

(No Model.)

E. PATTEN.
MECHANISM.

No. 481,508.

Patented Aug. 23, 1892.

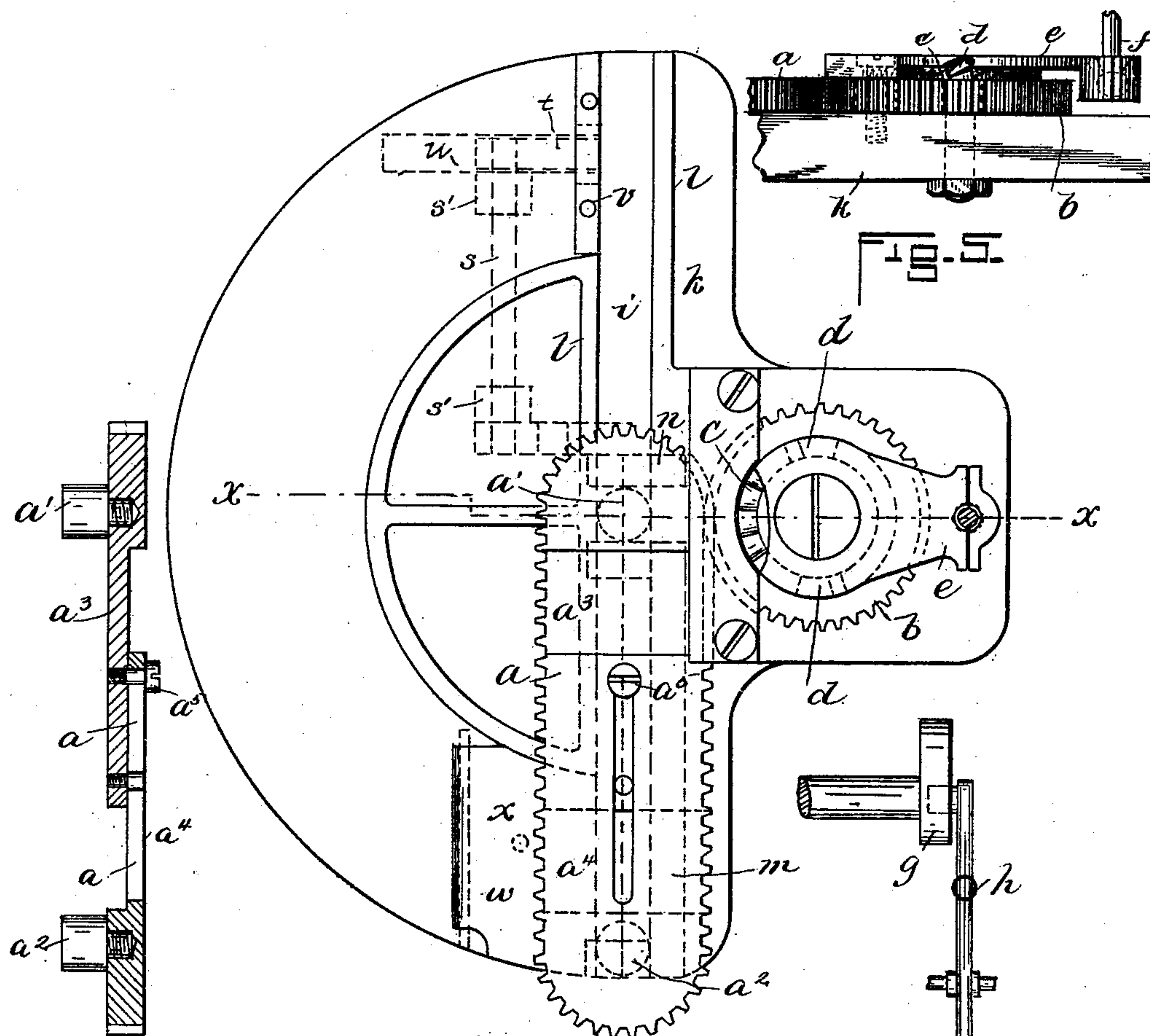


Fig. 4.

Fig. 1.

