

(No Model.)

3 Sheets—Sheet 1.

C. L. SHOLES, Dec'd.

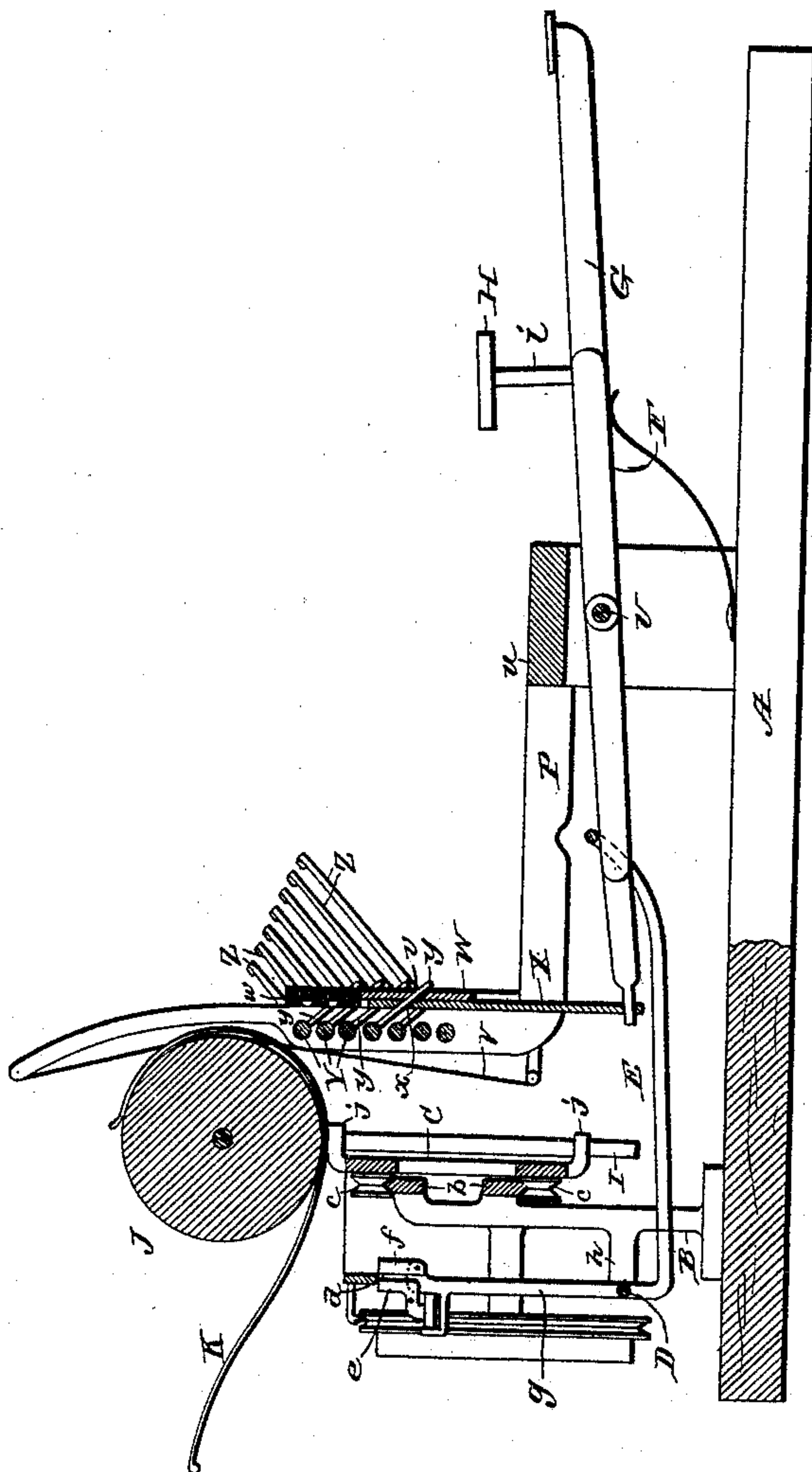
G. B. SHOLES, Executor.

TYPE WRITING MACHINE.

No. 464,903.

Patented Dec. 8, 1891.

Fig. 1.



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(No Model.)

