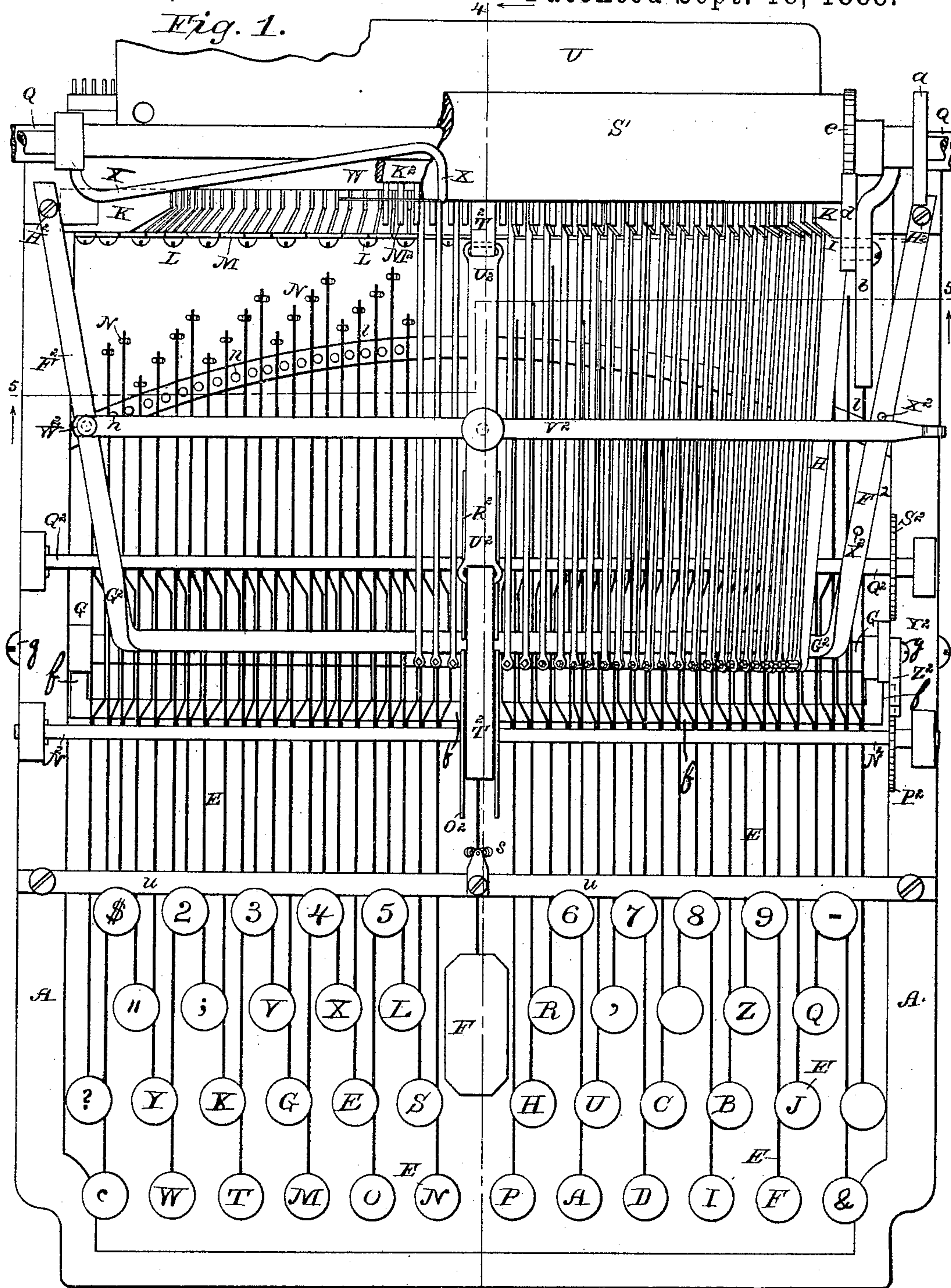


TYPE WRITING MACHINE.

No. 389,854.

Patented Sept. 18, 1888.



WITNESSES

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(No Model.)

