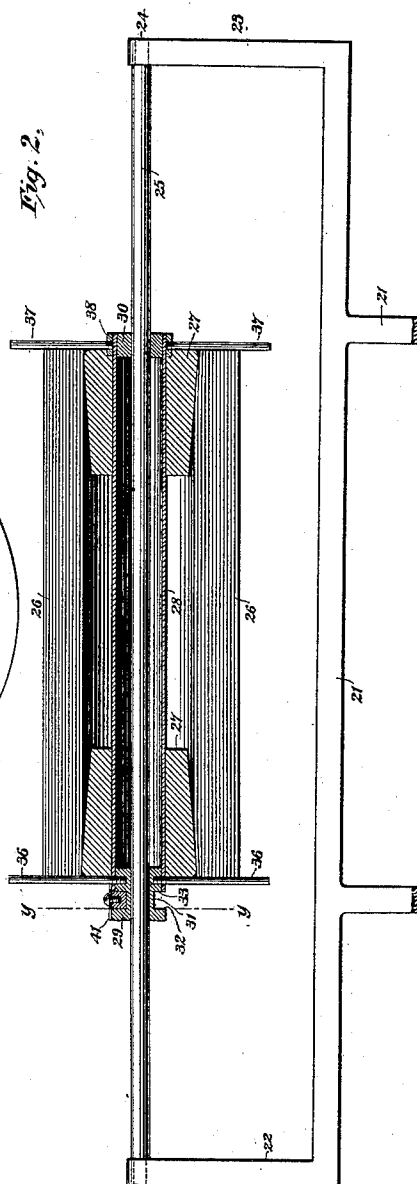
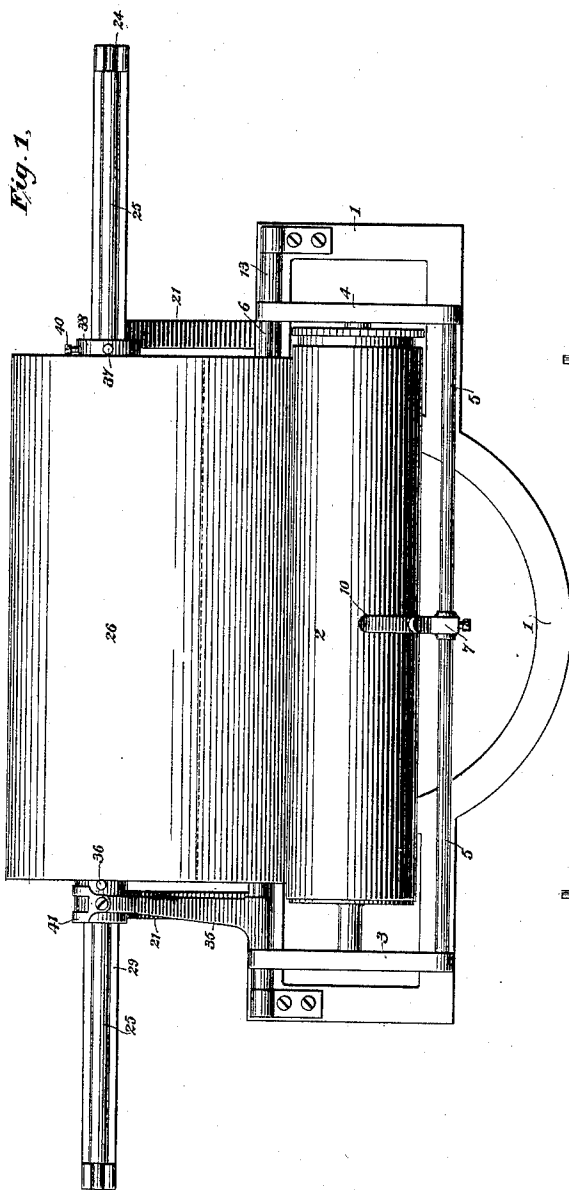


2 Sheets—Sheet 1.

No. 465,021.

Patented Dec. 15, 1891.



