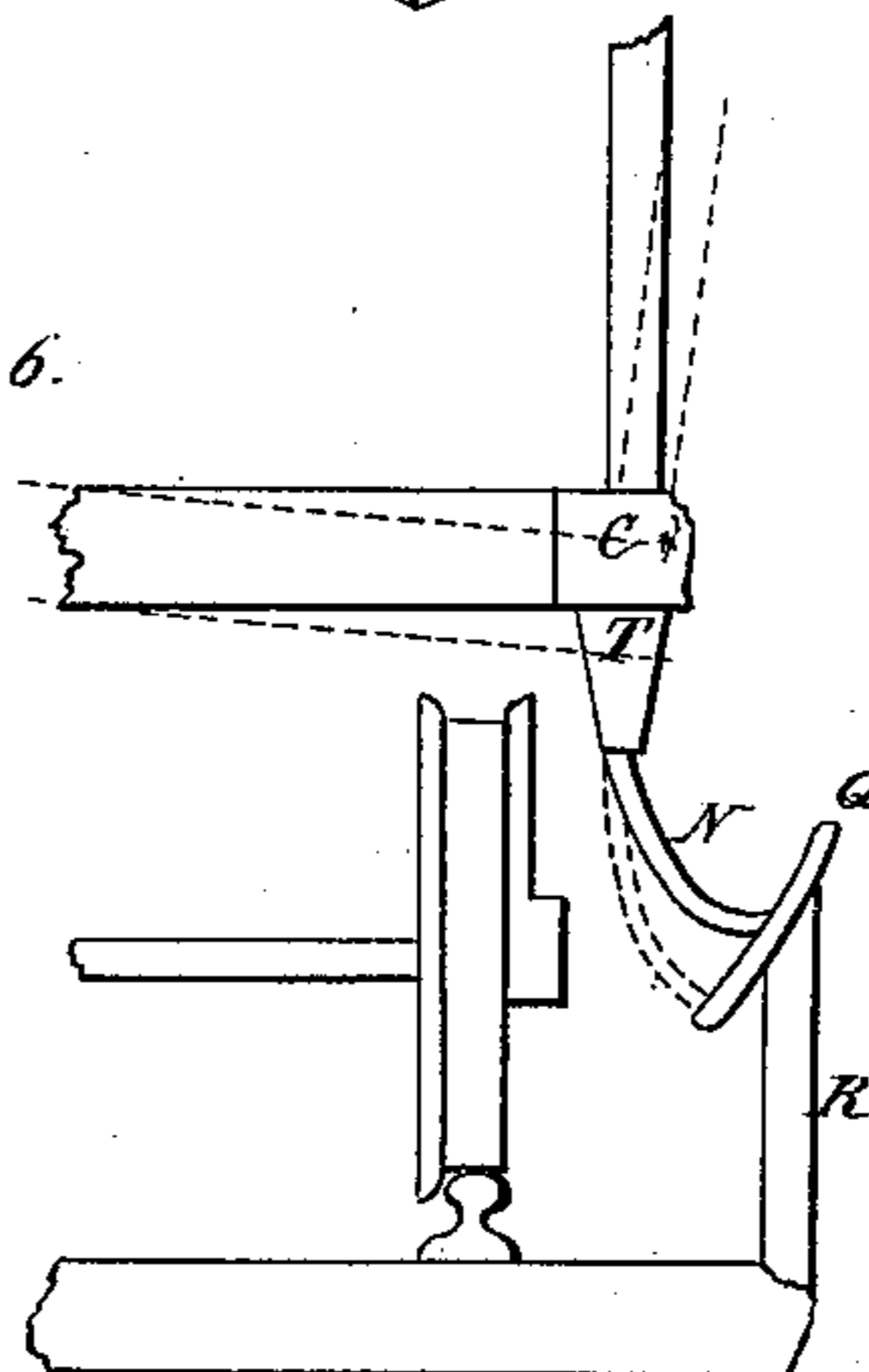
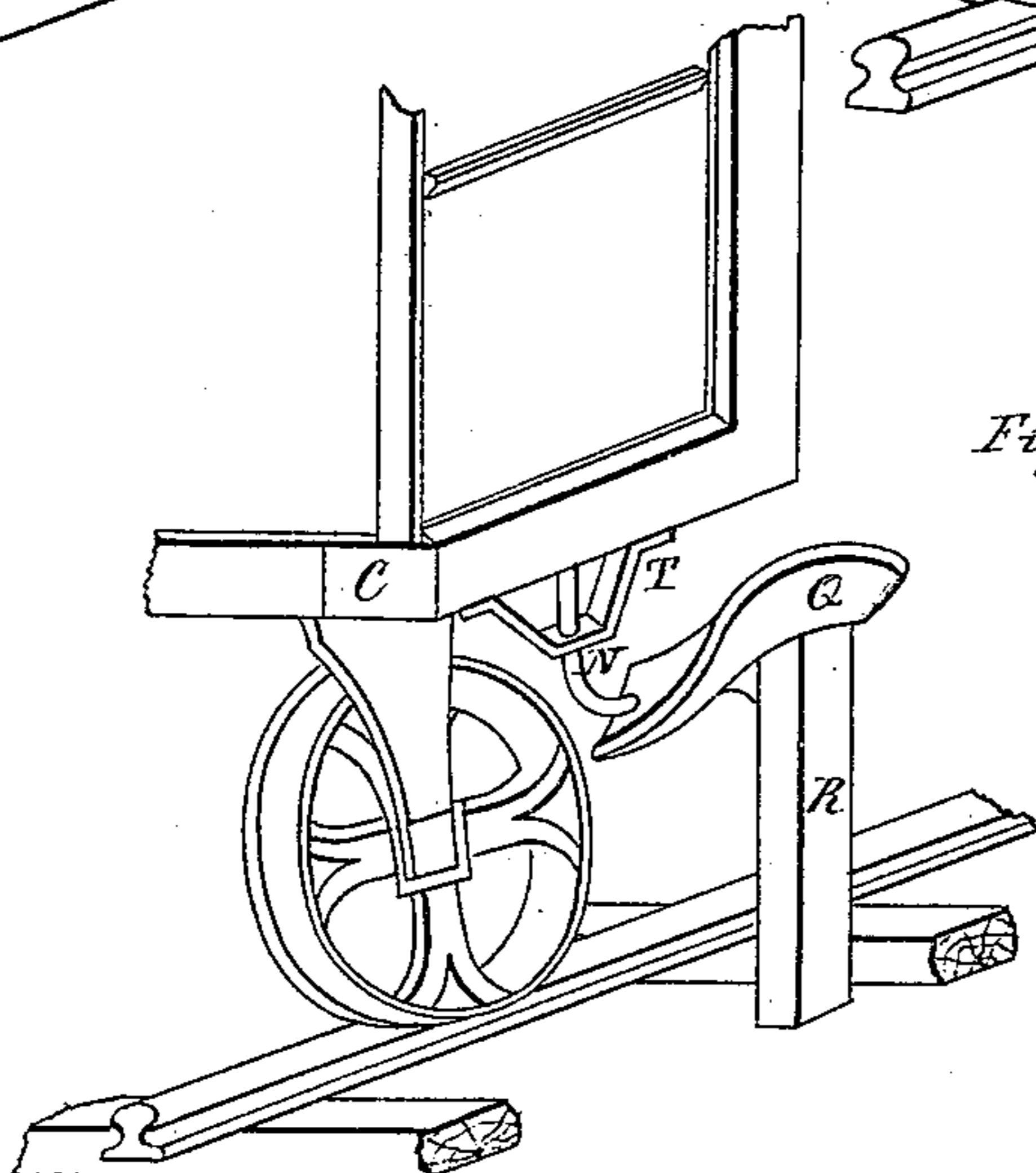
