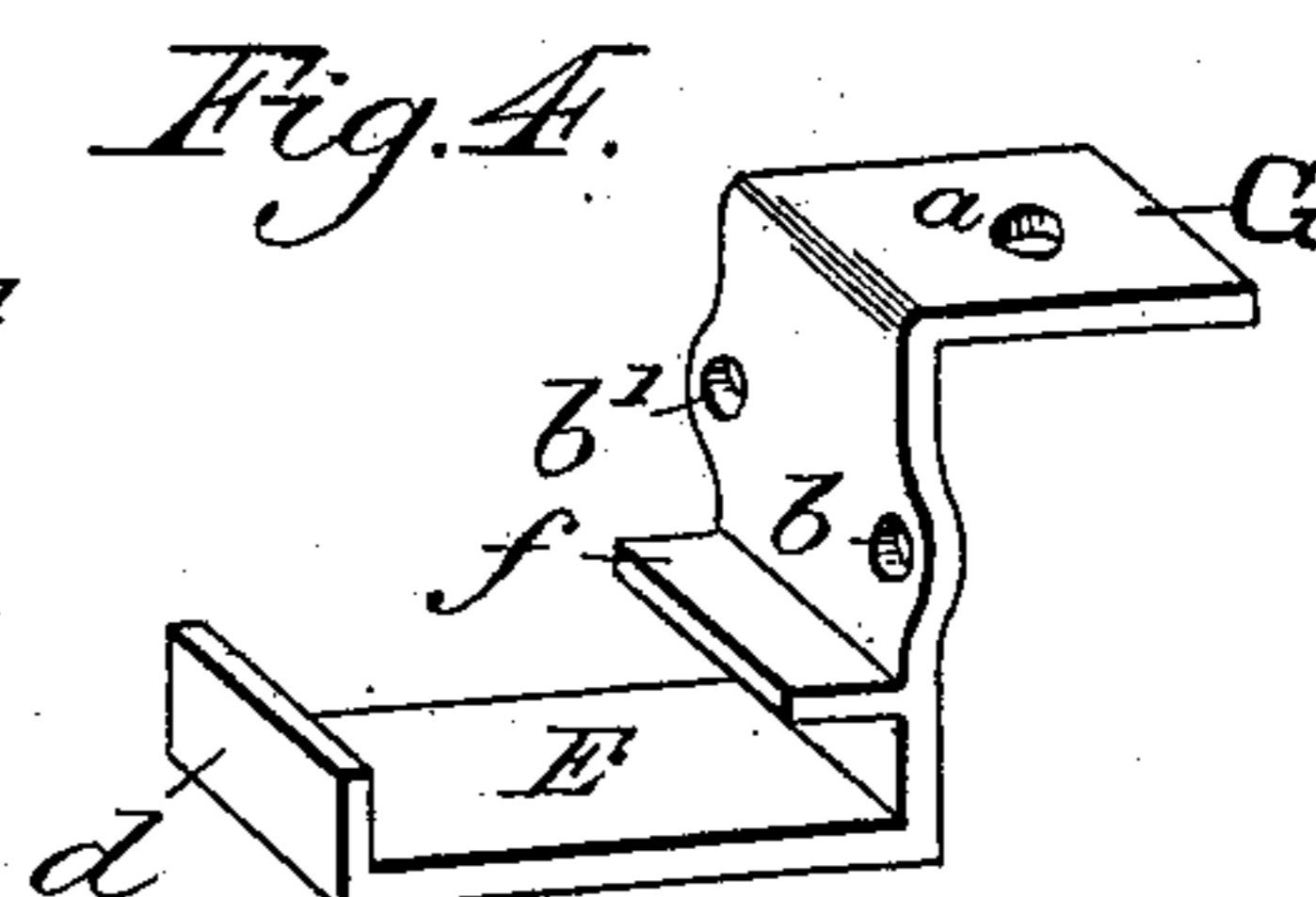
