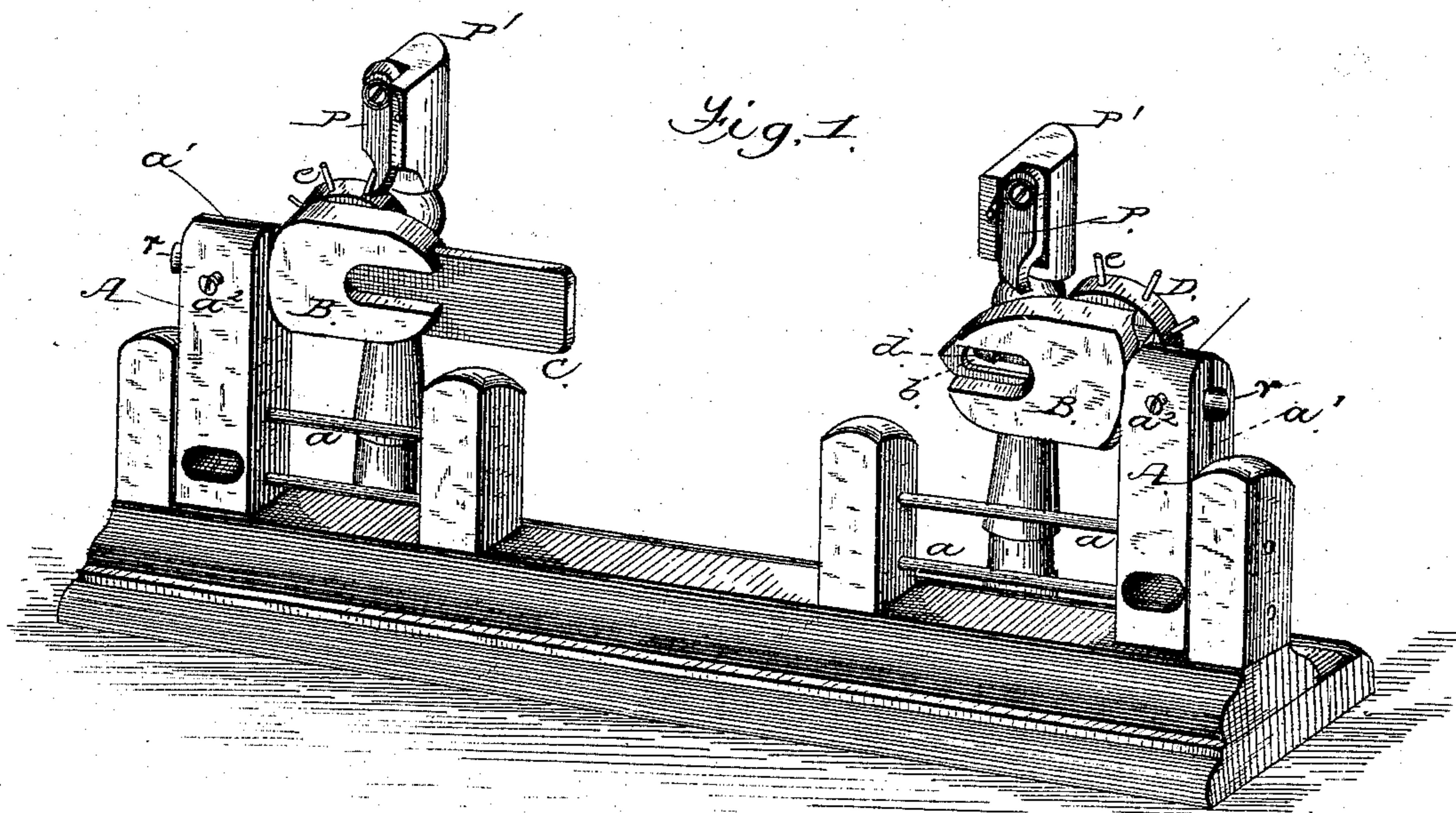


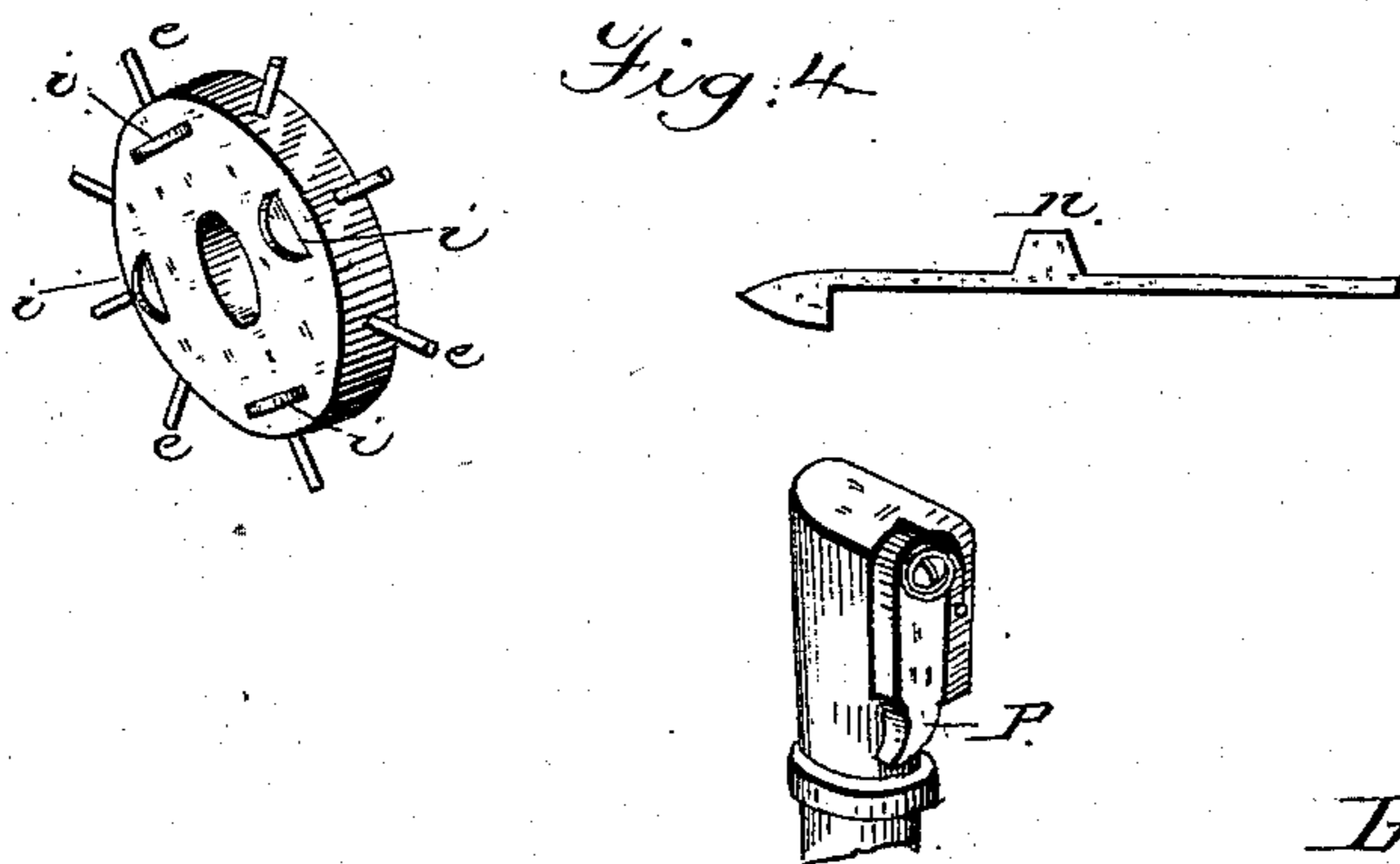
