3 Sheets—Sheet 1.

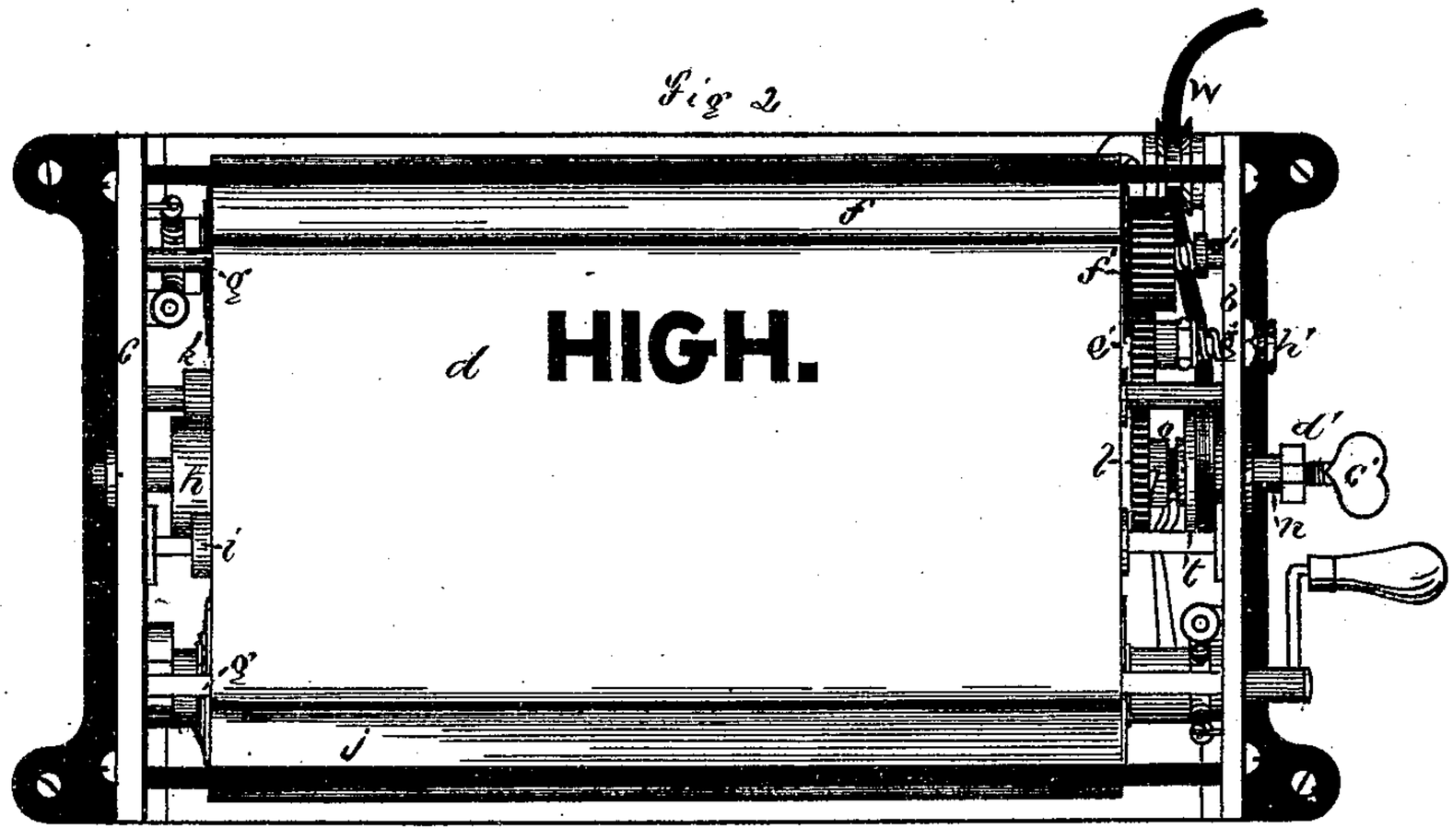
A. E. GODDARD, J. I. HUTCHINSON G. M. CLARK & S. G. NORTH.

STATION-INDICATOR.

