

(No Model.)

3 Sheets—Sheet 1.

H. H. UNZ.
TYPE WRITING MACHINE.

No. 560,244.

Patented May 19, 1896.

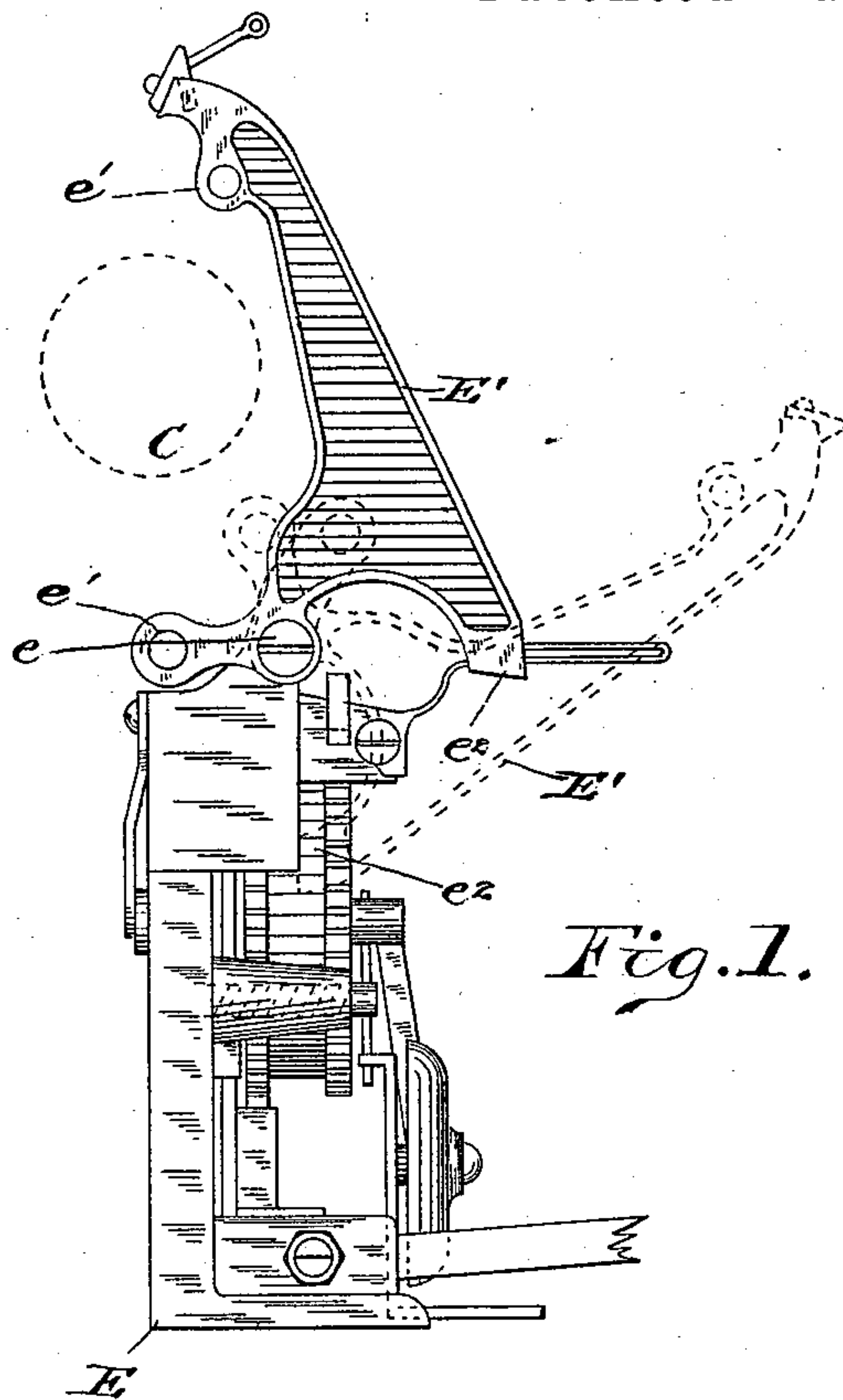


Fig. 1.