3 Sheets—Sheet 2.

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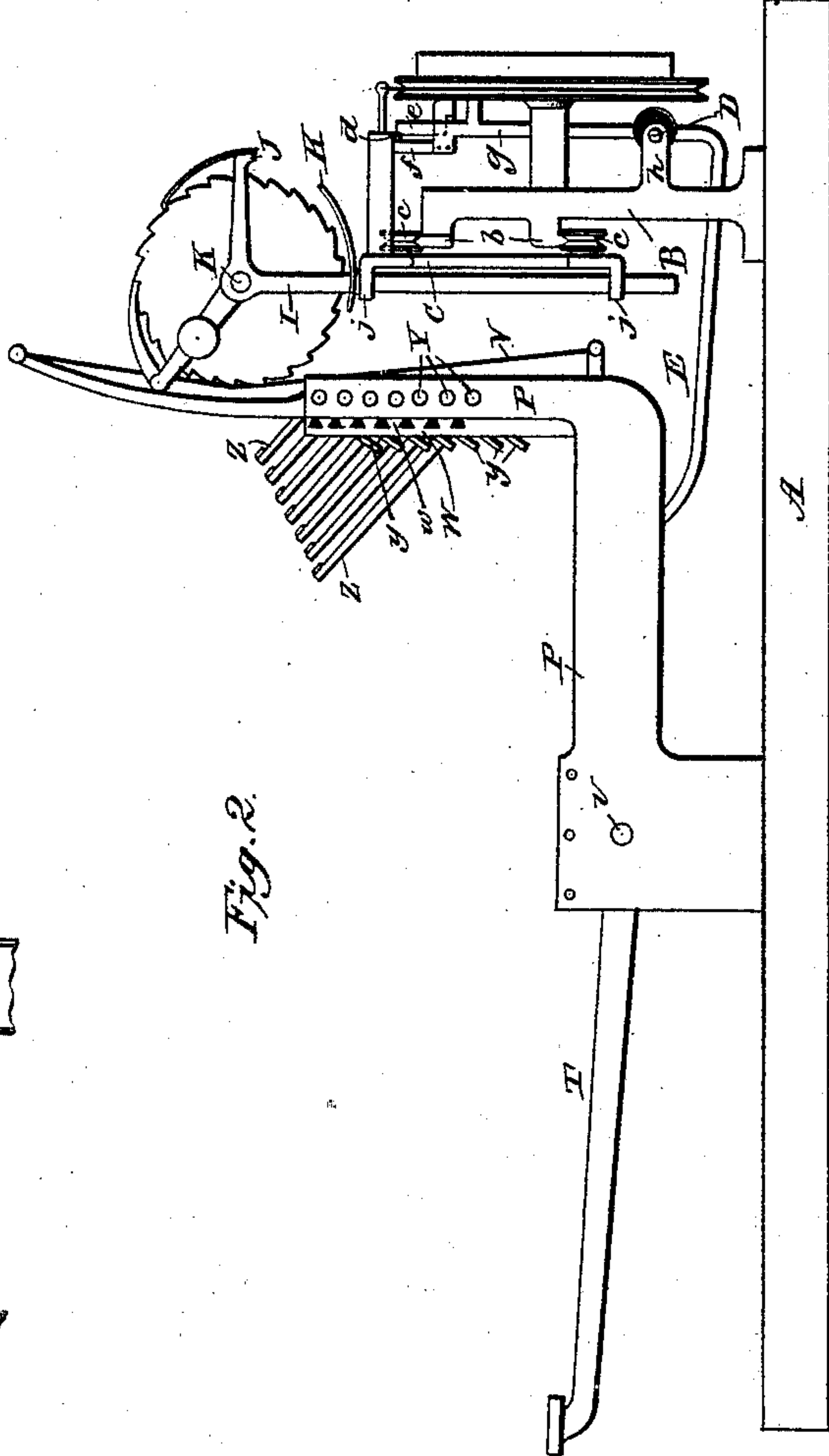


Fig. 2.

Fig. 4.