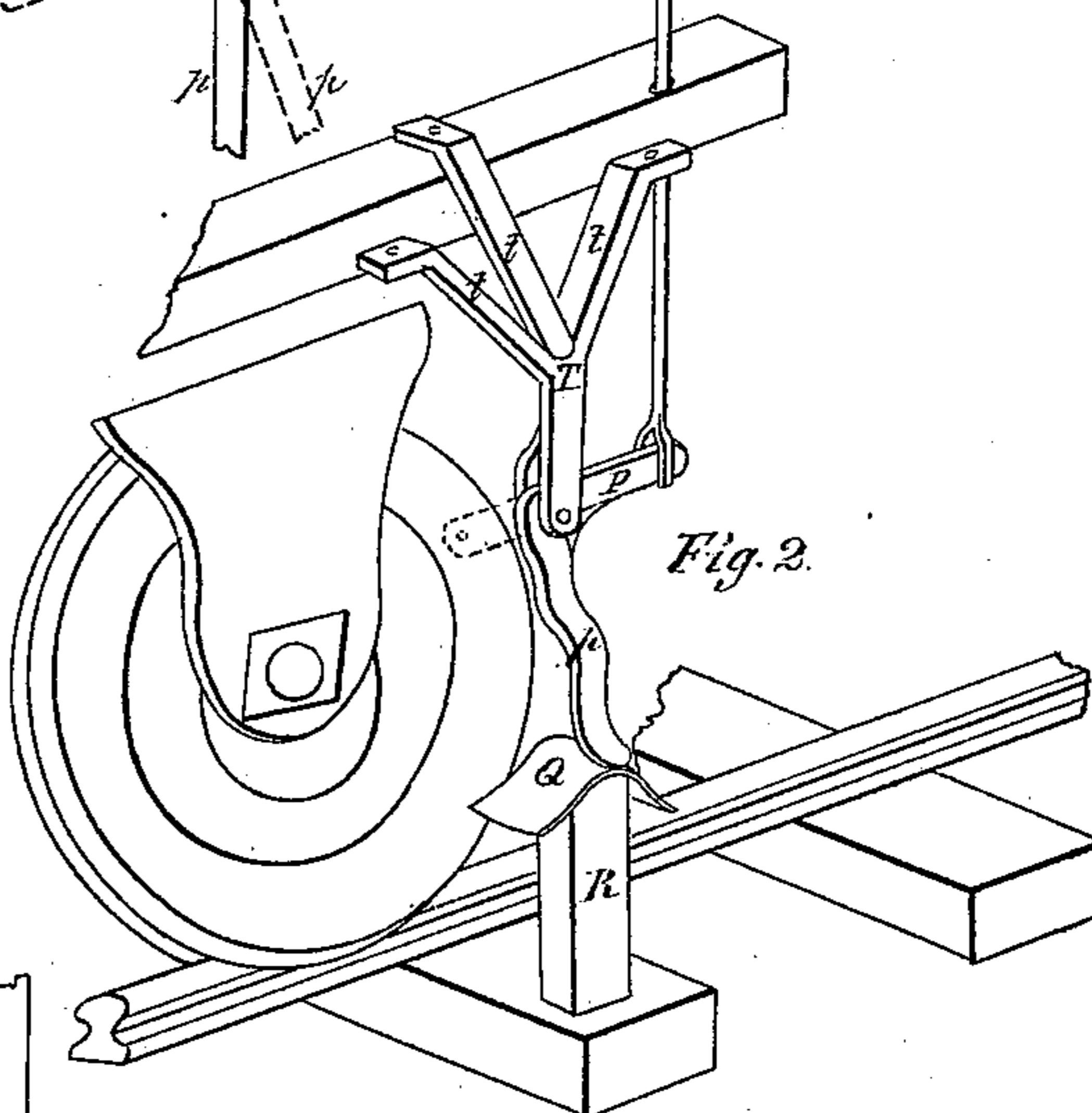
