(No Model.)

C. M. JORDAN.

PRINTING TELEGRAPH RECEIVER.

No. 326,989. Patented Sept. 29, 1885.

Fig. 1.

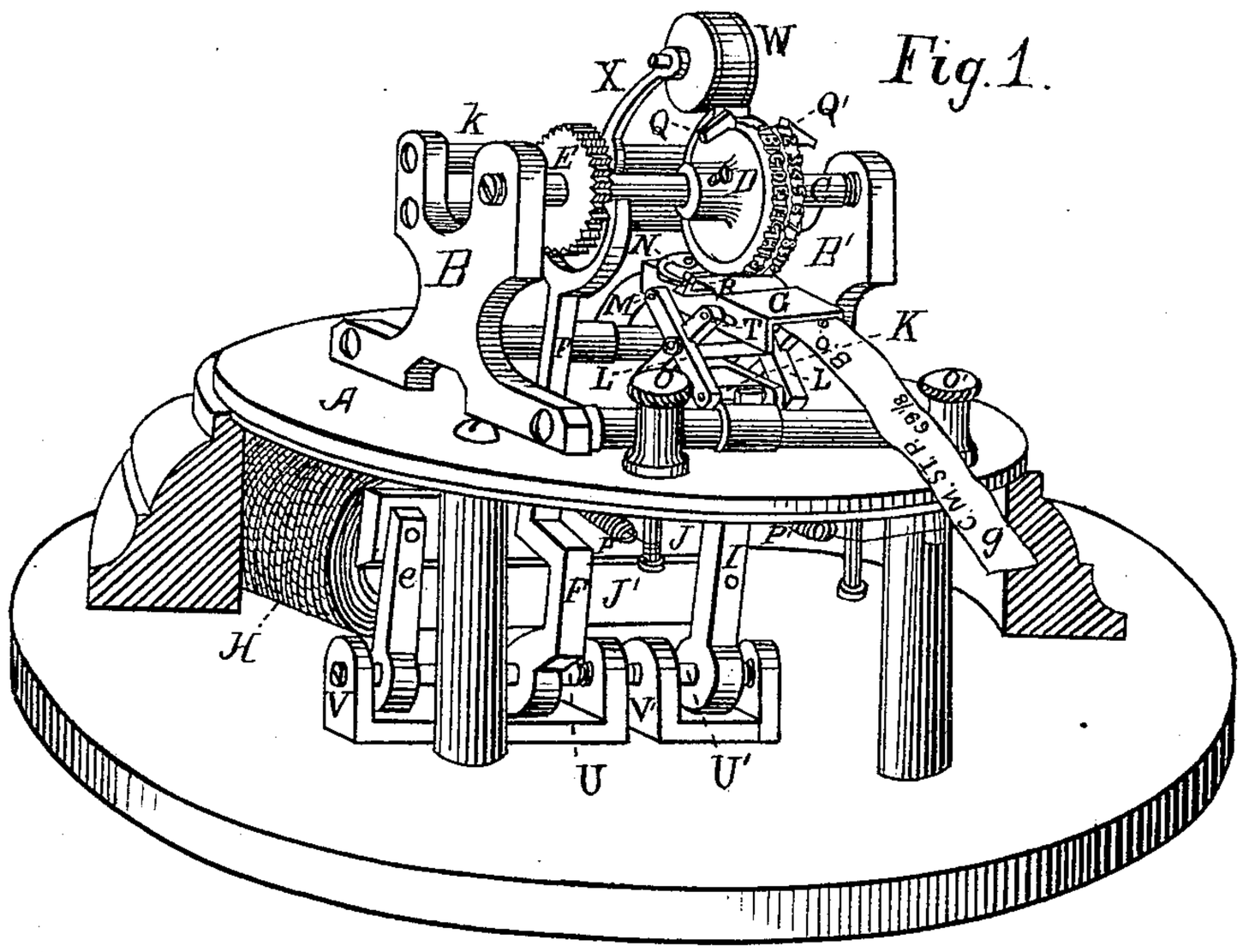


Fig. 2.

