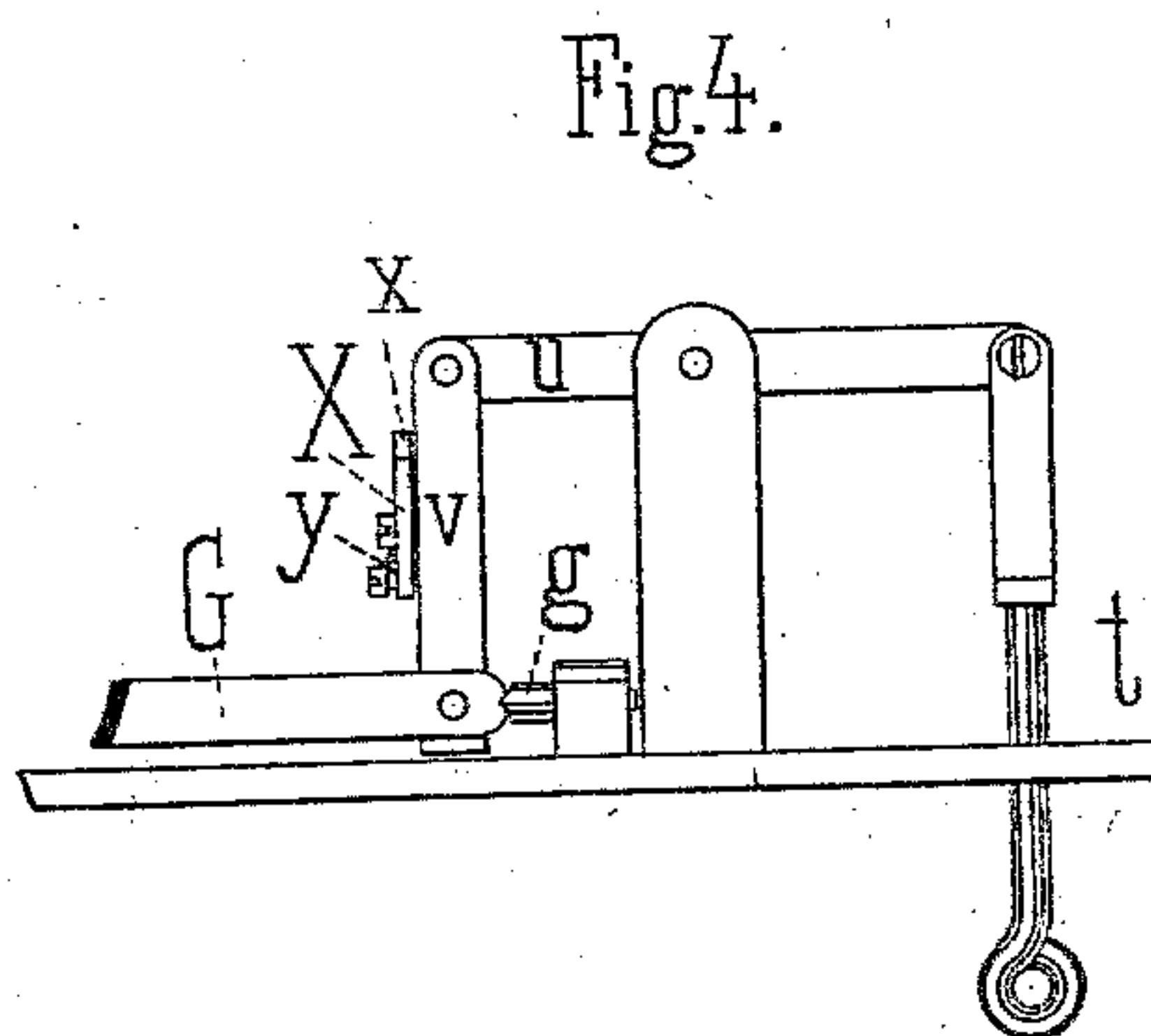