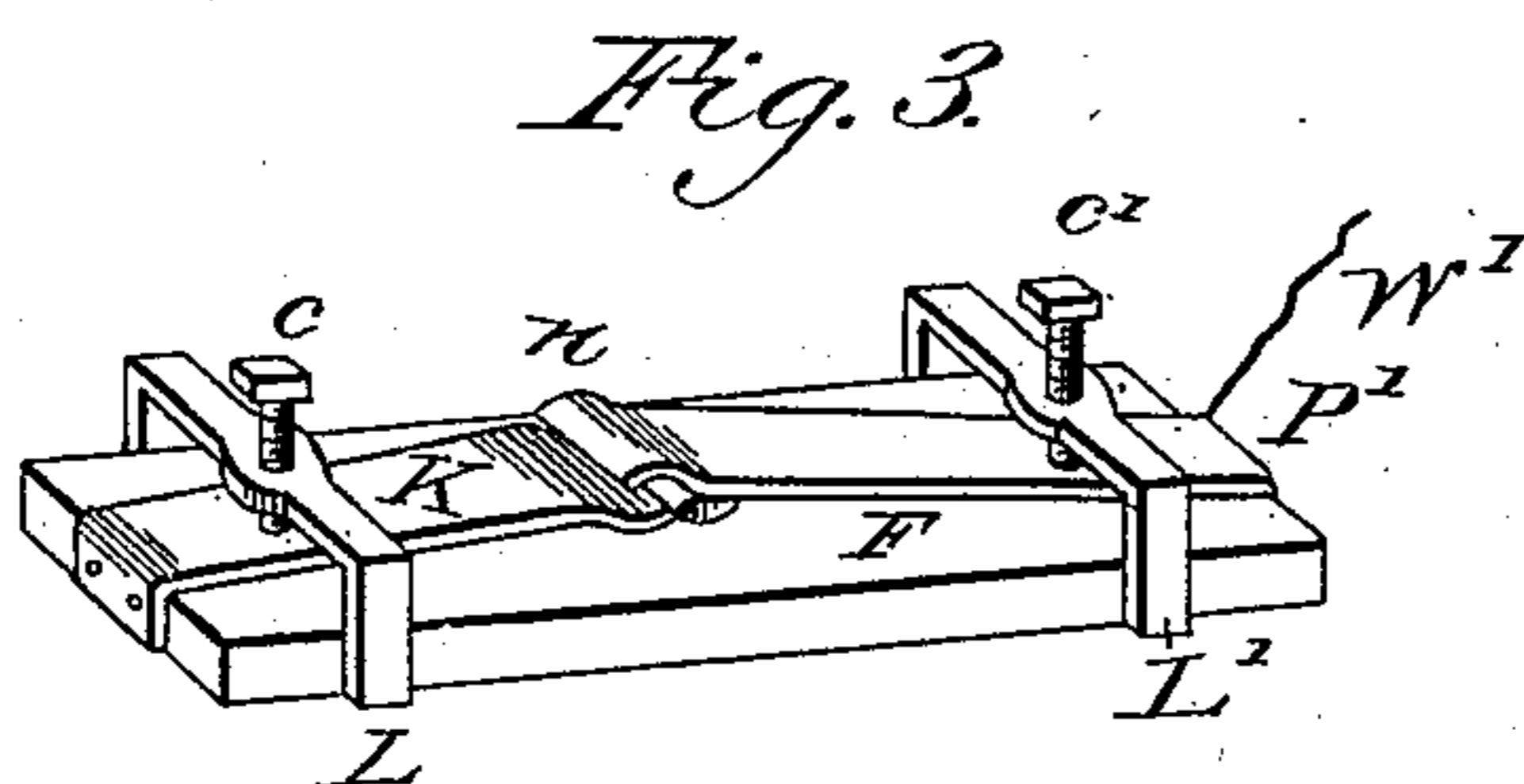
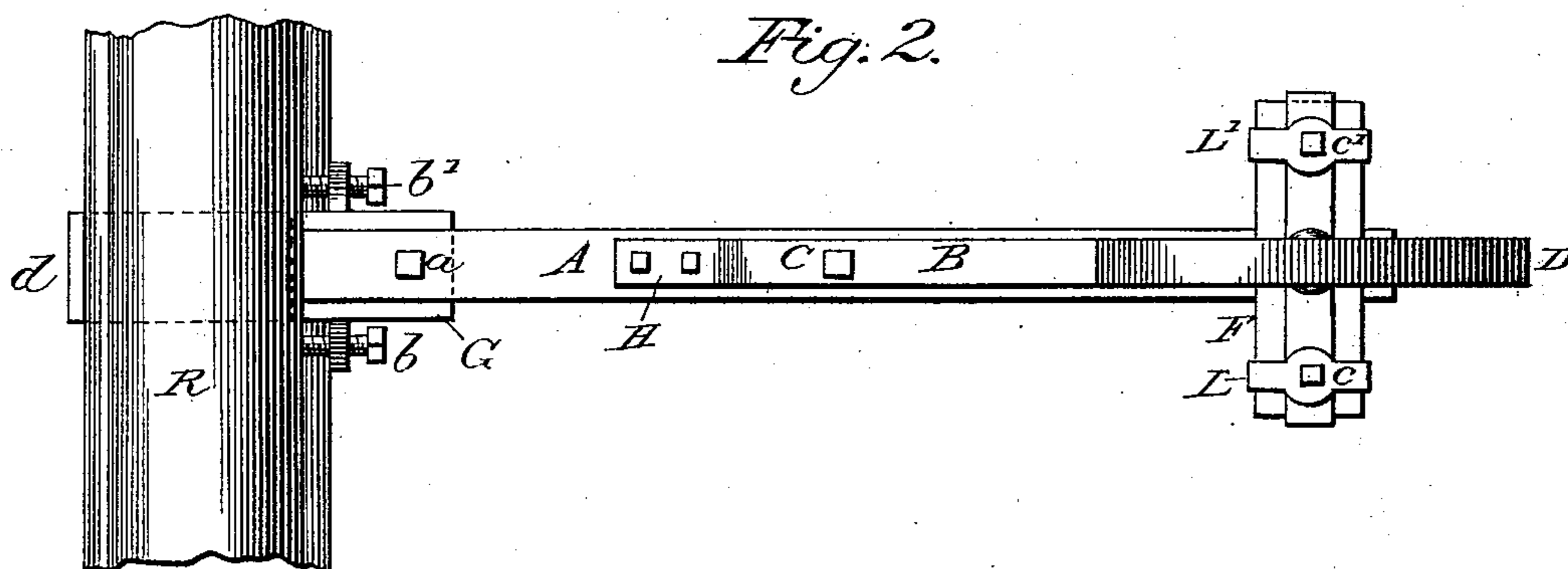