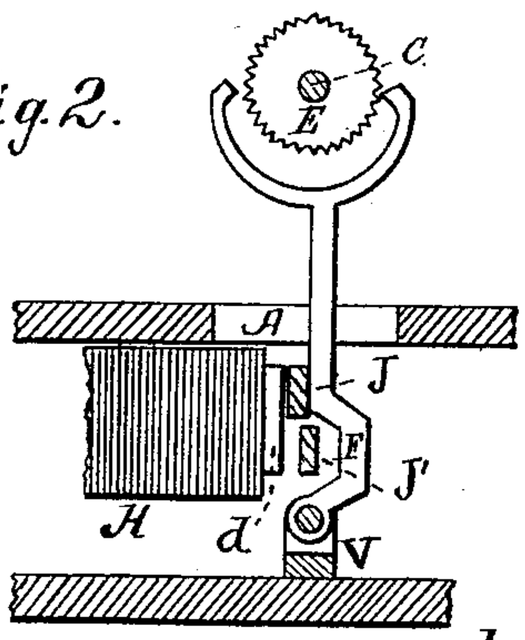


Fig. 3.

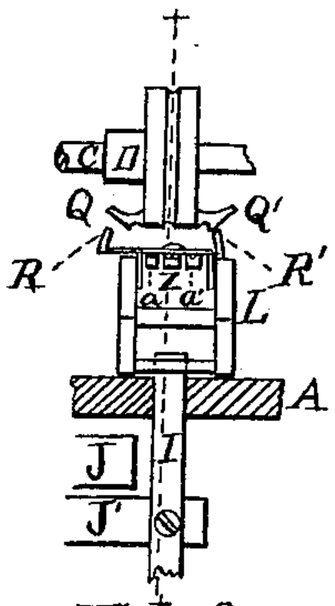


Fig. 4.

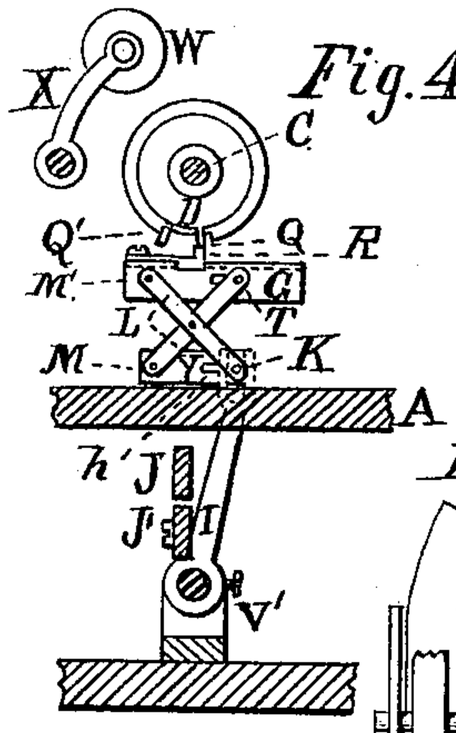


Fig. 7.

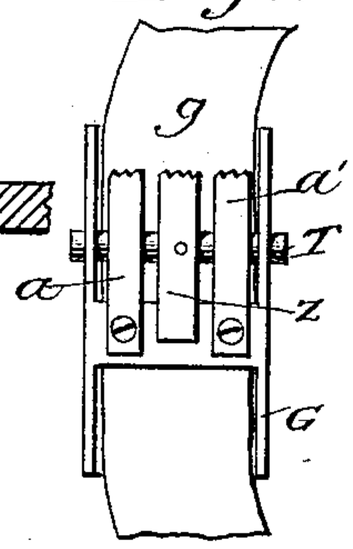


Fig. 6.

