

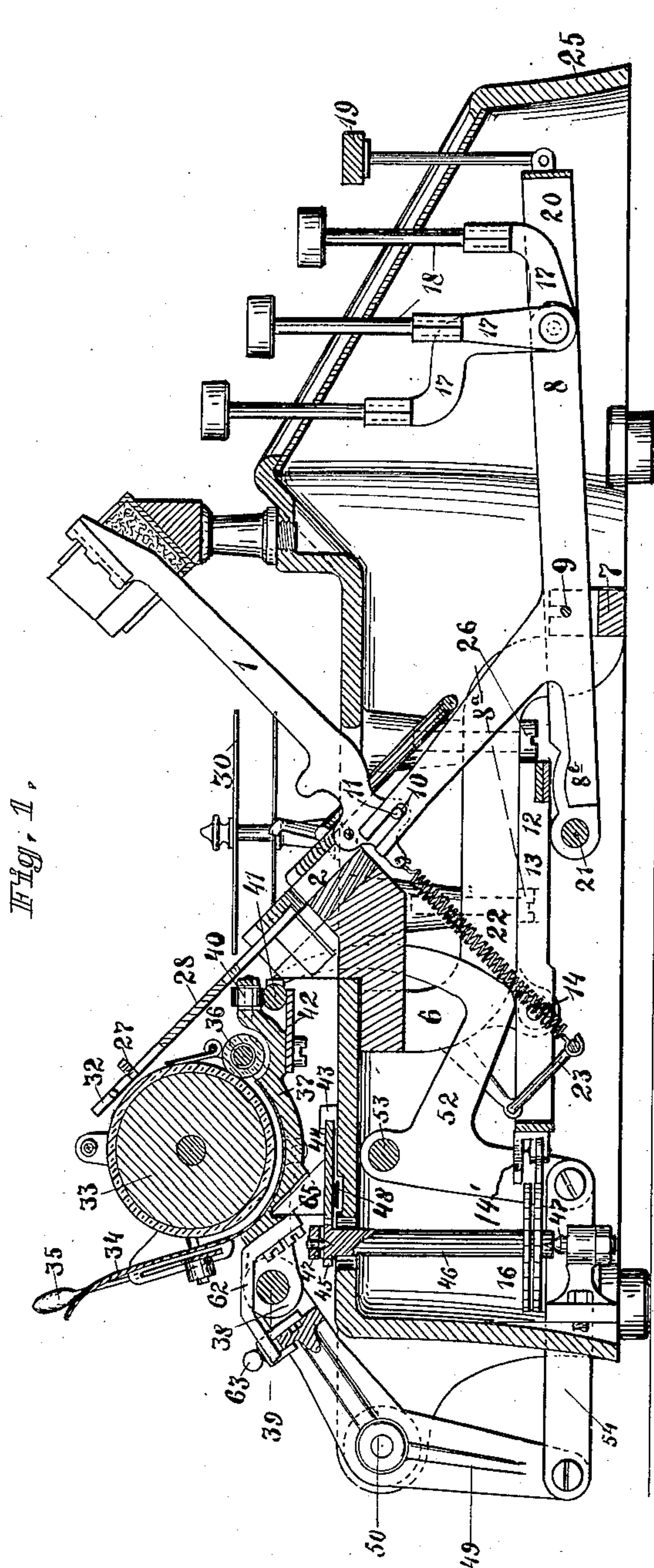
No. 754,366.

PATENTED MAR. 8, 1904.

H. ELLIS.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 2, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

Carl Christensen
A. Knistrom.

INVENTOR

Malcolm Ellis.