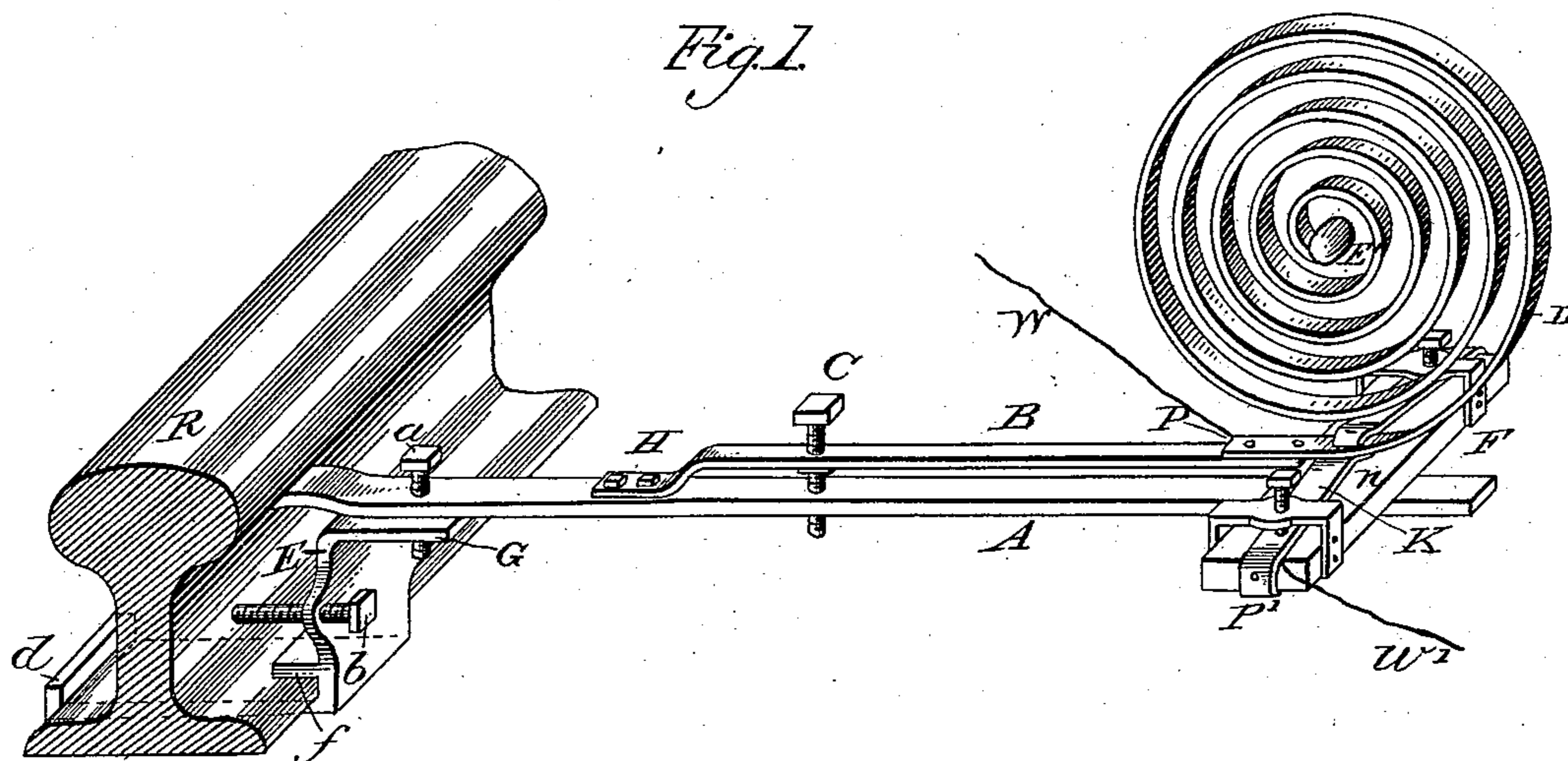