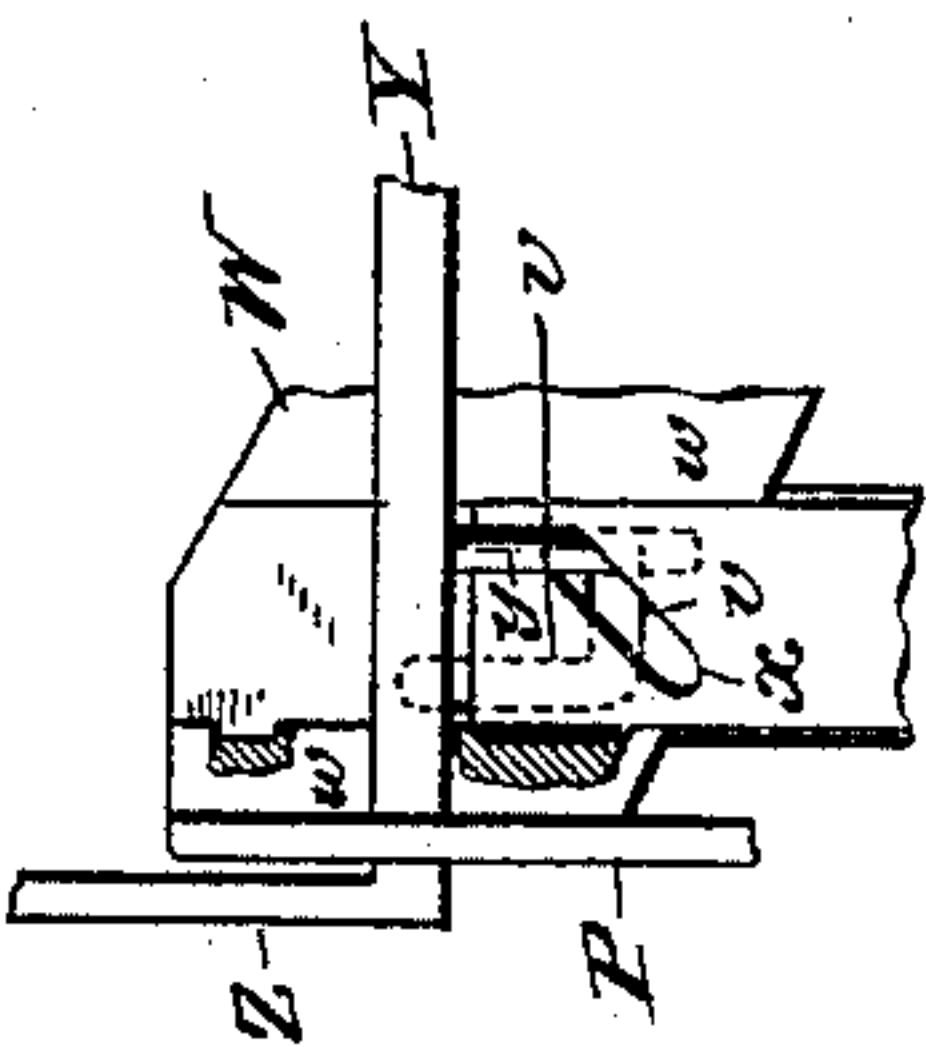


Fig. 5.

