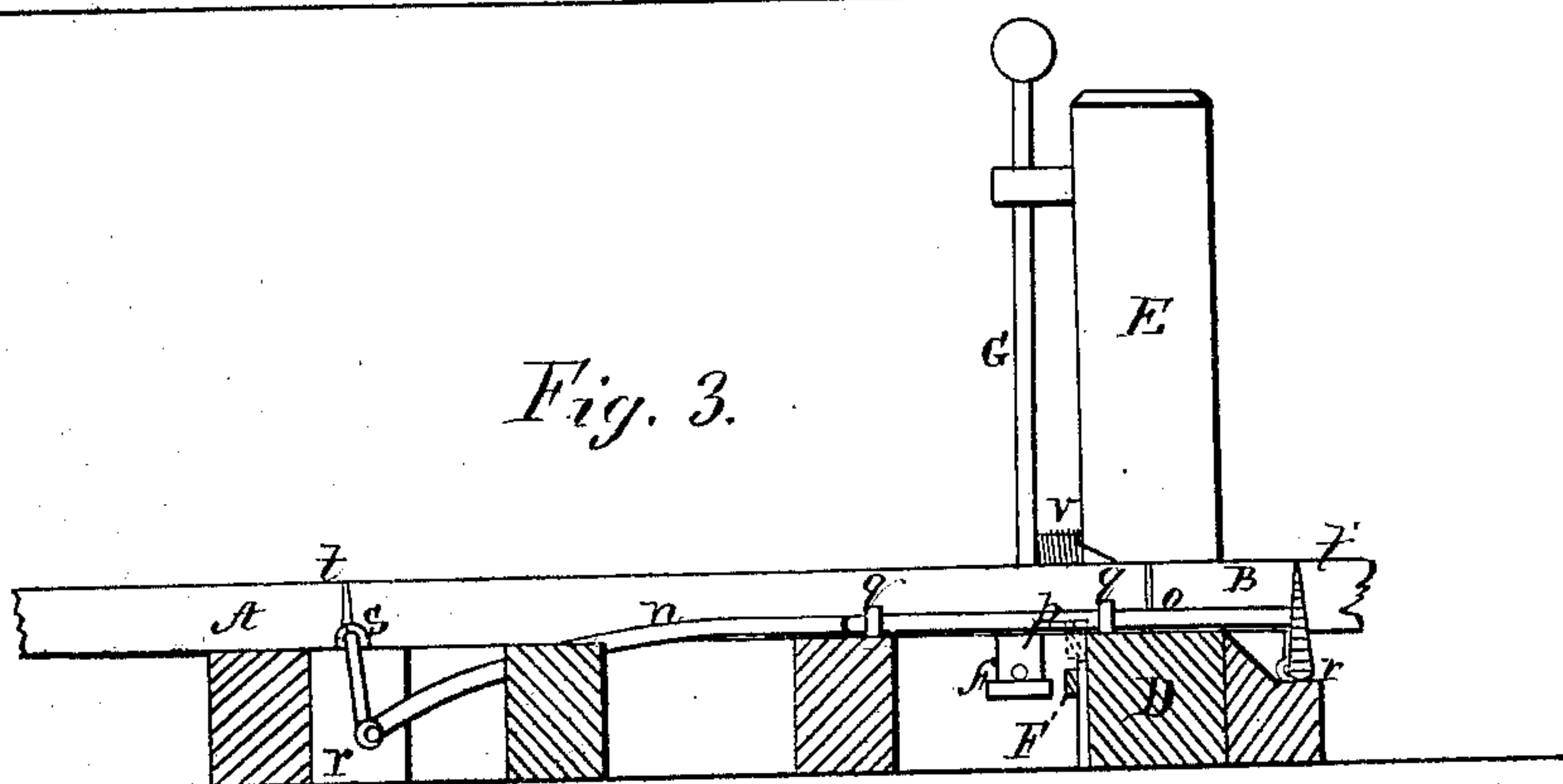