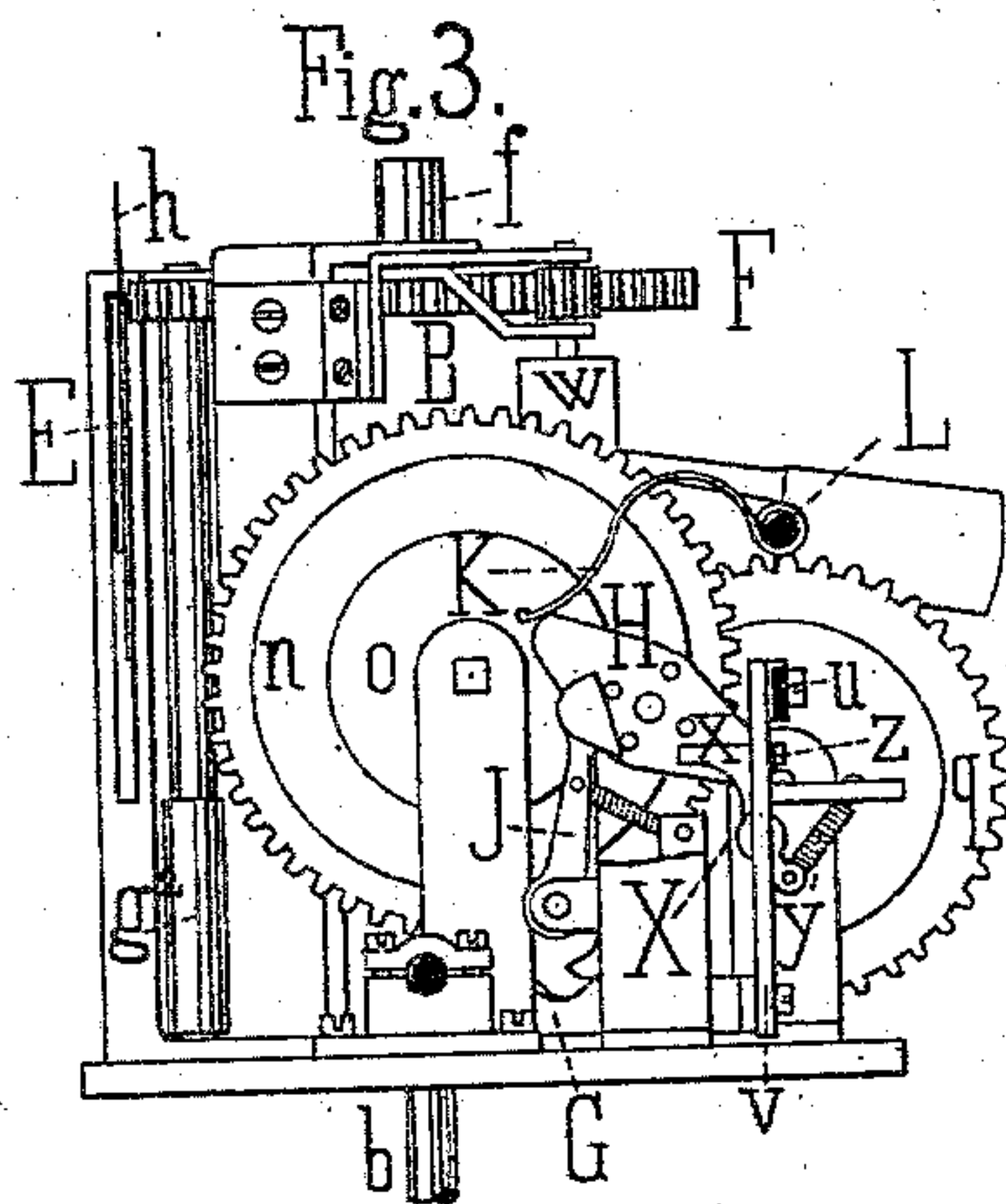
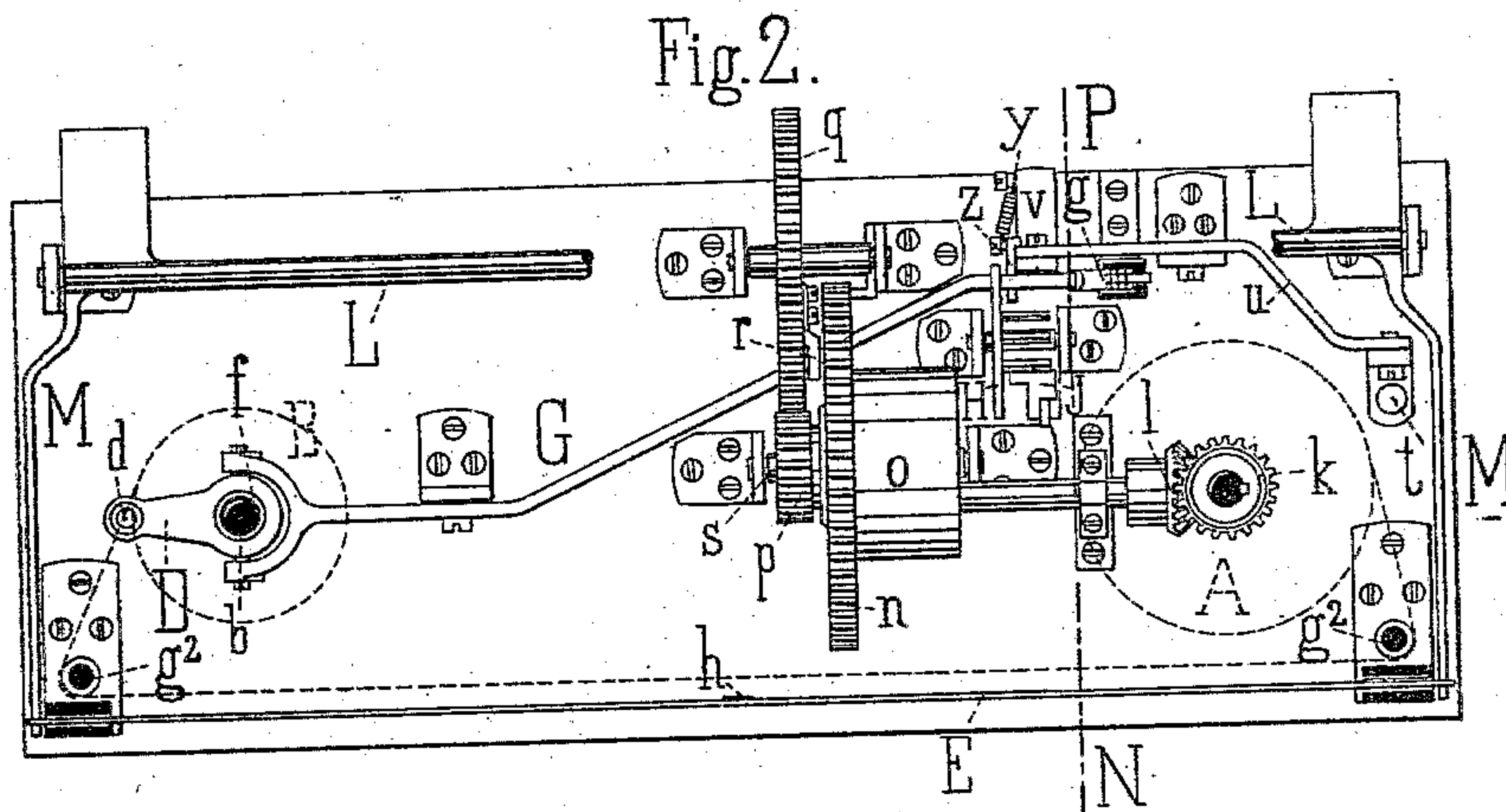
