

**No. 616,023.**

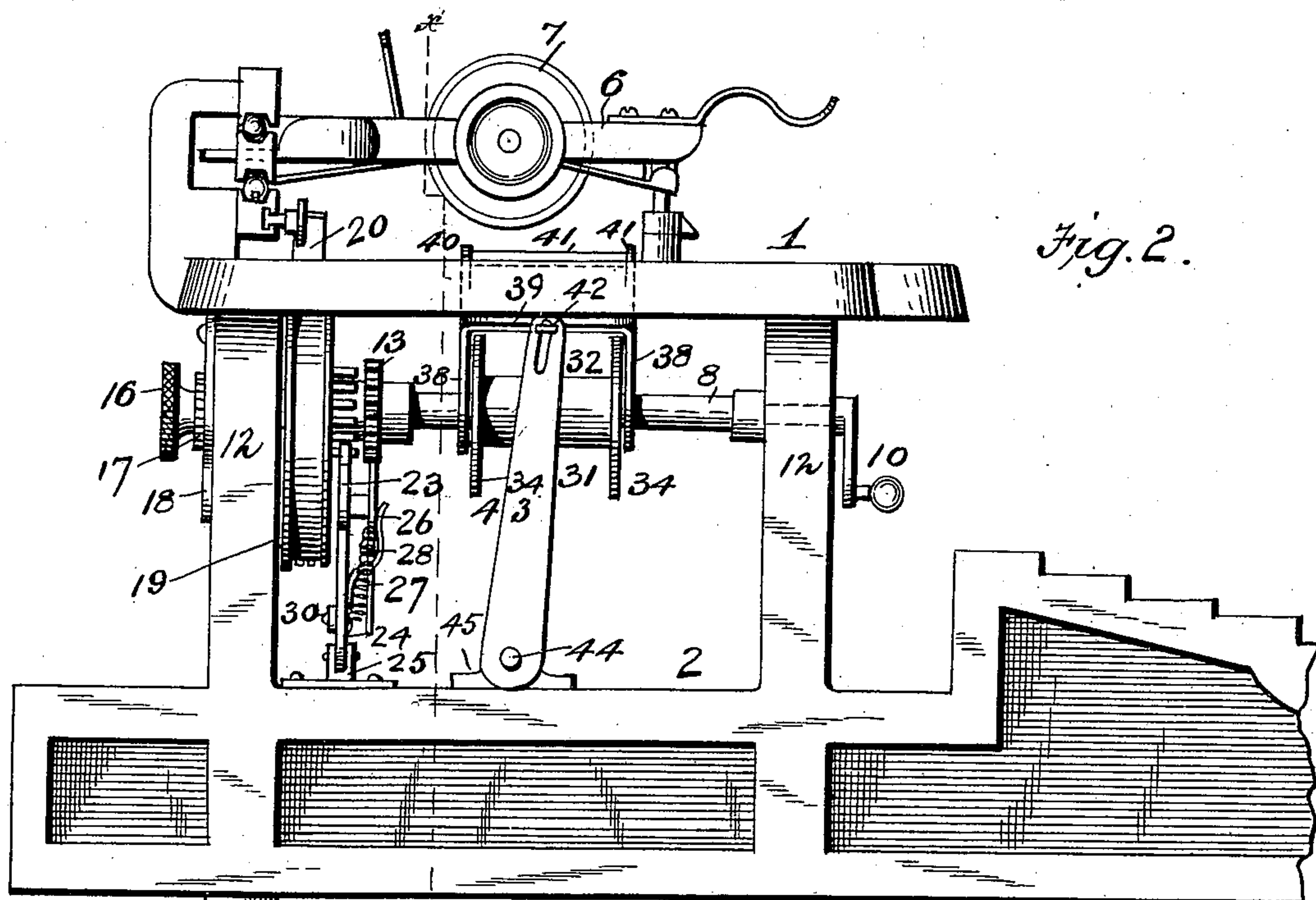
