

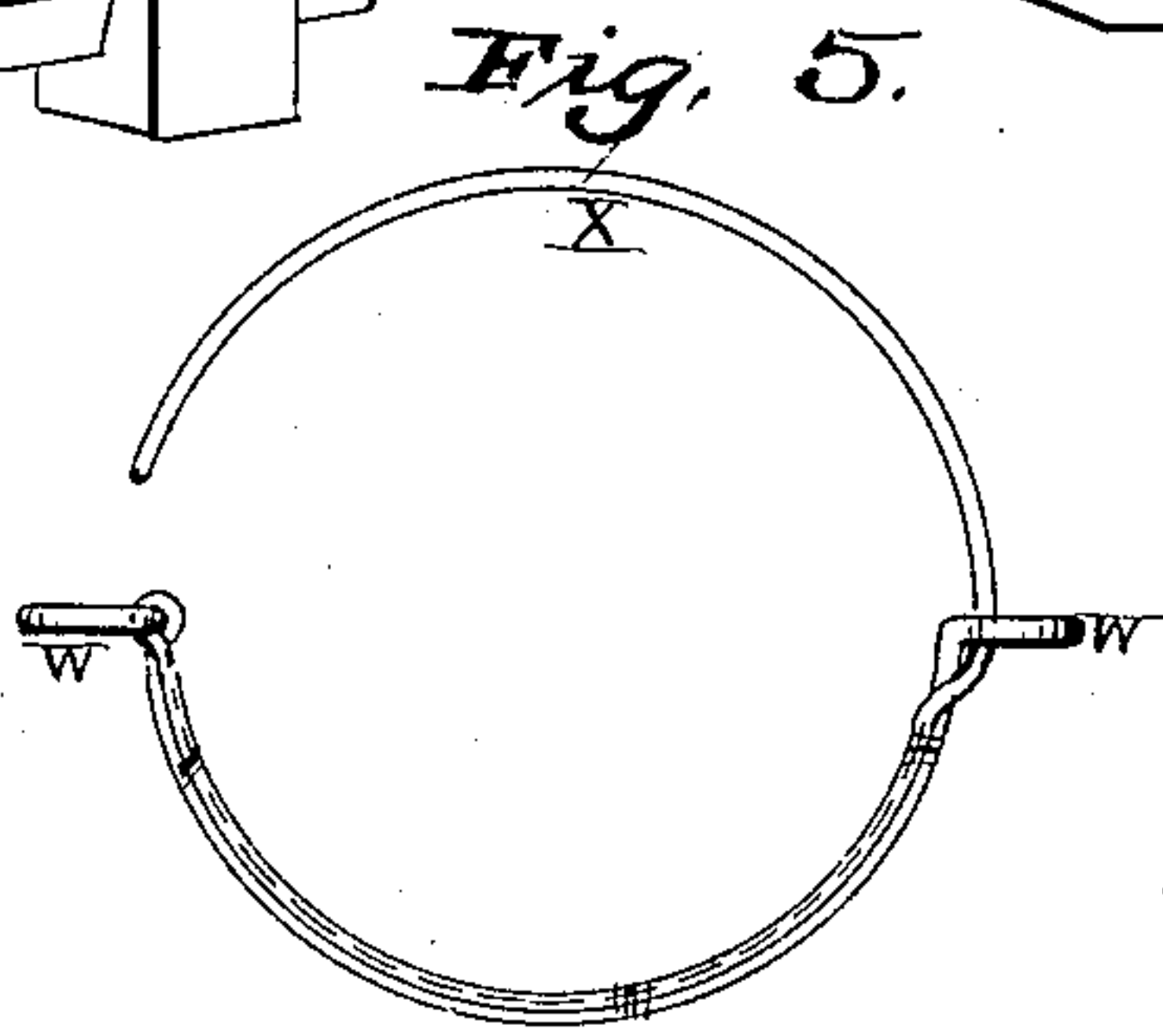