5 Sheets—Sheet 2.

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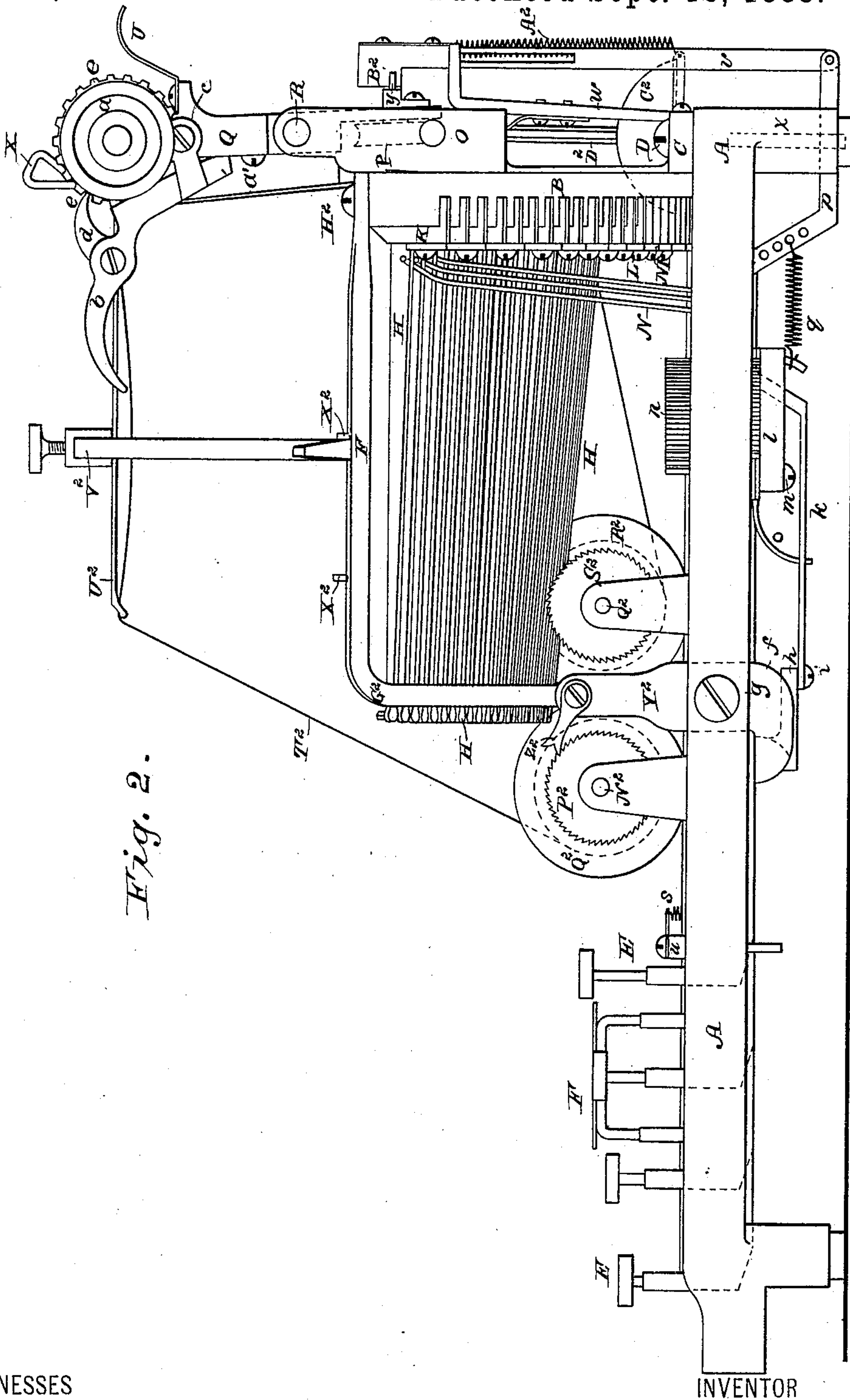


Fig. 2.