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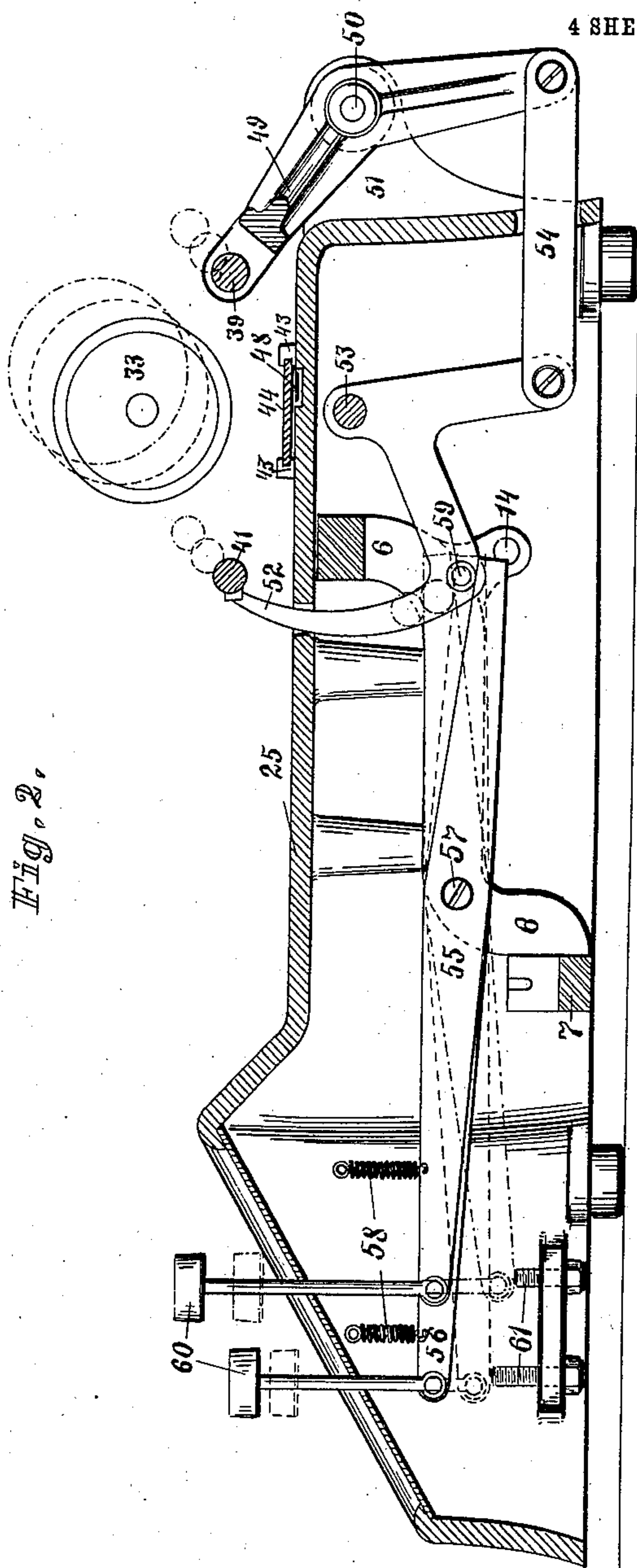


Fig. 2.

WITNESSES:

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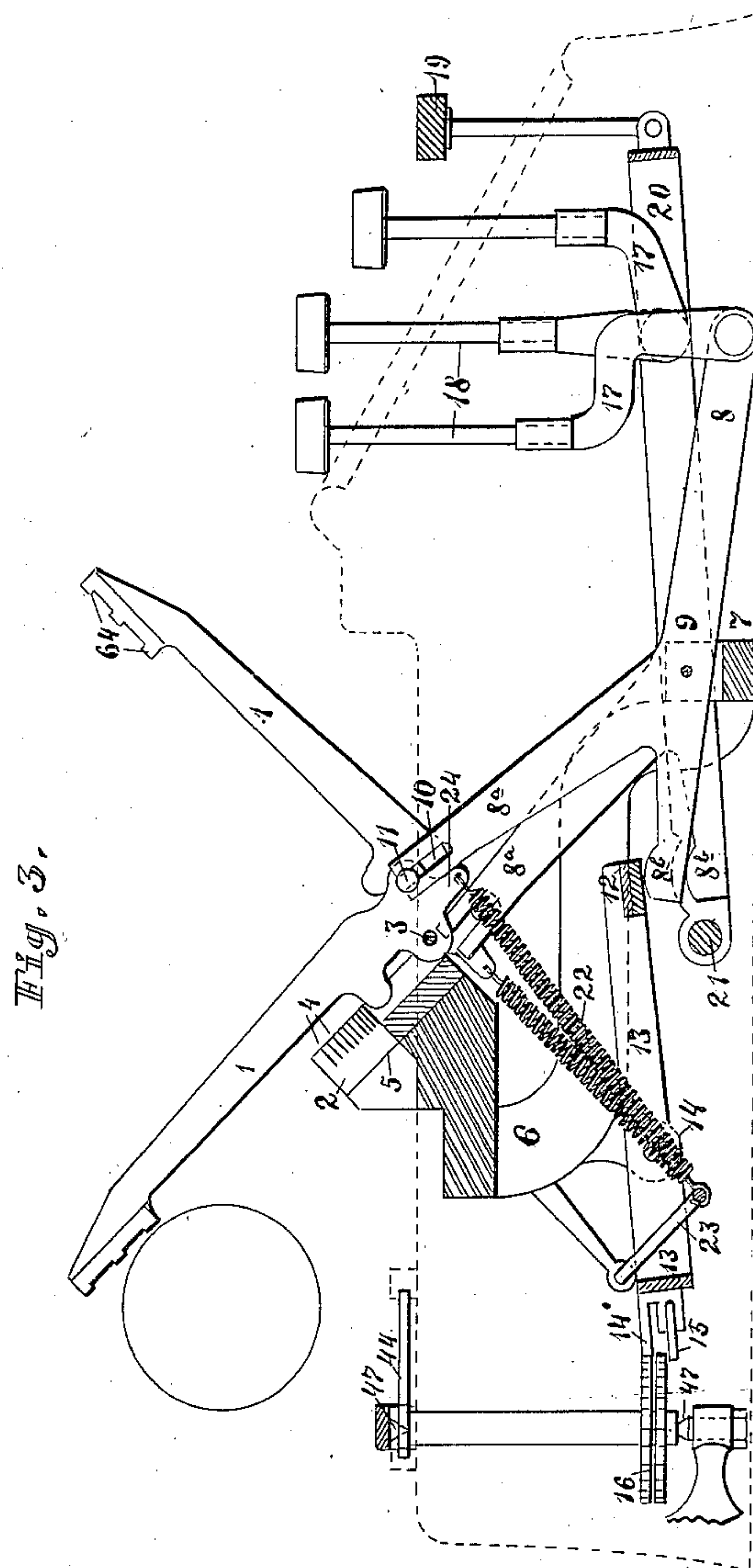
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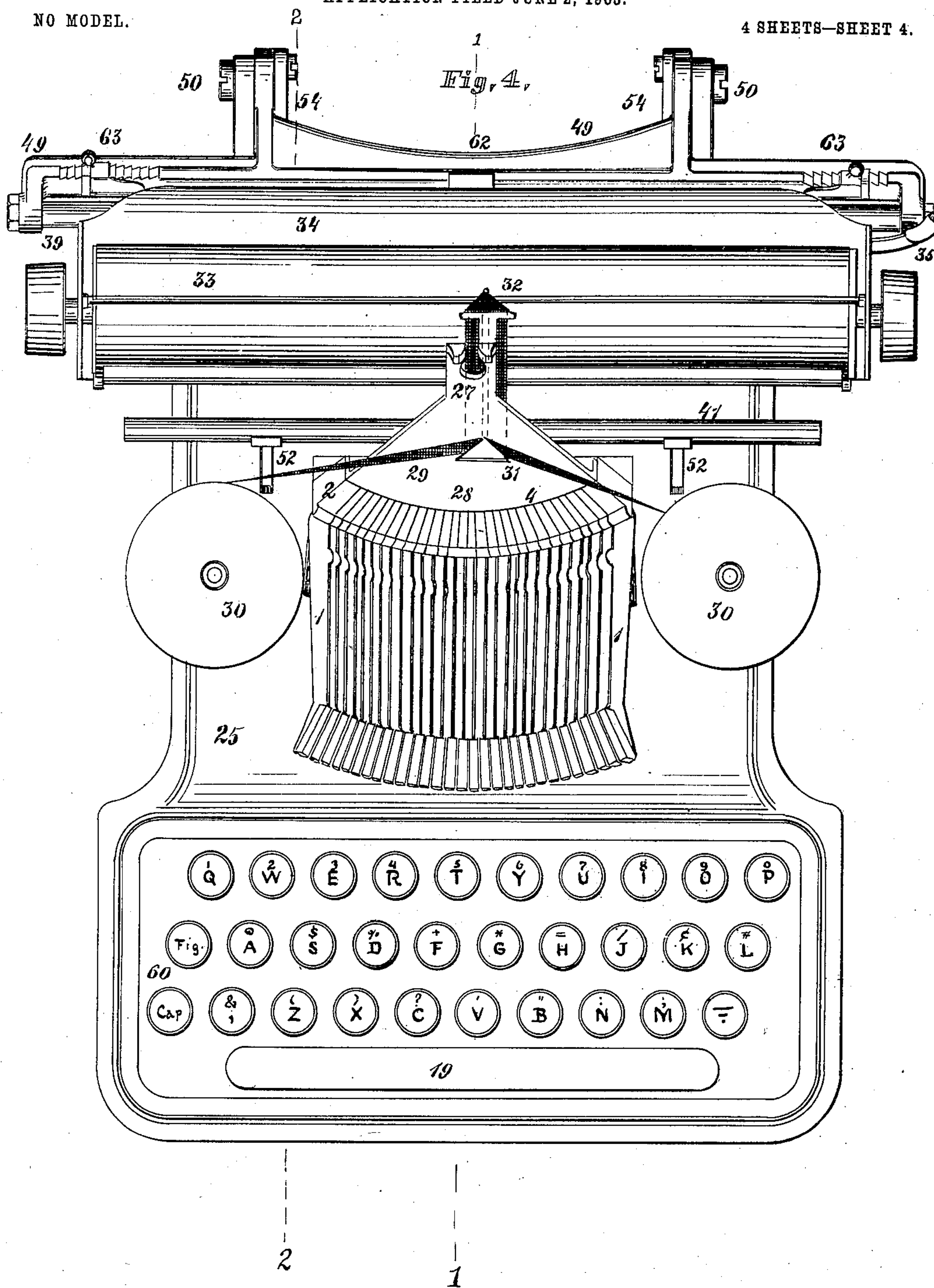
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4 SHEETS—SHEET 4.