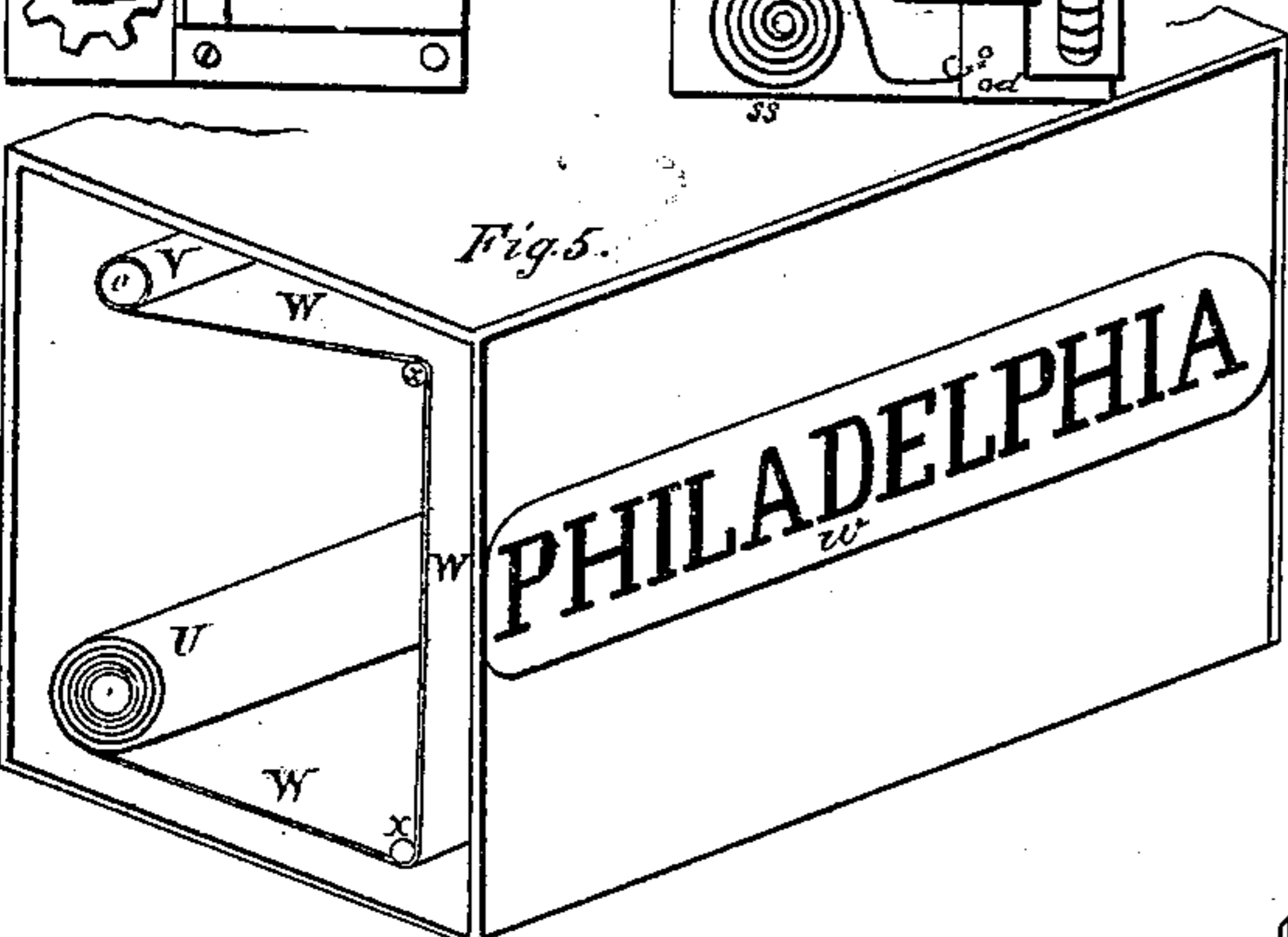
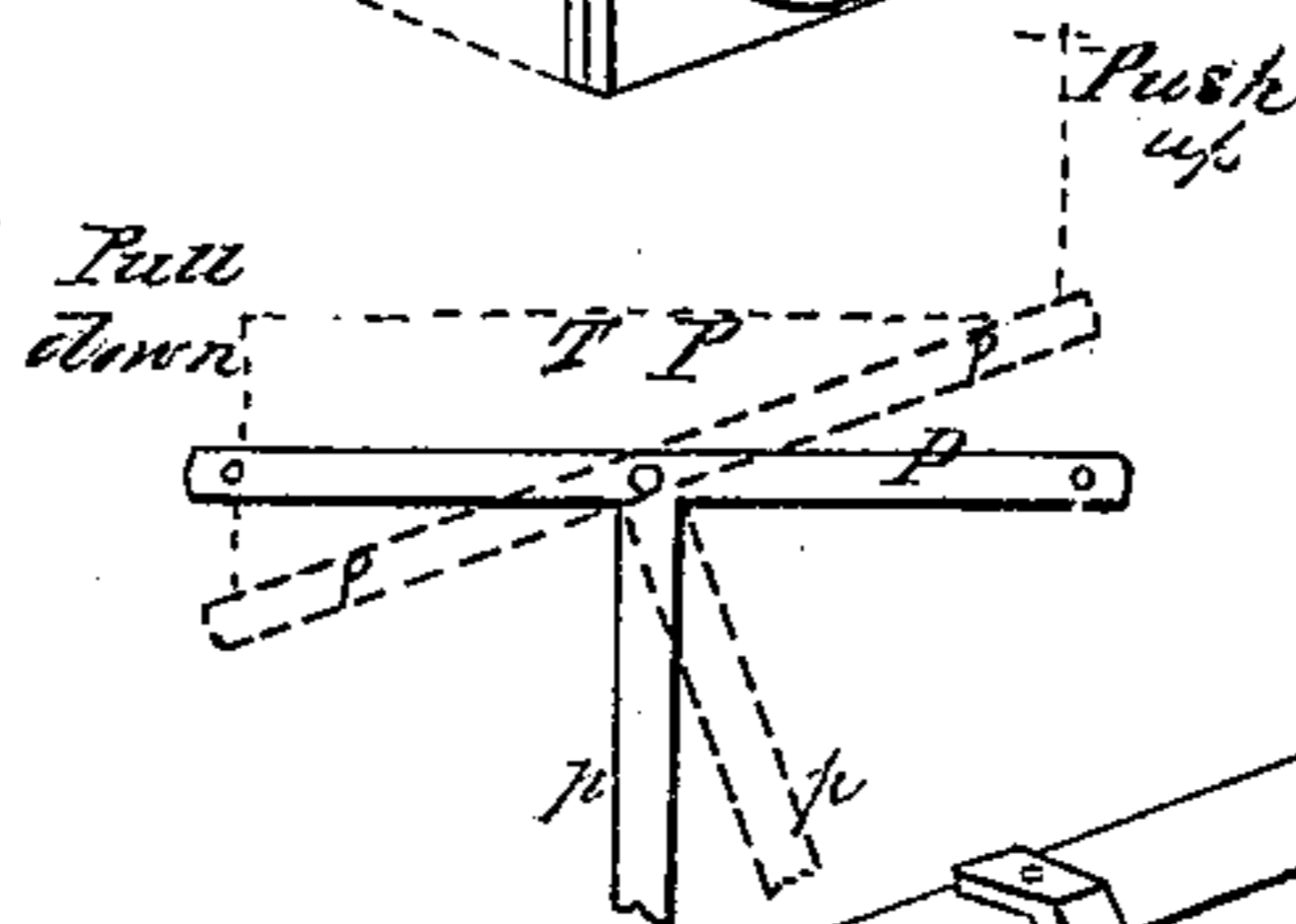
