

No. 898,310.

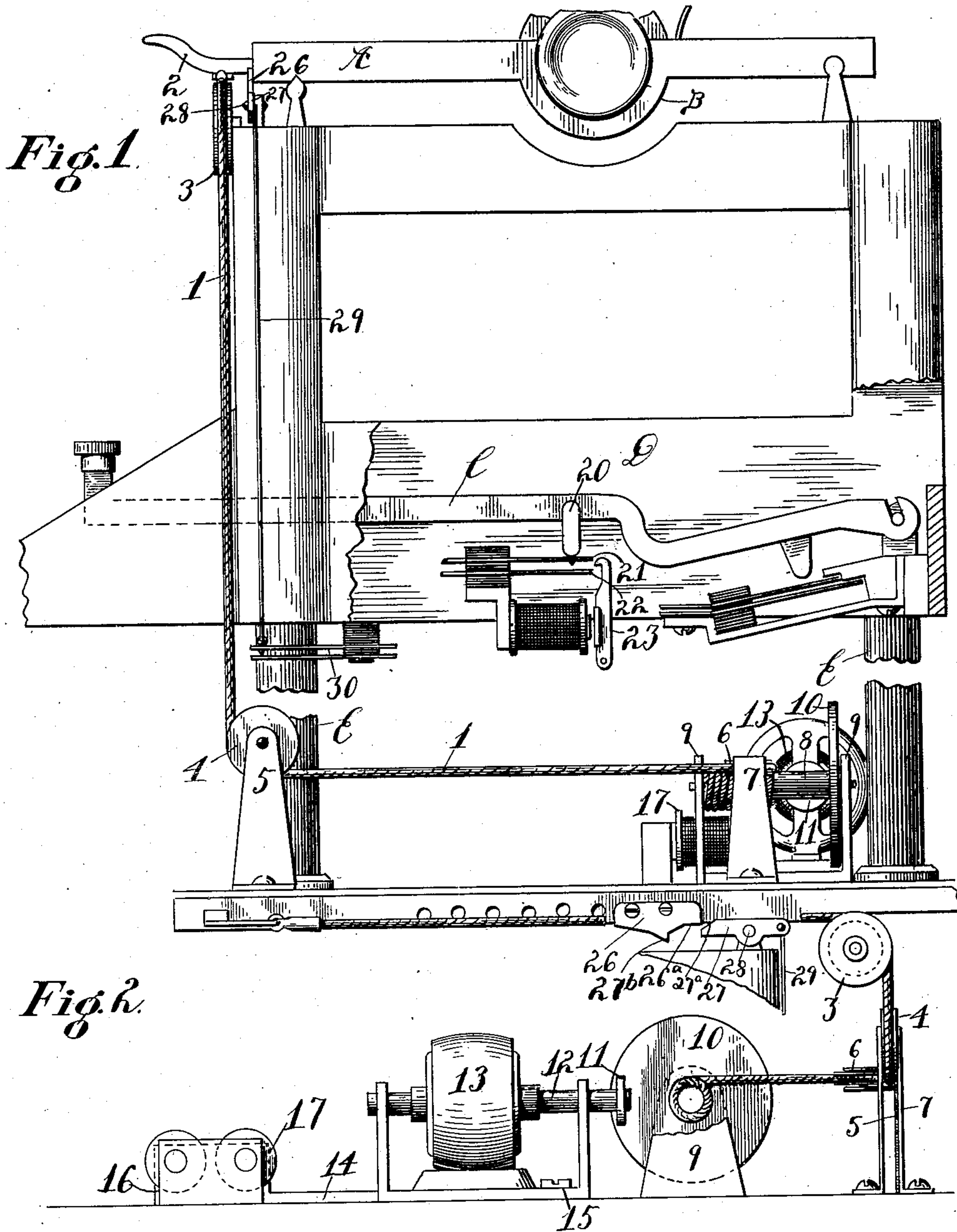
PATENTED SEPT. 8, 1908.

E. A. BURLINGAME.

CARRIAGE RETURN MECHANISM FOR TYPE WRITERS.

APPLICATION FILED MAY 11, 1908.

2 SHEETS—SHEET 1



WITNESSES.

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2 SHEETS—SHEET 2.

Fig. 3.