Witnesses
Geo. W. Breck.
Edward Thorpe.

Inventors!
George A. Hill and
By their Attorney Charles M. Hill
Jacob Felbel

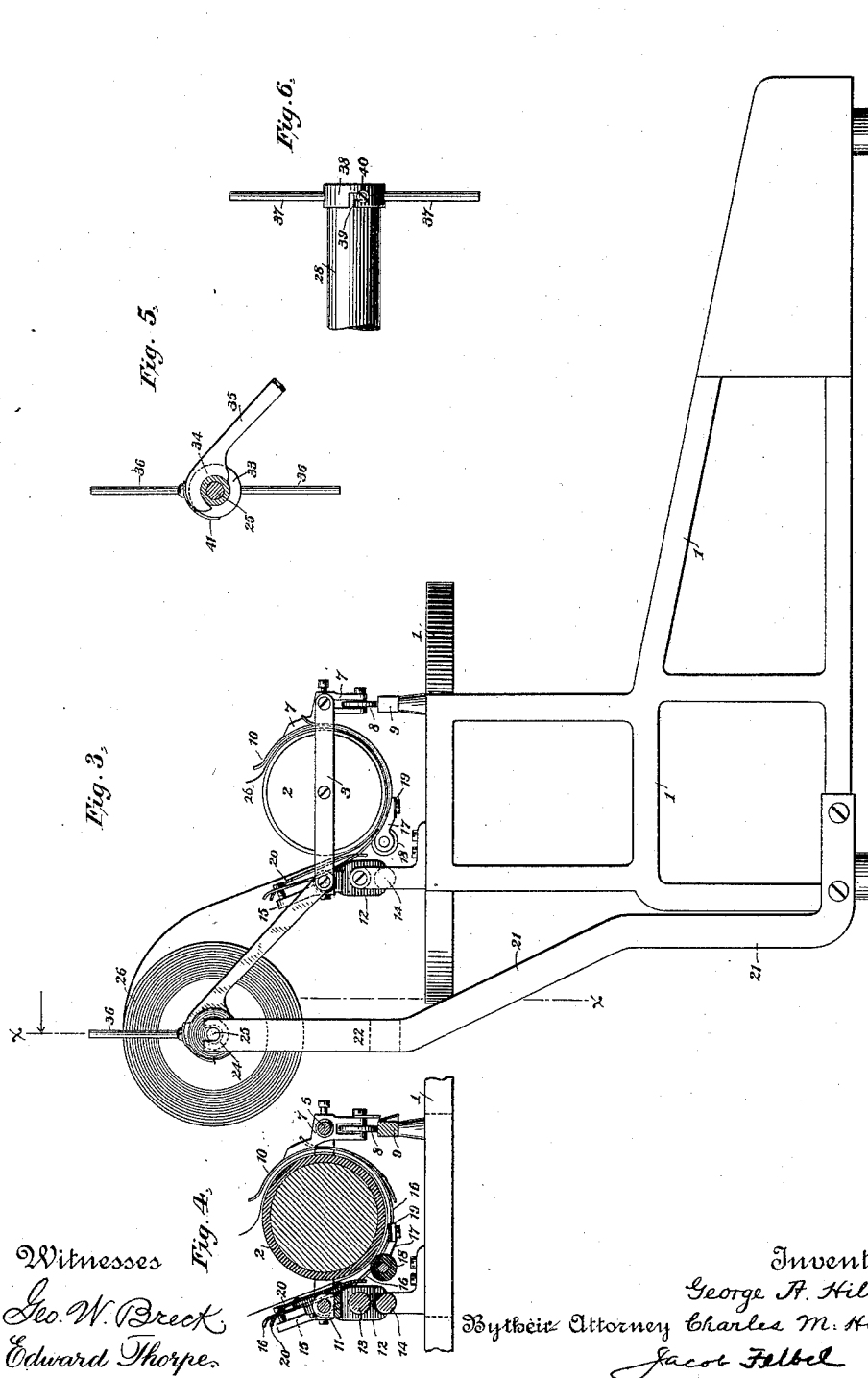
(No Model.)