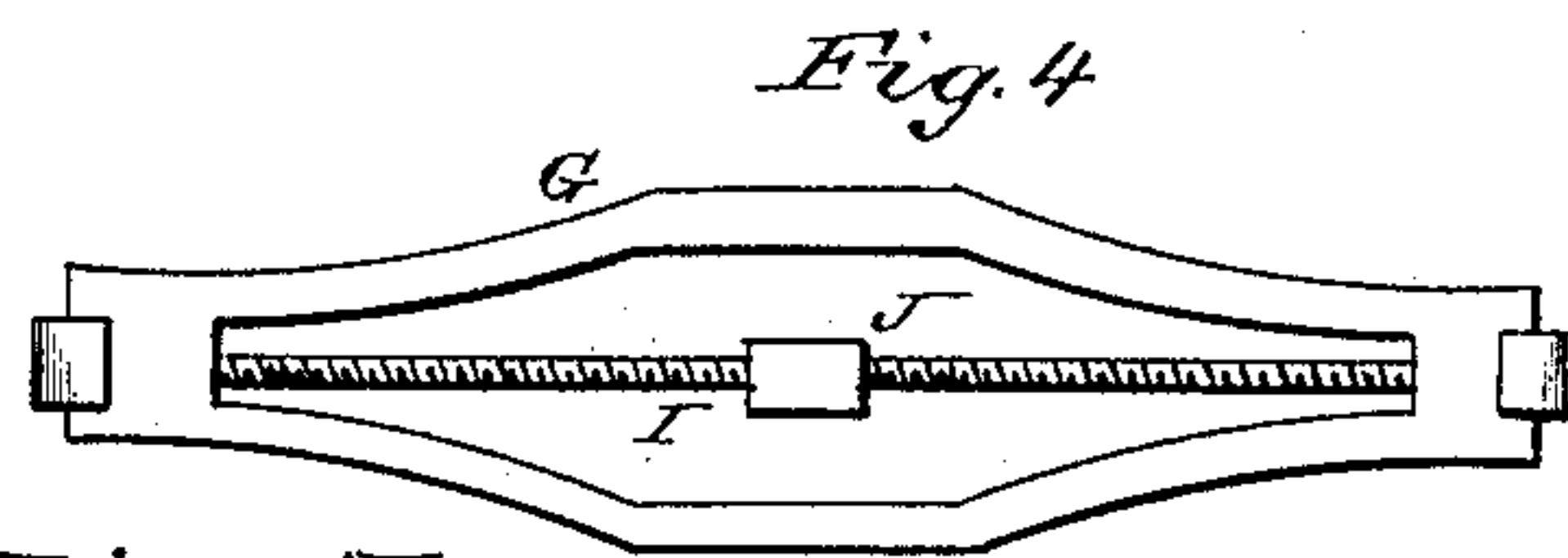
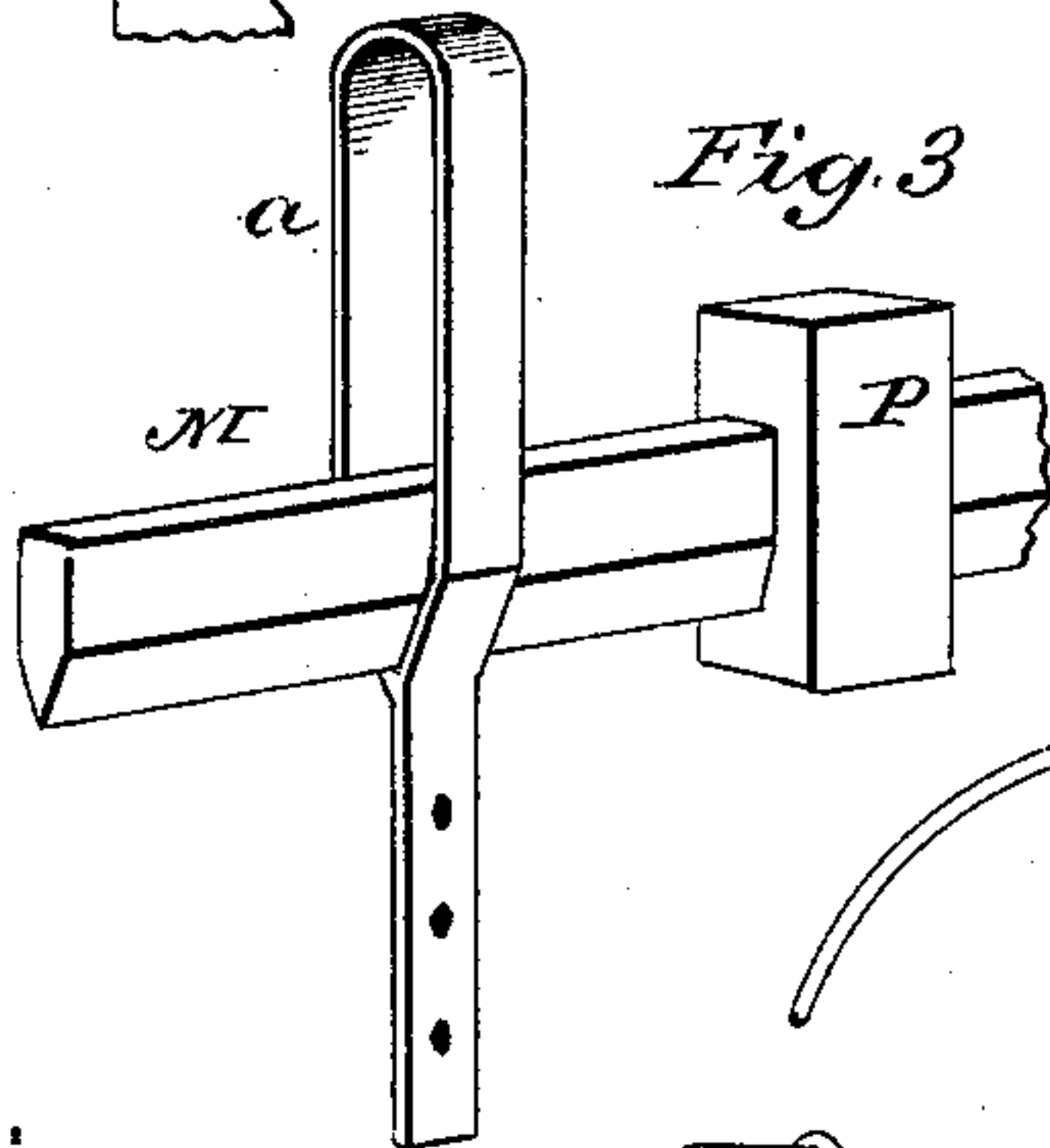