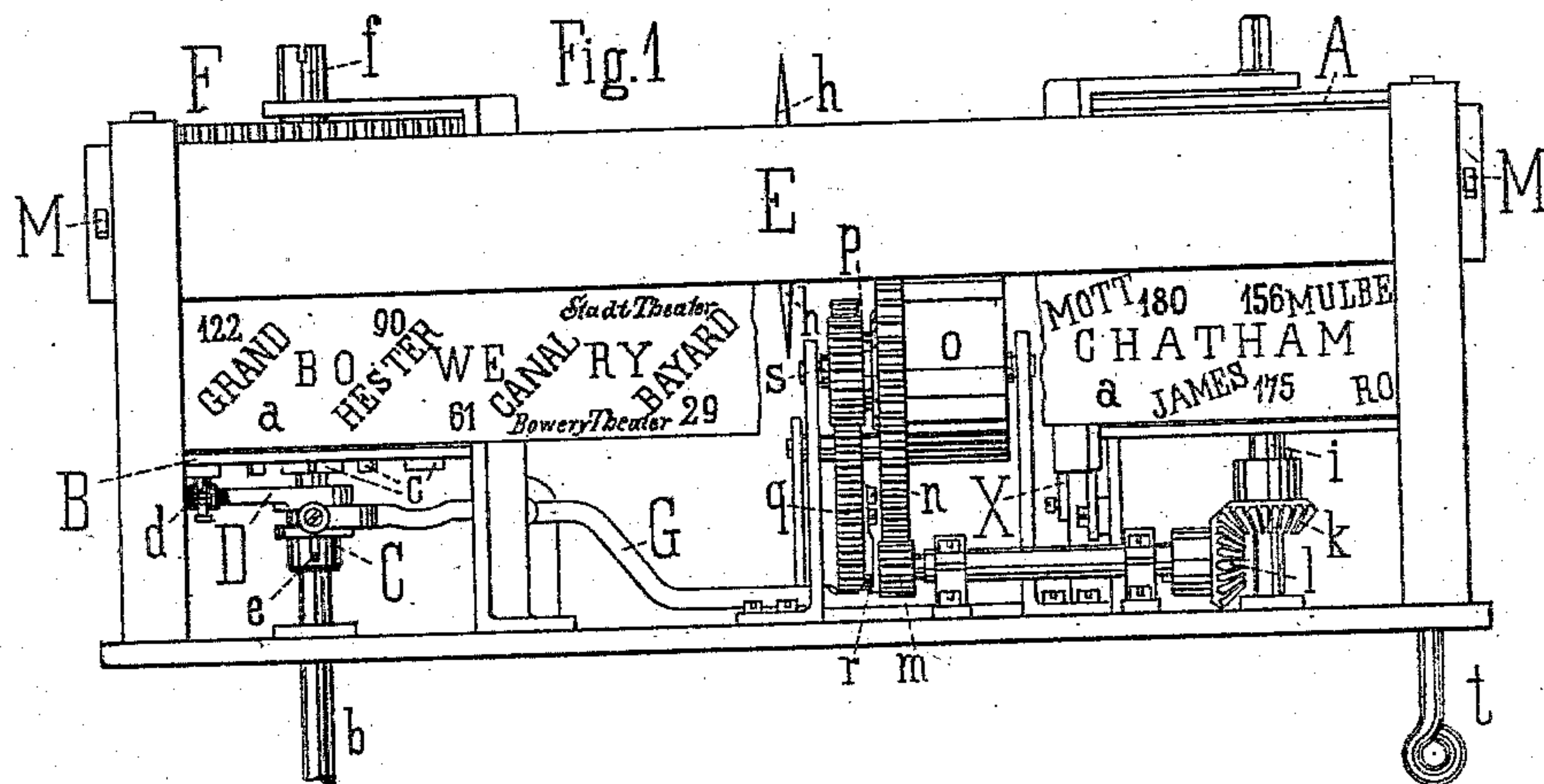