2 Sheets—Sheet 2.

G. A. & C. M. HILL.
TYPE WRITING MACHINE.

No. 465,021.

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UNITED STATES PATENT OFFICE.

GEORGE A. HILL AND CHARLES M. HILL, OF BROOKLYN, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 465,021, dated December 15, 1891.

Application filed November 20, 1890. Serial No. 372,010. (No model.)

To all whom it may concern:

Be it known that we, GEORGE A. HILL and CHARLES M. HILL, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Our invention has for its main object to provide a construction by which the type-writing machine is capable of printing from a continuous roll or web of paper; and to this end it consists in the features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a portion of a type-writing machine embodying our improvements. Fig. 2 is a vertical section taken through the roll of paper and on the line xx of Fig. 3. Fig. 3 is a side view of a portion of a type-writing machine embodying our improvements. Fig. 4 is a vertical cross-section through the carriage and the upper part of the machine. Fig. 5 is a vertical section taken at the line yy of Fig. 2; and Fig. 6 is a detail view, in elevation, of one end of the roll-supporting core.

In the several views the same part will be found designated by the same numeral of reference.

1 designates the frame-work of a type-writing machine, and 2 the paper-platen thereof. The latter, as usual, is mounted to rotate in a frame or carriage composed of the end bars 3 and 4 and front and rear bars 5 and 6, respectively. The front bar 5 is provided with a bracket 7, which contains an anti-friction roller 8, that travels upon a track or way 9, affixed to posts rising from the frame-work. The said bracket is also provided with a paper-guide 10, which partially encircles the platen at its front side and at about the middle of its length. The rear bar 6 passes through eyes or bearings 11 in a yoke 12 and forms an elongated pintle or shaft about which the carriage and its appendages may be turned up or vibrated, the yoke being incapable of turning by reason of its peculiar mounting on the parallel guide-rods 13 and 14, all as com-

mon in that type of machines known as the "Caligraph."

For the sake of clearness we have omitted to show the letter-spacing mechanism and the carriage-driving mechanism, as well as other necessary parts of a fully-equipped type-writing machine, and in carrying out our invention any of the well-known and suitable letter-spacing and carriage-driving mechanisms may be employed.

On the back bar 6 is mounted near each end a bracket 15, to which is attached one end of a spring 16, which is curved to extend around the under side of the platen at its end and which serves as a guide for the paper during the feeding operation. About the center of each of said springs is soldered or secured a bracket 17, in which brackets the ends of the feeding or pressure roller 18 are mounted or journaled, and to said brackets the ends of a paper-scale 19 are attached, all in about the usual manner.

Secured to the back bar 6 by suitable couplings or clips is a paper-table 20.

Attached to the frame-work by screws on opposite sides of the machine or made integral with said frame-work is a supplemental frame-work or support 21, arranged in rear of the type-writing machine proper and terminating in two upwardly-projecting arms 22 and 23, each having a half-round groove or open bearing 24 for the reception of the ends of a round rod 25, which is longer than the carriage guide-rails and which is arranged parallel therewith. Upon said rod 25 is mounted the roll of paper 26 to be used with the machine. The roll is preferably provided at its ends with hollow wooden tapering plugs 27, through which is inserted a tubular core 28, having perforated end pieces 29 and 30, which bear upon the rod 25. The end piece or bearing 29 is elongated and grooved, as at 31, forming shoulders 32 and 33, between which is fitted the bifurcated end 34 of an arm 35, pivoted or hinged to the back bar 6 of the paper-carriage. By means of said arm the roll of paper is connected to the paper-carriage to travel therewith and in its movements to bear always a fixed position relatively to the paper-platen. The roll is prevented from

moving endwise independently of the core by means of pins 36 and 37, the pins 36 being attached to the end piece 29 and the pins 37 to a ring or band 38, encircling one end of the core or tube and provided with a bayonet-slot 39, which is adapted to co-operate with a projecting screw or pin 40 in the core, thus locking the band and the pins 37 in position. The roll is prevented from unwinding too freely by a forked spring 41, screwed to the arm 35 and bearing with the proper degree of pressure or force upon the end piece 29 of the core.

