Nov. 17, 1931. A. VISCHER, JR 1,832,160

FEEDING MECHANISM FOR PRINTING TELEGRAPHS

Filed Aug. 28, 1930 2 Sheets-Sheet 1

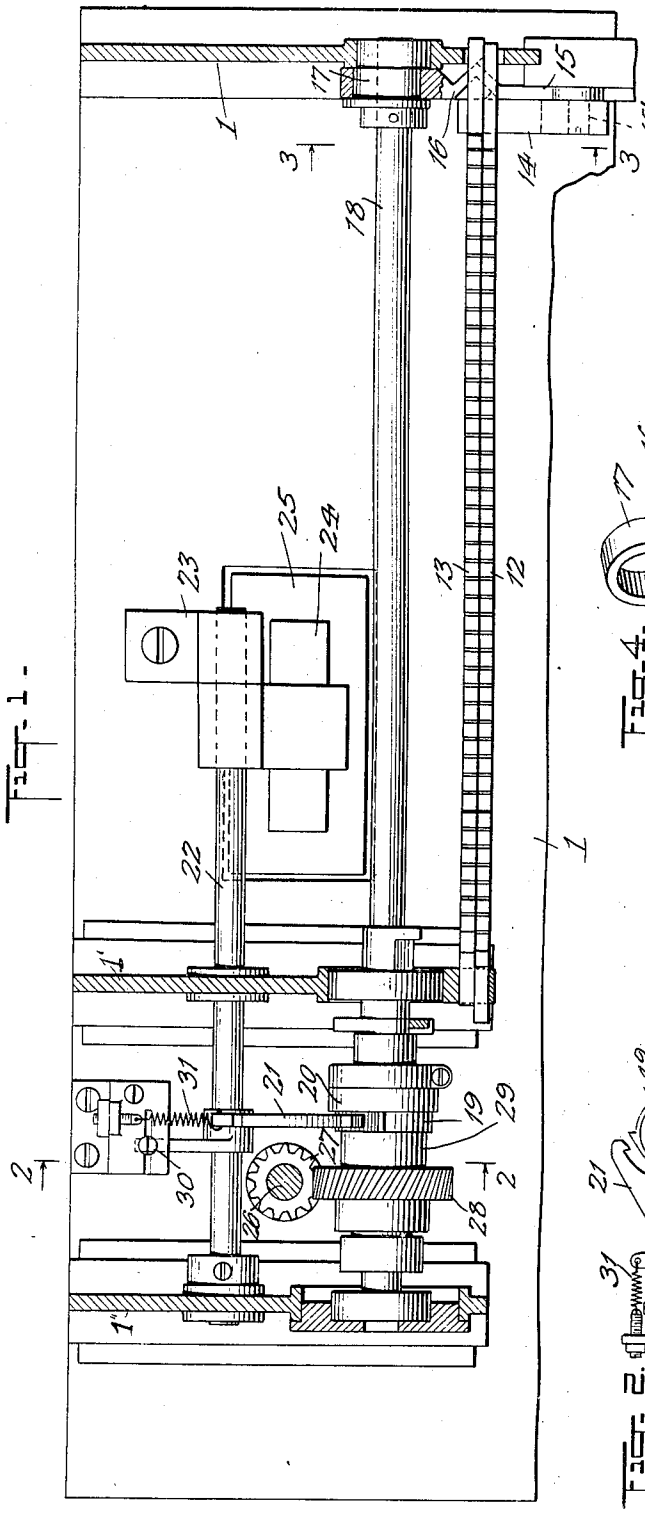


Fig. 1.

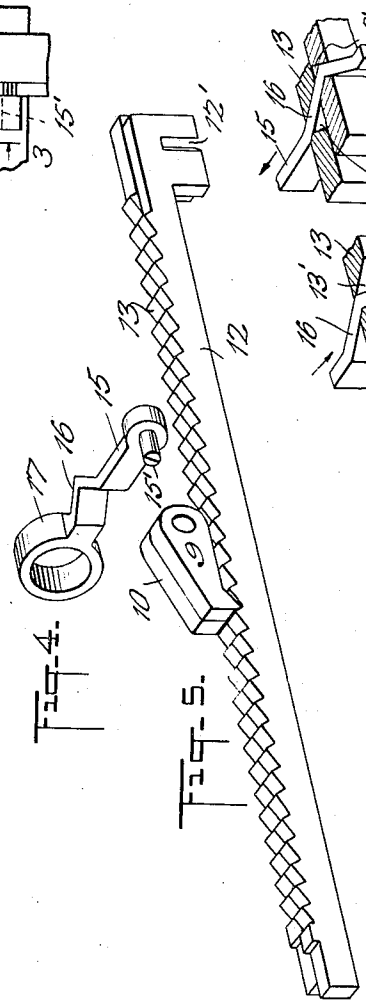


Fig. 5.