(No Model.)

S. BALLIN.
STATION INDICATOR.

No. 295,326.

Patented Mar. 18, 1884.



Witnesses,

C. J. Bell,
Oscar Stauch,

Inventor,

Semmy Ballin,
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Attys.

UNITED STATES PATENT OFFICE.

SEMMY BALLIN, OF HAMBURG, GERMANY.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 295,326, dated March 18, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, SEMMY BALLIN, a subject of the Emperor of Germany, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Station-Indicators, of which the following is a specification.

My invention relates to improvements in station-indicators in which the stations are indicated by a movable band; and the objects of my improvements are, first, to facilitate stating the place where the car, steamboat, &c., is at any moment during the locomotion; and, second, to exhibit automatically that part of the band which corresponds with the route over which the car, steamboat, &c., just is running. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view; Fig. 2, a top view, partly in section. Fig. 3 is a vertical section on the line P N, Fig. 2, and Fig. 4 is a detailed view of the reversing-lever.

Similar letters refer to similar parts throughout the several views.

The band *a* is divided lengthwise in an upper and lower division, the one showing the stations, streets, public buildings, houses, firms, &c., which the vehicle or boat passes during the one trip, and the other one those of the return trip, the same being spaced at distances proportionate to the distances between the points indicated along the route. One end of the band *a* is fastened to the roller A, and the other one to the roller B. The axle-box *f* of the roller B is movable on the shaft *b*, which rotates during the locomotion of the vehicle, &c., in consequence of the connection with one of the axles or with the main shaft of the engine, or any other driving or running part of the mechanism which causes the locomotion. The shaft *b* is provided with a sliding crank, D, the collar C of which has a slit for the reception of the pin *e*, fixed to the shaft *b*. The raising and lowering of the crank D is caused by the lever G, the fork-shaped end of which embraces the collar C, the other end being arrested by the spring-pin *g*. As soon as the vehicle or boat begins to move, the rotation of the shaft *b* draws the band *a* slowly off from A over the guide-rollers *g*² *g*², and winds it upon B. One-half of the pass-

