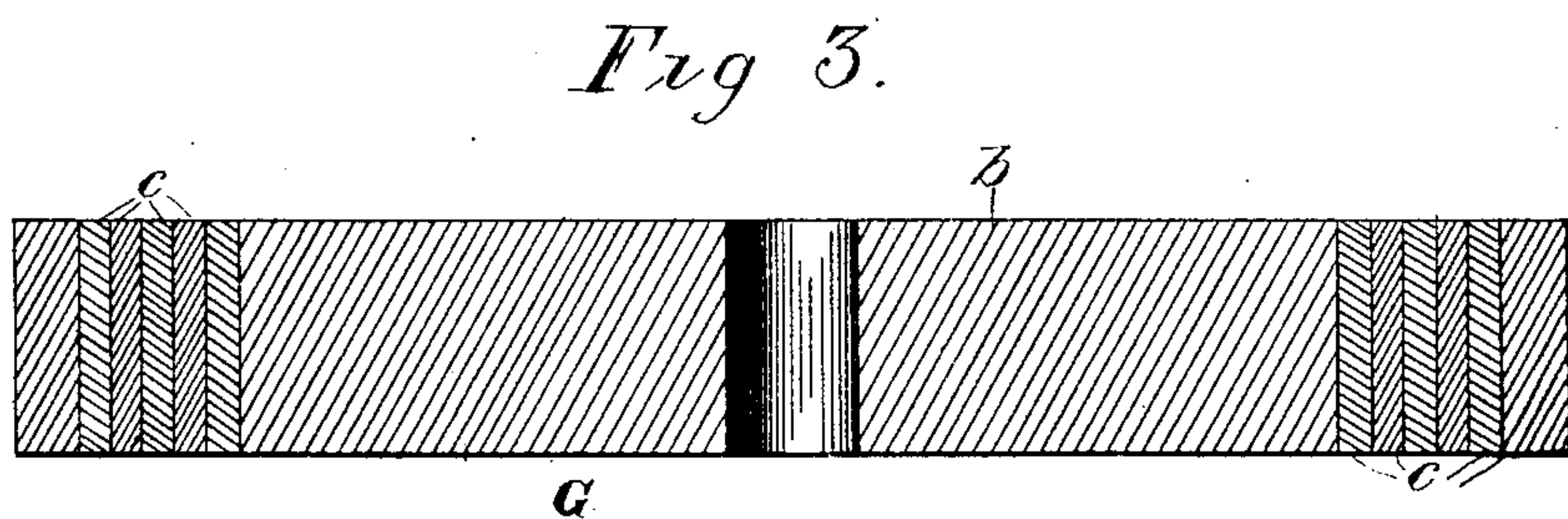
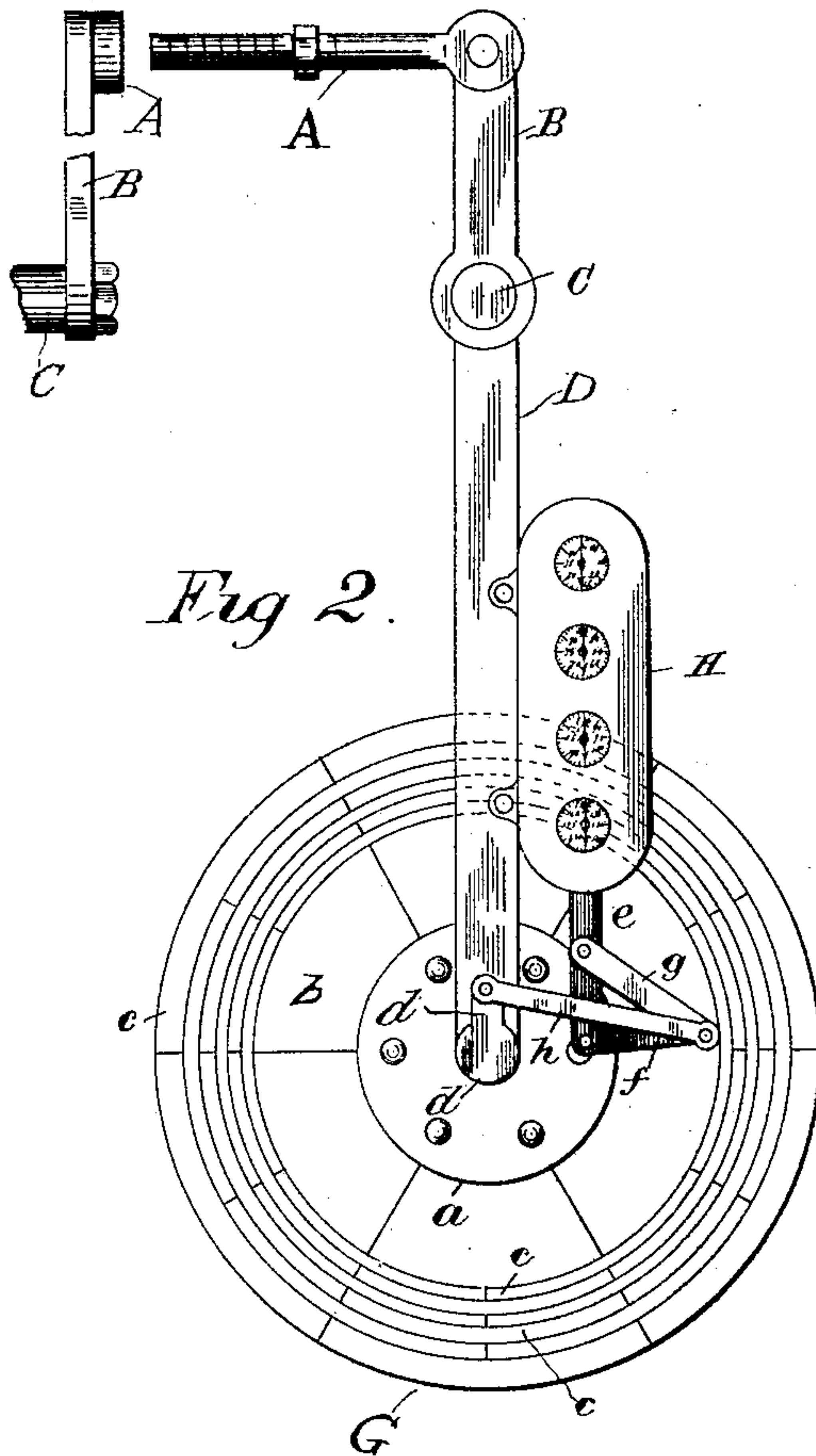