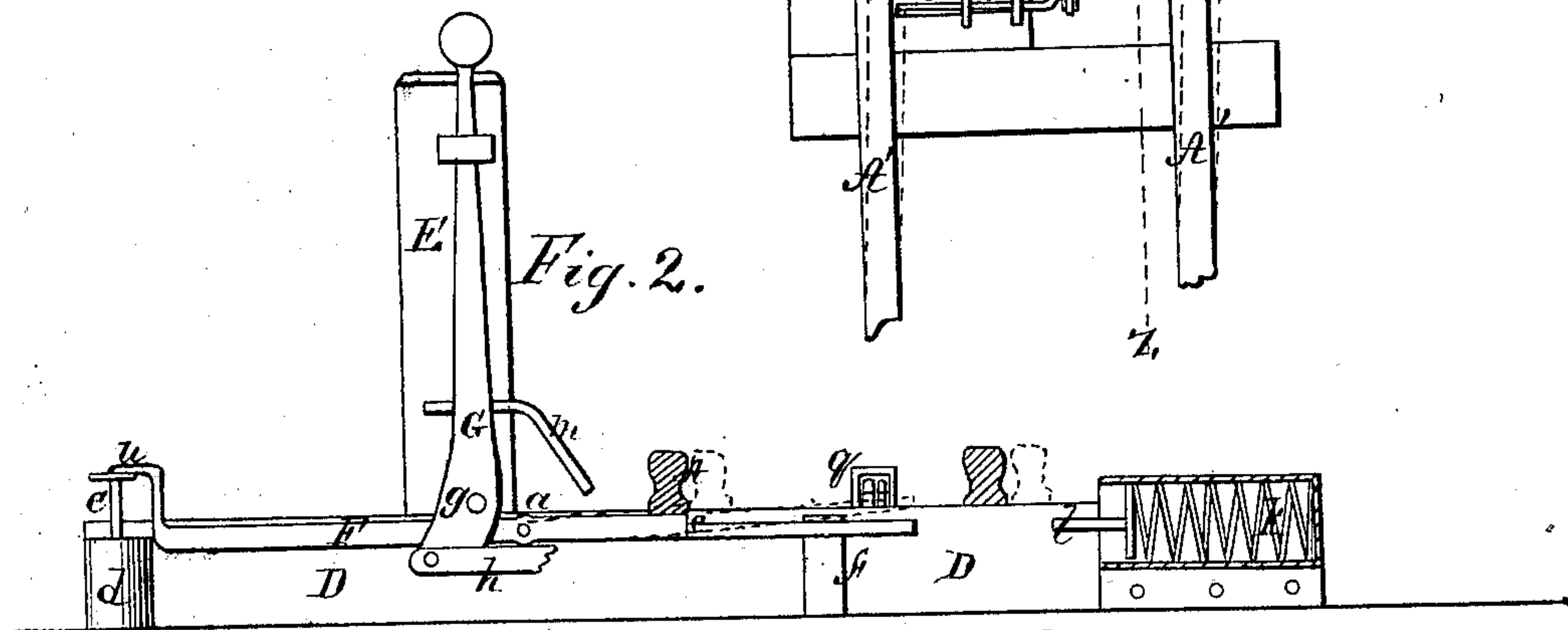
