No. 836,697. PATENTED NOV. 27, 1906.

F. McCLINTOCK.

TYPE JUSTIFYING MECHANISM.

APPLICATION FILED SEPT. 5, 1905.

Fig. 1.

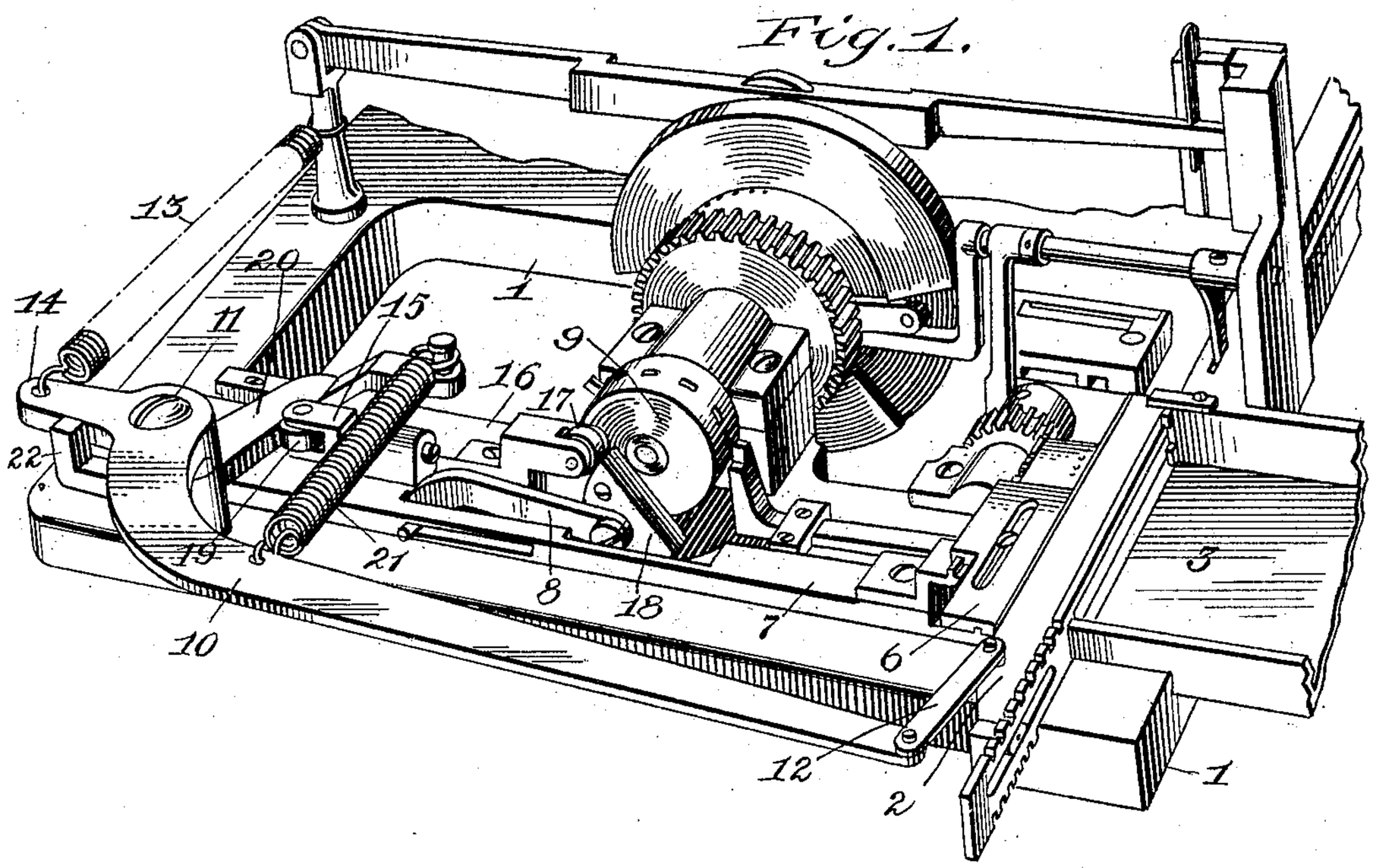
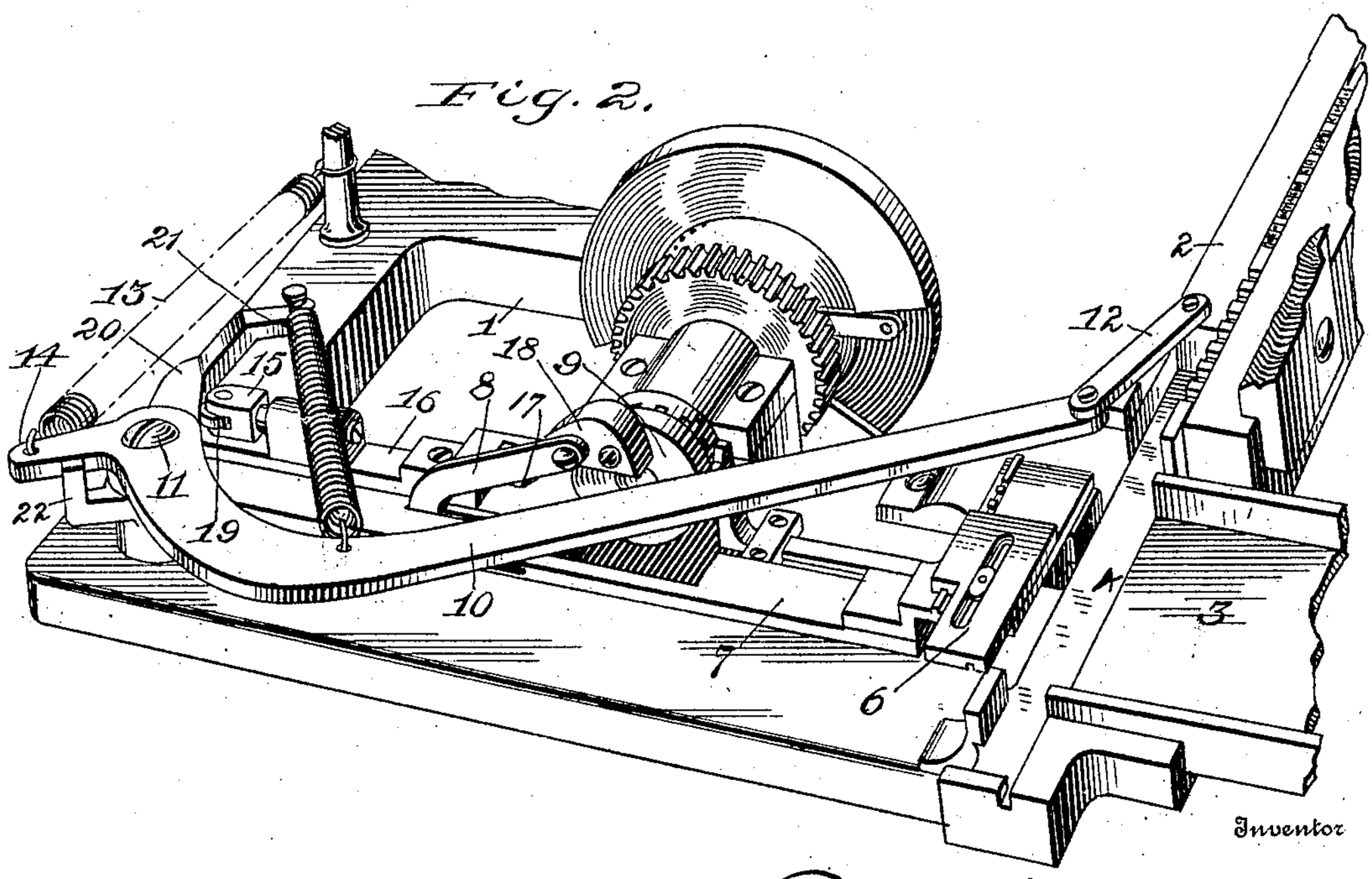