(No Model.)

S. T. STREET.
RAILWAY SIGNAL.

No. 400,880.

Patented Apr. 2, 1889.



Witnesses:

M. T. Sherwood
Anna McLean Dean

Inventor:

Samuel T. Street

UNITED STATES PATENT OFFICE.

SAMUEL T. STREET, OF DEPOSIT, NEW YORK.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 400,880, dated April 2, 1889.

Application filed January 21, 1888. Serial No. 261,525. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL T. STREET, a citizen of the United States, residing at Deposit, in the county of Broome and State of New York, have invented a new and useful Improvement in Railway-Signals, which I shall clearly and exactly describe with reference to the accompanying drawings, in which—

Figure 1 is a side view of the apparatus shown in connection with a railway-rail. Fig. 2 is a top plan view of the parts shown in Fig. 1. Fig. 3 is a perspective of a part, and Fig. 4 is also a perspective detail of a part.

Like symbols of reference indicate like parts wherever they occur.

My invention consists in an electrical signaling device for indicating the approach of railway-trains at highway-crossings or other places remote from the operating mechanism of the signal-circuit, which is put into action by passing trains.

In the drawings, (see Fig. 1,) A is a lever extending at right angles from the railway-rail R, having its inner end bent to rest up against the under side of the tread of the rail and resting for its support upon a short arm, G, attached to a clamp, E, (see Fig. 4,) to which it is securely fastened by means of a bolt, *a*. The lever A is made preferably of steel or other elastic springing material to be used as a vibrating rod or arm, and mounted on it near its outer end is an insulated plate or block, F, to which are attached contact-springs K and P', (see Fig. 3,) also upright standards L L', in which standards are fixed set-screws C C'.