Fig. 4.

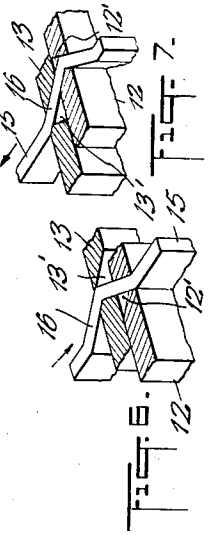


Fig. 6.

Fig. 7.

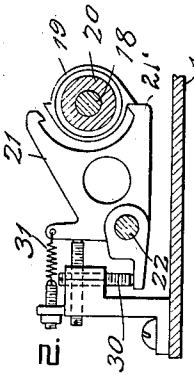


Fig. 2.

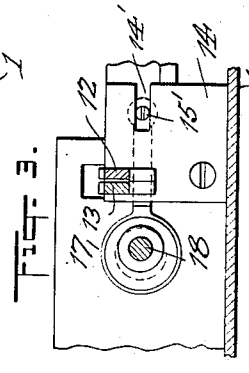


Fig. 3.

INVENTOR
Alfred Vischer Jr.
BY
Rogers Agnew
His ATTORNEYS.

Nov. 17, 1931. A. VISCHER, JR 1,832,160

FEEDING MECHANISM FOR PRINTING TELEGRAPHS

Filed Aug. 28, 1930 2 Sheets-Sheet 2

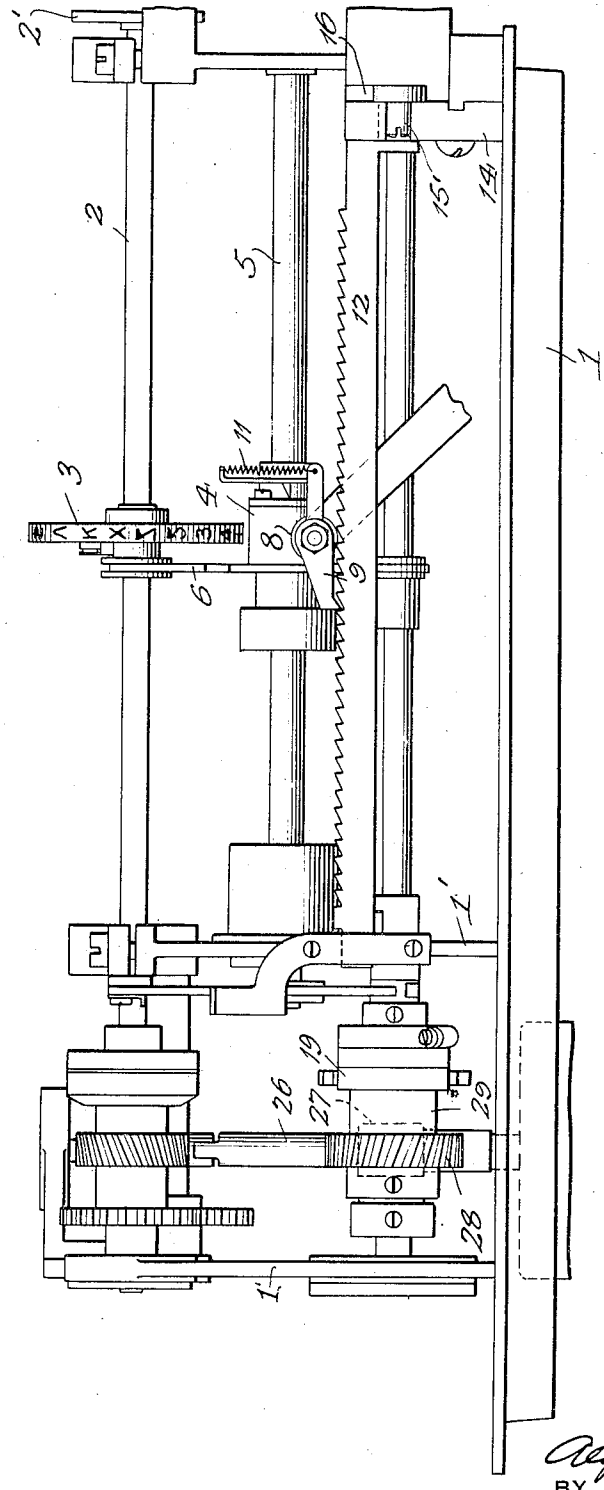


Fig. 1a

INVENTOR
Alfred Vischer Jr.
BY
Mayer & Jones
ATTORNEYS.