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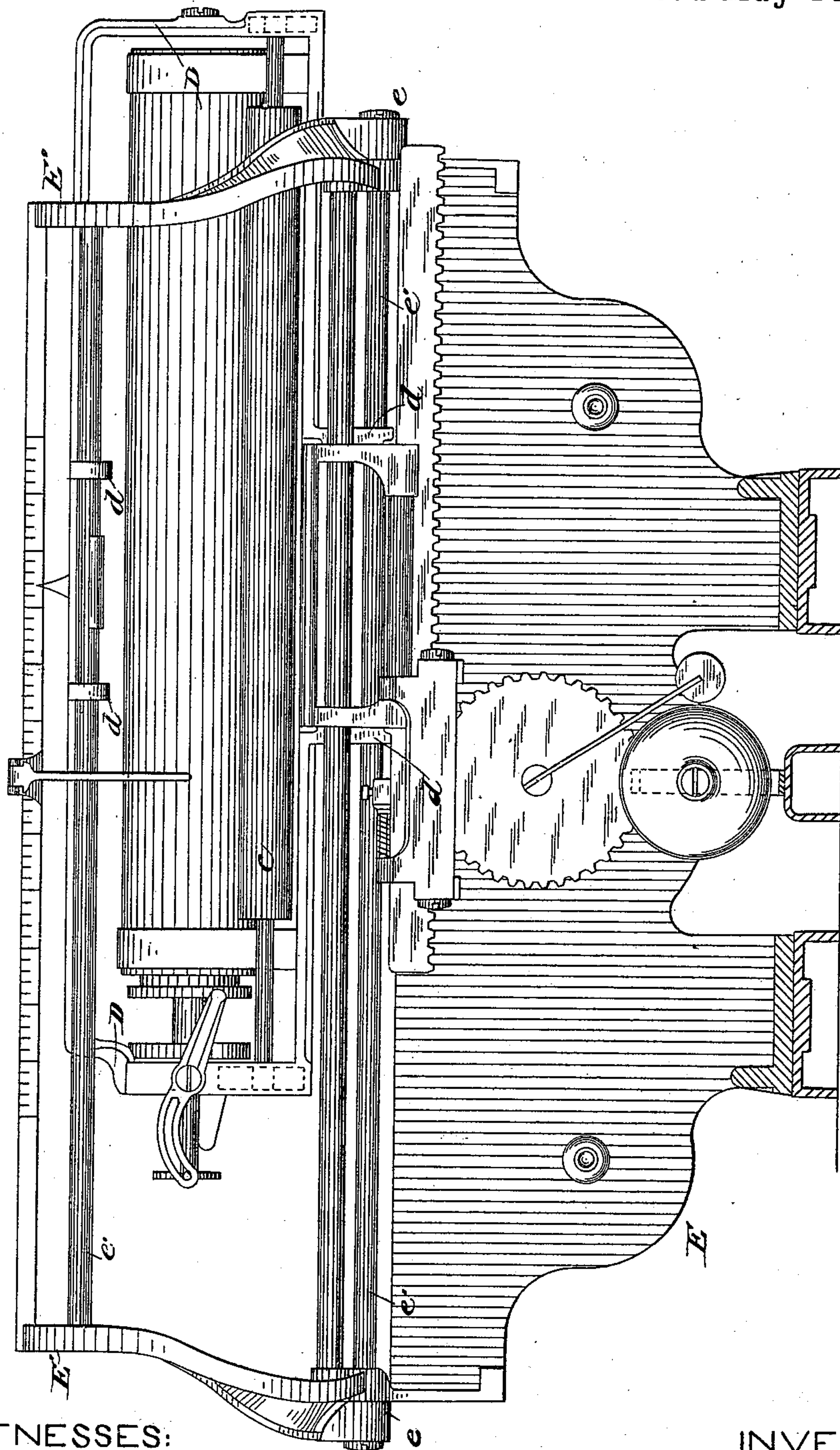


Fig. 2.