About one-third of the length of the lever A (from the rail) is attached to it at the point H a similar vibrating rod or arm, B, having mounted on its outer end a coiled metal spring, D, which passes between the points of contact *n* of the contact-springs K and P', and which has on its inner end a weight, E', to secure evenness and regularity of motion. About six inches from the inner end of the vibrating rod or arm B, and near its point of attachment to the lever A, a set-screw, C, passes through both the arm B and lever A to secure proper adjustment.

W and W' are line-wires of the signal-circuit, the wire W being connected electrically with the spring D, and the wire W' with the

contact-springs K and P'. These wires extend to the crossing or other place where a signal is to be given and have in circuit a battery and an electric bell or other electrical alarm-signal. When the spring D is brought into contact with either of the contact-springs at the point *n* it will complete the circuit and will sound the alarm at the crossing. The coiled metal spring D at its point of attachment P with the vibrating rod or arm is preferably insulated to prevent a possible deflection of the electric current.

The whole mechanism is removably secured to the rail by the clamp E, which consists of a heavy bar of iron or steel so bent that it fits under and at the sides of the flange of the rail having on one side a lug, *f*, which fits down on the upper side of the flange of the rail, and on the inner end is turned up at *d* to form a hook or lug to secure it against the inner side of the flange of the rail, and it is also so bent at its upper and outer end as to furnish a support or fulcrum for the inner end of the lever A to rest upon. Set-screws *b b'*, Fig. 2, pass through the side of the clamp between its bent end G and the lug *f* and engage the web of the rail. When these set-screws are tightened, the lug *f* and the end *d* of the clamp bear on the flange, exerting force in opposite directions and securely fixing the clamp to the rail.

I have not shown in the drawings any specific kind of indicator or alarm signal, since their constructions forms no necessary part of my invention.

The foregoing is a general description of the device, and its operation is as follows: When a train is approaching and passing the signal device along the rail R the pounding of the train on the rail and its consequent jarring motion communicated to the rail causes the coiled spring D to be agitated and its motion communicated to the vibrating rod or arm B, and through it to the longer arm, A, the two working alternately against each other, causing the end of the coiled spring, near its point of attachment to the rod or arm B, to strike rapidly against the points of contact of the contact-springs K P'. Each time the coiled spring strikes the upper or lower contact the circuit is closed and the alarm is sounded. As the train passes more or less

rapidly over the device, the recoil of the spring becomes more pronounced and continues the rocking motion of the vibrating arm and lever long enough for the train to reach the point of danger, the time being graduated by the distance the points of contact on the contact-springs is from the points of contact on the coiled metal spring, this being regulated by the set-screws C C', when as the vibrations of the arm and lever grow less the points of contact cease to meet, and the circuit is permanently broken by the device returning to its normal position. The advantages of my invention will be apparent to those skilled in the art.

I claim as my invention—

1. The combination, with a railroad-rail, a signaling device, and an electric circuit, of a lever mounted to have contact with said rail, a block of non-conducting material mounted upon said lever at its free end, contact-springs secured to said block, and a spring-arm mounted upon the lever in advance of the block of non-conducting material and adapted to vibrate between the contact-springs carried by said block, substantially as set forth.

2. The combination, with a railroad-rail, a signaling device, and an electric circuit, of a lever mounted to have contact with said rail, a block of non-conducting material mounted upon said lever at its free end, contact-springs secured to said block and overlapping at their free ends, and a spring-arm carrying a coiled spring mounted upon the lever in advance of the block of non-conducting material and passing between the overlapping ends of the spring-contacts, substantially as set forth.

3. The combination, with a railroad-rail, a signaling apparatus, and an electric circuit, of a lever mounted to have contact with the rail, a block of non-conducting material carried by the lever at its free end, contact-springs secured to said block, devices secured to the block for regulating the tension of said contact-springs, and a spring-arm mounted upon the lever in advance of the block of non-conducting material and passing between the contact-springs carried by said block, substantially as set forth.

SAMUEL T. STREET.

Witnesses:

ANNA MCK. DEAN,
H. L. WOOD.