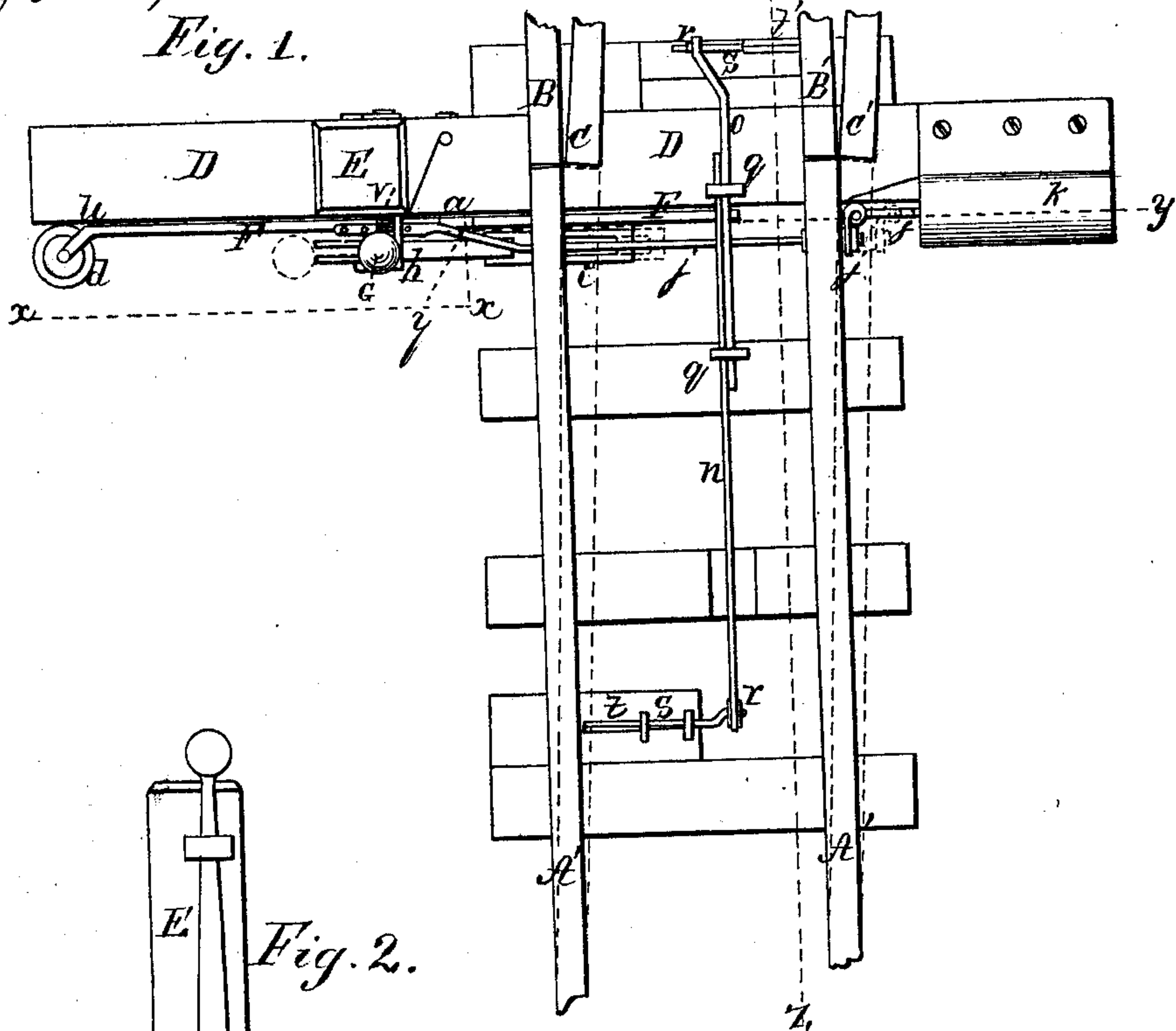