In order to put on or take off a roll of paper, the band 38, with its pins 37, is detached, the screw or pin 40 removed, and the guide-rod 25 lifted out of its supports or bearings. The devices at the other end of the core need not be disturbed. Supposing the roll to have been properly mounted, as illustrated, the leading end of the web of paper is passed down over the paper-table and between the platen and feed-roll and the several paper-guides to the desired extent. The writing may then be begun, and as the carriage travels to the left of the operator the roll is carried along in unison therewith by reason of the rigid connection between the carriage and said roll. In order that the weight of the roll and its accessories shall not add materially to the finger-key tension of the machine or to the driving power required we make the arm or support 22 slightly lower than that marked 23, so that the guide-rod 25 may be inclined toward the left and the roll thus assisted in that direction by the force of gravity during the operation of the finger-keys in writing. When the end of the line has been reached, the carriage and roll are returned by a pull on the carriage by the operator. At the same time the platen may be turned by the usual line-space lever (not shown) to feed the paper forward for the commencement of a new line. When the carriage is traveling to the left, the arm 35 at its hooked or bifurcated end bears against the shoulder or flange 32, and the roll is thus forced to move with said carriage, and when the carriage is being returned to the right the hooked end of the arm bears against the shoulder or flange 33 and forces the roll also to the right. When the writing has been finished, the paper may be severed at any desired locality. We prefer to have the paper perforated transversely at uniform distances, so that when severed after having been written upon the sheets may be all of equal length. The paper may of course be prepared with any desired printed matter or heading.

In practice thus far we have used telegraph-blanks printed in a continuous roll and perforated crosswise between each blank and have found that message after message may be written until the roll has been exhausted after the leading end of the roll has been once properly inserted between the feed-roll and

paper-platen, &c. As the paper is progressively unwound it is fed up over the platen into position for ready severance. The pins 36 and 37 not only prevent endwise movement of the roll bodily independent of the core, but, by reason of their length, they serve to confine the side edges of the paper and assist in feeding or delivering the paper to the platen in a true and perfect condition.

When it may be desired to use the machine in the usual way with loose sheets, the hooked end of the arm may be detached from the core or roll-support and allowed to rest on the carriage.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination, with the platen and its carriage, of an elongated stationary guide-rod arranged parallel with the path of movement of the paper-carriage, and a roll of paper connected to the carriage and arranged to turn about and slide longitudinally upon said fixed guide-rod.

2. In a type-writing machine, the combination, with the platen and its carriage, of an inclined guide-rod, a roll of paper, and connections between the carriage and the roll of paper.

3. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a core or tube on said rod for supporting a roll of paper, and an arm connecting said core with said carriage.

4. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core, devices for preventing the roll from moving endwise independently of the core, and an arm connecting the core with the carriage.

5. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core, an arm connecting the core with the carriage, and guides for insuring a straight unwinding of the roll and a proper presentation of the web to the platen.

6. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core having radial guide-pins, and an arm connecting the core and the carriage.

7. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core having detachable guide-pins at one end, and an arm connecting the core and the carriage.

8. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core having at one end a removable band provided with guide-pins, locking means for said band, and an arm connecting the core and the carriage.

9. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core mounted to

rotate thereon and having a grooved bearing at one end, and a hooked arm connecting the core and the carriage.

5 10. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core, an arm connecting the core with the carriage, and a friction device applied to the axis of the core to regulate the unwinding of the roll.

10 11. In a type-writing machine, the combination, with the platen and its carriage, of a guide-rod, a roll-receiving core having a

grooved bearing at one end, a hooked arm connecting the core and the carriage, and a friction-spring on said arm engaging said bearing to prevent undue unwinding of the roll. 15

Signed at New York city, in the county of New York and State of New York, this 10th day of November, A. D. 1890.

GEORGE A. HILL.

CHAS. M. HILL.

Witnesses:

GEO. W. WEIFFENBACH,

GEORGE W. PAGE.