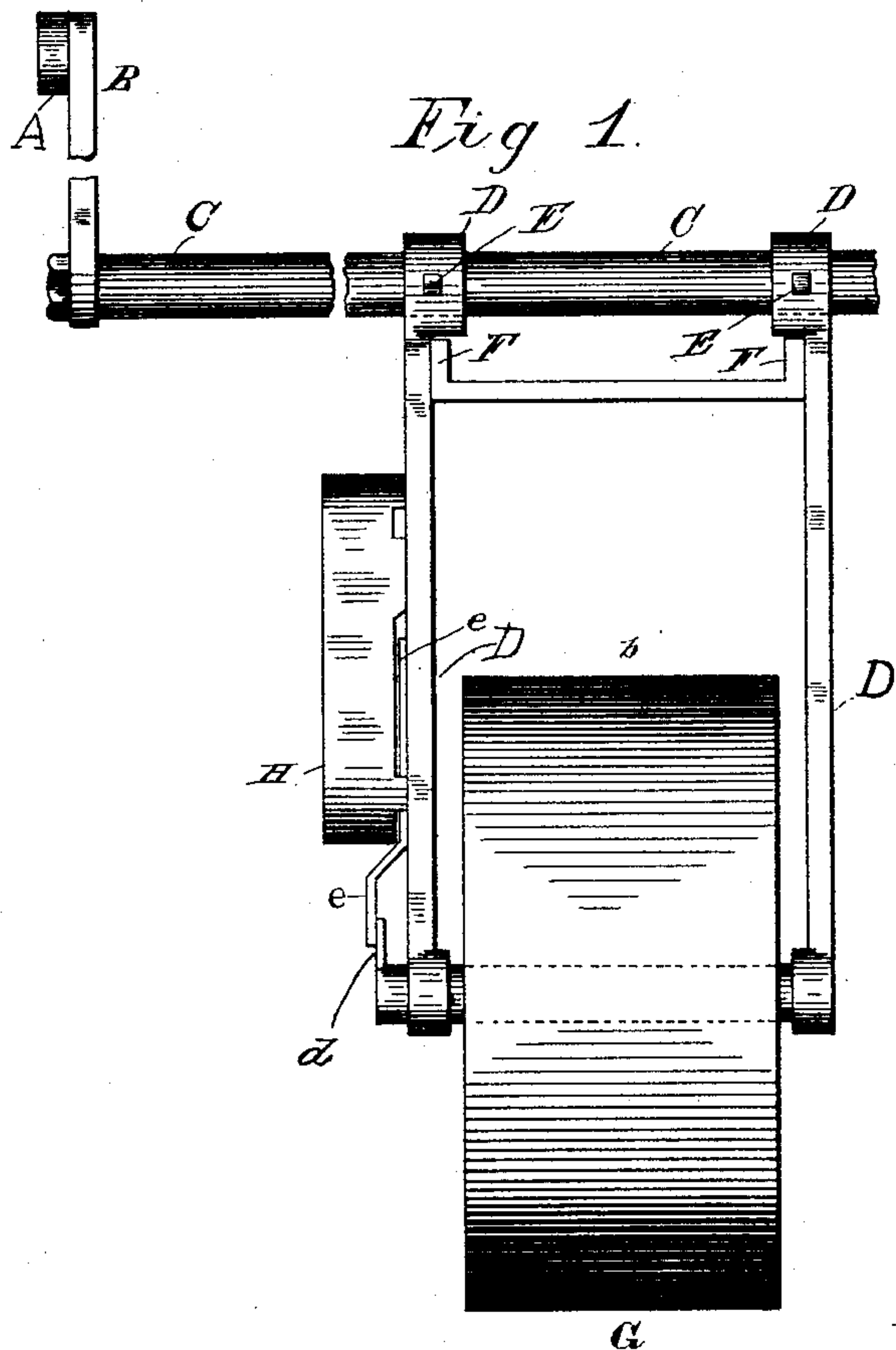