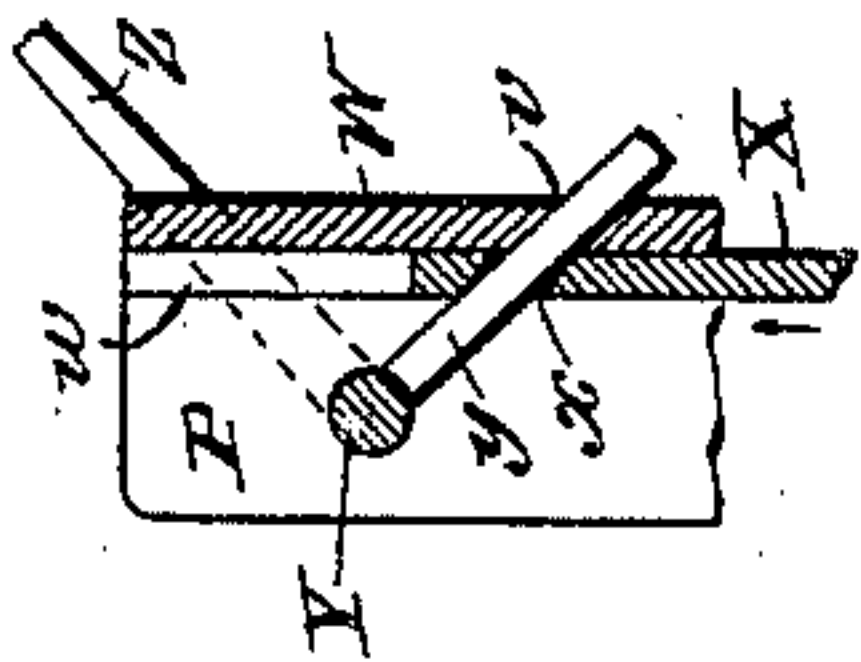
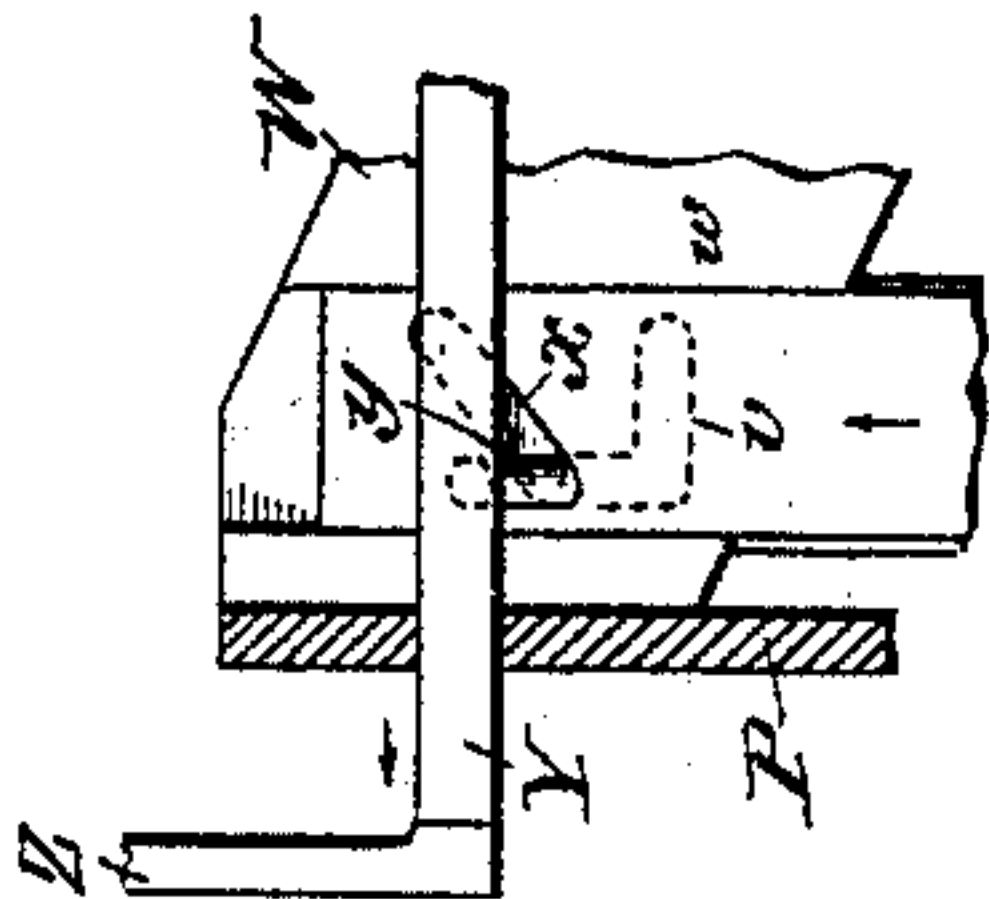


Fig. 6.



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3 Sheets—Sheet 3.

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TYPE WRITING MACHINE.

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Patented Dec. 8, 1891.