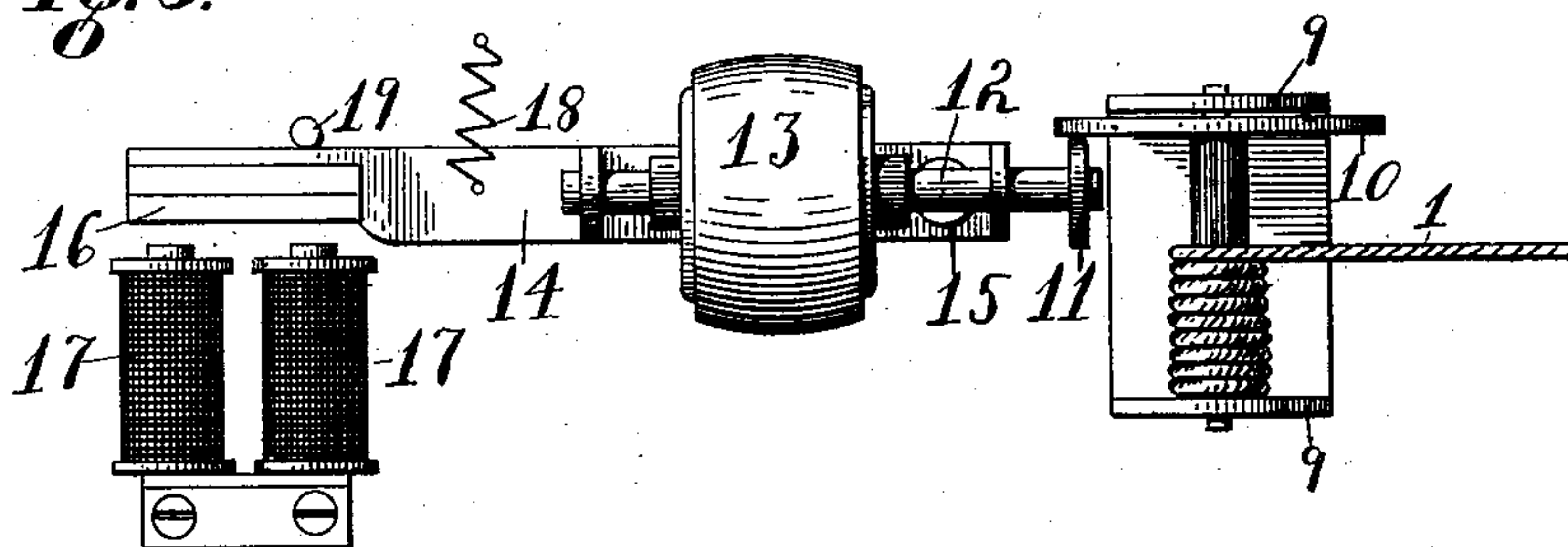
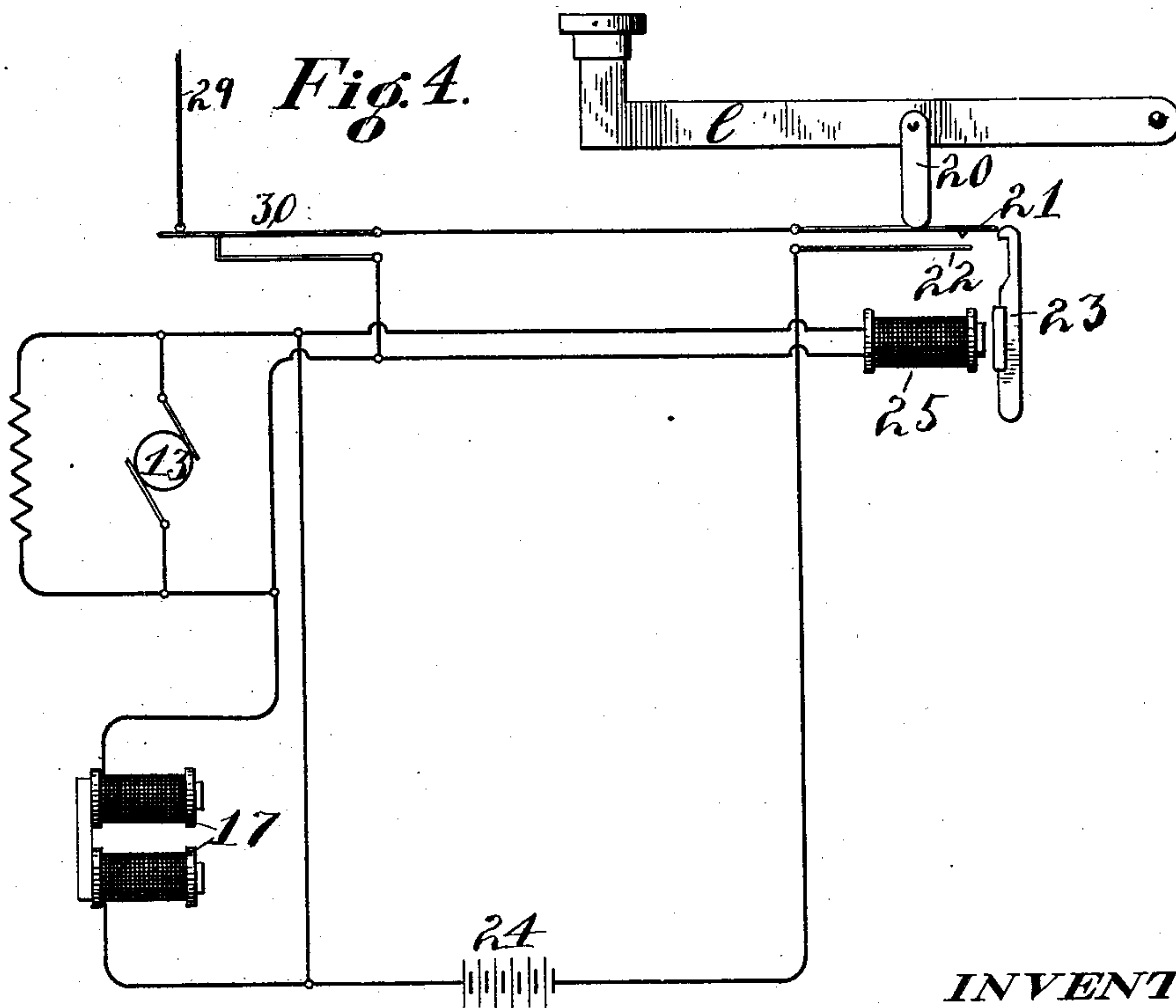