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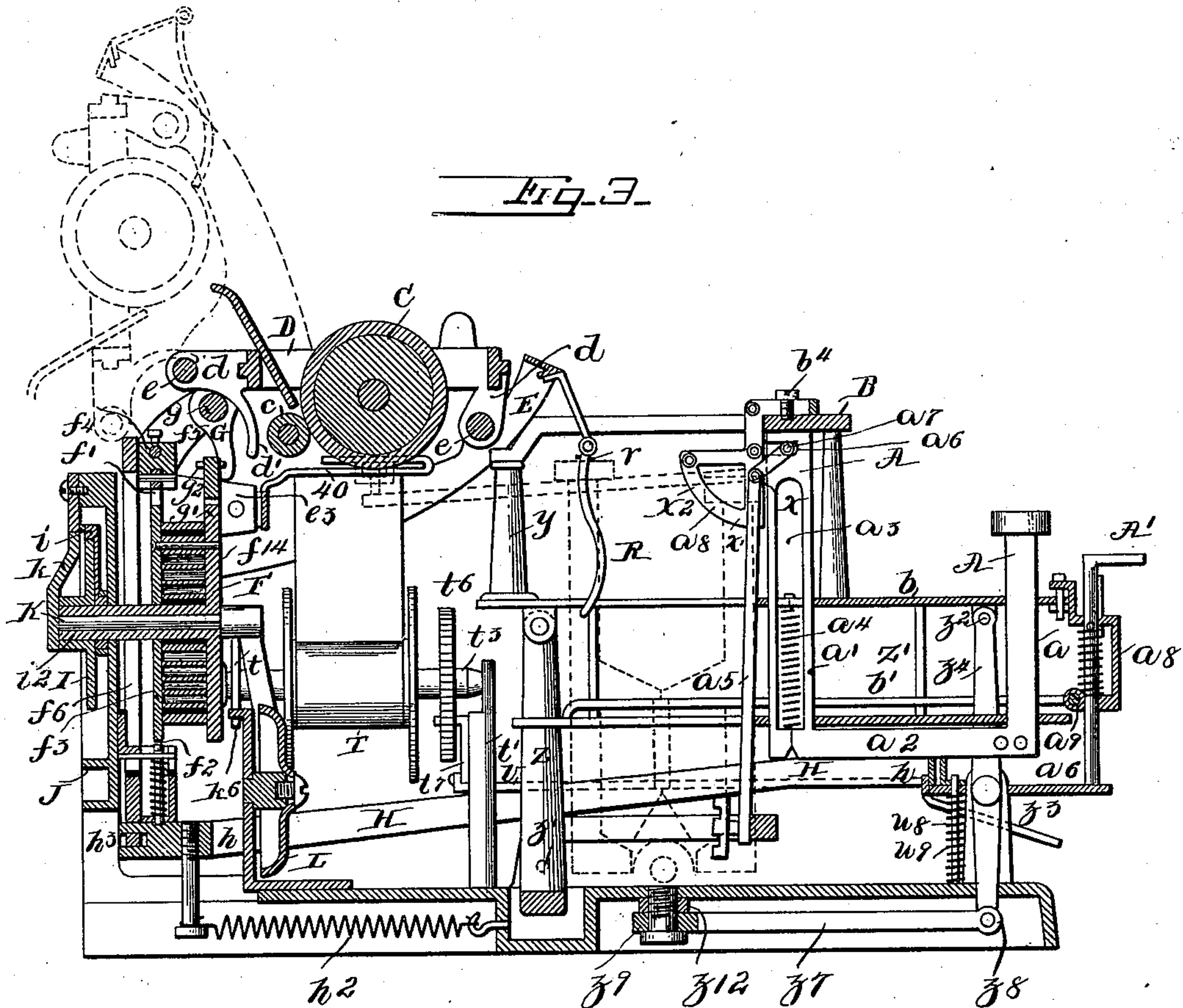
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3 Sheets—Sheet 3

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TYPE WRITING MACHINE.