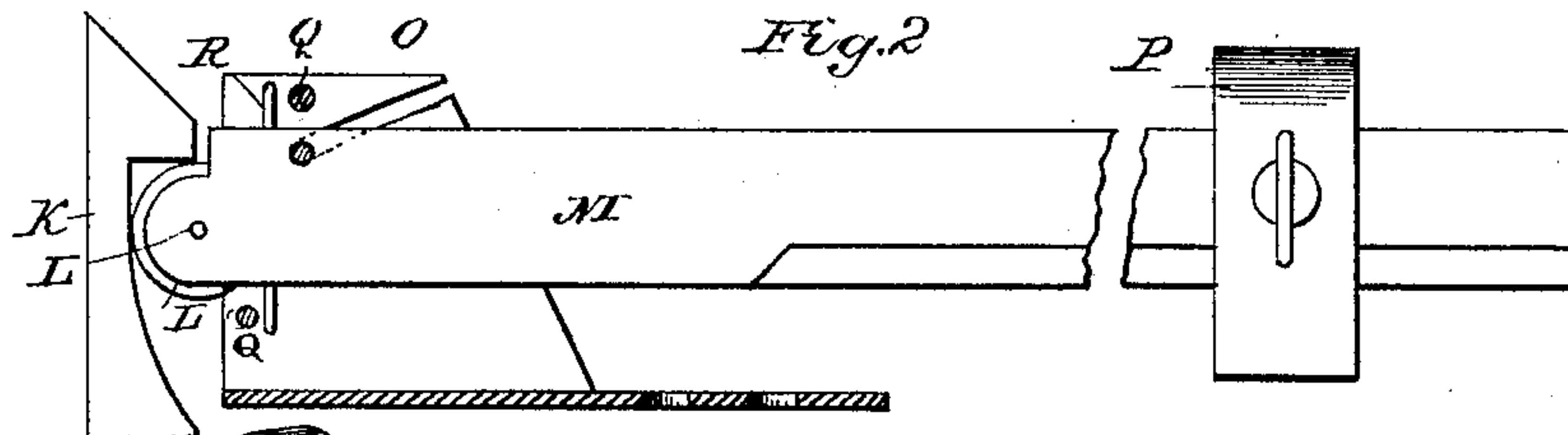