ing band *a* is covered by the plate E, the finger *h* of which is to indicate that point on the band where the vehicle or boat is in reality. The rotation of the roller A, caused by the band *a* drawn off therefrom, is communicated, by the shaft *i* and the pinions *k l m*, to the geared wheel *n*, whereby a spring inclosed in the barrel *o* is wound upon the barrel-arbor *s*. The tension of the spring thus produced serves to draw off the band *a* with great speed at the end station from the roller B, and to roll it upon the cylinder A in the following manner: When the vehicle or boat has arrived at the end of the trip, the conductor or driver, or any other person, pulls downward the rod *t*, and thereby lowers the crank D, the rod *t* being suspended at one end of the lever *u*, the other end of which is connected with the lever G by the connecting-rod *v*. The pull on the rod *t* causes the aft end of the lever G to be raised and the fork-shaped front end to be lowered, whereby the crank D also slides downward. The roller B becomes loose, and the spring in barrel *o* turns the roller A, by means of the wheel *n* and the pinions *m l k*, in the opposite direction.

To regulate the motion of the acting parts, a flying pinion, *w*, may be employed, which gears into the wheel F of the roller B. Simultaneously the pull on the rod *t* causes the motion of the plate or curtain E, which is lowered or raised, according to the half of the band *a* to be covered or uncovered for showing the actual route. To this effect the lever X is attached to the connecting-rod *v*. By means of the spring *y* and the ledge *z*, the lever X is kept in such a position as to push the projection *x* under one of the four pins of the cam H, when the connecting-rod *v* is raised. Thereby the cam H makes a rotation of ninety degrees, because two of its four pins are caught by the incline of the spring-lever I. The lever K, fixed to the shaft L, which bears, by means of the arms M, the plate E, is raised when the longer radius of the cam H comes into action, and falls down when the short radius is thereunder. A pinion, *p*, which gears in the toothed wheel *q*, is fastened to the wheel *n*, and causes the crank D to be raised automatically when the band *a* is wound upon the cylinder A. The wheel *q* and pinion *p* are to be of such a size as to produce only one rotation of the first one when the whole length

of the band *a* is drawn from one roller to the other. A finger, *r*, attached to the wheel *q*, lowers, when the band *a* is wound upon the roller A by means of the spring in the barrel 5 *o*, the straight end of the lever G, which is raised by pulling down the rod *t*, and thereby causes the coupling of the roller B to the shaft *b*. The pin *d* of the crank D is pushed upward by a small spring, in order to avoid the 10 crank D not being raised high enough when accidentally the pin *d* touches the edge of a projection, *c*, attached to the bottom of the roller B. In such a case the pin *d* slides downward into the boring of the crank D, but will 15 be raised immediately by the spring as soon as the hindering projection *c* has slipped away, and so get hold of the next one.

Having thus fully described my invention, I desire to claim and secure by Letters Patent—

20 1. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B and shiftable 25 screen E, which covers one line of names, substantially as and for the purpose set forth.

2. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, 30 with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B, a coiled spring connected with the drum B, a shiftable screen, 35 E, which covers one line of names, and a clutch device operated by a rod, *t*, which releases the drum A from its shaft and allows the apron to rewind on drum B at the end of the route, all operated and arranged substantially as and 40 for the purpose set forth.

3. In a station-indicator, the combination, with the rollers A and B, indicator-apron *a*,

and spring-drum O, suitably connected with roller A, of the crank D, carried by the collar C on the shaft of the roller B, and having a 45 projection or spring-pin, *d*, which can engage with projections *c* on the roller B, the lever G, and the wheel *q*, having finger *r*, and geared into the pinion *p* on the spring-shaft, as described, whereby the roller B is automatically 50 connected with its shaft when the apron has been rewound on the roller A, substantially as set forth.

4. In a station-indicator having an indicator-band, *a*, a curtain, E, carried in front of 55 the band by means of the arms M on the shaft L, said shaft having the lever K, in combination with the cam H and lever X, whereby the position of the screen in front of the apron can be shifted by means of any movement that 60 may be given to the lever X, substantially as herein set forth.

5. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, 65 with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B, a coiled spring connected with the drum B, an automatically-shiftable screen, E, which covers one line of 70 names, and a clutch device and a screen-shifting device operated by a rod, *t*, which releases the drum A from its shaft and allows the apron to rewind on drum B at the end of the route, and also shifts the screen, all operated 75 and arranged substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of July, 1883. 80
SEMMY BALLIN.

Witnesses:

ALEXANDER SPECHT,
EMIL F. CAASE.