No. 560,244.

Patented May 19, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY H. UNZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
NATIONAL TYPE WRITER COMPANY, OF PENNSYLVANIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 560,244, dated May 19, 1896.

Original application filed March 14, 1887, Serial No. 230,767. Divided and this application filed December 14, 1888. Serial No. 293,634. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. UNZ, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Type-Writers, of which the following is a true and exact description, due reference being had to the accompanying drawings, which form a part of this specification.

This application originally formed a part of application upon which Letters Patent No. 400,146, dated March 26, 1889, were granted.

My invention relates specifically to a novel construction of the main frame of the machine, which is constructed in two parts, said parts being pivotally connected together.

In the drawings, Figure 1 is a side view of rear portion of machine. Fig. 2 is a rear view of machine with pivoted portion of the main frame lifted. Fig. 3 is a vertical section through the center of the machine.

Are the type-operating keys. These type-operating keys have two vertical arms a a' in the same vertical plane, and these arms are connected together by the rod or bar a^2 . The arms a of the finger-keys are arranged in any desired manner upon the operating-board. In the orifice a^3 , which is cut out of the surface of the arm a' , is placed a spiral spring a^4 , said spiral spring being fixed at one end to the plate b and the other end to the finger-key A. The type-bar a^5 , having the desired type at its lower end, is connected with the type-operating key A by means of the arm a' of the type-operating key by being pivoted in the slot a^6 by the pivot or screw a^7 , so that it is loosely and not rigidly joined thereto.

The type-bar hanger a^8 , having a circular guide a^9 , is secured to the bar B by the screw b^4 , and in this hanger and guide the type-bar is swung and guided during its movement to and from its impact-point.

C represents the platen, having the pressure-roller c , between which and the platen the paper rests. D represents the platen-carrier. This platen-carrier is attached to the rods e of the main frame E of the machine by means of the bearings d .

A portion E' of the main frame E is pivoted

at e^2 , so that that portion of the main frame can have a swinging motion. The platen-carrier D has attached to it a contact-arm d' , which rests against the rack-carrying platen-carrier-operating frame G. This travels along the rod g , (a portion of the main frame.)

A rack g' is attached to the frame G by means of screws g^2 in slotted holes g^{35} . The rack g' works into the gear f^{14} of the spring-impelled actuating-drum F. The spring in this drum causes the drum and gear to revolve, driving the rack forward, and this forward movement of the rack carries with it the frame G, which in turn moves the platen-carrier D forward. The rack g' is guided in the bearings or lugs e^3 of the main frame E. The arms d' are so constructed that when the portion E' of the main frame E is swung, as heretofore described, the arms d' are moved in the arc of a circle, the center of which is e^2 , and are always engaged or in contact with the frame G.

The action of the drum F is directly controlled by the two dogs $f' f^2$, alternately engaging with the ratchet-wheel f^3 of said drum F. The dog f' is pivoted on the lug f^4 . Said lug is adjustably attached to a rod f^5 , said rod being sustained in the frame f^6 .

H is the spacing-frame. This spacing-frame has its front and rear ends h parallel and in straight lines. This spacing-frame is supported by a pivotal connection with the support h' and is normally held in position by the spring h^2 , which spring also retains the dog f^2 normally out of connection with the ratchet f^3 . The spacing-frame is connected to the vertical reciprocating sliding frame f^6 by means of the bifurcated projection h^3 .

Located at the front of the machine is a space-key A'. This key is an ordinary plunger. A spring surrounds the barrel of this key to hold it normally in position. The foot of this space-key rests upon one of the fingers a^6 , projecting from the end of the spacing-frame. The spacing-key A' is held in the frame a^8 , the upper end of which is secured to the upper plate b by the set-screw a^7 , and the lower end is guided on the wire a^9 , to

which it may also be secured by a set-screw, if desired.