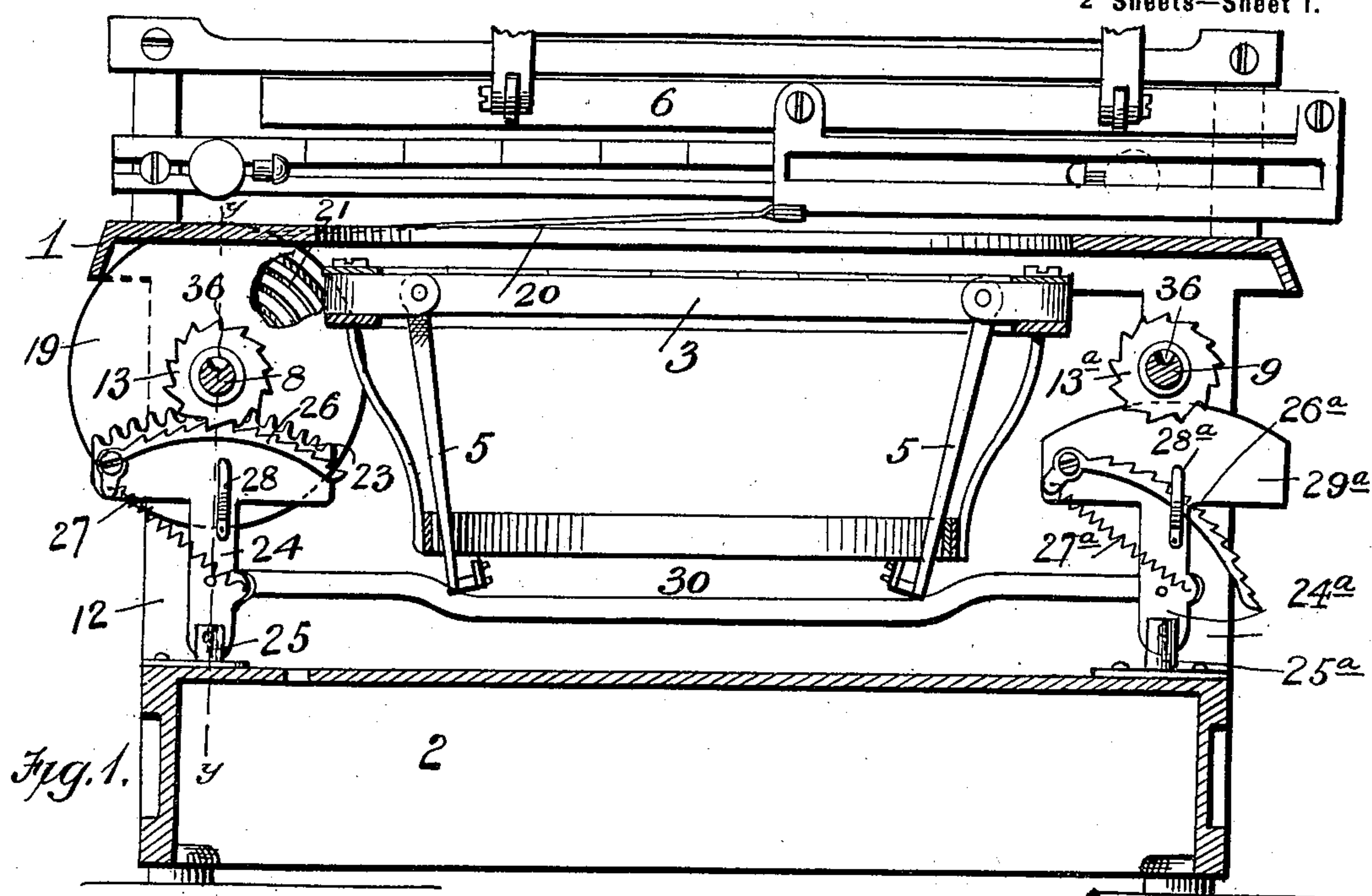
**Patented Dec. 13, 1898.**