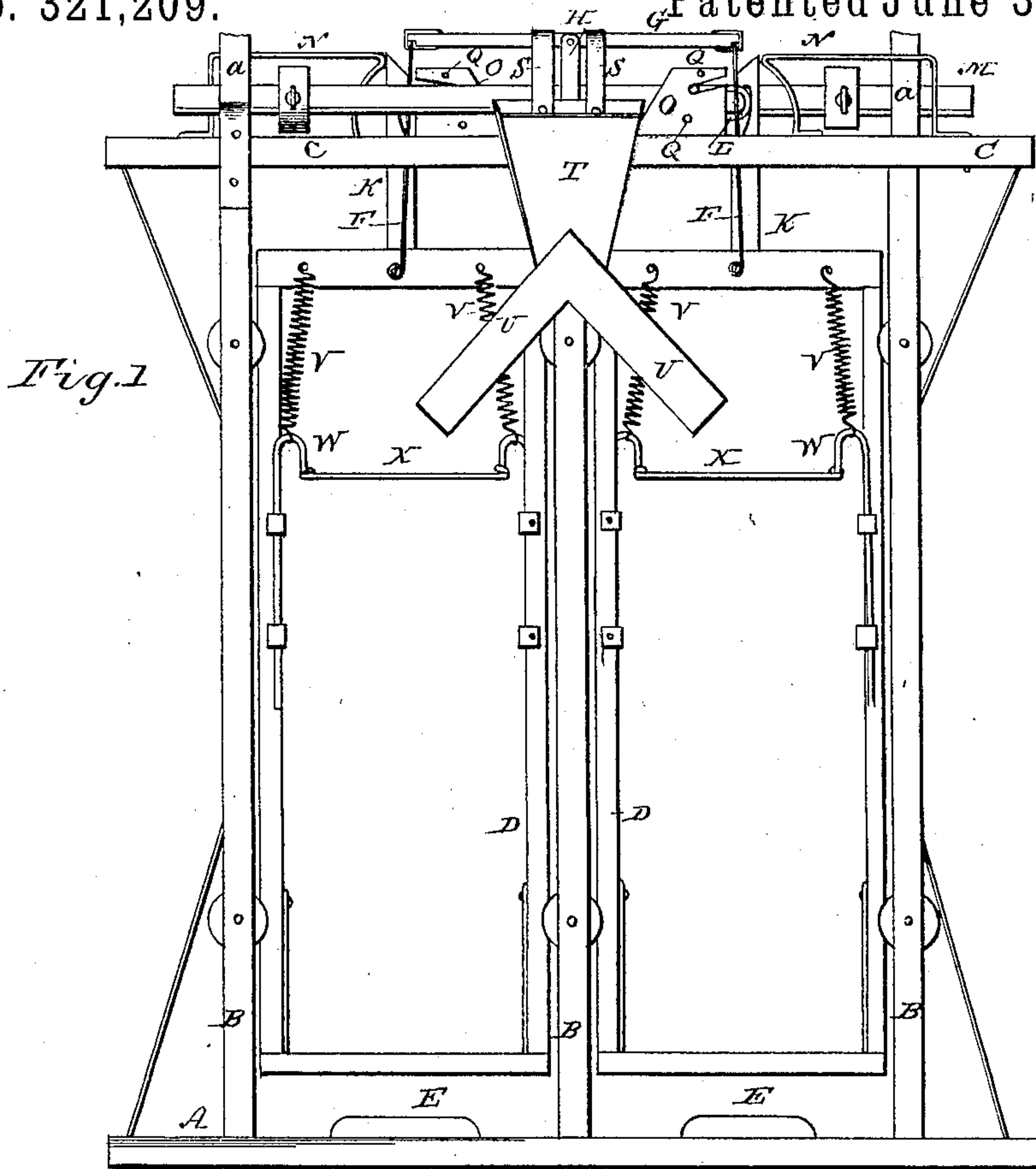
(No Model.)