Attached to the spring-actuated drum by means of the hollow shaft i^2 is the wheel I. On this shaft i^2 is loosely attached the adjustable spring bell-trip and drum-stop i , the wheel I having teeth or orifices i^3 , the drum-stop i having projections i^4 , which trip and stop can be moved, so as to rest in any desired tooth or orifice of the wheel I. On the back of the main frame of the machine is attached the bell-operator j . Within the hollow shaft i^2 is the normally idle shaft K, having fixedly attached to one end the arm k and to the other end the spring-clapper k' of the bell L and the stop k^6 .

When it is desired to prevent any further motion at any point of travel of the drum, the adjustable lug M, having the projection m , is rigidly attached to the rim J, which rim is secured at the back of the main frame of the machine at any desired point by means of the screw m' , so that when the adjustable spring bell-trip and drum-stop i in its travel strikes the projection m the motion of the spring-actuated drum ceases until the adjustable spring bell-trip and drum-stop i is returned back or the lug M removed. When the platen-carrier has reached the desired limit of its travel in returning toward its initial position, the necessary line-spacing is accomplished in the following manner: A plunger N passes through the end of the platen-carrier D, also through the shaft of the ratchets O and O', and has a spring n' in its inner end, which normally forces the plunger N outward by resting against the shoulder n^3 of the plunger. At the end of and attached to the platen having the plunger are the ratchets O and O'.

The spring-pawl o normally rests in the ratchet O', being attached to the platen-carrier frame by a screw. The pawl o^2 is attached to the platen-carrier of the machine and connected at its outer end with the plunger. This distance of movement of plunger may be adjusted by the stop P, pivoted on the platen-carrier frame, which will limit the throw of the pawl o^2 and movement of the platen.

The paper is held against the platen C by means of the pressure-roller c .

In order to locate the printing-point at any portion of the platen-carrier and platen, a pointer R is flexibly attached to the main frame of the machine. The pointer R is provided with a set-screw r . The indicator S is connected to and travels with the platen-carrier, the outer end of the indicator pointing to the scale s , said scale being secured to the main frame and graded the desired number of indications equal in number to the letter capacity of the machine.

The ribbon-spools T are constructed in the ordinary well-known manner. The ribbon-spool is retained in its bearings by being held between the projection t and the standard t' ,

the projection t being secured to the main frame of the machine, and is constructed so that the spring-bearing t^2 can have a lateral movement. The shaft t^3 of the ribbon-spool has tapering ends, which fit into the bearings. The movement of the ribbon from one spool to the other is accomplished and controlled in the following manner: Attached to the shaft t^3 upon each of the ribbon-spools are the ratchet-wheels t^6 . Pawls t^7 , having a toothed portion t^8 , rest in the ratchet-wheels. These pawls are attached at their lower ends to the ribbon-operating bar U. This operating-bar U extends toward the front of the machine and is so situated that when the operator depresses any type-operating key both the vibratory spacing-frame and the ribbon-operating bar are forced downward, and the ribbon-operating bar, acting through its pivoted bearings upon the pawl, causes that ratchet-wheel which is connected with the pawl to be revolved. The ribbon-operating bar can be adjusted so as to cause the engagement of either pawl directly with its corresponding ratchet-wheel. The ribbon in its travel from one ribbon-spool to the other is guided and supported by means of the ribbon-supports 40. These ribbon-supports are constructed so that the ribbon rests upon them, and they are pivoted to the main frame in such a position as to hold the ribbon at its proper place at or near the point of impact of the type. When it is necessary to reach the working parts of the machine below the ribbon, the portion E' of the main frame of the machine is swung upward, and the pivoted ribbon-supports are also swung up, carrying with them the ribbon if the machine is in operation. The ribbon-supports are placed adjacent to each of the spools and are preferably connected with each other. When the spacing-key A' hereinbefore described is operated, it has no action upon the ribbon-operating bar, acting only upon the vibratory spacing-frame. The spring u^9 surrounds the standard u^8 and is attached to the main frame E of the machine. When the ribbon-operating bar is pressed downward, it compresses the spring u^9 , and when the ribbon-operating bar is released the spring, being in compression, forces it back to its normal position.