No. 179,011. Patented June 20, 1876.

Fig. 1

Fig 2



Witnesses.
John Pollitt
Robt. F. Gaylord

Inventors.
A. Ernest Goddard
John I. Hutchinson
George M. Clark
Sleden G. North
By Wm. E. Simonds
Atty.

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A. E. GODDARD, J. I. HUTCHINSON G. M. CLARK & S. G. NORTH.

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Fig 3

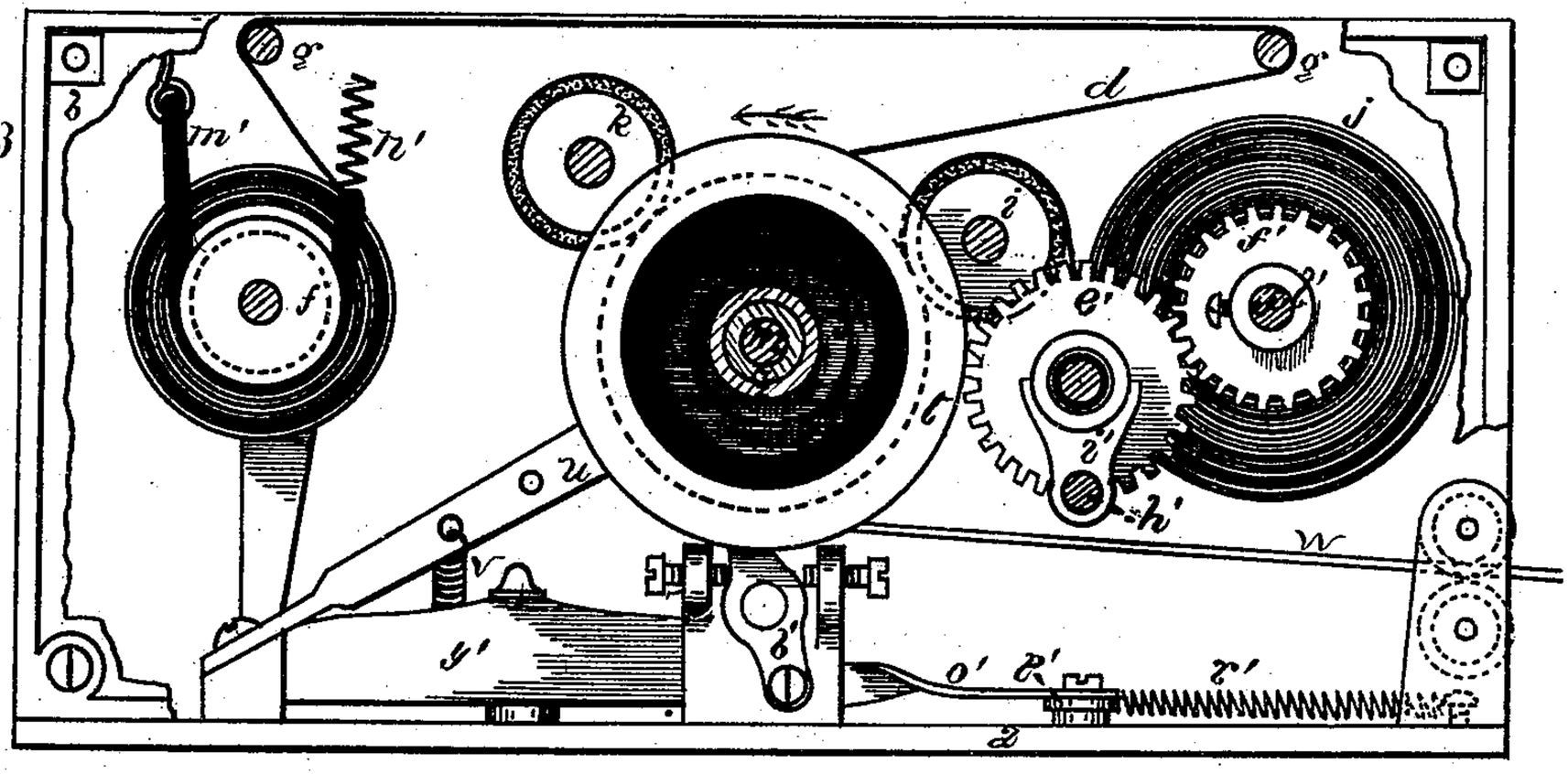
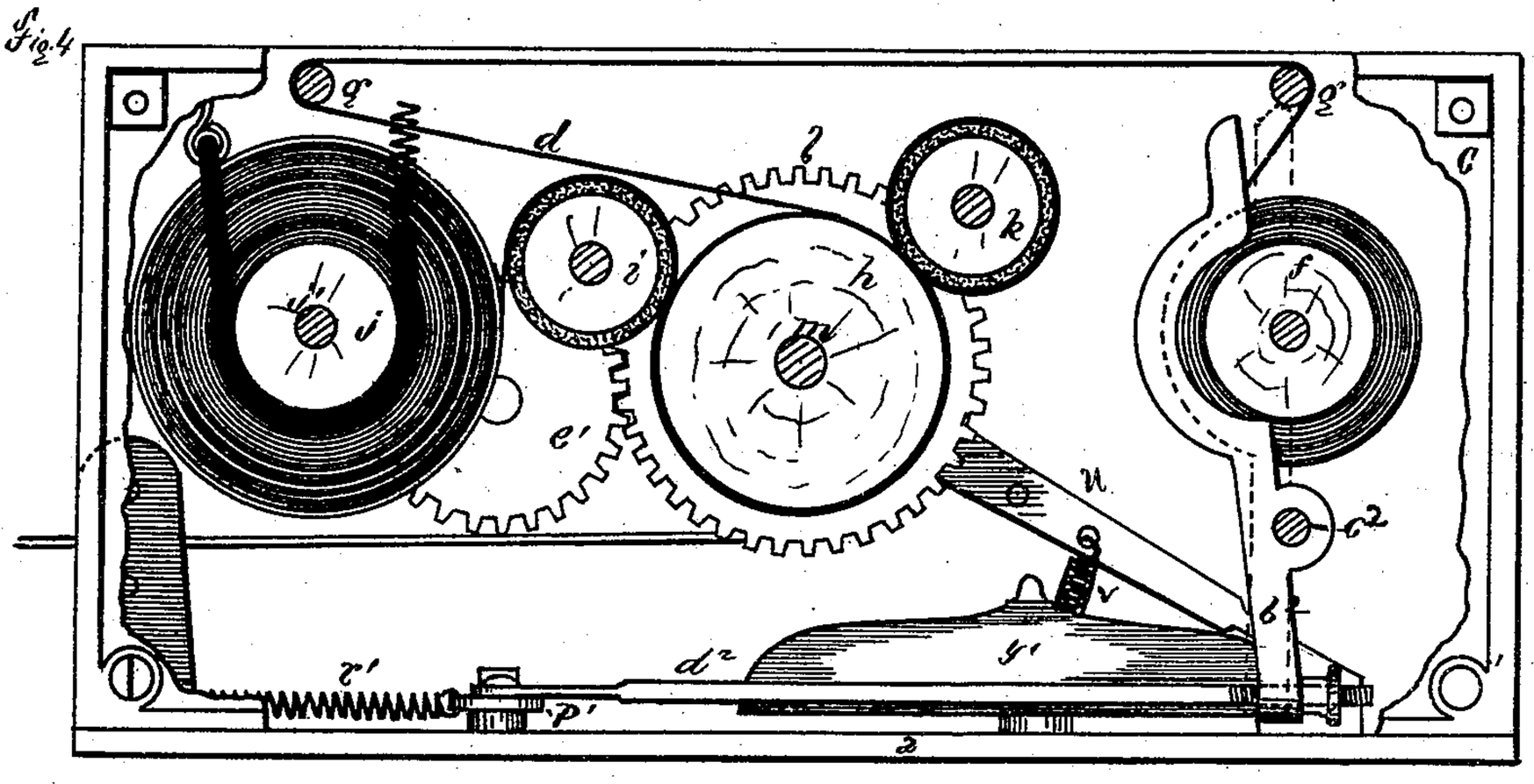


