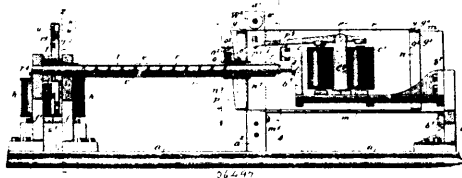


*Claim.*—1st. In a type printing apparatus, a blank formed as an endless band or tube in combination with means for moving the



blank step by step in the same direction, both for letter and word spaces, and by an enlarged single step across the space between the end of one line and the beginning of the next. 2nd. In a type printing machine, a blank returning upon itself to bring its edges together, in combination with means for feeding said blank in the direction of the letter space feed from the end of one line to the beginning of the next by a lengthened feed step. 3rd. In a type printing machine, a blank mounted in the machine as an endless band or tube upon which the lines are printed circumferentially or in the direction of travel of the band, in combination with step by step mechanism for moving the band or tube in the direction of the letter or word space feed, said mechanism having a long feed space or spaces for crossing the edge at the end of the line to the beginning of a new line by a longer step or steps. 4th. In a type printing machine, a paper or other blank mounted as a tube or endless band, in combination with means for feeding it in the same direction to print the lines around its circumference, as well as to cross the gap from edge to edge of the blank by a lengthened feed step in order to begin a new line, and means for feeding said blank axially to cover the space between lines. 5th. In a type printing machine, a paper blank formed as a tube or endless band, and a feeding mechanism rotating said blank adjusted to move by an enlarged or amplified step or steps at the end of a line. 6th. The combination with the blank, feeding always in the same direction both for letter or word spaces and for the space from the end of one line to the beginning of the next, of a feed mechanism moving the blank in the direction of letter and word spaces having an enlarged or amplified feed space adjusted, as described, to come into operation at the end of each line. 7th. In a type-by-type printer, the combination with a blank mounted to feed as an endless band or tube and with an edge forming a spiral or a diagonal to the line of feed as described, of a feeding mechanism operating always in the same direction and adjusted as described to feed said blank or tube more or less than a complete rotation for each complete rotation of the feed controlling wheel. 8th. In a type-by-type printer, a blank consisting of a tube adapted to rotate upon a stationary support, and a frictional feeding device engaging directly with the surface of the paper for feeding the same step by step. 9th. In a type-by-type printer, the combination, substantially as described, of a tubular blank, a supporting cylinder within the same, and a frictional feed wheel engaging with the surface of the paper tube for rotating the same upon the cylinder. 10th. In a type-by-type printer, the combination with the paper tube and the frictional feed wheel for rotating said tube step by step, of means for giving said wheel a movement of translation bodily parallel to the axis of the tube. 11th. In a type-by-type printer, the combination with a blank formed as a tube or endless band, a fixed support therefor, means for rotating the tube step by step upon its support and continuously in the same direction, as described, and means for giving said blank a movement of translation in the direction of its axis of rotation to produce the vertical space between lines. 12th. In a type-by-type printer, the combination with the blank formed as a tube or endless band, of a continuously rotating feed shaft or wheel connected with said tube, a step by step escapement wheel carried by said shaft, and a screw shaft with which a pin or lug rotating with the tube engages, as and for the purpose described. 13th. In a type-by-type printer, the combination of a paper feed wheel, a longitudinally slotted shaft supporting the same and connected with an escapement wheel, and a screw shaft with which a pin carried by the wheel engages through the slot. 14th. In a type-by-type printer, the combination with a paper feed wheel, of a screw shaft, a hollow longitudinally slotted shaft surrounding the same, and a spring actuated shaft pin connected with the wheel and engaging the screw thread, as and for the purpose described. 15th. In a type-by-type printer, the combination, substantially as described, of a paper feed wheel, a longitudinally slotted spindle on which said wheel slides axially, and a screw shaft with the thread of which the wheel is connected through the slot, as and for the purpose described. 16th. In a type printing machine, the combination, substantially as described, with a paper feed, of a forked lever, *a*, embracing an anchor escapement wheel, and a pivoted detent pallet mounted on one arm of said lever and provided with a spring for moving the toe of the pallet backward to meet an advancing tooth when the said pallet is moved radially away from engagement with the wheel. 17th. The combination, substantially as described, with the paper feed in a type printing machine, of two toothed wheels, *r*<sup>2</sup>, *r*<sup>3</sup>, and an anchor escapement, one of whose pallets is yielding, as described, the two pallets thereof engaging respectively with said wheels. 18th. The combination, substantially as described, with an anchor escapement having