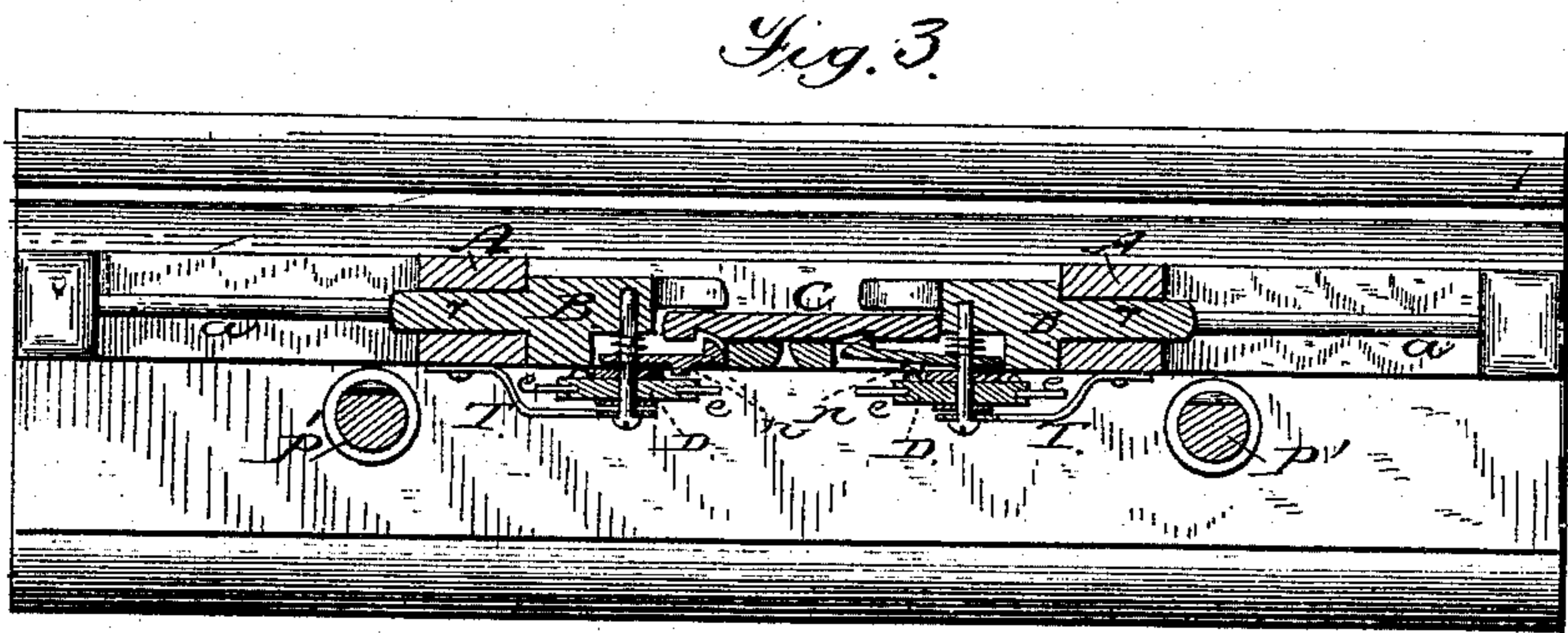
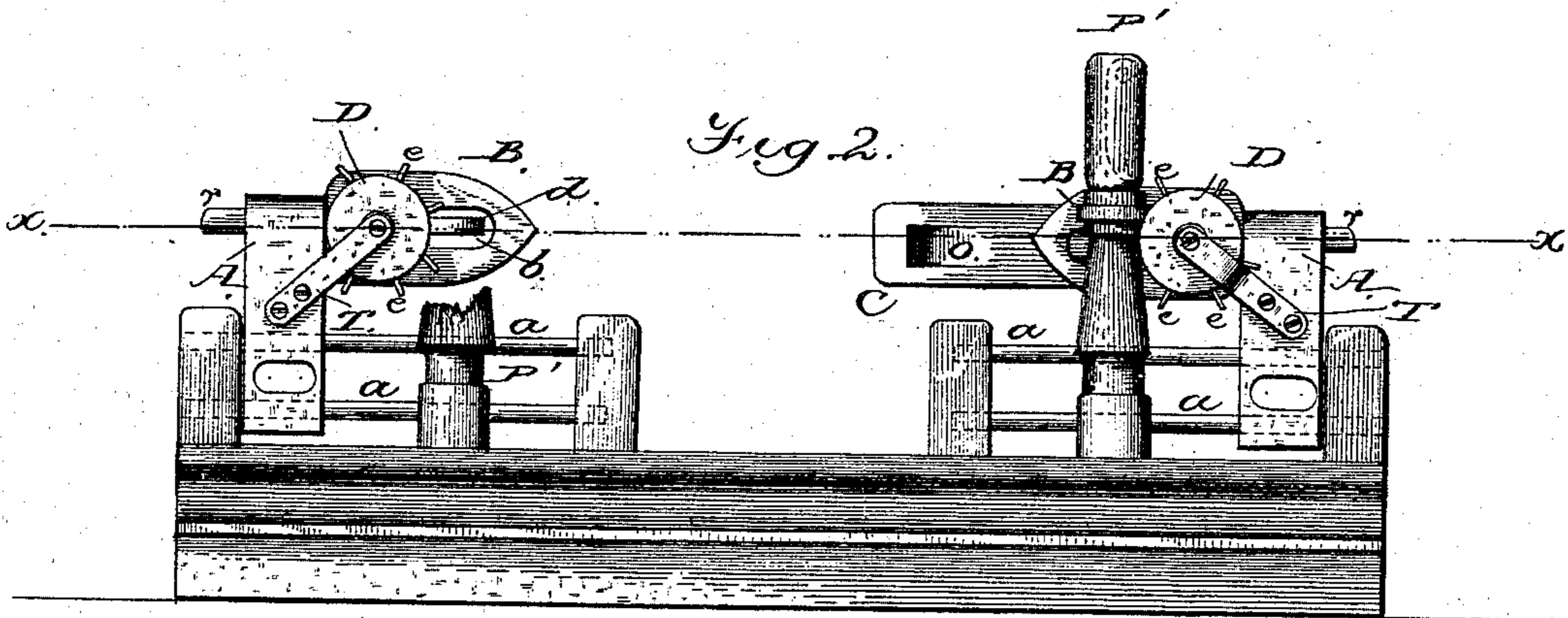
F. H. DAVIS.
Shuttle Operating Mechanism for Looms.
No. 229,238. Patented June 29, 1880.