Fig 4



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John Pollitt
Robt. F. Gaylord

Inventors
A. Ernest Goddard.
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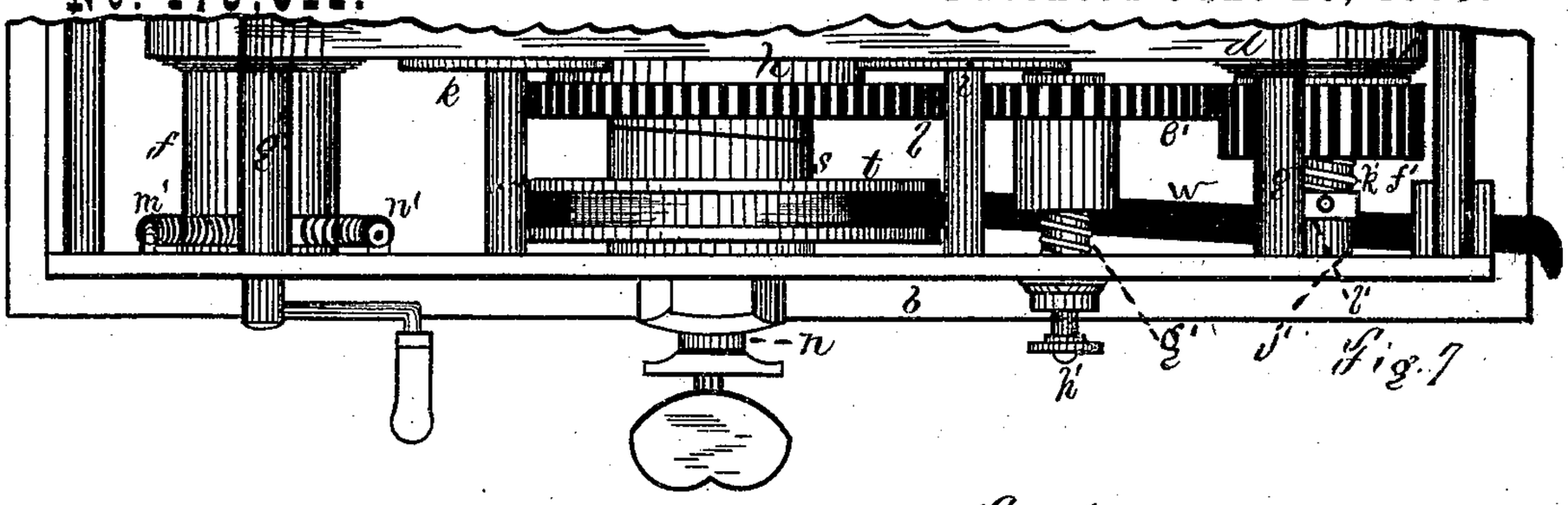
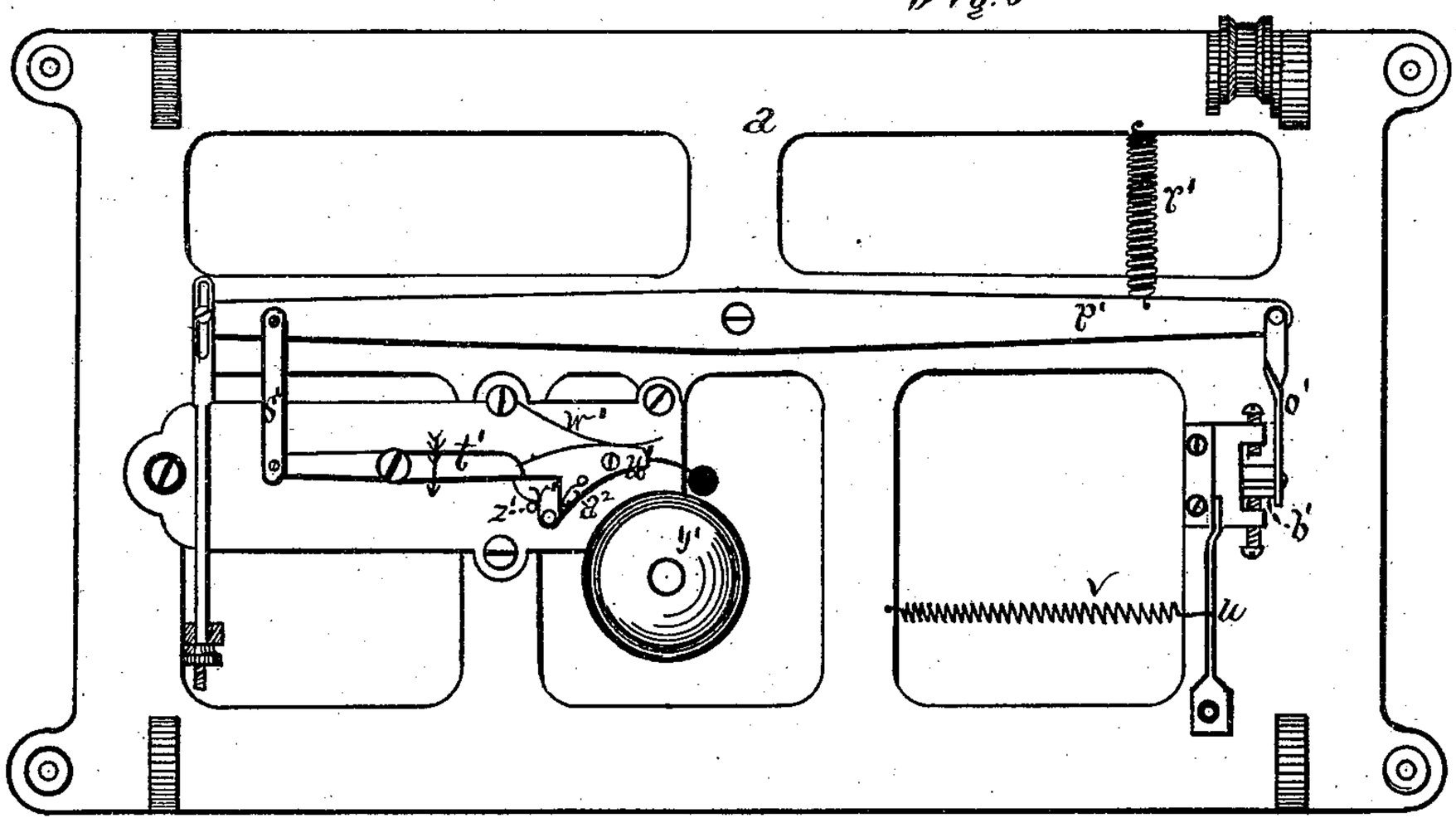