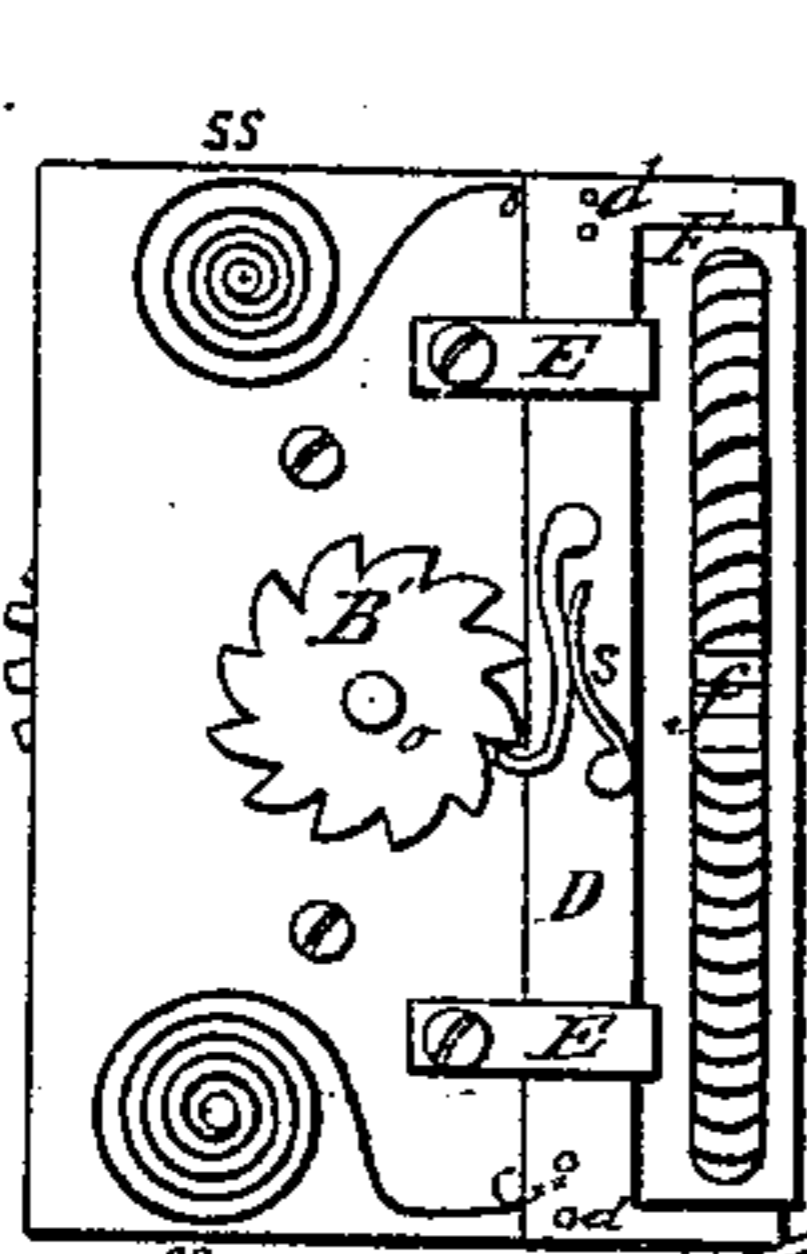