Fig. 4.



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UNITED STATES PATENT OFFICE.

ELMER A. BURLINGAME, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO BURLINGAME TELEGRAPHING TYPEWRITER COMPANY, A CORPORATION OF WASHINGTON.

CARRIAGE-RETURN MECHANISM FOR TYPE-WRITERS.

No. 898,310.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed May 11, 1908. Serial No. 432,228.

To all whom it may concern:

Be it known that I, ELMER A. BURLINGAME, a citizen of the United States, residing at San Francisco, California, have invented certain new and useful Improvements in Carriage-Return Mechanism for Type-Writers, of which the following is a specification.

My present invention relates to improvements in carriage return mechanism for typewriting machines, and is designed more especially for use in connection with the apparatus or system which forms the subject of an application filed by me in the United States Patent Office on the 11th day of May, 1908, Serial No. 432227, though applicable to any typewriter.

Among the objects of the invention are to provide means by which the carriage of the typewriting machine, irrespective of whether it is being used as a transmitting or a receiving machine, will be quickly returned by electrical power on the depression of a return key which has merely to close an electric circuit to enable the return to be accomplished without undue shock or jar to the machine, and to accomplish it by a simple, economical, durable and efficient construction.

The invention includes the features of construction and arrangement and combination of parts hereinafter described and particularly set forth in the appended claims.

A sufficient portion of a typewriting machine to illustrate the application of my invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a front elevation, showing the front bar of the carriage only, and with the cord broken away and the carriage bar and motor brought near together for convenience in illustration. Fig. 3 is a plan view of the motor. Fig. 4 is a diagrammatic view.

Referring by reference characters to these drawings, the letter A designates the carriage of a typewriting machine, B the platen, and C the keys, the whole being carried by a suitable frame D mounted upon posts E, as described in our said companion application, for providing space beneath the typewriter proper for the operating parts.

In order to effect the return of the carriage, a cord 1, is connected to the ordinary finger lever 2, which is usually provided in such machines and which on the return of the carriage automatically moves the platen to

effect the line spacing in the manner well understood by those skilled in the art. From the finger lever 2, the cord 1 passes over a pulley 3 at the upper right hand corner of the machine, thence down around a pulley 4, journaled in a suitable bracket 5, from which point it passes around a pulley 6, journaled in a bracket 7, and extends to the drum 8, upon which it is adapted to wind and unwind. This drum 8 is journaled in standards 9 and carries a friction disk 10, which is adapted to be engaged with and operated by a second smaller friction disk 11, carried by the armature shaft 12 of a small motor shown at 13. This motor and its shaft are mounted on a swinging lever 14 pivoted to the machine frame or bed plate at 15. The opposite end of this lever 14 carries a plate or block 16, which serves as the armature of an electro-magnet 17. When the magnet 17 is deenergized, the armature lever 14 is thrown into the position shown in Fig. 3 by a spring 18, a stop 19 serving to limit the movement in this direction and in this position the friction disk or wheel 11 is out of contact with the wheel 10, so that the latter is free to move freely and allow the cord to be unwound from the drum by the movement of the carriage.