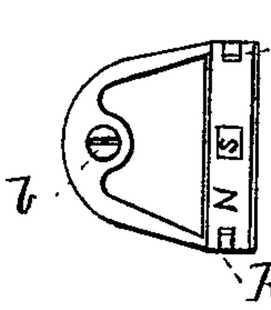
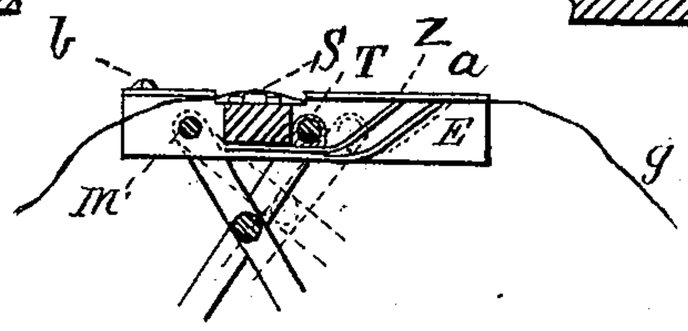


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES M. JORDAN, OF MINNEAPOLIS, MINNESOTA.

PRINTING-TELEGRAPH RECEIVER.

SPECIFICATION forming part of Letters Patent No. 326,989, dated September 29, 1885.

Application filed March 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. JORDAN, of Minneapolis, in the county of Hennepin and State of Minnesota, have made a new and useful Improvement in Printing-Telegraphs; and the following is declared to be a full and correct description of the same.

My invention consists of a printing-telegraph instrument in which the type-wheel is revolved, and the printing, feeding, pad-shifting, and unison-stop mechanisms are operated by one magnet, acting upon two polarized armatures parallel to each other, but reversed as to their poles, either being acted upon by a reversal of the current at the will of the transmitter. This arrangement simplifies the instrument, reduces the cost of manufacture, and necessitates the use of but one main line. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view. Fig. 2 is a side elevation of the type-wheel-revolving mechanism. Fig. 3 is a front elevation of the printing, feed, and shifting mechanisms. Fig. 4 is a side elevation of the printing mechanism at the time of shifting the printing-pad. Fig. 5 is a cross-section of the printing-frame and feed mechanisms on the plane shown by dotted lines *x x'* on Fig. 3. Fig. 6 is a plan view of the shifting yoke N and printing-pad S. Fig. 7 is a bottom view of Fig. 3.

Like letters of reference indicate corresponding parts.

A represents the bed-plate, and B B' the side frames, of the instrument.

C is the type-wheel shaft, revolving by a step-by-step motion derived from the electro-magnet H, armature J, levers *e* and F, fastened on the shaft U, acting on the escape-wheel E, the retracting-spring P drawing it back when released by the electro-magnet H. The spring is tightened by the post O.

D is the type-wheel, permanently fixed upon the shaft C.

I am aware that the method of revolving a shaft by an escape and pallets is common in such instruments.

J' is another polarized armature acted upon by the same electro-magnet H, which effects the printing through the lever I, collar on pin K, side bars, L, printing-plate G, shifting yoke N, and printing-pad S, Figs. 5 and 6.

Upon the type-wheel D are two arms, Q and Q'.

When the parts are in the position shown in Fig. 3, the lug or finger R' upon the shifting yoke N is raised, when the armature J' is attracted by the electro-magnet H and presses against the arm Q', which, being cut at an angle, pushes the lug R' outward, and thereby carries with it the pad S, until it is immediately under the numeral side of the type-wheel. The lug or finger R, on the opposite side of the shifting yoke, and the arm Q act in the opposite direction to throw the printing-pad S under the letter side of the type-wheel when desired.

The arms Q and Q' are not placed directly opposite each other, but one is placed either one or two spaces of the type-wheel behind the other, as shown in Fig. 4.

The movement of the type-wheel is effected by the electro-magnet H attracting the polarized armature J, while the polarized armature J' remains quiescent on account of its polarity being the reverse of armature J, and therefore is repelled, instead of attracted. The armature J' is just short enough to let the lever *e* pass it, and the same applies to the armature J and lever I.