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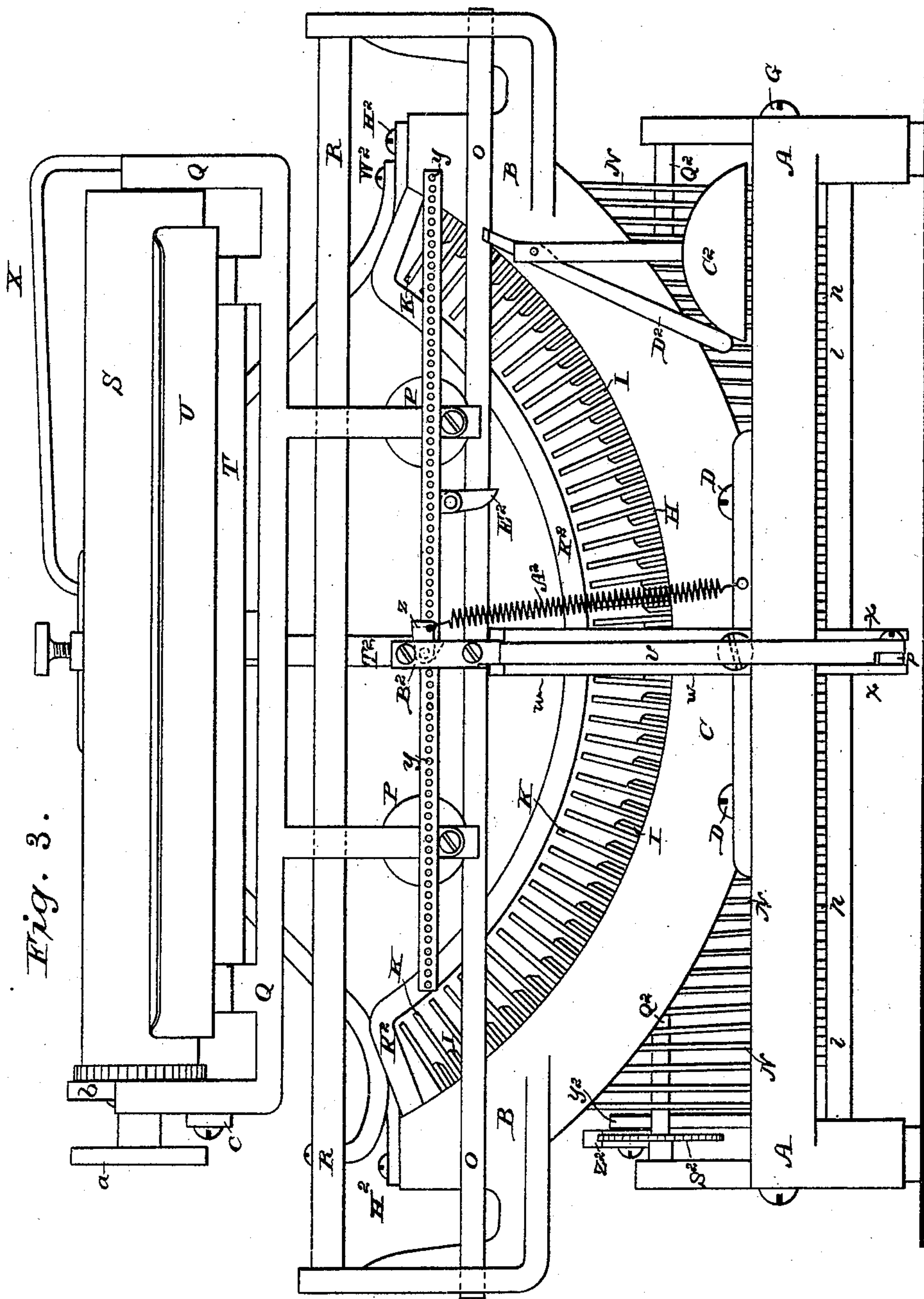