Fig: 7

Fig: 5



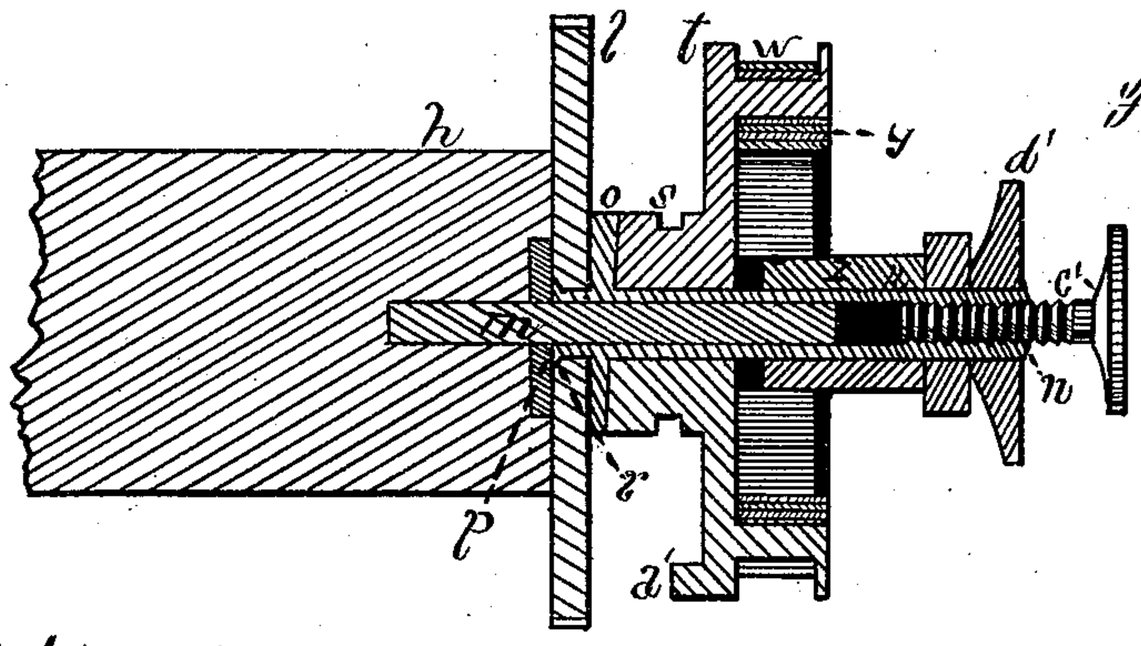


Fig. 6

Witnesses
John Pollitt
Robt F Gaylord

Inventors
A. Ernest Goddard
John I. Hutchinson
George M. Clark
Selden G. North
By Wm E. Simonds
Atty

UNITED STATES PATENT OFFICE.

A. ERNEST GODDARD AND JOHN I. HUTCHINSON, OF ESSEX, AND GEORGE M. CLARK AND SELDEN G. NORTH, OF HIGGANUM, CONNECTICUT.

IMPROVEMENT IN STATION-INDICATORS.

Specification forming part of Letters Patent No. **179,011**, dated June 20, 1876; application filed March 9, 1876.

To all whom it may concern:

Be it known that we, A. ERNEST GODDARD and JOHN I. HUTCHINSON, of Essex, and GEORGE M. CLARK and SELDEN G. NORTH, of Higganum, all in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements pertaining to Station-Indicators, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a front view. Fig. 2 is a front view with the containing-case removed. Fig. 3 is a right-end view, (as you face the machine in Fig. 1,) with the side standard broken away. Fig. 4 is a similar view of the left end. Fig. 5 is a front view of the back plate and its appurtenant parts, the rollers, &c., removed. Fig. 6 is a partial central section of the main roll and the appurtenant parts at its right end. Fig. 7 is an enlarged front view of the mechanism at right end of machine.

This invention is a device for use on steam or horse cars for denoting to the passengers the next station or street.

The letter *a* denotes the back plate; *b*, the right-end standard; *c*, the left-end standard; *d*, the length of cloth, or the like, bearing the names of the streets or stations in succession, and, if desired, advertisements, one to show with the name of each street or station. The letter *e* denotes the containing-case, having proper openings for showing the names and advertisements. The letter *f* denotes the roll which holds the main part of the cloth at the commencement of a trip, from which the cloth runs up over the display-rolls *g g*, back to and around the main roll *h;* from thence over the rubber-covered pressure-roll *i*, and thence upon the receiving-roll *j*. We also use the pressure-roll *k*.

On the right end of the main roll is fastened the gear *l;* also, the shaft end *m*, on which is the sleeve *n*, bearing the clutch-half *o* and the friction-clutch half *p*, the latter acting in conjunction and co-operation with a corresponding friction-clutch half, *r*, forming a part of the disk or gear *l*. A clutch-half, *s*, corresponding to the clutch-half *o*, is borne on the sleeve *n*, and is attached to the drum *t*. This clutch-half *s* and drum *t* have longitudinal play on sleeve *n*, to allow the clutch-halves *o* and *s* to engage and disengage. The clutch-half *s* is held toward the clutch-half *o* by the forked lever *u* and spring *v*. The drum *t* is rotated one complete revolution by a pull upon the strap *w*, which is wound on the drum. The direction of this rotation is shown by the arrow on the drum. The pull upon this strap is given by the conductor or brakeman or driver of the car, and the return rotation of the drum to its normal position is given by the coil-spring *y*, inside the drum, fastened thereto and also to the sleeve *z*, which runs through the standard *b*.