The printing is effected by the electro-magnet H attracting the armature J', throwing the lever I inward, and pushing the collar on the pin K, Fig. 4, before it. The pin K slides in slots cut in the base-piece Y, Fig. 4, the pin T having a corresponding movement in grooves in the printing-plate G. The side bars, L, being pivoted on the pins M, pin K is made to approach the lower pin M and pin T the upper pin M, thereby forcing the printing-plate G upward and pressing the pad S, with the paper strip overlying it, against a type. At the same time the feeding-dog Z, which is fixed to the pin T, is drawn back, while the paper strip *g* is held by permanently-fixed dogs or clips *a a'*, Figs. 3 and 5, from following it when the armature J' is released, and the retracting-spring P' acting the parts are drawn back and the feed-dog Z brought to the posi-

tion of rest shown by dotted lines in Fig. 5, carrying the paper strip *g* with it a distance sufficient for a new letter to be printed.

The method by which several instruments on the same line may be brought into unison is effected by rapid reversals of the current, by which the printing-plate G is not given sufficient time to reach its lowest point, but the type-wheel shaft is allowed to revolve. Thus the arm Q is swung around until it strikes the side of lug or finger R, when its progress is prevented until the printing-plate G is allowed to drop to its lowest point and the arm Q released and free to pass the lug R. The rapid reversals of the current are effected by a modification of a Breguet dial, and will be the subject-matter of another application for Letters Patent.

W is the ink-wheel, which turns easily in bearings in the arms X, fastened to the shaft *k*, and trails over the type as the type-wheel revolves.

The screw *b*, Fig. 6, acts as a pivot for the shifting yoke N.

I will now describe the manner of transmitting a message. The transmitting and receiving instruments are in unison. The operator now sends pulsations of a positive current through the magnet H, which now acts upon the armature J only, each pulsation moving the type-wheel the space of one letter until the letter desired is directly over the printing-pad S. He then reverses the current, which attracts the printing-armature J′ only and prints the letter. The paper is then fed along, and the process repeated for the next letter. Should he choose to print a numeral, the type-wheel is revolved until the arm Q is directly over the lug R, when he reverses the current as before, which presses the lug against the arm and pushes the shifting yoke with the printing-pad under the numeral type side and the numerals printed as desired. The pad remains in this position until carried to the letter side in a similar manner. Should the type-wheels get out of unison, alternating currents are sent through the magnet rapidly, which allows the type wheel to revolve until prevented by the arm Q striking the lug R, as before explained.

Having described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. The combination, in a telegraph printing-instrument, of one electro-magnet acting upon two polarized armatures parallel to each other but reversed as to their poles, one actuating the type-wheel escapement by currents of one polarity, the other actuating the printing, paper-feeding, pad-shifting, and unison stop mechanisms by reversing the current.

2. The combination of lever I, pins K, T, M, and M′, bars L, printing-plate G, shifting yoke N, and pad S, to form a printing mechanism.

3. The combination of the pin T, dog Z, dogs or clips *a′ a*, and printing-plate G, to form a feed mechanism.

4. The combination of the lugs R and R′, yoke N, arms Q and Q′ on the type-wheel, to form a shifting mechanism.

5. The combination of the electro-magnet H, acting upon a polarized armature, J′, screwed to a lever, I, whose bearings are centered screws at the base of the machine, a slot in upper end of lever I engaging the sleeve-piece on pin K, sliding in grooves in base-piece Y, said base-piece being fastened to bed-plate A, said pin K protruding sufficiently to pass the side bars, L, the rear side bars, L, being pivoted to the base-piece Y at its opposite end by pin M, the side bars L, crossing each other and pivoted at their centers, the upper end of bars L pivoted on pin M and pin T, pin T sliding in grooves in printing-plate G, the printing-plate G, carrying the yoke N, pivoted at the back part of printing-plate and having a lateral motion, allowing the pad S to engage either letters or numerals on the type-wheel, said yoke N having on either side lugs R and R′, by which said lateral motion is produced when lug R or R′ engages arm Q or Q′ on type-wheel and the printing-plate raised, the feed-dog Z riveted to the pin T and partaking of its movements, carrying the paper along on the release of the armature J, and the fixed dogs A and A′ riveted to the printing-plate G, the whole forming a printing, paper-feeding, pad-shifting, and unison stop mechanism in a telegraph printing-instrument, substantially as described.

CHARLES M. JORDAN.

Witnesses:
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