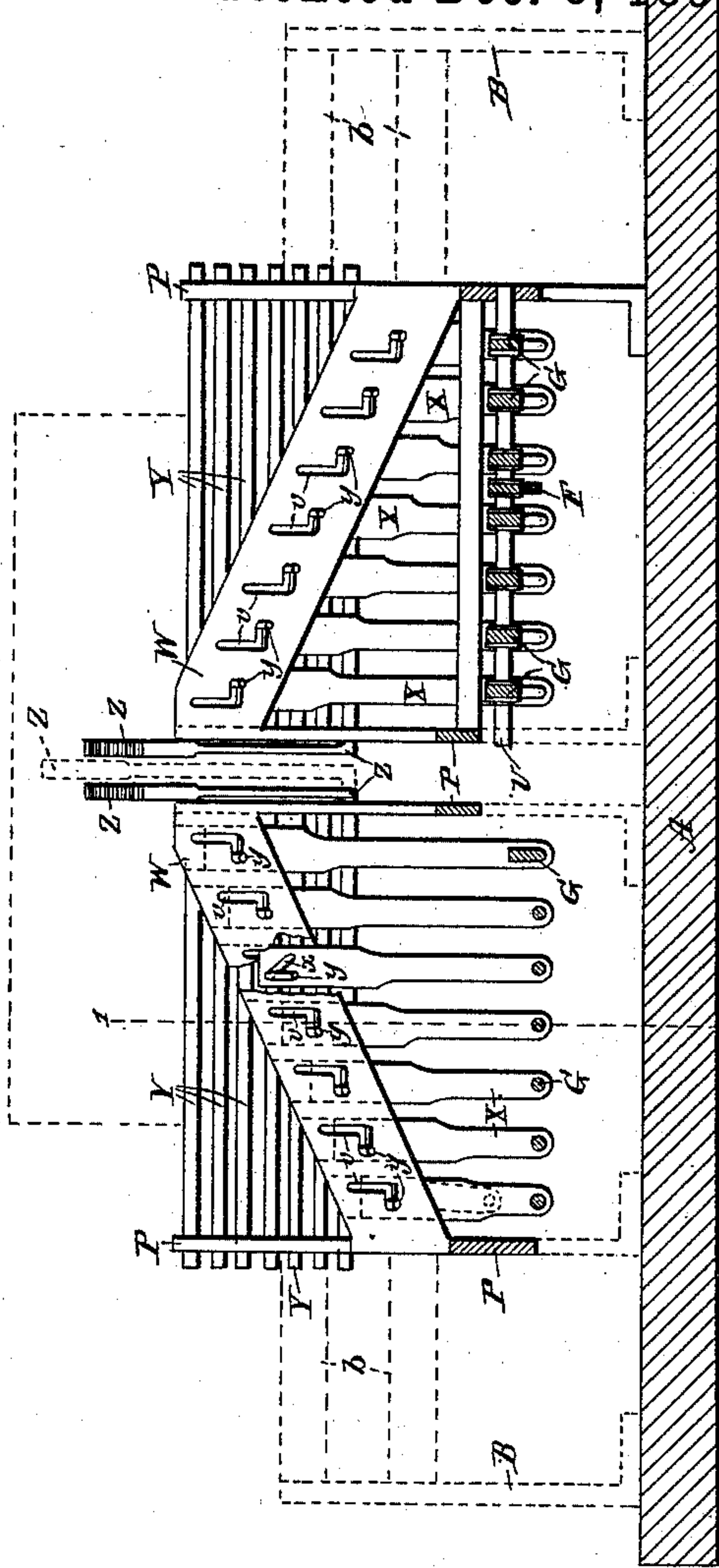


Fig. 3.

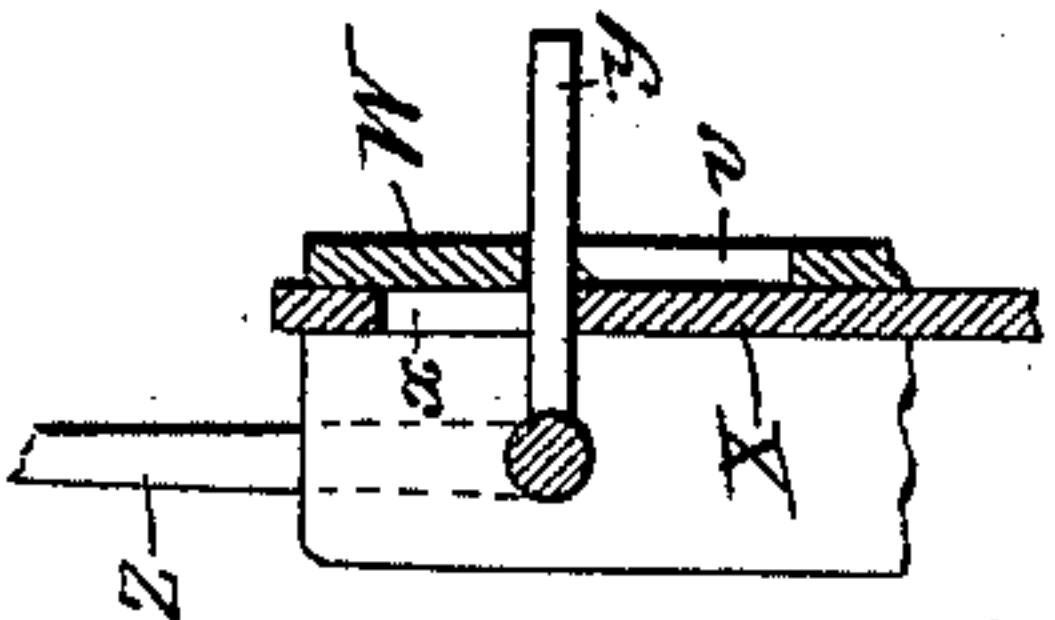


Fig. 7.