**E. S. SHIMER.**  
**TYPE WRITING MACHINE.**

(Application filed May 17, 1898.)

(No Model.)

**2 Sheets—Sheet 1.**



Witnesses:  
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**2 Sheets—Sheet 2.**

Fig. 3

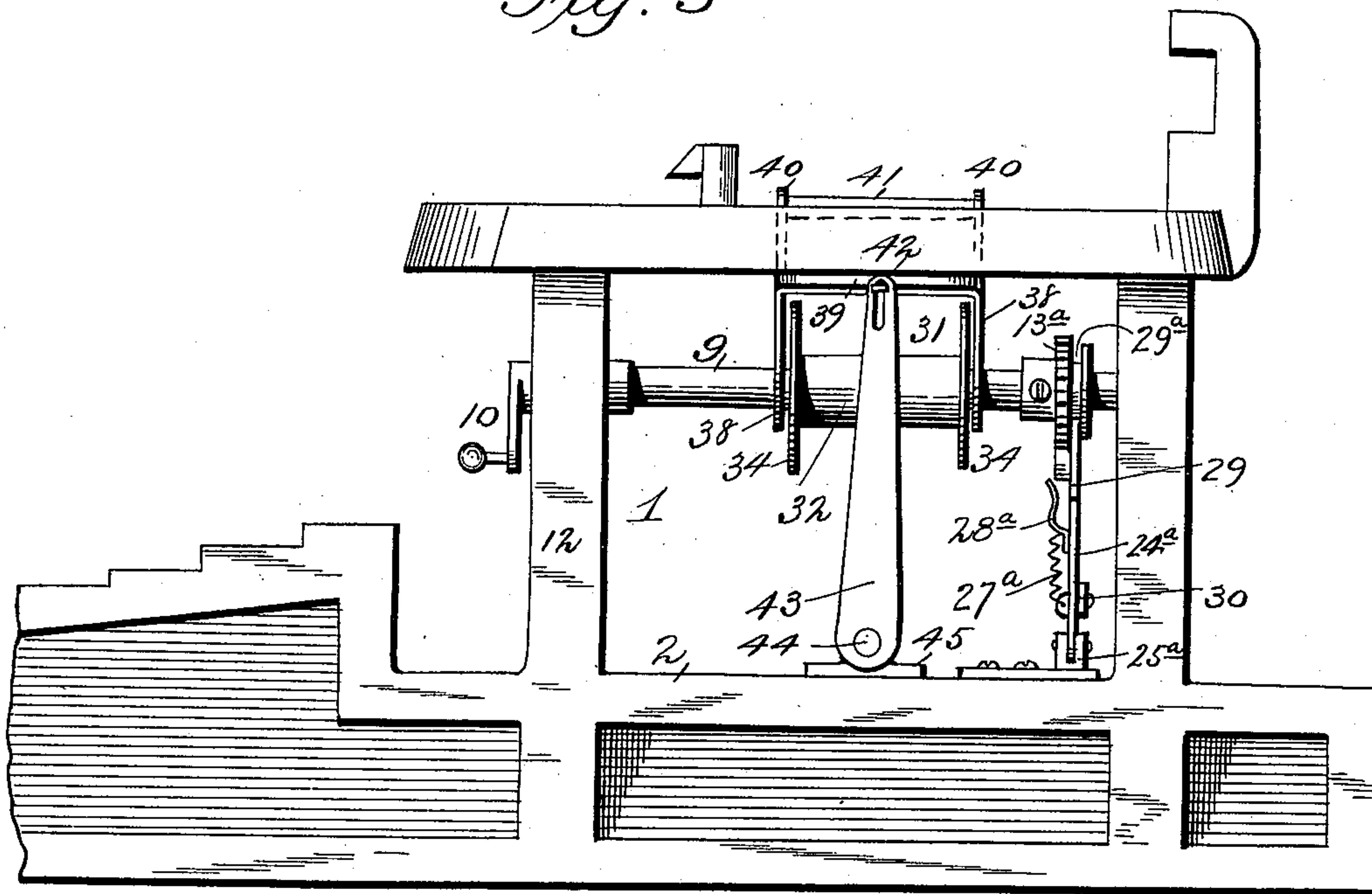


Fig. 4.