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UNITED STATES PATENT OFFICE.

FRANK H. DAVIS, OF FITCHBURG, MASSACHUSETTS.

SHUTTLE-OPERATING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 229,238, dated June 29, 1880.

Application filed September 30, 1879.

To all whom it may concern:

Be it known that I, FRANK H. DAVIS, of Fitchburg, in the State of Massachusetts, have invented a new and Improved Shuttle-Operating Mechanism for Looms; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the carrying mechanism. Fig. 2 is a side elevation of the shuttle-operating mechanism. Fig. 3 is a plan view, partially in section, on line *x x* of Fig. 2, showing the shuttle-carriers moving forward. Fig. 4 shows details to be referred to.

My invention relates to positive-motion looms, and to that class wherein the shuttle is carried through the warp by being transferred from a carrier and arm operating horizontally from one side of the loom to another arm and carrier similarly constructed and working in the same manner from the other side of the loom.

My invention consists in certain details of construction, as hereinafter more fully described and claimed.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, *A A* are the shuttle-carrier supports, having their upper ends split, as shown at *a'*, and provided with openings for the rods of the carriers, and set-screws *a²*, whereby to clamp the said rods, the whole arranged to reciprocate back and forth on the rods *a a* by means of any well-known actuating mechanism.

The shuttle-carriers *B* are elliptical in general outline, and provided with projecting rods *r* and a socket of a proper size to receive the end of the shuttle *C*. The front of the carrier has an opening, *b*, in which lies a spring-catch, *d*. This catch may be of any desired construction, but in this instance I have shown it as a hinged hooked arm having a coiled spring confined under it, which constantly presses it from out of a contact line with the shuttle.

Pivoted to the carriers are wheels *D*, provided with projections *e e* on their peripheries and with projections *i i* on the face of the wheel next to

the carrier, said projections *i i* being one-half in number with the projections *e e*, and arranged around the center on radial lines equidistant between the radial lines on which projections *e e* are arranged.

The back of spring-catches *d* is provided with projections *n*, which are so arranged that they lie in the line of travel of the rotating projections *i i*.

The wheels *D D* are provided with tension devices or springs *T T*, to prevent the wheels moving by the jar of the machine or from any other cause than the positive motion given by means of spring-pawls *P P*, mounted on posts *P' P'* in the line of the beat of the carriers. As the shuttles recede the pawls *P P* yield and allow projections *e e* to pass without turning wheels *D*; but when the carriers move forward pawls *P* are rigid and strike projections *e e* consecutively and turn the wheels *D*.

The shuttle *C* is provided on its side with depressions or projections *o o*, into or over which the spring-catches *d d* engage to hold the shuttle in the carrier. From the relative arrangement of pins *e e* and *i i* and pawl *P* it will be apparent that on each alternate beat of each carrier one of the projections *i* will be against projection *n* on the spring-catch, and thereby throw it into the carrier and into a position to seize the shuttle. Intermediately in its beats the carrier-spring has projection *n* lying between projections *i i*, so that the coiled spring beneath the catch operates and throws the catch out of contact with the shuttle.

When the device is started into operation one spring should be put in engagement with the shuttle and the other with the coil-spring, operating to throw the spring-catch out of contact with the shuttle.

It is evident that the projections *e e* and *i i* may be made integral with the wheel, or of separate pieces attached to the wheels, without departing from the spirit of my invention.

By the construction of the supports with the split *a'* and screws *a²* and the carriers with the projecting rods *r*, I am enabled at any time to compensate for irregular throw of the shuttle caused by wear or otherwise.

I am aware that it is not broadly new to carry a shuttle by reciprocating carriers alter-

nately seizing the shuttle, and wherein the shuttle is automatically seized and released by catches in said carriers operated by pawls on the frame of the loom, the same being shown
5 in Patent No. 5,450, February 22, 1848.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a shuttle-carrying mechanism, the wheel
10 D, having pins *e e* on its periphery and projections *i i* on its face, in combination with a

carrier, B, provided with a central longitudinal opening, *b*, and a centrally-located spring-catch, *d*, provided with a stud, *n*, and a pawl, P, and mechanism to support said parts, all
15 constructed, arranged, and operated as set forth.

FRANK HERBERT DAVIS.

Witnesses:

HENRY JACKSON,
DAVID D. FUSON.