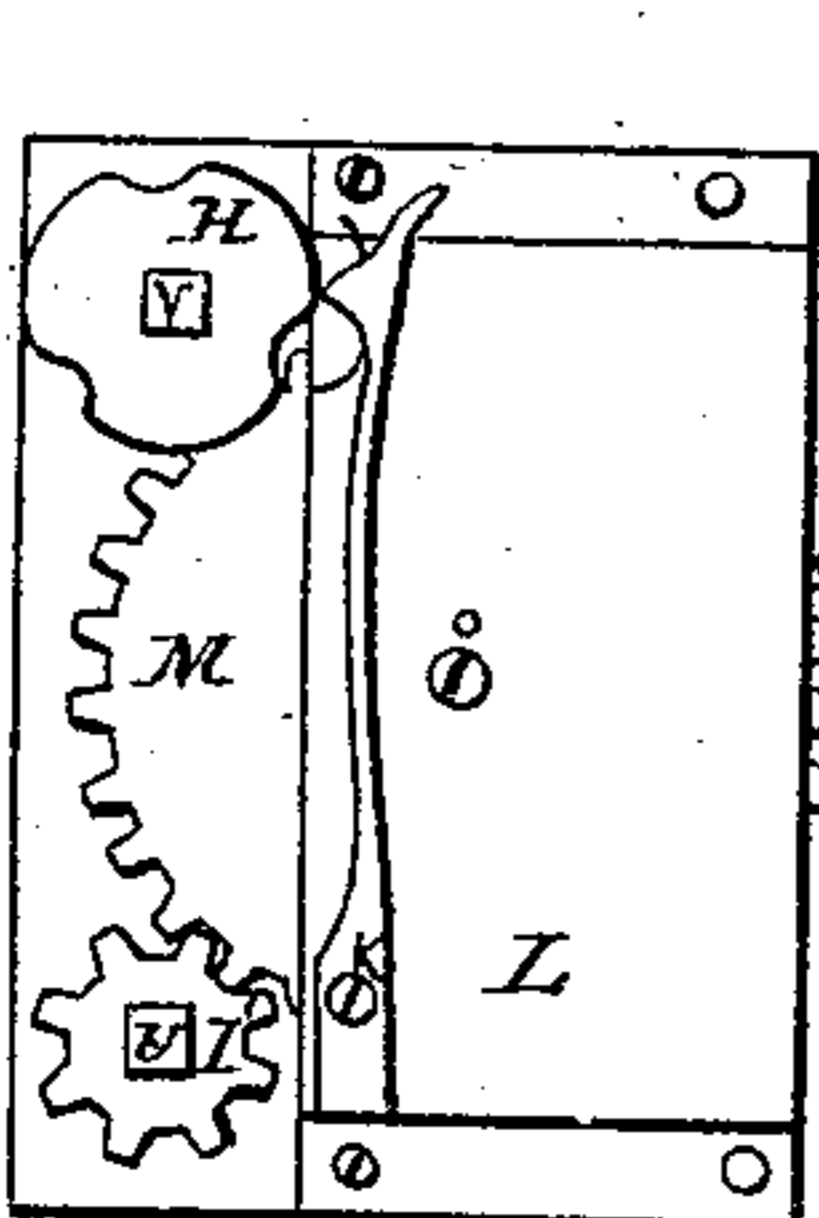
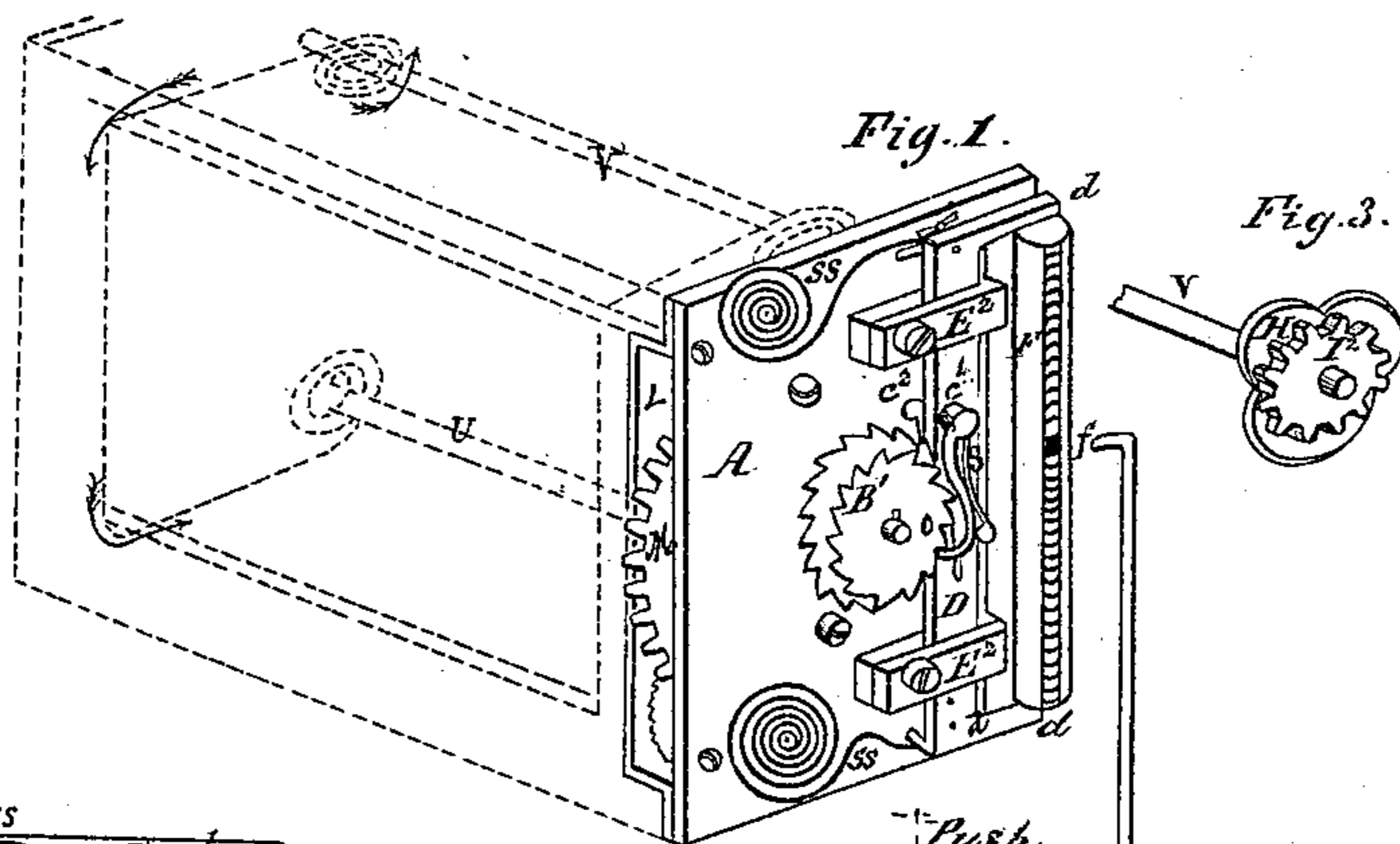