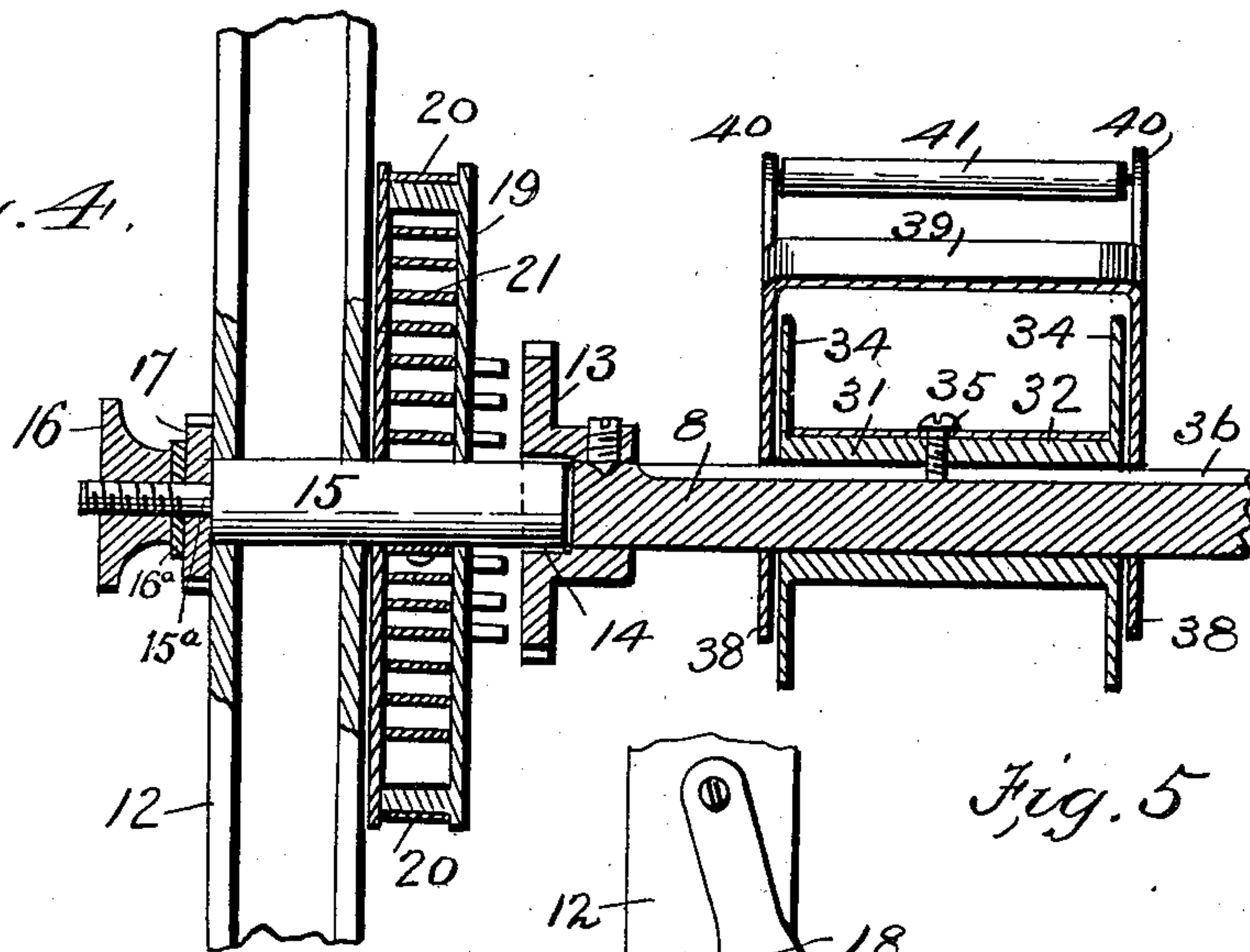
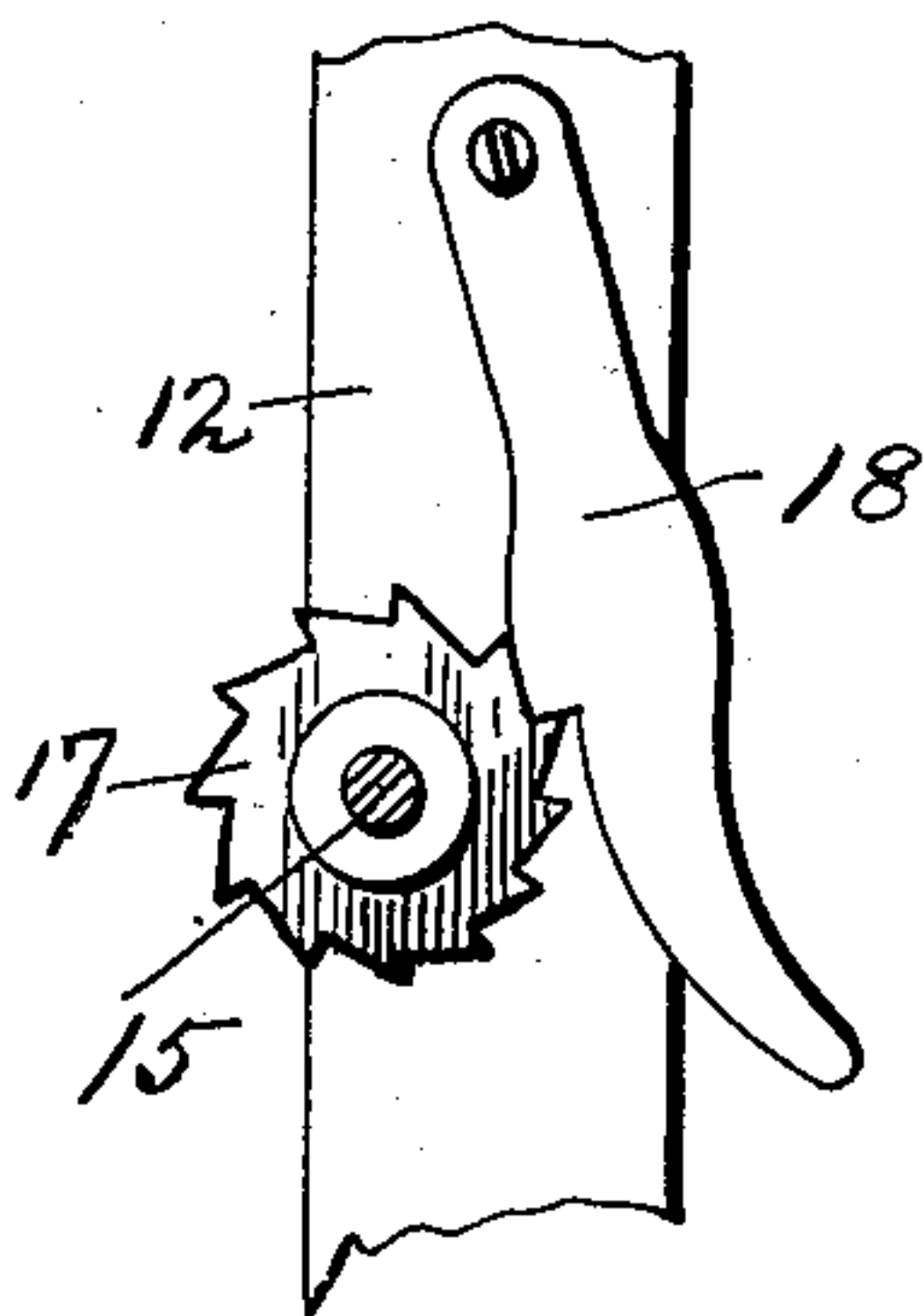