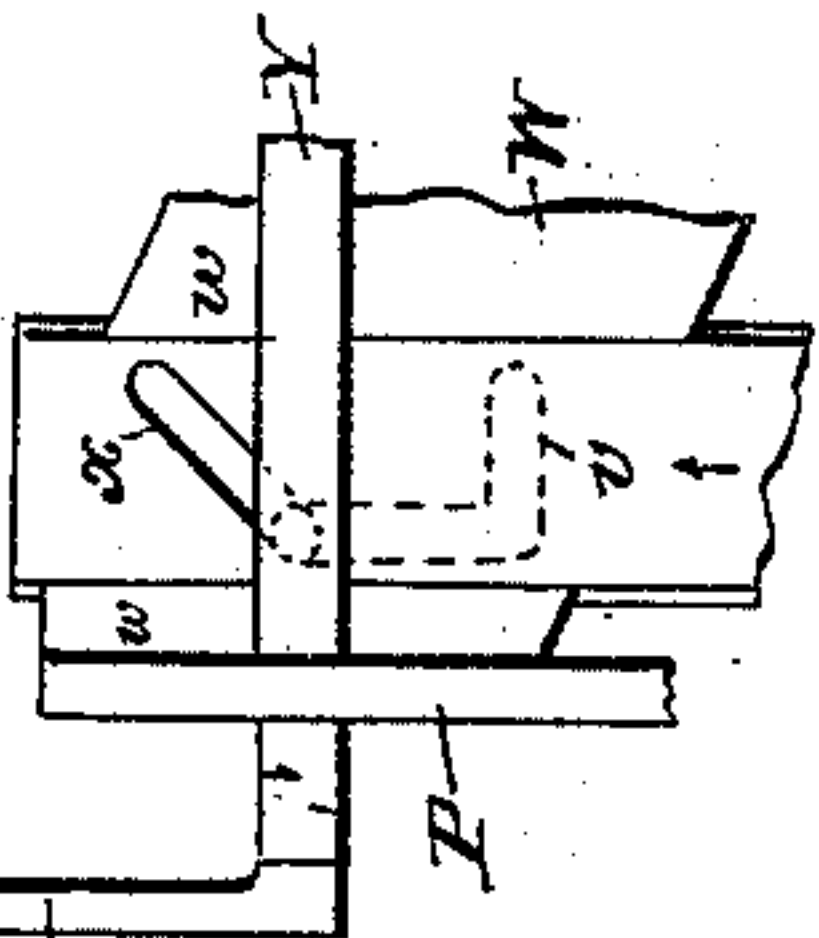


Fig. 8.