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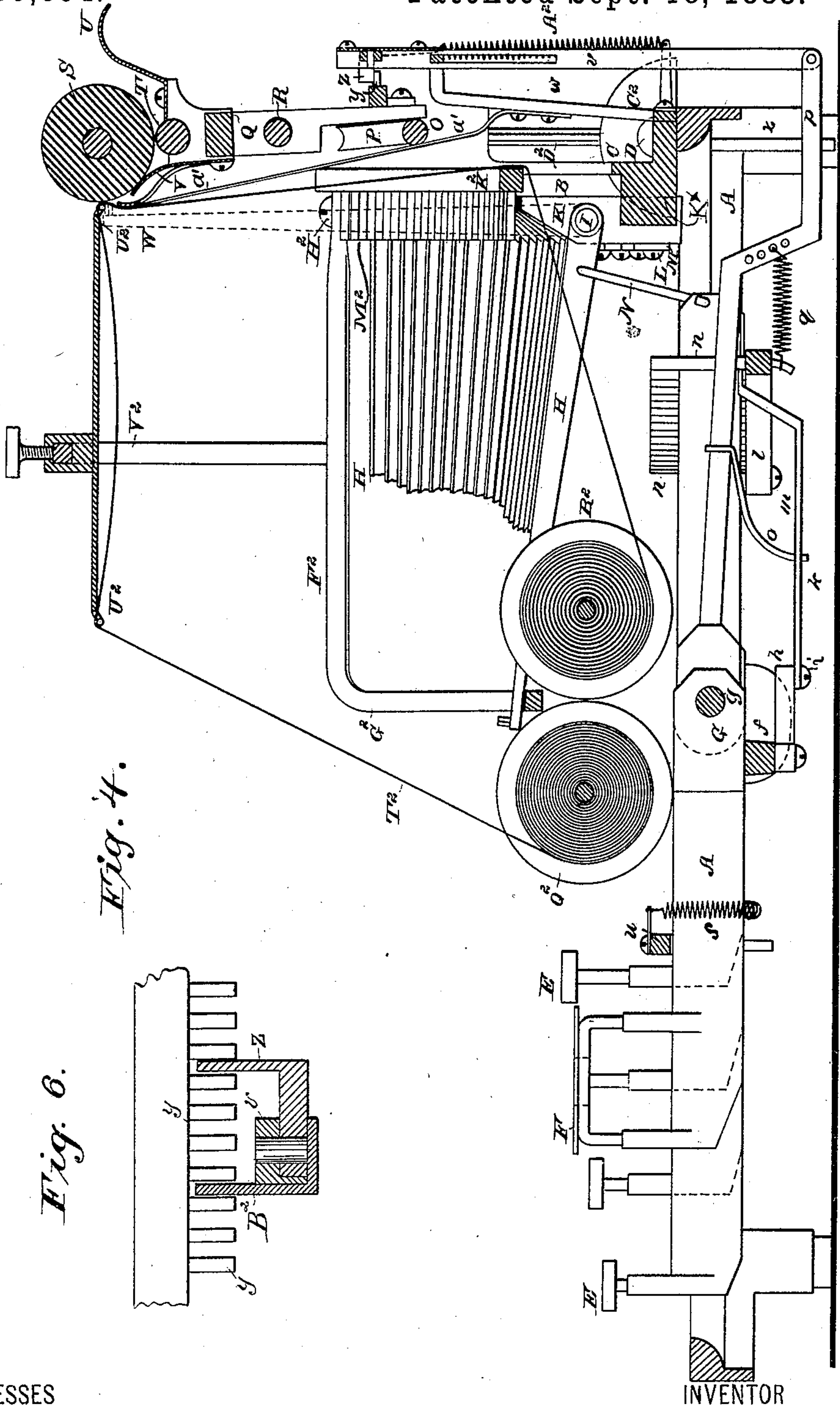