Patented Nov. 17, 1931 1,832,160

UNITED STATES PATENT OFFICE

ALFRED VISCHER, JR., OF RIDGEWOOD, NEW JERSEY, ASSIGNOR TO DOW, JONES & COMPANY, OF NEW YORK, N. Y., A NON-INCORPORATED JOINT-STOCK ASSOCIATION OF NEW YORK

FEEDING MECHANISM FOR PRINTING TELEGRAPHS

Application filed August 28, 1930. Serial No. 478,531.

My invention relates to a printing telegraph receiver, and more particularly to a mechanism for feeding the type wheel for letter spacing. It will be understood by reference to the following description taken in connection with the accompanying drawings in which Fig. 1 is a top plan view, and Fig. 1A a front elevation of a machine embodying the present invention; Fig. 2 is a transverse section on the plane of the line 2—2 of Fig. 1, certain parts being in elevation; Fig. 3 is a transverse section on the plane of the line 3—3 of Fig. 1, certain parts being in elevation; Fig. 4 is a perspective view of the actuating cam for the feed racks; Fig. 5 is a perspective view of the feed racks and their pawls; and Figs. 6 and 7 are detail perspective views of parts of the racks and cam showing them in different positions. Similar reference numerals indicate similar parts in the several views.

Telegraph receivers of the type for which the present invention is adapted are well known. For an understanding of the application of my improved feeding mechanism I have illustrated certain parts of a typical receiver which will first be briefly described.

Referring to Figs. 1 and 2, the numeral 1 designates the base and end plates of the frame of the machine. Mounted in suitable bearings in the end plates is a type wheel shaft 2. Supported on the shaft 2 for rotation therewith but slidably mounted thereon so as to be moved back and forth along the same, is a type wheel 3 having fixed to its periphery the characters to be printed.

The shaft 2 is provided with the usual escapement mechanism 2′ at one end thereof for controlling its rotation and that of the type wheel. The construction is such that at each impulse of an electromagnet, and at each operation of a polarized magnet, not shown, the escapement wheel will permit shaft 2 to rotate and the printing wheel to be set, as usual in machines of this type and described, for example, in U. S. Patent to G. S. Conger No. 1,178,215 granted April 4, 1916.

To move the type wheel step by step along shaft 2 for spacing the letters on the sheet of paper on which the printing is being done, the carriage 4 is slidably mounted upon a shaft 5 supported upon the frame of the machine. This carriage is provided with an arm 6 which engages a grooved hub on the side of the type wheel in such way as to permit free rotation of the wheel so that as the carriage is moved on its shaft the type wheel 3 will have a corresponding movement on its shaft 2.

Independently pivoted upon a stud 8 of the carriage 4 are two pawls 9 and 10 normally held, respectively, in engagement by springs 11 with ratchet toothed bars 12 and 13. These bars or racks are of the same length with teeth of the same number and pitch. They are arranged along side of each other and slidably supported at one end in an opening in the frame plate 1′, and at the other end in an opening in a guide block 14 secured to an end plate of the machine frame.

The function of both racks 12 and 13, and their corresponding pawls, is to move the type wheel transversely of the paper to effect letter spacing at each cycle of operation of the machine. For this purpose they are reciprocated simultaneously in opposite directions, the forward movement of each rack effecting a feeding movement of the type wheel, and the return movement restoring the rack to its normal position ready to feed on the next cycle.

The desired reciprocation of the racks may be effected by any suitable mechanism such as cams. A construction which has been employed in practice consists of a bar 15 formed with an angular or V shaped cam section 16. This bar forms an extension of an eccentric link operated by eccentric 17 mounted on a shaft 18. The racks are formed with extensions, as shown in Fig. 5, having a V shaped groove or cut-out portion 12′ and 13′, respectively, adapted to receive the cam section 16 of the bar 15. The latter has a laterally extending pin 15′ movable in a slot 14′ in the block 14. When shaft 18 is permitted to rotate, the bar 15 will be reciprocated in a rectilinear direction in a plane at right angles to the planes of the two racks thus causing the two angularly disposed sec-

tions of cam 16 to move the racks 12 and 13 in opposite directions.

Shaft 18 is normally held against rotation by a two toothed escapement wheel 19 mounted on a drum 20 frictionally mounted on the shaft 18. The pallets 21 and 21′ are mounted on a rock shaft 22, supported in a bracket 23, and frame 1′ and connected to the armature 24 of an electromagnet 25.

The numeral 26 designates a constantly rotating power shaft carrying a gear 27 which meshes with a gear 28 running free on shaft 18. Mounted on the latter is a member of a friction clutch 29 which, when pallets 21 and 21′ are rocked by armature shaft 22, shaft 18 will be permitted to rotate one half a revolution when it will be held by the other arm of the pallet. Stops 30 control the limit of the escapement stroke on both sides. A rectractile spring 31 restores pallet 21 to normal position upon release of the armature 23.