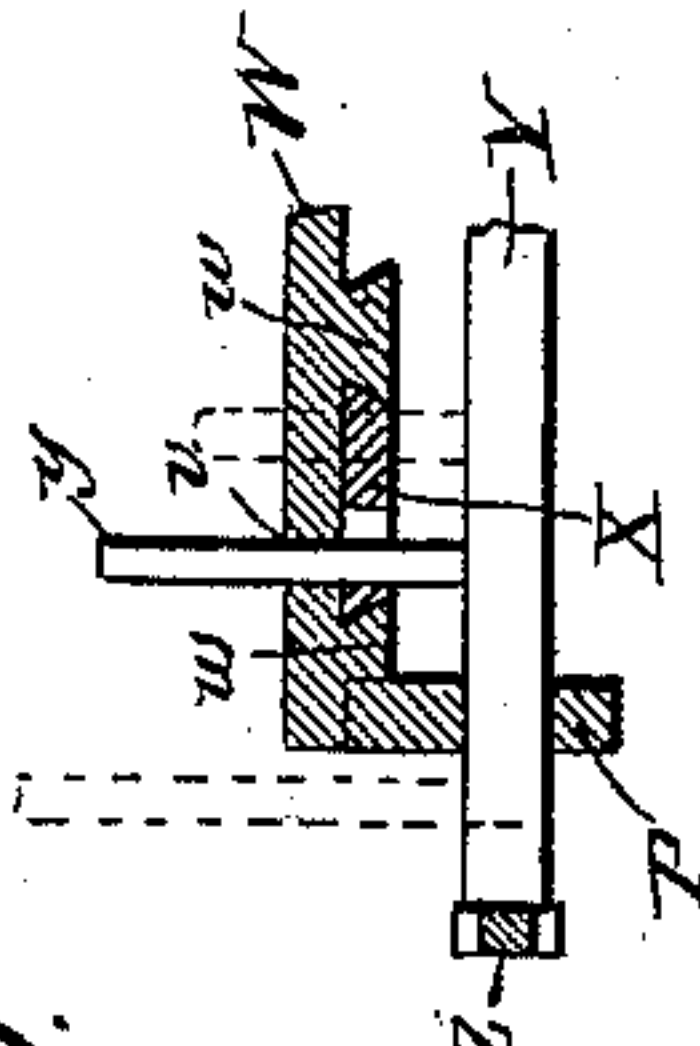


Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE B. SHOLES, OF CHICAGO, ILLINOIS, EXECUTOR OF CHRISTOPHER LATHAM SHOLES, DECEASED.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,903, dated December 8, 1891.

Application filed December 24, 1890. Renewed August 3, 1891. Serial No. 401,493. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. SHOLES, of Chicago, Illinois, executor of the estate of CHRISTOPHER LATHAM SHOLES, deceased, late of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, who did during his lifetime invent certain new and useful Improvements in Type-Writing Machines, do declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

The invention relates to type-writers; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a vertical longitudinal section of a type-writer constructed according to his invention, the section being taken on line 1 1 of Fig. 3; Fig. 2, a side elevation of the machine with parts broken away; Fig. 3, a detail front elevation having certain of the parts broken away; Fig. 4, a detail rear view illustrating a type-rod and its actuating mechanism in their normal position; Fig. 5, a vertical transverse section of Fig. 4; Fig. 6, a detail rear view illustrating a type-rod and its actuating mechanism in the position they assume when a lever corresponding therewith has been partially depressed; Fig. 7, a vertical transverse section illustrating a type-rod and its actuating mechanism in the position they assume when the corresponding lever has been fully depressed; Fig. 8, a rear elevation of what is shown by Fig. 7, and Fig. 9 a horizontal section of the parts shown in Fig. 8.

Referring by letter to the drawings, A represents the base of the machine, and secured to this base are standards B, united by tracks *b* for anti-friction rollers *c* on a spring-controlled carriage C, the latter being provided with a rack *d*, alternately engaged by pawls *e f* on the upper end of an arm *g*, that is fast on a rod D, having bearings *h* on said standards. Connected to the rod D are the ends of a bail E, that rests on spring-controlled levers F G, the levers F (only one of which is shown) being provided with vertical stems *i*, that connect with a spacing-bar H. The carriage and its escapement mechanism, above described,

is not materially different from what is common in some other type-writers, and therefore no specific claims to the same shall be made.

The carriage C is provided with guides *j* for vertical rods I, provided at their upper ends with bearings *k* for the journals of a cylindrical and intermittingly-rotated platen J, (so common in a variety of type-writers now in use that a detail description of the parts by which its actuated is not deemed necessary in this specification,) while at the same time a paper-guide K (also common in this class of devices) is arranged on said rods to move with the platen when the latter is adjusted in a vertical direction, as will be hereinafter more fully described.

An inking-ribbon V is arranged to pass the printing-point of the machine; but as there are a variety of ribbon-actuating mechanisms adaptable to said machine it is deemed unnecessary to particularly illustrate and describe any one of them in this specification.

The vertical portions of each pair of the angular standards P are united by braces *u* and diagonal plates W, the latter being provided with a series of cam-slots *v*, each of which extends in a horizontal and vertical direction. The slots, as shown, are L-shaped, it being essential to the operation of a machine constructed according to the embodiment of the invention herein shown that said slots shall extend in both a horizontal and vertical direction.

The rear sides of the diagonal plates W are provided with a series of guides *w* for vertical links X, that connect with the levers G and are individually provided with diagonal cam-slots *x*, these slots being arranged to cross the horizontal portions of the slots *v* in said diagonal plates when the links are in their normal position, as is best illustrated in Fig. 4.

A series of rods Y have their bearings in each pair of the vertical standards P and terminate at their inner ends in right-angular extensions Z, the latter being the type-bars, and the type-bars in each series are arranged to stand one behind the other, as best illustrated in Figs. 1 and 2. The rods Y are provided with fingers *y*, that engage the slots *v x* in the diagonal plates W and vertical links X, whereby an upward movement of any one of the latter will cause its accompanying rod to move horizontally and then partially rotate

in its bearings to bring its angular extension or type-bar Z to the printing-point, as will be hereinafter more fully described with particular reference to the enlarged detail views, 5 Figs. 4 to 8, inclusive.