Fig. 2.




Witnesses

W. W. Cooper.

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Inventor

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By Phil. T. Dodge Attorney.

# UNITED STATES PATENT OFFICE.

FRANK McCLINTOCK, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

## TYPE-JUSTIFYING MECHANISM.

No. 836,697. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed September 5, 1905. Serial No. 277,067.

*To all whom it may concern:*

Be it known that I, FRANK McCLINTOCK, of Mount Vernon, county of Westchester, and State of New York, have invented a new and useful Improvement in Type-Justifying Mechanism, of which the following is a specification.

My invention relates to improvements in machines for justifying type wherein the line of type is justified while contained in a reciprocating line-holder, which is caused to move progressively along a raceway during the operation of justification and thence to a position opposite a galley to which the justified line is automatically transferred, after which the line-holder is automatically returned to its initial position.

Such a machine is shown in an application for patent filed by me in the United States Patent Office, February 11, 1904, Serial No. 193,075.

The improvements herein shown and claimed relate particularly to the mechanism for causing the required and timely reciprocating movement of the line-holder; and the object of this invention is to provide means whereby the return movement of the line-holder from the galley to the point where it receives another line of type may be effected with the desired speed without causing undue wear and jar to the mechanism.

The improvements are shown in the sheet of drawings herewith.

Figure 1 is a perspective view showing the parts in the position assumed just before the line-holder is started on its return movement. Fig. 2 is a similar perspective view showing the line-holder in its position at the upper end of its raceway, where it receives the line of type prior to justification.

Similar reference characters indicate similar parts in each of the views.

1 represents the bed-plate of the machine.

2 is the reciprocating line-holder, fitted to move along a track or raceway 4.

6 is the line-bunter, whereby the line of type is moved laterally out of the line-holder into the type-galley 3. The line-bunter 6 is secured to a reciprocating slide 7. The movement of the slide 7 is caused by a link 8, one end of which is pivoted to said slide and the other end is connected to a disk 9, which is adapted to be rotated intermittently. A lever 10, which is pivoted to the bed-plate at the point 11, has its long arm connected to the line-holder 2 by means of a short link 12. A spring 13, secured to the projection 14 on the lever 10, serves, in combination with the weight of the line holder, to cause the progressive movement of said line-holder down its inclined track 4.

The construction and operation of the parts above mentioned are fully shown and described in the application above referred to.

In machines of this character heretofore constructed the return movement of the line-holder from the position shown in Fig. 1 to position shown in Fig. 2 has been effected by means of a stud secured directly to the line-bunter slide 7, which stud was adapted to engage a short lug rigidly connected to the lever 10. The movement has been found in practice not to be adapted to cause the required return movement of the line-holder at a desirable speed without causing undue wear and tear and jar to the mechanism. In order to avoid this, I have secured the stud 15 to an independent reciprocating slide 16, which is fitted to move freely in suitable guides adjacent to and parallel with the line-bunter slide 7. A roller 17 is secured at the inner end of the slide 16 in such a position that it will engage with a cam 18, which is rigidly secured to the disk 9. A roller 19 is secured to the lug 15 and engages with the short arm 20 of the lever 10. The arm 20 instead of being rigidly secured to the lever 10 is loosely fitted thereto and is normally retained in the position shown by means of a strong spring 21. The convex surface of the cam 18, which engages the roller 17, is made of such shape as will cause the line-holder to be started on its return journey without shock and reduce its speed of movement as it nears the upper end of its track in such a way as to carry it positively into contact with its limiting-stop 22 without jar. In the event that any obstacle blocks or interferes with the free return movement of the line-holder 2 or lever 10 the release-spring 21 permits the full movement of the reciprocating slide 16 to be effected without injury to any of the mechanism.

What I claim as my invention is—

1. In a type-justifying machine the combination with a traveling line-holder of a pivoted lever having one arm connected to the line-holder, a longitudinally-movable slide one end of which engages the other arm

of the lever, and means for communicating an intermittent movement to the slide of such variable speed as will cause the rapid return movement of the line-holder without shock or jar to the parts.

2. In a type-justifying machine the combination with a traveling line-holder of a pivoted lever having one arm connected to the line-holder, a longitudinally-movable slide one end of which engages the other arm of the lever, a cam engaging the other end of said slide and of such shape as will cause the rapid return movement of the line-holder without shock or jar to the parts, and means for communicating an intermittent rotary movement of the cam.

3. In a type-justifying mechanism, a reciprocating carrier adapted to receive and carry a composed line of type, in combination with a lever for moving the same, a spring acting on the lever and tending to move the same in one direction, and a cam acting on the lever to move the same in the reverse direction, said lever comprising two members connected by a spring, whereby the lever is permitted to yield in the event of the carrier meeting an obstruction.

4. In a type-composing machine, a reciprocating line-carrier and a lever for actuating the same, in combination with a spring tending to move the lever in one direction, and a cam acting to move the lever in the opposite direction, and a spring through which the cam acts to move the lever.

In testimony whereof I hereunto set my hand, this 28th day of July, 1905, in the presence of two attesting witnesses.

FRANK McCLINTOCK.

Witnesses:
JOHN F. GEORGE,
P. T. DODGE.