Fig. 6.

Fig. 4.

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5 Sheets—Sheet 5.

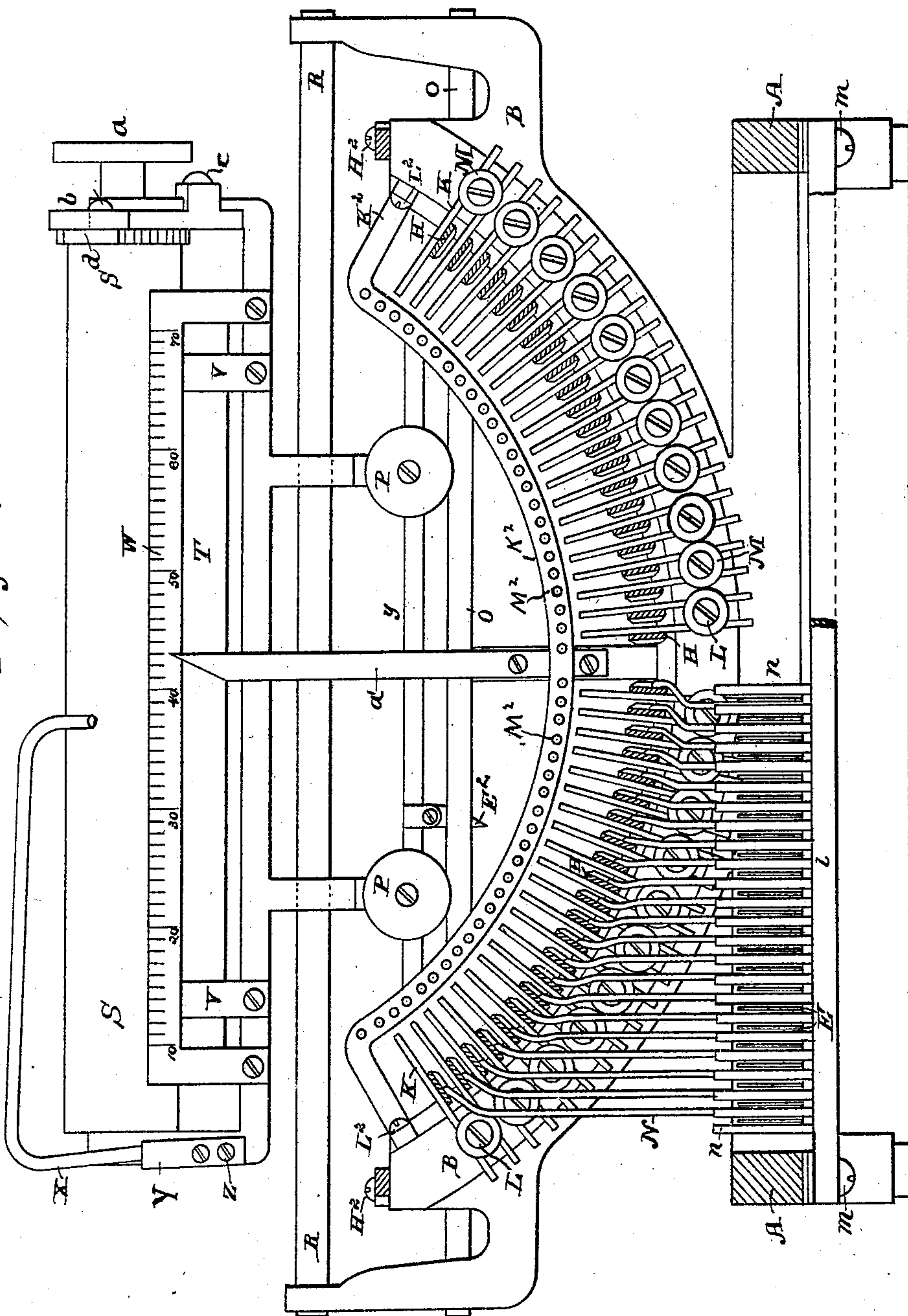
E. PROUTY & O. S. HYNES.

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Fig. 5.



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UNITED STATES PATENT OFFICE.

ENOCH PROUTY AND OLIVE S. HYNES, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 389,854, dated September 18, 1888.

Application filed January 5, 1887. Serial No. 223,446. (No model.) Patented in England November 15, 1886, No. 14,774.

To all whom it may concern:

Be it known that we, ENOCH PROUTY and OLIVE S. HYNES, both of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines, (for which an English Patent No. 14,774, bearing date November 15, 1886, has been granted,) of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a type-writer embodying our invention. Fig. 2 is a side elevation thereof. Fig. 3 is a rear elevation thereof. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is a front elevation, partly in section; and Fig. 6 is a detail view of the ratchet link and pawl.

The object of our improvements is to produce an improved type-writer of the kind in which the work done shall be visible to the operator while working.

Our invention consists in the combination of parts hereinafter described, and specified in our appended claims.

Referring to the letters upon the drawings, A indicates a main frame or casting. B indicates another casting, curved, and secured at its base C upon the main frame by means of screws D or in any usual manner.