Fig. 5



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# UNITED STATES PATENT OFFICE.

ELMER S. SHIMER, OF MILTON, PENNSYLVANIA.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 616,023, dated December 13, 1898.

Application filed May 17, 1898. Serial No. 680,982. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER S. SHIMER, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type-writing machines; and its object is to provide an improved ribbon-feeding mechanism whereby the ribbon is intermittently fed by the forward movement of the paper-carriage, so as to present a new surface to the types as they are successively actuated.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a type-writing machine constructed in accordance with my invention, taken on the line *x x*, Fig. 2. Fig. 2 is an end view looking from the left, showing so much of the machine as is necessary to illustrate the invention. Fig. 3 is a similar view looking from the opposite end. Fig. 4 is a transverse section on the line *y y*, Fig. 1. Fig. 5 is a detail view.

In the said drawings the reference-numeral 1 designates the frame of the machine, mounted on the base 2, and 3 the type-basket, which is movable forwardly to change from small letters to capitals by means of mechanism disclosed in Letters Patent granted to me June 30, 1896, No. 563,080, but which forms no part of the present invention.

The numeral 5 designates the type-bars, and 6 the sliding carriage which carries the paper-cylinder 7.

The numerals 8 and 9 designate rotatable ribbon-spool shafts at opposite ends of the machine, provided with cranks 10 at the front ends. The shaft 9 extends across the frame of the machine and is journaled in the upright portions 12 of the frame. Shaft 8 does not extend to the rear upright of the frame, but is provided near said upright with a ratchet-wheel 13, for a purpose hereinafter described, formed with a socket 14.