The type-bar a^5 may have one or more type at its lower end. This type-bar swings on the pin x , which is riveted fast to the hanger a^8 . This hanger a^8 has a circular-shaped guide x' , in which the type-bar swings, and is guided from its initial point of movement to its point of impact. The two walls x^2 of the hanger are held together by rivets or screws.

When two or more type are used on each type-bar, it is necessary that the type on said bar which it is desired to operate shall come in such a position that it will impinge upon the platen at the proper point. This is accomplished in the following manner: The plates b and b' and the bar B (the hangers a^8 are rigidly attached to the bar B) are riveted

together by posts Y, forming the vibratory keyboard and type-bar-carrying frame Z'. These parts are rigidly connected with each other. This vibratory keyboard and type-bar-carrying frame Z' is pivoted at its forward ends to the frame Z by the lugs z^2 , and this frame Z is pivoted on its lower ends at z' to the standards u of the main frame E of the machine. This frame Z' is sustained at its inner end by the standard z^3 , a part of the main frame, to which standard the frame Z' is connected by the lever z^4 by the lug z^2 , said lever being pivoted on the standard z^3 . This frame Z' has a swinging movement on these pivotal points, heretofore described, which is controlled and operated in the following manner: The lever z^4 is extended downward a distance sufficient to give the desired extent of swinging movement to the frame Z'. The connecting-link z^7 is loosely riveted to the foot of said link z^4 , the connecting-link having, preferably, a bifurcated jaw z^8 , in which the foot of the lever z^4 rests. The connecting-link z^7 extends a distance sufficient to give the desired movement to and from the printing-point. At the forward end of this connecting-link it is pivoted to the arm z^9 . This arm z^9 is pivoted to the main frame of the machine at a point z^{12} sufficiently distant from the pivotal point of the connecting-link z^7 to give the desired movement of the arm z^9 . The arm z^9 has a forward and backward movement on the pivotal point z^{12} , which communicates, through the connecting-link z^7 , a vibratory movement to the lever z^4 and causes the frame Z' to vibrate to and from the printing-point.

A portion of the main frame carrying the platen-carrier and platen, the platen or the platen-carrier may be shifted by substantially the same mechanism as that hereinbefore described, in which case the type-bar carrying-frame may be shifted, as hereinbefore de-

scribed, or may be constructed so as to be rigid.

As may be seen from the construction of this machine, it consists, essentially, of a fixed main frame, to the front portion of which is secured a frame carrying the type mechanism and type-bars, which frame of course may be a rigid part of the main frame if it is not desired to shift the same, and between the parallel projecting portion at the front and rear of the main frame is a space, which space is covered by the hinged portion of the main frame E', which carries the platen and carriage and pertinent mechanism, and therefore by this construction of the hinged frame E' and the position of the parts, as clearly shown and described, when the hinged portion E' of the main frame is lowered this space is covered; but when it is moved upward on its hinged point all operative parts of the mechanism become at once uncovered and can be readily got at for the purpose of adjustment, cleaning, or for any other purpose.

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

In a type-writer, in combination with a main frame having an upward front and rear extension, the front portion carrying and supporting the type-bar-operating mechanism, there being a space between the front and rear portion, and a hinged portion of the rear portion of the main frame carrying the platen, carriage, and appurtenant mechanism adapted to close the space between the front and rear of the machine and swing backward leaving said space open.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY H. UNZ.

Witnesses:

G. I. HARDING,

HARRY C. KENNEDY.