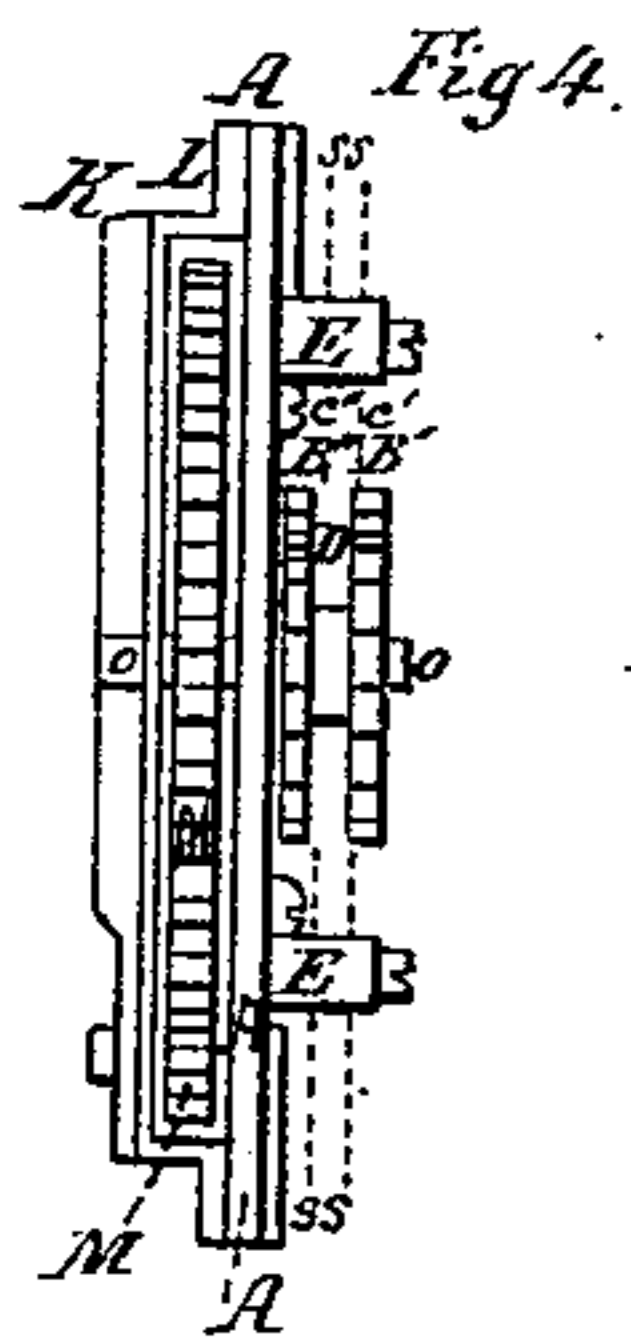