In their normal position of rest, the two clutch-halves *o* and *s* engage, and a pull on the strap causes the main roll to make one rotation, and thereby move the cloth just far enough to bring another street-name into sight.

The limit of rotation is given to drum by the lug a^1 striking alternately upon the sides of the lever b^1, which, for this purpose, answers as a stop.

When it is desired to roll the cloth backward, the friction-clutch halves *p r* are disengaged by loosening the screw c^1, which runs into the sleeve *n*, and bears on the shaft end *m*. This disengages the main roll, so as to allow it to rotate independently of the operating devices just described—a thing that is necessary when the cloth is to be rolled backward or adjusted. The main roll is thrown into gear by rotating the clutch-half *o*, by means of handle d^1 on outer end of sleeve *n*, till it meets clutch-half *s*, and then tightening up on screw c^1.

The gear *l* meshes into intermediate pinion e', and that into gear f', and so drives the roll *j*. The pinion e' is loose on its shaft, and has longitudinal play thereon, being held in mesh by spring g', so that it can be pulled out of mesh with gear *l* by means of rod h' and fork i', when the main roll is to be rotated independently, or when it is to be rotated backward. As the cloth rolls upon roll *j* the roll increases in size, and if it were rotated the same part of a revolution each time it would soon call for cloth faster than the main roll is ready to supply. The gear f' is not, there-

fore, fast on shaft j', but loose thereon, having a helical spring, k', attached to its side, bearing against collar l', which is fast on shaft j'. The tension or pressure of this spring is sufficient to rotate roll i, but still leaves it free to slip when it would otherwise take up too much cloth. A peculiar brake holds roll f from unrolling by acquired momentum. It consists of a cord, m', of leather, preferably depending from the side standard, running around the roll, and having its pressure upon the roll given by spring n'. When the roll rotates forward the cord acts as a brake, but when rolled backward the spring gives and has little braking action. We apply the same kind of a brake to the opposite end of roll j. Roll f has another brake, hereinafter described.

The back frame of this machine bears a bell, the construction and operation of which we will now describe.

At the end of the rotation of the main shaft the lug a^1 strikes and vibrates the lever b^1, which, acting through connecting-rod o', lever p', (return action given by spring r',) and connecting-rod s', gives vibration to lever t', the movement of which in the direction indicated by the overlying arrow raises the bell-hammer w' till the end of lever t' trips off the end of tumbler v', and allows the hammer, under action of spring w', to strike and sound the bell y'. The tumbler v' is pivoted on hammer w', pressed against pin z' by spring a^2, and allows lever t', on its return movement, to trip past it to position of rest. These bell-striking parts are so adjusted that the bell cannot be sounded till the main roll has been rotated just the right distance to bring a street name into display.

As to the additional brake for roll f, the letter b^2 denotes it pivoted on pin c^2, connected to lever p' by connecting-rod d^2. As this lever moves to sound the bell it applies brake b^2 to roll f, and as the lever retreats the brake retreats.

We claim as our invention—

1. In combination, roll h, disk l, embodying friction-clutch half r, shaft m, friction-clutch half p on sleeve n, and screw c^1, all substantially as and for the purpose set forth.

2. In combination, roll h, shaft m, friction-clutch r p, clutch o s, sleeve n, and drum t, all substantially as and for the purpose set forth.

3. In combination, roll h, gear l, loose side-playing pinion e', with its rod h' and fork i', gear f', and roll j, all substantially as and for the purpose set forth.

4. In combination, roll h, clutch o s, drum t, levers and rods b^1 o' p' s' t', bell-hammer w', and tumbler v', all substantially as and for the purpose set forth.

5. In combination, roll h, clutch o s, drum t, levers and rods b^1 o' p' d^2, brake b^2, and roll f, all substantially as and for the purpose set forth.

A. ERNEST GODDARD.
JOHN I. HUTCHINSON.
GEORGE M. CLARK.
SELDEN G. NORTH.

Witnesses:
CLINTON B. DAVIS,
E. D. GILBERT.