The key-levers E and the spacing-lever F are all pivoted to the main frame upon a pivot-rod, G. The type-levers H are pivoted in the arc of a circle, each upon a separate pivot-pin, I, secured upon a standard, K, these standards being secured, preferably in pairs, in recesses or sockets K^x in the curved frame B, by means of screws L and clamping-collars M, as clearly shown in Figs. 4 and 5. Thus each type-lever has a separate pivot, and by this means it will be seen the minimum amount of friction or resistance to its dropping back to its place of rest after it has made an impression is attained.

N indicates pivoted links which connect the key-levers and the type-levers. These links are bent, as illustrated, at their upper ends, where they have slight movement sidewise, in order that they may follow the movements of the type-levers without interfering.

O indicates a track or rod, upon which track

run anti-friction wheels P of the reciprocating roller-frame Q.

R indicates a guide-rod of the roller-frame.

T indicates the lower and S the upper paper-holder roller, between which the paper is secured and adjusted in the usual manner.

U indicates a paper-guide back of the upper roller, and V guides in front of it.

W is a scale from 1 to 70, to guide the adjustments of the roller-frame.

X is a finger or holder to bear the paper back over the top of the upper roller. It is fastened in a socket, Y, held by screws Z.

a indicates a thumb-wheel for turning the upper paper-roller.

b indicates a pawl-lever, pivoted at c to the roller-frame and carrying the pawl d for turning the upper roller by means of the ratchet e.

f indicates an angle-bar pivoted to the main frame on either side at g. This angle-bar is provided with an arm, h, projecting forward from its middle, to which is secured by means of a pivot-pin, i, an arm, k, inclined at one end, as shown, and resting at its incline upon the curved bar l, which is secured by bolts m to the main frame, and supports the forward guide-pins n of the key-levers.

o indicates a bearing-arm projecting upward from the arm k, for lifting the ratchet-lever p, which is provided with a spring, q, secured to the curved bar l and tending to keep the ratchet-lever down. The spacing-lever F is provided with a spring, s, tending to keep it up. The ratchet-lever p is pivoted upon the rod G, and is raised by each depression of the key-levers and spacing-lever through the operation of the angle-bar f and connected parts just described.

u indicates a cross-bar, which supports the downwardly-projecting front guide-pins of the key-levers.

v indicates a perpendicular reciprocating ratchet-link, and w a guide for the same, secured to the frame.

x indicates guide-pins for the ratchet-lever.

y indicates a pin-rack secured to the roller-frame and operated by means of the pawl z and its spring A².

B² indicates a plate or spur projection, which, at each stroke of the ratchet-lever, is raised

out from between two of the pins of the pin-rack and then dropped between two other adjacent pins to hold the roller-frame firmly in place for each impression of the type after it has been pushed forward by the pawl z .

The operation of the pawl is something like that of a toggle-lever, the pawl being pivoted to the ratchet-link v in such a way that when the link is raised it carries the pawl out of engagement with the rack-pins, and the spring of the pawl will swing it downward, so that as the link descends again the pawl will not enter between the two teeth from between which it was raised, but will enter between the two adjacent teeth in position to push the roller-frame forward a distance of one tooth or pin in proper position for the impression of another type. It is important that the pivot of the pawl shall come down on a line with the pin-rack at each push of the pawl, in order to secure uniform feed.

C^2 indicates a bell, and D^2 a pivoted bell-hammer, the short arm of which above the pivot is in the path of the spur or stud E^2 , projecting from the roller-frame, so that as the roller-frame reaches its proper limit of movement to one side and requires shifting, the bell will be struck in the usual manner.

F^2 indicates an angle arm or support, curved from the points G^2 , and secured to the frame B by means of screws or bolts H^2 . The curved portion of this arm serves as a rest for the type-levers.

K^2 indicates a curved bar, secured to the frame B by bolts L^2 , and provided with guide-pins M^2 for the type-levers.

N^2 indicates a rod or axle for the ribbon-wheel O^2 , and having the ratchet-wheel P^2 .

Q^2 indicates another rod or axis for the other ribbon-wheel, R^2 , provided with a ratchet-wheel, S^2 .