P. E. & J. P. Gruger.
Station Indicator.

No 53,607.

Patented Apr. 3, 1866.



Witnesses
W. Houghton
A. A. Yerkes.

Inventor.
John P. Gruger.

UNITED STATES PATENT OFFICE.

PEARSON E. GRUGER AND JOHN P. GRUGER, OF LANCASTER, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD-STATION INDICATORS.

Specification forming part of Letters Patent No. 53,607, dated April 3, 1866.

To all whom it may concern:

Be it known that we, PEARSON E. GRUGER and JOHN P. GRUGER, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented a new and Improved Mode of Constructing and Operating Railroad-Station Indicators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the outer face of the plate closing one end of the box, Fig. 5. Fig. 2 shows the rod and lever-connection with the track and indicator. Fig. 3 shows the reverse sides of the end plate and machinery; Fig. 4, a vertical section of the same. Fig. 5 shows the box and rollers V U and stretchers X for the printed ribbon to indicate the names of the stations successively presented behind the open space in the front of the box. Fig. 6 shows a modification for actuating the lever and rod of the indicator.

The object of this invention is to operate the indicator by means of machinery that will reverse the motion of the rollers when the direction of the car is reversed as they pass over the ground from one end of the route to the other back and forth.

The box and lettered strip of muslin, as shown by Fig. 5, is the same as that introduced by J. R. Graves, of Philadelphia, several years ago, and by no means new in itself.