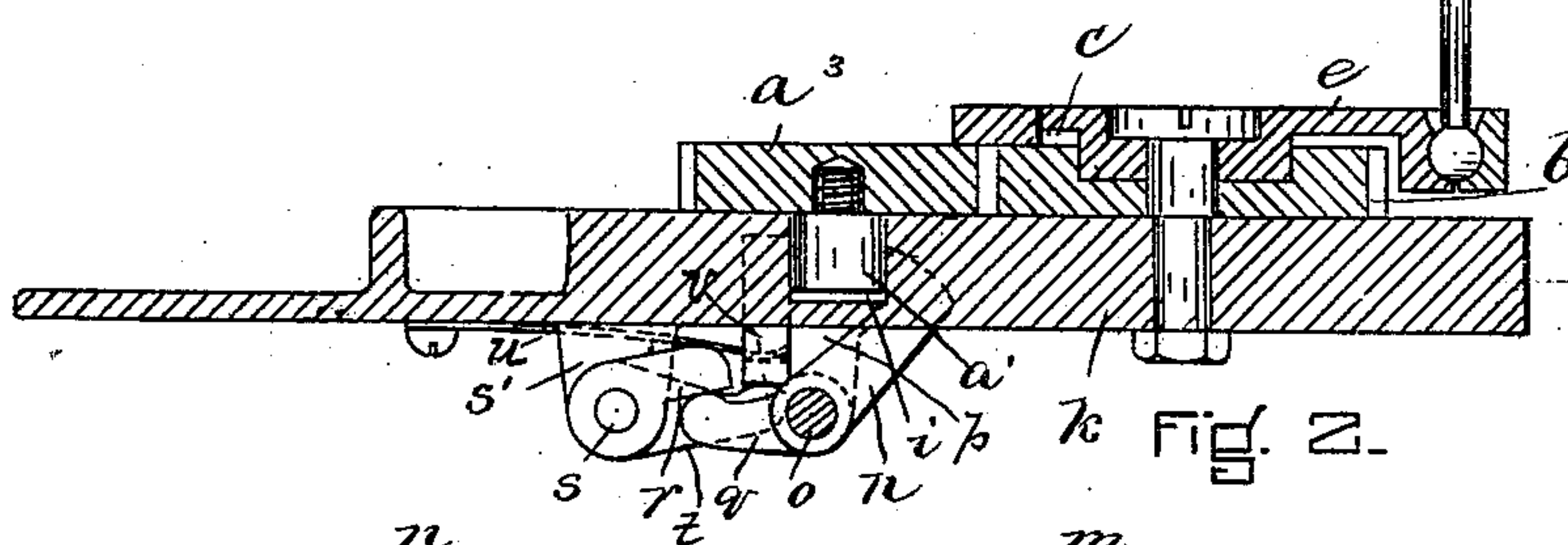
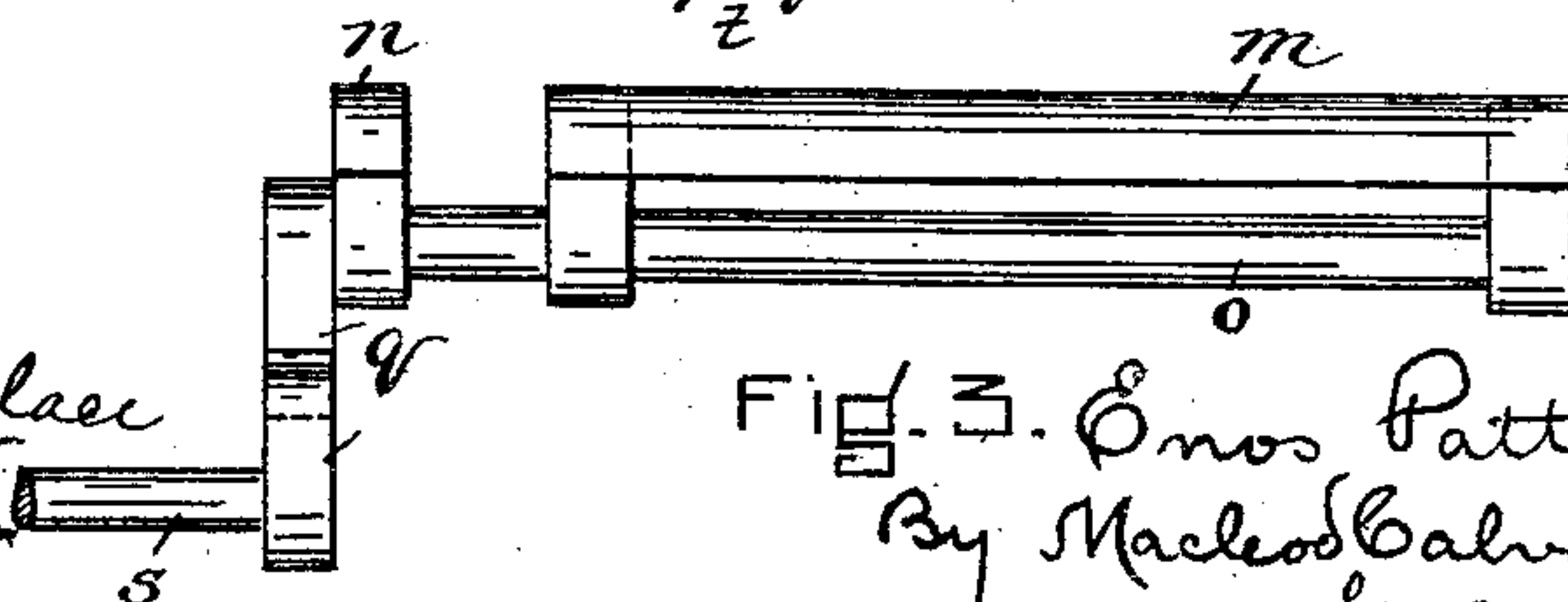


