(No Model.)

E. J. MALLETT.

PRINTING TELEGRAPH.

No. 384,322. Patented June 12, 1888.

Fig. 1.

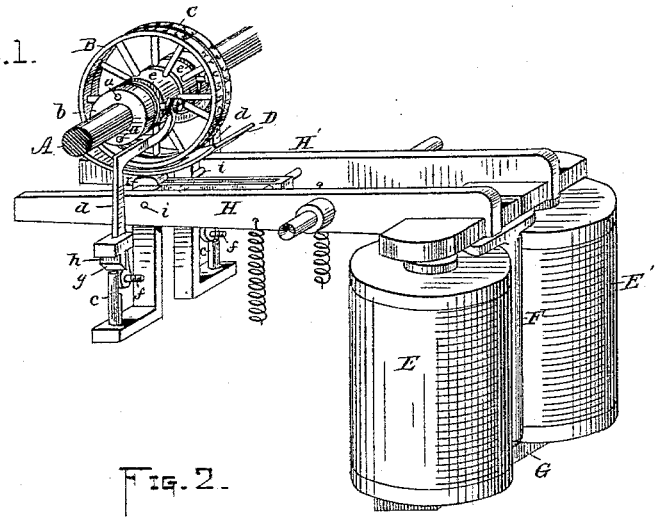


Fig. 2.

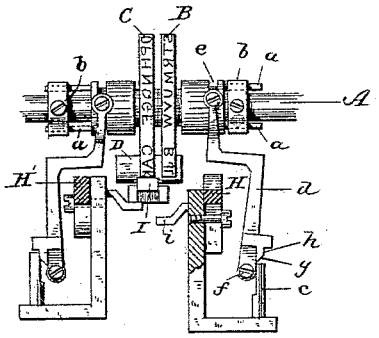
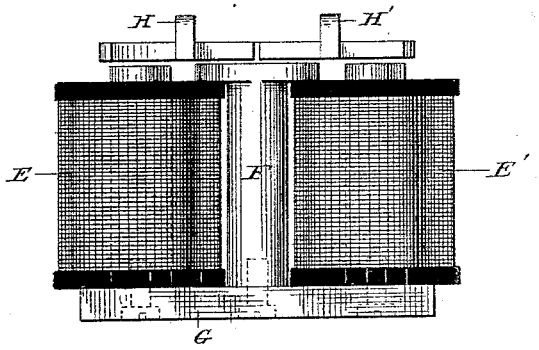


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD J. MALLETT, OF BAY SIDE, NEW YORK.

PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 384,322, dated June 12, 1888.

Application filed February 26, 1887. Renewed April 5, 1888. Serial No. 269,661. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. MALLETT, of Bay Side, Long Island, in the State of New York, have invented certain new and useful Improvements in Printing-Telegraphs, of which the following is a specification.

The instrument in which my present improvements are embodied is a receiving-instrument for use in a printing-telegraph system, and involves the use of two type-wheels, two press-pallets—one for each wheel—and an independent magnet for each of said pallets. The two type-wheels are capable of shifting or sliding lengthwise on the rotating shaft on which they are mounted, so that the one or the other of them, as occasion requires, may be brought into the line on which the printing is to be done, and their position is determined by the two pallets, one wheel or the other being in printing position, according as one or the other of the two pallets is caused to move.

One characteristic of my invention is, that the one movement of the pallet causes both the shifting of the type-wheels to proper position and the printing from that one which is thus brought into printing position. The shifting is accomplished during the first part of the stroke of the pallet and the printing during the last part of the same stroke.

The shifting mechanism I prefer consists of a dog on the pallet which acts upon the end of a shifting-lever, which has a beveled face sufficient to throw the lever to the proper extent, and above that bevel a face which is parallel with the line of motion of the dog, so that the dog can move over and in contact with it without imparting further movement to the shifting-lever. I may use this shifting mechanism with one pallet only, employing a spring by which the type-wheels will be pressed constantly in a direction opposite to that in which they are moved by the shifting mechanism; but by this plan the load of the magnet for that pallet which carries the shifting-dog is increased to an extent equal to the power of the spring whose stress must be overcome, and I therefore prefer to dispense with the spring and to duplicate the shifting mechanism, employing one set with each pallet, so that the wheels will be shifted positively in one direction or the other, according as one or the other of the two pallets is called into action.

The instrument thus generally described has been devised by me with more particular reference to the needs of the system for operating printing-telegraphs described and claimed in my application for Letters Patent filed of even date herewith, Serial No. 228,970, said system contemplating, among other things, the use at the sending-station of two independent sets or rows of transmitting keys or needles, the one set embracing one portion of the characters of the code employed and the other set embracing the other portion of said characters, and also the use at the receiving-station of two type-wheels bearing characters correspondingly arranged and two independent press magnets and pallets, one for each wheel, the arrangement being such that the keys of one set will cause the main line to be open at the time reversals stop therein and the keys of the other set will cause the line to be closed at that time, the condition of the line (that is to say, whether it is open or closed) determining which one of the two press-magnets at the receiving-station shall be called into operation, and consequently which type-wheel shall be printed from.

By providing, as I do, for the shifting of the type-wheels, I am enabled in the system just referred to to print the transmitted message in one continuous straight line from the two type-wheels.

The nature of my invention and the manner in which the same is or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of so much of a printing-telegraph receiver as is needed to illustrate my invention. Fig. 2 is a front elevation of the type-wheels and shifting mechanism, with the press-pallets in cross-section. Fig. 3 is a front elevation of the press magnets and pallets.