The plate forming one end of said box, with the shafts of the rollers U V and mechanism, is constructed and actuated as follows: This plate A, forming one end of the box, has on its external face two ratchet-wheels, B' B², toothed in opposite directions, affixed and separated the thickness of the bolt D from each other on a central shaft, O. This shaft also operates a large-sized cog-wheel, M, on the inside of the plate A, between it and supporting-plate L, which plate L has a spring, K, with a catch acting into a cam, H, at three or more points, according to the width of the strips W bearing the names, requiring a shorter or longer action of the cog-wheel M on the pinions I' I², in connection with the shafts or rollers U V, which rollers are turned by the right or left action of the cog-wheel M on the

same shaft with both the right and the left acting ratchets B' and B², so as to wind the strip from U onto V and from V back to U, according as the wheel M is impelled by one or the other of the ratchet-wheels. The ratchet-wheels B' and B² are respectively operated by a pawl or click, C' and C², one on the outer side and the other on the inner side of a vertical vibrating bolt, D. This bolt slides up and down in the slots of fixed guides E' E², and is connected at top and bottom by arms d, at right angles to said bolt D, with the top and bottom of the spring-case F held and acted upon by a spiral spring, S S, above and below, as seen in Fig. 1. The spring-case F contains two spiral springs, separated centrally at f, between which the hooked end of the rod N is inserted. This rod is a fixture in the corner of the car and extends down through the bottom, and is connected with a right-angled lever, P. The curved portion is carried down sufficiently low so as to come in contact with a curved inclined plane, Q, on a post, R, on the side of the track, of such a height and position as to be out of the way of the steps of the car. Such a rod and lever, held by a pivot in a fixed bracket, T, under the car, is at each end of the car diagonally placed, so as to be in the forward right-hand corner whichever direction the car moves. Hence a single track will require an actuating-post on each side of the track at every station, these rods being so connected with the lever P as to be pushed upward in one direction and drawn down in the opposite direction of the cars, (illustrated by the diagram T P.) Thus, when the rod N is pressed upward the click C, with its spring S on the bolt D, operates the one ratchet, and consequently the gearing in connection with the rollers unwinding the strip containing all the names of the stations on that particular route to its terminus in regular succession as they are reached, usually giving the next station in advance to afford persons ample time to get ready to leave without delay when the train stops.

When the cars are to return on the same route the seats are turned, and the former rear of the car now becomes the front. It is only necessary to unship the indicator and carry it forward to the other rod and fixings and insert the crook between the springs in

the case F. When on the return the rod is now drawn down at each station, and the other ratchet-wheel is grasped by its click or pawl, (the teeth being reversed.) The other click is now inoperative, and a reverse motion given to the gearing in connection with the rollers U V. The consequence is that the several stations are again brought to view when returning on the same route, so that the rollers alternately wind up or down from one terminus to the other, as each station actuates the rod in the same manner while moving in the same direction.

The machinery occupies but little space, is not liable to get out of order, and is readily adapted to the cars.

The curve of the actuating-plate Q has a radius from the center of the car, so that any degree of rocking will not prevent the proper action of the rod N and lever P *p*. This lever may be as shown by the illustration T P, as in very rare cases the train is switched round without a change of front, when the connection of the rod need only be changed to the other arm of the oscillating lever P.

The cam H, with its pawl K, is to prevent the gearing from turning back as the bolt D is returned to its place by the action of the springs S S.

The arms *d*, which connect the bolt D and spring-case F, regulate the length of stroke in unison with the notched cam H, by the space allowed between them and the slotted guides E, in which the main bolt D slides, with its pawls *c* above and below, both for an upward push or a downward pull.

The stiff coiled springs in the case F, separated at *f*, for the hook on the rod N, are designed to check excess of action brought to bear on the machinery through the connecting-rod N, induced by the rocking of the cars or other irregularity.

It is intended to give the rod and connected bolt and pawls just throw enough to move the distance equal to the width of each name indicating a station through the gearing on the rollers and plate.

I am aware that the utility of such an indicator is fully appreciated, and various plans have been patented for effecting or operating the same. I am not aware, however, that all the machinery required to wind and unwind the strips of printed names has ever been arranged on a single plate, constituting one end of the box or indicator, which indicator consists of a movable box, to be carried and hung from one corner in the rear to the front, as the former rear becomes the front of the car on leaving each terminus, with as much ease as reversing the seats.

The several rods and lever-connections are fixtures and connected to the car, so that, the box being transferred from one rod to the other, a reverse action is had to unwind in going in one direction what was previously wound up in passing over the line in the opposite direction. Any number of stations can thus be indicated by the same instrument on any particular route, however numerous.

I do not claim the box with the printed or lettered strip or band, nor the inclined plane for actuating the machinery apart from the apparatus specified, as well as the ratchets and pawls, independently considered.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the bolt D, springs S S, spring-case F, pawls or clicks C' C², in combination with the reversely-toothed ratchets B' B² on the same shaft O that carries the cog-wheel M, when all these parts are fixed upon a plate, A, constituting one end of the box or indicator, transferable from one rod, N, to the other, and actuated substantially in the manner specified.

PEARSON E. GRUGER.
JOHN P. GRUGER.

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JACOB STAUFFER.

Witnesses as to J. P. Gruger:

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A. A. YERKES.