F. M. GLADISH.

AUTOMATIC WEIGHING AND SACKING MACHINE.

No. 321,209.

Patented June 30, 1885.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANCIS M. GLADISH, OF AULLVILLE, MISSOURI.

## AUTOMATIC WEIGHING AND SACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 321,209, dated June 30, 1885.

Application filed December 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, F. M. GLADISH, of Aullville, in the county of Lafayette and State of Missouri, have invented certain new and useful Improvements in Automatic Weighing and Sacking Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in automatic weighing and sacking machines; and it consists, first, in the combination of a suitable frame-work, a walking-beam which is pivoted thereon, two vertical moving sacking-frames which are attached to opposite ends of the walking-beam, a hook which is attached to each frame, a weighing-beam provided with a roller for each sacking-frame, and a pivoted spout which is moved from the bag on one frame to the bag upon the other frame by the action of the walking-beam; second, in the combination of the sacking-frames provided with hooks with the weighing-beams provided with rollers for the hooks to catch upon; third, in the combination and arrangement of devices, which will be more fully described hereinafter.

Figure 1 is a front elevation of a machine embodying my invention. Figs. 2, 3, 4 are detail views of the same. Fig. 5 is a detail of the bag-holder.

The frame-work of my machine consists of the base A, the three uprights B, and the top piece, C. The central upright divides the frame into two separate parts, and in each part is placed a sacking-frame, D, which has a vertical movement. In the uprights B are placed suitable guiding-rollers, which serve both to keep the sacking-frames in place and to make them move very freely. Under each sacking-frame, upon the base A, is placed a suitable piece of rubber, spring, or other similar substance, E, for the purpose of preventing the descent of the sacking-frame from jarring the machine in any way. Each one of the sacking-frames is connected by means of the rods F to one end of the walking-beam G, which is pivoted upon the top of the frame

and supported by suitable knife-bearings upon the supports H, which rise from the top of the machine. The connecting-rods F are also connected to the end of the walking-beam by means of knife-edges, for the purpose of making as little friction as possible. The walking-beam consists of an open frame-work having a screw-rod, I, running its entire length, and upon this screw-rod is placed a poise, J, as shown in Fig. 4. This poise can be moved back and forth upon the rod to either side of the center of the walking-beam, and thus accurately balance the two sacking-frames. By means of this poise the two frames are so evenly balanced that they will always accurately register the same weight.

To the upper end of each weighing-frame is pivoted a hook, K, which has its upper end to pass through an opening in the top piece, C, and which is made to catch over the friction-roller L, which is journaled in the end of each of the weighing-beams M.

Secured upon the top of the cross-piece C is a suitable spring-guide, N, preferably of the shape here shown, and which serves both to guide the hook K over toward the roller and to hold it in contact therewith until the hook is released by the sinking down of its sacking-frame D.

Each one of the weighing-beams is pivoted between suitable ears, O, which are secured upon the top of the cross-piece C, and which beam is provided with bearings having knife-edges, which bearing passes through the beam near its upper edge. The roller, which is pivoted in the end of the beam M, has its bearing or journal to pass through the end of the beam at a suitable distance below the bearing for the beam, so that when the weighing-beam tips the distance between the roller and the point of the spring-guide N will increase and assist the hook in escaping from the roller on the end of the beam.