(No Model.)

H. O. & S. ERTEL.  
REGISTER FOR PAPER MACHINES.

No. 461,330.

Patented Oct. 13, 1891.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

HENRY O. ERTEL AND SAMUEL ERTEL, OF WILLIAMSPORT, PENNSYLVANIA.

## REGISTER FOR PAPER-MACHINES.

SPECIFICATION forming part of Letters Patent No. 461,330, dated October 13, 1891.

Application filed January 5, 1891. Serial No. 376,723. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY O. ERTEL and SAMUEL ERTEL, citizens of the United States, both residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Registers; and we do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to various new and useful improvements in registers for all machines wherein paper or other material is removed from or placed upon a roll, or is passed through a machine, such as in slitting-machines, printing-presses, carpet-looms, &c.

The principal objects of our invention are to provide and produce a registering apparatus whereby the amount of material passing to or from a machine will be accurately measured and will be indicated plainly upon the dial-face of the device.

For a better comprehension of our invention attention is invited to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of the device; Fig. 2, a top elevation of the same, and Fig. 3 a sectional view of the trailing-wheel.

In all of the above views the same or corresponding parts are designated by the same letters of reference.

The machine with which our improvement is to be attached is not shown in the drawings, for the reason that we do not wish to limit ourselves to any particular machine, and for the additional reason that the machine relates in no way to our present invention.

A A are screw-threaded uprights or standards, which are securely held in position on the desired machines by reason of nuts engaging with the shank of each. These standards are located with respect to the paper or other material, so that the trailer-wheel, which will be described presently, will bear upon the paper as it enters or leaves the machine, as the case may require. Pivotally mounted at the upper end of each of the standards A is the lever-arm B, arranged so as to be capable of a swinging movement up and down.

Connecting the free ends of the two lever-arms B B is a bar C, held in position within the arms B B by means of nuts, as shown. Secured to the bar C near the central part thereof are the two arms D D, which are held from movement on the bar C by means of pins or set-screws E E. These two arms D D are connected together at suitable points by means of braces F F, so as to form a strong and rigid frame-work. Mounted at the other end of this frame-work is the trailer-wheel G, which is rigidly secured to its shaft. This trailer-wheel G consists of a hub *a*, made of two flanged portions bolted together and holding the body *b* of the wheel firmly between them. For cheapness and lightness the body *b* is made of wood, and to insure strength this wood is made of several thicknesses, as shown in Fig. 3. The rim of the wheel is also made of wood in the form of rings *c c*, which are bolted or glued to the body *b*. In this way we form a very strong and light wheel, and one wherein there will be no slip on the paper and consequent inaccurate registering. The shaft of the trailer-wheel is formed with a crank *d* at one side, which will turn as the trailer-wheel revolves. Secured to the arm D at the same side on the crank *d* is the register proper H. This register may be of any suitable construction or make, and we do not wish to be limited to any particular form of device in carrying our present invention out into practical operation.

Secured to one side of the register is a short arm *e*, mounted at the end of which is an angle-lever *f*, with the lower end of one of its arms in engagement with said arm *e*. The lower end of its other arm engages with the lever *g*, which connects with and operates the mechanism of the register H. Connecting the crank *d* with the upper angular end of the lever *f* is a short rod *h*.

The operation of our improved device is as follows: The trailer-wheel bears upon the paper or other material as it enters or leaves the machine, and by reason of its weight and consequent friction will be rotated. As the trailer-wheel is rotated, the crank *d* will be operated, which will cause the upper angular end of the lever *f* to be moved up and down. Since the forward arm of the said lever is sta-

tionary, being secured to the rigid arm *e*, the other arm will be moved back and forth, substantially in a horizontal plane, and in this way the register will be operated.

5 It will of course be understood that the register should have such a relative arrangement to the circumference of the trailer-wheel that the amount of material passing beneath the trailer-wheel will be accurately  
10 indicated.

Having now described our invention, what we claim as new therein, and desire to secure by Letters Patent, is as follows:

In a registering apparatus, the standards  
15 A A, movably secured to the desired machine, movable arms B B, pivoted at the upper ends of the standards A A, a bar C, con-

necting the free ends of said arms B B, arms D D, rigidly mounted on said bar C, a trailer-wheel, substantially as set forth, mounted at 20 the ends of the arms D D on a rigid shaft, having a shaft *d*, a register H, secured to one of said arms D, an arm *e*, rigidly secured to said register, an angled lever *f*, having one 25 arm connected with said arm *e* and the other arm connecting with and operating the register, and an arm *h*, connecting the angle part of the lever *f* with the crank *d*, all combined and arranged as described.

HENRY O. ERTEL.  
SAMUEL ERTEL.

In presence of—  
ADDISON CANDOR,  
HUGH GILMORE.