I have omitted the frame-work of the machine, the escapement mechanism for operating or controlling the movement of the type-wheel shaft, the inking-pad, and other accessories usually found in printing-telegraphs. Such devices are well understood, and, forming no part of my present improvements, do not require illustration.

The parts of the machine which I have deemed it necessary to show are the type-wheel

shaft A, the two type-wheels B C, the shield D, the press-magnets consisting of the two spools E E′ and intermediate naked soft-iron core F, all mounted on a common yoke, G, the two pivoted independent press-pallets H H′, and the hinged press-pad I, which is operated equally by the movement of either pallet. The two type-wheels are fastened together, so that they move together at all times. They slide lengthwise on their shaft A, but are compelled to follow its step-by-step rotary movement by any known or suitable means—as, for instance, by pins *a*, which extend from their hub into and through holes formed in collar *b*, fixed to shaft A, the pins sliding back and forth in their holes as the wheels are shifted back and forth on the shaft.

The same shifting mechanism is provided for each pallet. Therefore a description of one will answer for both. Taking, for example, pallet H, it is provided at the proper point with an upright shifting-dog, *c*. In proper position to co-operate with this dog during the upward movement of the press-pallet is a shifting-lever, *d*, the upper end of which is forked, the forks being provided with points to enter and engage an annular groove, *e*, in the type-wheel hub. The shifting-lever is pivoted at *f* to the frame of the machine, and upon that portion of it which is acted on first by the dog *c* as it rises is provided with a bevel or incline, *g*, of sufficient extent to cause the dog which acts thereon to throw the shifting-lever, and consequently the type-wheels, the proper distance to bring the type-wheel B over the slot or opening in the shield D, which slot or opening is slightly wider than the type-wheel. Above the incline *g* is the straight portion *h*, along which, during the concluding portion of the movement of the pallet, the dog moves without imparting movement to the shifting-lever.

The two sets of shifting mechanism are so placed that one or the other of the pivoted shifting-levers is always in position to be acted on by its appropriate dog. If two consecutive impressions are taken from one wheel—*e. g.*, from wheel B—the shifting of the wheel to proper position over the shield D will be accomplished during the first rise of pallet H. The wheel then remains in its shifted position, while the pallet descends and again rises to make a second impression. In fact, when the wheels are shifted by one of the pallets they remain in that position until the other pallet comes into action. It is immaterial, however, whether they shift from position during the intervals between the rise of the pallets or not, because either pallet when in action will during the first portion of its rise compel the wheels to assume the required position, and will then hold them in that position during the subsequent printing operation.

Each pallet is provided with a horizontal lifter-arm, *i*, which extends under the hinged press-pad I, so that the rise of either pallet will lift the press-pad. The pad, however, rises high enough to press the tape against the face of the type-wheel only while the shifting-dog is on the straight face *h* of the shifting-lever, which is after the shifting of the type-wheels has been accomplished.

Each press-pallet is pulled down by a spring, and is lifted by the attraction of the armature with which it is provided for the magnet appropriate to it.

The spool E and core F constitute one magnet; the spool E′ and the core F constitute the other magnet. In other words, the naked core F is common to the two spools. When the current is through magnet E, pallet H is operated; when the current is through magnet E′, pallet H′ is called into action. This particular form of magnet is not here claimed *per se* by me, the same being the subject in part of my aforesaid application, Serial No. 228,970, of even date herewith.

I have described what I believe to be the best way on the whole of carrying my improvements into effect. I do not, however, desire to be understood as limiting myself to the details hereinbefore described in illustration of the same, for it is manifest that the construction and arrangement of parts may be considerably varied without departure from my invention, what is mainly essential being that the shifting of the type-wheels (when shifting is called for) shall be accomplished by the same stroke of the pallet which accomplishes the printing.

What, therefore, I claim, and desire to secure by Letters Patent, is—

1. The combination of the laterally-movable type-wheel, the shifting mechanism, the printing-pad, and the press-pallet, which during the first part of its stroke completely shifts and brings to rest the movable type-wheel and subsequently effects the printing, substantially as and for the purposes hereinbefore set forth.

2. The combination of the two laterally-movable type-wheels, the shifting mechanism, the two independent press-pallets, each of which during the first part of the stroke completely shifts and brings to rest the movable type-wheels and subsequently effects the printing, and the press-pad common to the two pallets, substantially as hereinbefore set forth.

3. The combination of the two laterally-movable type-wheels, the shifting mechanism, the slotted shield, the press-pad common to both press-pallets, and two independent press-pallets, each of which during the first part of its stroke completely shifts and brings to rest the movable type-wheels and subsequently effects the printing operation, substantially as hereinbefore set forth.

4. The combination of the two independent press-pallets, the type-wheels, and the two sets of shifting mechanism, one for each pallet, the combination being and acting substantially as hereinbefore set forth.

5. The two type-wheels, the two independ-

ent press-pallets and wheel-shifting mechanism operated thereby, and the press-pad, in combination with the two magnets, one for each pallet, substantially as and for the purposes hereinbefore set forth.

6. The combination of the type-wheel, the press-pallet, the shifting-dog thereon, and the shifting-lever provided with an incline, *g*, and straight face *h*, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 25th day of February, 1887.

EDWARD J. MALLETT.

Witnesses:
CHARLES TAYLOR,
C. E. MYLANDER.