Fig. 2.



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WITNESSES.

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MECHANISM.

SPECIFICATION forming part of Letters Patent No. 481,508, dated August 13, 1892.

Application filed November 17, 1891. Serial No. 412,149. (No model.)

To all whom it may concern:

Be it known that I, ENOS PATTEN, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

In certain classes of machines—as, for example, automatic pegging and lasting machines which are used in the manufacture of boots and shoes—it becomes necessary to provide for the movement of the parts of such machines which shall first carry an object operated upon in a right-line direction of a predetermined extent, so as to carry one side thereof past the point at which it is operated upon by the tool or tools in the machine, then turn the said object one-half around, as on a pivot, at one end, and, finally, shall again move it endwise, as before, so as to present the other side thereof to the action of the tool or tools aforesaid.

My invention has for its object to devise mechanism whereby this movement shall be occasioned in a simple and reliable manner.

It consists in an improved construction and combination of parts hereinafter described and having the above end in view, and it will first be described in connection with the accompanying drawings, and then be particularly pointed out and defined in the claims at the close of this specification.

In the drawings, Figure 1 is a view in plan of devices embodying my invention. Fig. 2 is a view thereof in section on the line $x x$ in Fig. 1. Figs. 3, 4, and 5 are views of details, Fig. 4 being in section.

In the drawings, a represents an oblong gear, and b is a pinion whose teeth engage with those of the gear. This pinion is provided in practice with means for turning it either continuously or intermittently, as desired. I have shown as a convenient means of operating the said pinion a series of ratchet-teeth c , formed on the upper side of the pinion, pawls d in engagement with the said ratchet-teeth, a pawl-carrying arm e , pivoted concentrically with the said pinion, a lever f for operating the said pawl-carrying arm,

and a cam g and spring h for moving the said lever. Starting from the position in which the parts are represented in Fig. 1, the oblong gear is intended to be moved in the direction of its length past the pinion b in consequence of the engagement of its teeth with those of the said pinion and of the actuation of the said pinion. In order to permit of this endwise movement of the oblong gear, it is provided on its under side with studs a' a^2 , which fit and slide in a way or channel i , formed on the table k , the said channel extending between the raised portions or ribs l on the said table. After having been moved endwise until the stud a^2 comes opposite the axis on which the pinion b turns, the endwise movement of the oblong gear changes into one of partial rotation in consequence of the stud a^2 being prevented from further advance and being made to act as a center on which the oblong gear may turn while being further actuated by pinion b . In order to provide for this arrest of the stud a^2 and to insure the proper turning of the oblong gear on the said stud, as on a center, while the pinion b continues to rotate, I provide stops which are projected into the channel at the proper moment. These stops consist of a long wing m and an arm n , which are fixed on a short shaft o , mounted in lugs p , depending from the under side of the table. On one side of the channel i the raised portion of the table is cut away to make room for the wing m and arm n . An arm q , fixed to the shaft o or connected with the arm n , is borne against by an arm r on a second shaft s , which latter is mounted in lugs s' , depending from the under side of the table, this shaft s' having an arm t , which is in engagement with a vertically-sliding gateway v , which forms one side of the channel within which the studs a' a^2 slide, this vertically-sliding gateway v being located at the end of the channel opposite to the end thereof at which the wing m is located and on the opposite side of the channel from that on which the said wing is located, the wing being located on the side thereof which is adjacent to the pinion b . The action of a spring u tends to force the sliding gateway v down and move

