicating-marks, substantially as and for the purpose described.

9. In a station-indicator, in combination with the toothed wheel connected with the

indicator mechanism, a block below the same, the two pawls pivotally attached to the block and so situated thereon that one or the other can be brought under the teeth on opposite sides of the wheel by longitudinal movement of the block, and means, substantially as described, for moving the block longitudinally and also vertically, substantially as and for the purpose described.

10. In combination with the toothed wheel for driving the mechanism of the indicator, the arm T, the slide thereon carrying two pawls adapted to be brought below the teeth on opposite sides of the wheel by the movement of the slide along the arm, and means for moving the slide in one direction or the other, as desired, and for raising and lowering the arm carrying the slide, substantially as and for the purpose described.

11. In a station-indicator, in combination with the toothed wheel connected with the indicating mechanism, the vertically-moving weight, the horizontal arm attached to the weight, the slide on the arm, the pawls carried by the slide, the cord attached to the weight so as to raise the same, and connected with the slide so as to move it in one direction or the other as the cord is pulled from one side or the other of the indicator, and means for connecting the cord, as desired, with the bell or signal rope on either side of the indicator, substantially as and for the purpose described.

12. In combination with the indicating mechanism, the toothed wheel, the vertically-moving weight, the arm attached thereto, the slide on the arm below the toothed wheel, the two pawl-arms on the slide, the swinging tube extending down through a loop on the slide, and the cord U, passing up through the tube over suitable pulleys down to the weight, and adapted to be connected with the bell or signal rope on either side of the indicator, substantially as and for the purpose described.

13. In combination with the toothed wheel, the weight, the arm attached thereto, the slide on the arm, the rock-shaft pivoted in the slide, and having its ends bent substantially at right angles, the weight tending to turn the rock-shaft so that the arms will project beyond the side of the slide, the swinging tube, and the cord U, passing up through the same over suitable pulleys, and down to the arm-carrying weight to which its end is fastened, substantially as and for the purpose described.

14. In combination with weight S, the arm T, provided with stops t^4 t^4, the slide on the arm, the rock-shaft pivoted in the slide and provided with arms t' t', a weight on one of the arms to turn the shaft, so that the arms project beyond the side of the slide, and a loop, t^3, on the slide, all substantially as and for the purpose described.

15. In a station-indicator, in combination with the toothed wheel O^2, the indicator band-roller having notches in its end, the latch or bolt, the spring tending to press the bolt inward to engage the notches in the roller, and the swinging lever adapted to force the spring and bolt outward away from the roller end, the weight, the arm carried by the weight, and provided with means for turning the toothed wheel as the weight is raised, and a lug on the weight adapted to engage and operate the latch-lever before the toothed wheel is turned, substantially as and for the purpose described.

16. In combination with the upper and lower band-rollers, and the two indicator-belts wound thereon, substantially as described, gear-wheels on the shafts of the rollers, and a gear-wheel between and meshing with such wheels, the wheel or roller provided with two series of numbers starting from opposite sides of the wheel and running in the same direction, gear-teeth on such wheel, a shaft having pinions meshing with such teeth and the gear on the lower roller-shaft, and the toothed wheel and the gear-wheel on the same shaft therewith meshing with a pinion on the roller-driving shaft, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of April, A. D. 1885.

DAVID WILSON.

Witnesses:
HENRY C. HAZARD,
PHILIP G. RUSSELL.