The key C, as shown in the drawings, is designed to represent the key which is to be operated when the carriage is to be returned. The depression of this key through a depending projection 20 presses down contact spring 21, causing the same to engage with contact 22, in which position it is held by the hooked end of the retaining armature 23. This closes the circuit from the battery 24 through the conductors shown diagrammatically in Fig. 4 through the electro-magnet 17, the motor 13 and the magnet 25. The energizing of the magnet 17 attracts the armature 16, swinging the bar 14 on its pivot 15 and throwing the friction wheel 11 into engagement with the friction disk 10. At the same time the motor 13 is started to operate the drum and wind up the cord to return the carriage to initial position. The magnet 25 being energized holds the armature lever 23 in engagement with the contact spring 21 so that the circuit is kept closed even though the key be instantly released after having been depressed. It is necessary, of course, to break the circuit when the carriage has reached the limit of its return movement and

it is extremely desirable that this break should occur at a certain distance from the limit of the return movement of the carriage, as otherwise the impact of the carriage against the stop under the pull of the motor would be apt to cause damage. To accomplish this, I provide on the carriage bar an adjustable stop 26 which may be adjusted longitudinally of the bar by any suitable means, a series of holes for the engagement of the securing screws being shown merely as an example. On the frame of the machine is located a pivoted lever 27, which has an inclined end 27^a which as the carriage nears the limit of its return movement comes in contact with the edge or shoulder 26^a of the stop 26. This causes the lever 27 to be rocked upon its pivot 28 pulling upward on a rod 29, which lifts the switch lever 30, see Figs. 1 and 4, thus breaking the circuit.

As the motor runs always at a uniform speed, the momentum of the carriage will always be sufficient to cause it to travel until the end of the lever 27 comes in contact with abutment 26^b on the stop when the movement of the carriage will be arrested without undue shock. When the circuit is thus broken, the motor is of course stopped, the magnet 25 deenergized, allowing the armature 23 to be retracted by the spring 23^a, whereby the electrical connection between the contacts 21 and 22 is broken and magnet 17 is deenergized, allowing bar 14 to be drawn back against the stop 19 by spring 18, which disengages the friction wheels 10 and 11. As soon as the carriage in the operation of writing has moved the few spaces necessary to bring the stop 26 and lever 27 in the relative positions shown in Fig. 2, the contact spring 30 is restored to the position shown in Figs. 1 and 4 and the parts are now ready to be operated anew to return the carriage upon the depression of the key C.

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

1. The combination with a typewriter, of a friction disk having operating connections to the carriage thereof, whereby the rotation of the disk moves the carriage to return it to initial position, a friction wheel movable into and out of engagement with said disk, an armature lever for moving said friction wheel, an electro-magnet for operating said armature, a key having electrical connection for energizing said armature and a motor for operating the disk, substantially as described.

2. In a typewriter, a carriage, a winding drum having operating connections to the carriage, a motor, gearing connecting the shaft and drum, an armature adapted by its movement to engage and disengage said gearing, an electro-magnet, an electrical circuit including a source of electric energy and the said electro-magnet and motor, a switch lever also included in said circuit, a key on

the typewriter for operating said switch, and means for holding said switch lever in contact position after the release of the key and until the carriage has been returned by the motor to initial position, substantially as described.

3. In a typewriter, a carriage, a rotary friction disk having operating connections to the carriage, a pivoted armature lever, a motor carried by said lever, a friction wheel carried by the shaft on the motor and located in proximity to the friction disk, a magnet cooperating with said armature lever, an electric circuit including a source of electric energy and a motor and electro-magnet, a switch lever, a key for operating the same, an armature lever adapted to engage said switch lever on its depression to hold it in a circuit closing position, and a second magnet included in said circuit and adapted to hold said armature in its locking position after the release of the key, substantially as described.

4. In a typewriter, a carriage, a rotary friction disk having operating connections to the carriage, a pivoted armature lever, a motor carried by said lever, a friction wheel carried by the shaft on the motor and located in proximity to the friction disk, a magnet cooperating with said armature lever, an electric circuit including a source of electric energy and a motor and electro-magnet, a switch lever, a key for operating the same, an armature lever adapted to engage said switch lever on its depression to hold it in a circuit closing position, and a second magnet included in said circuit and adapted to hold said armature in its locking position after the release of the key, and a second normally closed switch included in the circuit and adapted to be opened on the arrival of the carriage at initial position, substantially as described.

5. In a typewriter, a carriage, an electrical motor having operating connections thereto for returning the carriage to initial position, an electric circuit including said motor and a source of electric energy, a key operated circuit closing switch included in said circuit, and means for breaking the circuit automatically at the arrival of the carriage at or near initial position, comprising a switch lever included in said circuit, an adjustable stop on the carriage, a pivoted lever on the typewriter frame adapted to be rocked by said stop and a connection between said pivoted lever and said switch lever whereby they are operated in unison, substantially as described.

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

ELMER A. BURLINGAME.

Witnesses:

JAMES M. SPEAR,
EWD. L. TOLSON.