the wing m and arm n forward in the channel. When, however, the parts are in the position represented in Fig. 1, the stud a^2 holds the wing back, and since the arm n is fixed upon the same shaft o with the said wing the said arm n is also held out of the channel and the studs a' a^2 are free to move longitudinally thereon. While the said wing and arm are thus held out of the channel, the sliding gate v is held elevated, so as to form a continuation of the side of the channel and guide the forward stud in a right line. The result of the rotation of the pinion b will be to move the oblong gear endwise until the stud a^2 has been carried beyond the end of the wing m . As soon as this occurs, the action of the spring u will occasion the said wing m and arm n to move forward into the channel, thereby closing the channel in front of and behind the stud a^2 in such manner as to prevent the said stud from either advancing or retreating along the channel. Simultaneously therewith the sliding gateway v is depressed by the action of the spring u . Hereupon the continued rotation of the pinion will cause the oblong gear to swing upon the stud a^2 as a center, thereby carrying the end thereof from which the stud a' depends around in a semicircle until it reaches the position occupied by the stud a^2 in Fig. 1. Opposite to the wing m there is placed a hinged plate w , over which the stud a' passes in making the movement described, this plate being pressed upward by a spring x beneath the same, so that its free edge shall form one side of the channel, the side wall of the channel being here cut away. In passing over the said hinged plate the stud a' depresses the same, but the plate springs up as soon as the said stud has passed, closing the side of the channel at this point. After it passes the said plate the stud comes in contact with the wing m , which, as before stated, was projected by the action of the spring u into the channel, and as it continues its movement it presses the said wing m back, the arm n moving with the said wing, so as to clear the channel, and the sliding gate v being raised simultaneously. The parts are now in the same positions as they occupied at the outset, except that the oblong gear has been turned end for end. The swinging movement of the oblong gear now terminates and the gear again moves endwise along the channel until the stud a' has moved beyond the end of the wing m , whereupon the said wing and stop n are again

projected into the channel to constitute stops for holding the said stud a' from advancing or retreating, the sliding gate v is depressed, and the oblong gear is caused to make a second semi-revolution, this time turning upon the stud a' as a center.

The devices which I have so far described usually are employed in connections in which the use of a gear of invariable proportions and size would be unsatisfactory and insufficient. Therefore in order to obviate the necessity which otherwise frequently would arise for replacing a gear of a given length by one of a different length, I make the oblong gear variable in length by constructing it in two or more oblong sections a^3 a^4 these overlapping at their proximate ends and each being toothed, as shown, entirely around three of its sides or to substantially this extent, these sections being adjusted upon each other as required, in order to produce a gear having the necessary length, and being secured together by convenient means—as, for instance, a screw or screws a^5 , passing through a slot a^4 in one section and into threaded holes in the other section.

I claim as my invention—

1. The combination, with the driving-pinion and means for actuating the same, of an oblong gear having studs projecting therefrom adjacent to the opposite extremities thereof, a table formed with a channel in which the said studs may move lengthwise of the channel, and spring-pressed stops against which the studs act in succession to keep the channel clear, the said stops when projected into the channel passing in front of and behind one of the studs to hold the gear from further endwise movement and thereby cause it to turn upon the said stud as on a center, substantially as described.

2. The combination, with the driving-pinion and means for actuating the same, of an oblong gear having studs projecting therefrom adjacent to the opposite extremities thereof, a table formed with a channel in which the studs may move lengthwise of the channel, and the spring-actuated wing m and arm n , substantially as described.

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

ENOS PATTEN.

Witnesses:

CHAS. M. ROLLINS,
CHAS. W. PHILLIPS.