The numeral 15 designates a stud-shaft which fits in the socket 14 and serves as a journal for the shaft 8. The outer end of this shaft 15 is journaled in the said rear up-

right and has a reduced portion 15<sup>a</sup>, the outer end of which is screw-threaded. Fixed to the inner end of this reduced portion is a ratchet-wheel 17, with which engages a pawl 18, pivoted to said upright for preventing backward movement of the shaft 15. Engaging with the screw-threaded end of said reduced portion is a milled nut 16. A washer 16<sup>a</sup> is interposed between said nut and ratchet-wheel. Loosely mounted on said stud-shaft is a spring-barrel 19, connected with the paper-carriage by means of a strap 20 and by means of which said carriage is fed forward. Located in this barrel is a spring 21, one end of which is connected therewith, while the other end is secured to the stud-shaft 15. The said nut 16 is a right-handed one, and by turning it to the right the shaft 15 will be turned, whereby the tension of the spring will be increased, the ratchet and pawl preventing backward movement of the shaft. By releasing the pawl the shaft will be turned backward, decreasing the tension of the spring. Upon its inner face said barrel is provided with a pin-gear consisting of a number of pins or projections arranged in a circle and engaging with a cogged segment 23 at the upper end of an arm 24, pivoted to lug 25 on the base 2. Pivoted to the outer end of said segment is an inwardly-extending curved rack bar or segment 26, which is adapted to engage with the ratchet-wheel 13. A coiled spring 27 is connected with said rack bar or segment for holding it in engagement with the ratchet-wheel when in use. When this segment or rack-bar is not in use, it is held out of engagement with the ratchet-wheel 13 by a spring-catch 28, secured to the arm 24. At the opposite end or side of the machine there is an arm 24<sup>a</sup>, pivoted to lugs 25<sup>a</sup> and provided with a segment 29, to which is pivoted a rack bar or segment 26<sup>a</sup>, which engages with a ratchet-wheel 13<sup>a</sup> on the shaft 9. This ratchet-wheel is formed with a peripheral groove 29<sup>a</sup>, which serves as a guide for the segment 29. Said arm is also provided with a spring-catch 28<sup>a</sup> and a coiled spring 27<sup>a</sup>. A bar 30 connects the arms 24 and 24<sup>a</sup> with each other, so that they will move in unison.

The spring-catches 28 and 28<sup>a</sup> consist of short pieces of spring metal, the lower ends of



which are secured to the pivoted arm 24 and 24<sup>a</sup>. The upper ends of these catches are bent upwardly and outwardly, so that when the segments 26 and 26<sup>a</sup> are turned down out of engagement with the ratchet-wheels said bent portions of the catches will clamp them against the pivoted arms and hold them in such position.

The numeral 31 designates the ribbon-spools, comprising the hubs 32 and end flanges 34. These hubs are mounted on the shafts 8 and 9 and are provided with projections 35, which engage with longitudinal slots 36 in the shafts, so that while they will rotate with the shafts they can also be moved laterally thereon. At each end of the machine is a ribbon-shifter, comprising end plates 38, through which the shafts 8 and 9 pass, a connecting-plate 39, and lugs 40, to which is journaled a roller 41, over which the ribbon passes. The said connecting-plate is provided with a projection 42, which engages with a hole or slot in a vertical arm 43. The lower ends of these arms are secured to a shaft 44, which is journaled in bearings 45, secured to the base 2. This shaft extends transversely across the machine, and its purpose is that when one of the ribbon-shifters is operated the other will move in unison therewith, the arms 46 being rigidly secured thereto.

The operation is as follows: Supposing the ribbon is to be fed from the spool at the right of the machine to the spool at the left, then the segment or rack-bar 26<sup>a</sup> is thrown out of engagement with the ratchet-wheel 13<sup>a</sup> and is held in place by the catch 28<sup>a</sup>, while the segment 26 is held in engagement with ratchet-wheel 13 by its coiled spring. As the paper-carriage is now fed forward step by step by the spring-barrel by the depression of the keys the pin-gear on the spring-barrel will engage with the cog-segment 23, causing the pivoted arm with which it is connected to be moved inward. The rack bar or segment 26 will also be moved inward, which, meshing with the ratchet-wheel 13, will intermittently rotate the latter, the shaft 8 and the ribbon-spool thereon winding the ribbon on the spool, so that the ribbon will present a new surface to the successively-actuated type. To reverse the movement of the ribbon, the segment 26 is disengaged from the ratchet-wheel 13 and segment 26<sup>a</sup> engaged with ratchet-wheel 13<sup>a</sup>, when shaft 9 and its spool will be rotated through the medium of the bar connecting the arms 24 and 24<sup>a</sup>. To shift the ribbon laterally, one of the shifters on the shaft 8 or 9, as the case may be, is moved back or forth, which will move the ribbon-spools laterally on the shafts.