As shown by Figs. 4 and 5, the parts are in their normal position, the finger *y* on the rod Y being at the highest point in the slot *x* in the link X. Now by a depression of the corresponding lever G the link X will be moved 10 up and its slot *x* will push on the finger *y* to thereby impart a horizontal sliding movement to the rod Y, this movement being for a distance equal to the horizontal portion of slot *v* 15 in the adjacent diagonal plate W. By the time this horizontal sliding movement of the rod Y is effected the finger *y* will be at the lowest point of the slot *x* in the link X and in the vertical portion of the slot *v* in the 20 plate, as illustrated by Fig. 6. Now the continued upward movement of the link X will draw on the finger *y* and cause it to move in the vertical portion of the slot *v* in the plate W, whereby the rod Y is partially rotated in 25 its bearings, and thus the angular extension Z or type-bar on said rod is brought to the printing-point.

In the machine shown in the drawings each type-bar Z is provided with a single character; but several characters may be employed 30 on each type-bar, as illustrated in a prior application, Serial No. 297,943, filed January 31, 1889, of which this is a division.

By the construction above described a type- 35 writer of practical character is provided wherein there is a positive adjustment and action of the type-bars and consequent perfect alignment of the printed characters, while at the same time the result of the work is al- 40 ways in sight of the operator. Both of these features are of great importance, because more or less frequent adjustments of the type-bars to preserve a good alignment is obviated and the lifting of the paper-carriage to view the 45 work in progress is avoided, thereby effecting a saving in time and annoyance to the operator.

Another advantage of the machine lies in the fact that there are no delicate mechanisms, and consequently said machine is not 50 liable to get out of order from hard usage.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

55 1. In a type-writer, the combination of a series of cranked type-rods loosely arranged in bearings, mechanism for imparting a sliding and rotary movement to each rod, and means, substantially as described, for simultaneously returning said mechanism and 60 type-rod to their normal position, substantially as set forth.

2. In a type-writer, the combination of a series of cranked type-rods loosely arranged 65 in bearings, mechanism for imparting a sliding and rotary movement to each rod, a lever for actuating said mechanism, and a spring

arranged in opposition to the lever, substantially as and for the purpose set forth.

3. In a type-writer, the combination of 70 cranked type-rods loosely arranged in bearings and provided with fingers, a plate provided with a series of cam-slots for engagement with the type-rod fingers, sliding links also provided with cam-slots for engagement 75 with said fingers, and levers for actuating the links, substantially as set forth.

4. In a type-writer, the combination of a series of rods loosely arranged in bearings and having angular extensions provided with 80 printing characters, a stationary plate provided with a series of diagonally-arranged cam-slots, a series of sliding links adjacent to the stationary plate and also provided with cam-slots, fingers extended from said rods to 85 engage the slots in said stationary plate and links, and levers for actuating the links, substantially as set forth.

5. In a type-writer, the combination of a stationary plate provided with a series of di- 90 agonally-arranged slots each of which extends in a horizontal and vertical direction, a series of sliding links arranged adjacent to the plate and individually provided with a diagonal slot, a series of rods loosely arranged 95 in bearings and carrying type-bars, fingers on the rods for engagement with the slots in said plate and links, and levers for actuating the latter, substantially as set forth.

6. In a type-writer, the combination of a 100 stationary plate provided with a series of diagonally-arranged slots, each of which extends in a horizontal and vertical direction, guides arranged on the plate, a series of links fitted to slide in the guides and individually pro- 105 vided with a diagonal slot, a series of rods loosely arranged in bearings and carrying type-bars, fingers on the rods for engagement with the slots in said plate and links, and levers for actuating the latter, substantially as 110 set forth.

7. In a type-writer, the combination of a series of cranked type-rods loosely arranged in bearings, a finger on each type-rod, a cam 115 mechanism engaging the finger, and a lever for actuating the cam mechanism, whereby a sliding and rotary movement is imparted to said type-rod, substantially as set forth.

8. In a type-writer, the combination of a plate provided with a series of cam-slots, a 120 series of cranked type-rods loosely arranged in bearings and provided with fingers for engagement with said cam-slots, and means, substantially as described, for actuating each 125 finger, whereby it is caused to travel in its relative cam-slot to slide and rotate the type-rod of which it forms a part, as and for the purpose set forth.

GEO. B. SHOLES,
Executor of Christopher Latham Sholes, dec'd.

Witnesses:

JAMES W. BREEN,
RICHARD WATERMAN.