G.W. Starr,
R.R. Switch,
No 69,856,
Patented Oct. 15, 1867.



Witnesses.
P. J. Dodge.
Jno. Johnson

Inventor.
Geo. W. Starr
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United States Patent Office.

GEORGE W. STARR, OF CLARKSBURG, WEST VIRGINIA.

Letters Patent No. 69,856, dated October 15, 1867.

IMPROVED AUTOMATIC RAILROAD SWITCH.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE W. STARR, of Clarksburg, in the county of Harrison, and State of West Virginia, have invented certain new and useful improvements in Automatic Railroad Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to railroad switches, and consists of a new and improved method of adjusting them automatically. By my improvement the passing train, in whichever direction it may be going, will adjust the switch so as to make the main line continuous, and avoid accidental running on to the side track. In the drawings—

Figure 1 is a top plan view.

Figure 2 is a view of a cross vertical section on the lines *x x* and *y y* of fig. 1, and

Figure 3 is a view of longitudinal vertical section on the line *z z* of fig. 1.

At the point on the railroad at which I locate my switch, as shown in fig. 1, I fasten firmly the rails *A A'* to the sleeper at one end, and under the other end, where they connect with the rails *B B'* of the main track, or the rails *C C'* of the side track, I place a heavy timber, *D*, with an upright, *E*, as shown in figs. 1 and 2. On the side of the timber *D*, I pivot a lever, *F*, at *a*, having its outer arm bent at its extreme end, and resting on an upright, *c*, which is attached to a spiral spring inside of a case, *d*. Its inner arm passes under the rail *A* next to the point *a*, where the lever is pivoted, as shown in fig. 2, and is provided with a shoulder or catch, *e*, located so as to be on a line with the rail *A*, when the rail *A* is in line with the rail *C*. On the same side of the timber *D* with the lever *F*, and near the end of the inner arm of the lever *F*, I place a rest or support, *f*, for this end of the lever when locking the rails *A A'* in line with rails *C C'*. When the end of the lever *F* is on the rest *f*, the shoulder *e* will be above the lower side of the rail *A*, as shown by the red lines in fig. 2, and the rail *A* will bear against it. To the upright *E*, I pivot a lever, *G*, at *g*, and to its lower end I pivot an arm, *h*, extending at right angles to it, which is pivoted to a slotted arm, *i*, as shown in fig. 1. To the under side of the rail *A*, I attach a projection or shoulder, which passes through the slot in the arm *i*. The rails *A A'* connect firmly with the rod *j*, which is also connected with a stiff spiral spring, *k*, by the rod *l*, as shown in figs. 1 and 2. The spiral spring *k*, I enclose in a case, which is strongly fastened to the timber *D*, as shown in fig. 1. I also attach to the rail *A* an arm, *m*, bent so as to pass along the side of the upright *E*, and through a staple in the same, to which it can be locked or keyed when desired. Between the rails *A A'* and *B B'*, I place a pair of locking-bars, *n* and *o*, lapping by one another, as shown in fig. 1. Each of the bars *n* and *o* has a catch or notch, *p*, as shown in fig. 3, which fits over the end of the lever *F*, when upon the rest *f*, as shown in figs. 2 and 3. The bars or rods *n o* are kept in place by staples *q* fastened in the sleepers, and their ends *r* are attached by a crank to small shafts *s*, provided with trippers *t t'*, which are flat, firmly attached to the shafts *s*, and when in a vertical position their upper ends are on a line with the upper side of the rails near which they are placed.

In operating my switch I pull down the lever *G*; this moves the rails *A A'* on a line with the rails *C C'*. As they are rigidly attached at one end to the sleepers, they are sprung over partially, and tend to spring back again. But in being sprung over the spiral spring *k* is compressed, which, when made sufficiently strong, would throw them back, even if the other ends of the rails were pivoted to instead of being rigidly attached to the sleepers. When the rails *A A'* are thus by the lever *G* placed on a line with the rails *C C'*, I bear down on the end *u* of the lever *F*. This elevates its opposite end, which I place on the rest *f*, and at the same time the shoulder *e* rises above the side of the rail *A*, which is caught and held by it. And as the rail *A* is connected with the rail *A'*, they are thus both held in a line with the rails *C C'*, as shown by the red lines. When in this position, if the cars are moving on the rails *A A'* towards the switch, the flanges of the forward wheels will strike against the tripper *t*, as shown in fig. 3, and bend it forward. As it bends forward it moves the rod *n* towards it and the catch *p* pulls the end of the lever *F* off of the rest *f*. This end of the lever *F* is forced down by the action of the spiral spring in the case *d*, as shown in fig. 2. The rail *A* is released from its bearing *e* in the lever *F*, and the rails *A A'* are forced by the spiral spring *k* and their own elasticity back on to a line

with the rails B B'. When the cars are moving on the rails B B' towards the switch, should the switch be set, as before, so that the rails A A' are on a line with the rails C C', the tripper *t'* will be struck by the flange of the wheels the rails A A' released and spring back on a line with the rails B B', as before. The rails A A' may be held in any desired position permanently by means of the arm *m*, and any suitable locking device on the upright E. By means of a spring, *v*, attached to the lever G, as shown in fig. 1, and the slot *i* in the arm *k* of the lever E, the lever will always spring back, after being used, to a vertical position. The bars or rods *n* and *o* may be made of any desirable length, so as to secure the switching of the rails at some distance from the switch, and thus avoid the pressing of the rails A A' against the sleepers by the cars, and prevent their movement.

By this arrangement I make an automatic switch that will secure a continuous line of rail by the action of the cars themselves, in whichever direction they may be moving. The object of my invention is to prevent collision on the side track, as well as to prevent the cars from running off the track, and this I believe my automatic switch arrangement will do.

Having thus described my invention, what I claim, is—

1. The lever G, in combination with the slotted arm *i* and spring *v*, when arranged to operate in connection with the rail A, the connecting-rods *j* and *l*, and spring *k*, as described and for the purpose set forth.
2. The lever F, in combination with the spring in the case *d*, the rest *f*, and rail A, when arranged to operate as described and for the purpose set forth.
3. The trippers *t t'*, in combination with the bars *n* and *o*, when arranged to operate the lever F for releasing the rail A, as described and for the purpose set forth.
4. An automatic railroad switch with the devices for locking and releasing the rails A A', when arranged to operate as described and for the purposes set forth.

GEO. W. STARR.

Witnesses:

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