Having thus fully described my invention, what I claim is—

1. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft, the ratchet-wheel secured thereto, the stud-shaft, the spring-barrel journaled thereon, and the gear on said spring-

barrel, of the pivoted arm, the cog-segment at the upper end thereof, and the rack-segment pivoted thereto meshing with said ratchet-wheel, substantially as described.

2. In a ribbon-feeding mechanism for type-writing machines, the combination with a ribbon-spool shaft, the ratchet-wheel secured thereto formed with a socket, the stud-shaft engaging with said socket, the spring-barrel loosely mounted on said stud-shaft and connected with the paper-carriage, and the gear connected with said spring-barrel, of the pivoted arm, the cog-segment at the upper end thereof meshing with the gear of the spring-barrel, and the ratchet-segment pivoted to said cog-segment and engaging with the ratchet-wheel of the spool-shaft, substantially as described.

3. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft, the ratchet-wheel secured thereto formed with a socket, the stud-shaft engaging therewith, the spring-barrel loosely mounted on said stud-shaft and connected with the paper-carriage and the gear on said spring-barrel, of the pivoted arm provided with a cog-segment at the upper end, the rack-segment pivoted thereto, the coiled spring and the spring-catch on said arm, substantially as described.

4. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft, the ratchet-wheel secured thereto formed with a socket, the stud-shaft engaging with said socket, the spring-barrel journaled on said stud-shaft and provided with a pin-gear, the spring located in and secured to said barrel and also secured to the stud-shaft, the ratchet-wheel on said stud-shaft and the pivoted pawl engaging therewith, of the pivoted arm, the cog-segment at the upper end thereof, the rack-segment pivoted thereto, the coiled spring and the spring-catch, substantially as described.

5. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shafts, the ratchet-wheel secured to one of said shafts, the stud-shaft, the spring-barrel journaled on said stud-shaft, the gear connected therewith, the pivoted arm, the cog-segment at the upper end thereof and the rack-segment pivoted thereto, of the pivoted arm at the opposite end of the machine, the pivoted rack-segment at the upper end thereof, the ratchet-wheel secured to the other ribbon-spool shaft and the bar connecting said pivoted arms, substantially as described.

6. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft at one end of the machine, the ratchet-wheel secured thereto, the stud-shaft, the spring-barrel journaled thereon, the gear on said spring-barrel, the pivoted arm, the cog-segment at the upper end thereof, and the rack-segment pivoted thereto, of the pivoted arm at the opposite end of the machine, the bar connecting said arms, the



5 pivoted rack-segment, the ribbon-spool shaft, the ratchet-wheel secured thereto provided with a peripheral guide-groove and the segment working therein, substantially as described.

10 7. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft at one end of the machine, the ratchet-wheel secured thereto formed with a socket, the stud-shaft engaging with said socket, the spring-barrel on said stud-shaft, the gear connected therewith, the pivoted arm provided with a cog-segment, the ratchet-segment pivoted thereto, the coiled spring and  
15 the spring-catch, of the ribbon-spool shaft at the opposite end of the machine, the ratchet-wheel secured thereto, and formed with a peripheral guide-groove, the pivoted arm having a segment engaging with said groove, the  
20 rack - segment pivoted thereto, the coiled spring and spring-catch connected with said pivoted arm and the bar connecting said pivoted arms, substantially as described.

25 8. In a ribbon-feeding mechanism for type-writing machines, the combination with the

ribbon - spool, the shaft thereof, and the ratchet-wheel secured to said shaft, of the spring-barrel, the pivoted arm, the rack-segment pivoted thereto and engaging with said ratchet-wheel, and means carried by the  
30 spring-barrel for operating the said pivoted arm, substantially as described.

9. In a ribbon-feeding mechanism for type-writing machines, the combination with the ribbon-spool shaft at one end of the machine, 35 and the ratchet-wheel secured thereto formed with a groove, the pivoted arm provided with a segment engaging with said groove, and the rack-segment pivoted thereto, engaging with said ratchet-wheel, and means for operating  
40 said arm and segment, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELMER S. SHIMER.

Witnesses:

W. H. BECK,

C. F. BALLIET.