a yielding pallet, of two toothed wheels engaged respectively by the pallets, and one provided with a blank space, as and for the purpose described. 19th. The combination, substantially as described, of two toothed wheels and an escapement lever having two pallets engaging respectively with said wheels, one of said pallets being pivoted as described and provided with a spring and top, said spring being applied to move the toe of the pallet in a direction to meet the rotation of the wheel. 20th. The combination with a type printer, of two toothed wheels connected with the feeding mechanism, one of said wheels having a blank space and an escapement lever, the pallets of which engage respectively with said wheels, as and for the purpose described. 21st. In a printing telegraph, the combination of a type-wheel, a press pad operated positively in both directions by an electro-magnet or magnets, and means at the receiving stations for energizing the said magnet or magnets in alternation first to effect an impression and then to withdraw the pad immediately and independently of the condition of the line circuit. 22nd. In a printing telegraph, the combination with the press mechanism, of two operating magnets, one acting to produce the impression, the other to restore the press to normal position, and means at the receiving station for energizing said magnets alternately. 23rd. The combination with the type-wheel of a press pad, an armature lever carrying the same, two electro-magnets acting on said lever at opposite sides of its fulcrum, respectively, and a circuit controller for throwing said magnets into circuit alternately one as soon as the type-wheel is set to position for printing and the other immediately thereafter to throw off the pad. 24th. The combination with a type-wheel having two or more rings of type and capable of an axial movement as well as a movement of rotation, of one or more drivers and followers arranged in line with the axis of said wheel, said followers being capable of rotation in a plane parallel to the plane of rotation of the type-wheel, and means for converting the rotation of the final follower directly into an end thrust to produce an axial movement of the type-wheel. 25th. The combination with a type-wheel having two or more rings of type, of means for moving said type-wheel axially consisting of two or more axially movable drivers mounted in line with the type-wheel axis, and two or more corresponding rotating followers rotating parallel with the type-wheel, the final follower being connected directly with an axial extension of the type-wheel shaft incapable of rotation but adapted to move axially. 26th. The combination of a type-wheel having three or more rings of type, of two series of rotating drivers and followers all arranged axially in line with the said wheel, and one of said series being provided with means for imparting a movement of rotation to the type-wheel while the other series is provided with means for imparting an axial movement to said wheel, as and for the purpose described. 27th. The combination with the selecting relays and a sunflower or distributor for closing connection to said relays in succession, of a differentially wound controlling magnet governing the circuit through the sunflower, and a main relay having front and back contacts connected respectively to the different coils. 28th. The combination with the selecting relays, of a differential magnet controlling the circuit thereof, and means for alternately closing the circuit of the differential coils by the main line pulsations. 29th. The combination, substantially as described, with the selecting relays and the type-wheel impelling device controlled thereby, of a differential magnet governing the circuits of said selecting relays, said controlling magnet being adapted, as described, to respond to a prolongation or modification in a rapid succession of currents flowing through its coils alternately. 30th. The combination, substantially as described, of a type-wheel adjusted to its various positions for printing by a series of impelling devices acting singly or in various combinations, a press apparatus brought into operation automatically on the completion of each cycle of actions in the type-wheel adjusting apparatus, a power driven feed mechanism, an electro-magnet for releasing the same, and means for controlling said magnet to release said feed mechanism on the reverse movement of the press apparatus after each impression. 31st. The combination, substantially as described, in a type-by-type printer, of a tubular blank and a step-by-step feed therefor, a sunflower or distributor governing the position of the type-wheel, a press apparatus controlled by said sunflower, and means for releasing the feed devices on reverse movement of the press after each impression. 32nd. The combination, substantially as described, in a type-by-type printer, of a paper feed mechanism, a wheel of which has an enlarged or amplified feed space as described, a driving power therefor, a step-by-step feed adjusted to release the paper mechanism on movement in one direction only, an electro-magnet controlling said step-by-step devices, and a press governing the circuit of said electro-magnet by a back contact. 33rd. In a type-by-type printer, a blank formed as an endless band or tube in combination with a stationary support therefor and paper feed devices engaging directly with the surface of the paper for rotating the blank continuously in the same direction in the printing of lines and for moving it axially to cover the space between lines. 34th. The combination, substantially as described, of the paper feed devices and escapement mechanism acting to release the paper feed on movement in one direction only, an electro-magnet controlling the same, a press governing the circuit of said magnet, a sunflower or distributor for the type-wheel adjusting apparatus, and means for changing the circuit of the press magnet once for each cycle of changes produced by the sunflower or distributor.