This release will occur on the breaking of a printing impulse and when that occurs, both racks 12 and 13 will be simultaneously moved in opposite directions. That one of the racks which on the previous cycle has been moved to the left, as viewed in Figs. 1 and 1A, will now be moved forward by cam 16 so that its pawl 19 will move the type wheel one letter space to the right.

If, for example, when rack 12 is moved forward to feed the type wheel a letter space, rack 13 will be moved in a reverse direction. This simultaneous movement of the racks is effected by the angularly disposed sections of cam 16 when the latter is moved in one direction through the eccentric 17 and arm 15. When the latter is moved in the reverse direction, rack 13 will be moved forward to effect the desired movement of the type wheel one letter space, and rack 12 will be moved rearwardly to position it for a forward movement on the next cycle.

As heretofore constructed, there have been two ratchet toothed racks but only one has been utilized to effect a step by step movement of the type wheel. Upon a feeding movement of the rack the pawl on the other rack will be dragged over the same to retain the type wheel in position while the feed rack is being returned to its normal position under the influence of a spring.

By the present invention both racks are feed racks, that is, they are moved alternately in the same direction on alternate cycles of operation of the machine. Thus on one cycle the rack 12 and its pawl 9, will on its forward movement, or to the right as viewed in the drawings, advance the type wheel on its shaft one letter space. On the next cycle the rack 13 and its pawl 10 will step the type wheel a letter space. Also, the two racks are moved simultaneously in opposite directions, that is, while one is being moved forward to effect the desired movement of the type wheel on its shaft, the other will be moved in a reverse direction to restore it to its normal or starting position. Thus the time required to effect letter spacing is reduced to one half that heretofore required, effecting a very substantial saving in the time of operation of the machine. It is also to be noted that the movements of the racks are effected by positively acting means thus doing away with the use of springs heretofore used.

What I claim is:

1. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably supported, and means for imparting a step by step movement to the wheel along its shaft comprising a plurality of racks, independently pivoted pawls mounted on said carriage and engaging said racks, and means for moving said racks simultaneously in opposite directions on each cycle of operation of the receiver.

2. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel along its shaft comprising racks, independently pivoted pawls mounted on said carriage and engaging said racks, a cam and means for actuating the same upon each cycle of operation of the machine for moving said racks in opposite directions to effect the desired movement of the printing wheel by one of said racks and its pawl, and restore the other of said racks to its normal and starting position.

3. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel comprising two racks, pawls pivotally mounted on said carriage and engaging said racks, and a cam and means for actuating the same to move said racks alternately in the same direction to effect the desired movement of the printing wheel.

4. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel along said shaft comprising two racks, pawls pivotedly mounted on said carriage and engaging said racks, and means for imparting a longitudinal movement to said racks alternately in the same direction to effect a positive movement of the type wheel along its shaft.

5. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said

wheel along said shaft comprising two racks, independently pivoted pawls mounted on said carriage and engaging said racks, and means for imparting a longitudinal movement to one of said racks in one direction to effect the desired movement of the type wheel on its shaft, and simultaneously therewith to impart a longitudinal movement to the other of said racks in a reverse direction to restore it to normal or starting position.

6. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel along said shaft comprising two racks, independently pivoted pawls mounted on said carriage and engaging said racks, means for imparting a longitudinal movement to said racks simultaneously in opposite directions on each cycle of operation of the machine to effect the desired movement of the type wheel by one of said racks and its pawl while the other rack is being restored to normal or starting position.

7. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel along said shaft comprising two racks, independently pivoted pawls mounted on said carriage and engaging said racks, a cam engaging said racks for imparting a positive longitudinal movement thereto simultaneously in opposite directions and alternately in the same direction to effect the desired movement of the type wheel and the restoration of one of the racks to normal or starting position on each cycle of operation of the machine.

8. In a receiver for a printing telegraph system, the combination of a printing wheel and carriage therefor, a shaft on which said wheel is slidably mounted, means for imparting a step by step movement to said wheel along said shaft comprising two racks, slidably mounted in the frame of the machine and having in the body thereof cam engaging grooves, a shaft also supported in bearings in the frame of the machine, an eccentric mounted on said shaft, a cam engaging the said grooves in the racks, means for intermittently rotating said eccentric shaft on each cycle of operation of the machine to thereby effect a longitudinal movement of said racks simultaneously in opposite directions, and independently pivoted pawls mounted on said carriage and engaging said racks to effect the desired movement of the type wheel along its shaft.

Signed at New York, in the county of New York and State of New York, this 26th day of August, A. D. 1930.

ALFRED VISCHER, JR.