It will be seen that when the hook is in position, resting upon the roller, the bearing-point of the hook rests on the center of the roller directly over its pivot, but the point of the hook does not quite come in contact with the end of the beam, which is cut away at this point. When the beam tips up, the end of the beam strikes against the point of the hook



and thus forces it backward, so as to cause the hook to become disengaged from the roller, and thus allow the frame D to sink downward at the proper time. The notch in the hook is just deep enough to allow the point of the hook to rest upon the top of the roller, while the edge of the roller is bearing against the inner side of the hook, and thus the point of the hook can never extend past the center of the roller.

Upon each weighing-beam is placed a suitable weight, P, which is held in any desired position by means of the set-screw, or by any other suitable means, for the purpose of preventing the weight from becoming accidentally displaced.

The outer end of each beam is held in a suitable guide, a, which is made V-shaped at its lower end for the purpose of centering the lower edge of the beam as it drops to the bottom of the guide, the lower edge of the beam being also made V-shaped.

In order to prevent the beam from becoming displaced at any time, two rods, Q, are passed through the ears O, one above and the other below the inner end of the beam. Projecting vertically from this inner end of the beam are two studs or stops, R, which catch upon opposite sides of the two rods Q, and thus prevent any endwise movement of the beam.

Rigidly secured to the walking-beam G, by means of the supports S, is the spout T, into which the article to be weighed and sacked runs. As this spout T is rigidly secured to the beam, and is left entirely free at its lower end, as the beam tips the spout T is moved from side to side at its lower end, so as to instantly shift the current of the material that is being weighed and sacked from one side of the machine to the other. As the material leaves the lower end of the spout, it passes into one of the inclined guides U, which are supported upon the center of the standard B in such a manner that one of its ends extends over each of the sacks that is being filled.

To each sacking-frame D are secured the two coiled springs V, which are fastened at their lower ends to the bag-holder W, which has a vertical play in or upon the sacking-frame. These bag-holders consist of metallic rods or bars, which form semi-circles, and which have their two ends bent, as shown, and then pass down through guides secured to the sacking-frame. Secured to each metallic rod W is a light spring-rod, X, which forms the other portion of the circle, and which serves to distend the mouth of the bag and to hold it firmly in position. When the bag is empty

and is attached to the bag-holder, the springs support the bag in a raised position; but as the bag fills it gradually sinks downward until its lower end rests upon the bottom of the sacking-frame. In this position the bag is supported until the regulated weight is reached, when the hook K slips off the roller of its weighing-beam, when the sacking-frame instantly sinks downward, causing the walking-beam to tilt and instantly shift the spout so that the material will run into the bag upon the other frame.

From the above it will be seen that the operation of the machine depends entirely upon the gravity of the material which is being weighed and sacked, and is not operated by any other motive power. As long as the sacks are placed in position, and there is any material left to be weighed, the machine operates automatically, without assistance from any outside source. Also connected to the walking-beam may be a rod or arm which will project downward from the beam and operate a register, so as to keep an accurate tally of the number of bags or sacks that have been filled.

Having thus described my invention, I claim—

1. The combination of the sacking and weighing frames, the hooks connected thereto, the weighing-beams provided with rollers, and suitable guides for forcing the hooks in contact with the rollers, substantially as set forth.

2. In a sacking and weighing frame, the combination of the two sacking-frames, which have a vertical movement in the main frame, a walking-beam to which both frames are connected, a movable spout, the hooks, the weighing-beams provided with rollers, and the spring-guides for forcing the hooks in contact with the rollers, substantially as specified.

3. The combination of the weighing-beams, suitable ears, between which the beams are pivoted, the rods Q, which pass through the ears, and the studs or projections which extend vertically from the beams for the purpose of preventing the beams from becoming displaced, substantially as described.

4. The combination of the bag-holders, the spring-rods X, and the springs which support the bag-holders in position, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS M. GLADISH.

Witnesses:

JOHN H. FUHR,  
BENJAMIN HADER.