T^2 indicates the ribbon, secured at each end to the respective ribbon-wheels, as usual, and passing in front of the upper roller in position to be struck by the type, thence through a guide or holder, U^2 , supported and adjustable upon a yoke, V^2 , pivoted at W^2 , so as to swing out and in and be stayed in place wherever set by spurs X^2 .

Y^2 indicates a stud projecting upward from the angle-bar f , and having pivoted to its upper end a double pawl, Z^2 , which is adapted to operate either ratchet-wheel P^2 or S^2 . By this means the ribbon may be run by its full length in one direction, and then run back again, and so on to and fro while it lasts.

a' is an index-pointer, to facilitate reading or working by the scale.

It will be observed that we make the key-levers of unequal lengths in the series or groups, as clearly shown in Figs. 1 and 2, the object being to have the connection between the key-levers and the pivoted links N not side by side, but one forward of the other in each group. By this means, and by bending the links near the top, as shown in Fig. 2, we

are enabled to connect them all in the same relation to the type-levers, so as to be able to operate them without collision, as by this arrangement the joints between the links and the key-levers pass each other easily.

By employing the plate B^2 in connection with the push-pawl z the roller-frame is kept under perfect control and the feeding operation is exact.

The type-levers, it will be seen, all operate inside of the tape, and the work can be viewed by the operator with perfect convenience. The arrangement of the key-levers is such that the machine will work with a comparatively easy touch and with a good degree of speed.

What we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of a series of key-levers, a series of horizontal type-levers, an upright semicircular frame open at the top, to which the type-levers are pivoted in front of the paper-roller, and a series of vertical bent links connecting the type-levers to the key-levers, substantially as set forth.

2. The combination of the main frame A, the vertical curved casting B, the curved bar K^2 , secured thereto, the type-levers, and the horizontal guide-pins M^2 for the type-levers, secured to the bar K^2 , substantially as set forth.

3. The combination of the main frame A, the upright curved casting or frame B, the standards K, projecting therefrom, the type-levers, arranged in the arc of a circle and secured to the standards K by separate pivot-pins I, the curved bar K^2 , secured to the frame B, and the horizontal guide-pins M^2 , for the type-levers, arranged on the bar K^2 , substantially as set forth.

4. The combination of the main frame, the curved casting B, the curved bar K^2 , secured thereto, the horizontal guide-pins arranged on the bar K^2 , the pivoted type-levers arranged in the arc of a circle in front of the paper-roller, each upon a separate pivot-pin, I, and the standards K, secured in pairs to the curved frame B, substantially as set forth.

5. The combination of the curved upright casting or frame B, open at the top, the horizontal type-levers pivoted in the arc of a circle in front of the paper-roller, and the horizontal angle arm or support F^2 , arranged to support the type-levers at their outer ends, substantially as set forth.

6. The combination of a series of type-levers pivoted in the arc of a circle in front of the paper-roller, the ribbon-rollers, and ribbon guide or holder V^2 , arranged in front of the paper-roller and out of the path of the levers, so that they operate inside of the inking-ribbon, and the yoke V^2 and the guide or holder U^2 , substantially as set forth.

7. The combination of the key-levers, the type-levers arranged in the arc of a circle in front of the paper-roller, the tape-rollers Q^2 and R^2 , arranged in close proximity to each

other, the angle-bar *f*, the stud *Y*², and the double pawl *Z*², pivoted on the stud between the rollers, substantially as set forth.

5 8. The combination, with the curved casting B, of the angle-arm *F*², the yoke *V*², and the ribbon-holder *U*², substantially as set forth.

10 9. The combination, with the key-levers, of the angle-bar *f*, pivoted to the main frame, the arm *k*, secured to the bar *f*, the curved bar *l*, on which the end of the arm *k* rests, the bearing-arm *o*, carried by the bar *k*, the spring *q*, secured to the ratchet-lever and to the bar *l*, and the ratchet-lever pivoted to the main frame, substantially as set forth.

10. The combination of the ratchet-lever *p*, 15 connected with the angle-bar *f*, the spring *q*, the ratchet-link *v*, the pin-rack *y*, the pawl *z*, its spring *A*², and the plate *B*², substantially as set forth.

In testimony whereof we have hereunto subscribed our names. 20

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OLIVE S. HYNES.

Witnesses:

HENRY LAWRIE,
FLOYD P. GEROW.