WITNESSES:

Carl Christensen
A. Kristrom.

INVENTOR

Malcolm Ellis

UNITED STATES PATENT OFFICE.

HALCOLM ELLIS, OF ATTLEBORO, MASSACHUSETTS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,366, dated March 8, 1904.

Application filed June 2, 1903. Serial No. 159,801. (No model.)

To all whom it may concern:

Be it known that I, HALCOLM ELLIS, a citizen of the United States, residing at Attleboro, State of Massachusetts, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The object of this invention is to provide a visible-writing type-bar machine of the utmost simplicity, very compact and easy to assemble, together with other features of novelty, which will be more particularly pointed out in the description of the drawings, which are made part of the specification, in which—

Figure 1 is a vertical longitudinal section showing the type-bar action, the escapement-action and a section through the carriage on line 1 1 of Fig. 4. Fig. 2 is a vertical longitudinal section taken on line 2 2 of Fig. 4, showing the shift-key mechanism and the linkage for supporting the carriage-rails, portions of the complete machine being removed to better illustrate the mechanism. Fig. 3 is a vertical longitudinal section of the action and the action-frame, showing the position of the type-bar when at the printing-point. Fig. 4 is a top view or plan of the entire machine.

This machine is neither a front-strike nor, strictly speaking, a top-strike writing-machine. The type-bars 1 swing through an angle of ninety degrees from a position of rest at forty-five degrees to the horizontal through the vertical and to the position of forty-five degrees to the horizontal at the printing-point, as is clearly indicated in Fig. 3. The type-bars 1 are pivotally mounted in a segmental block 2 about a pivot-wire 3, secured to said block 2, and radial slots 4 within the block 2 serve as lateral guides for the type-bars 1. The segmental block 2 is supported upon an inclined face 5 of the action-frame 6. This frame 6 besides supporting the slotted segment 2 has a slotted bar 7 extending across the machine, which serves as a pivot-support for the key-levers 8, a suitable wire 9 forming the pivot. The key-levers 8 are of peculiar construction and are made with three arms extending radially from the pivot-wire 9, the forward arm serving for the key connection. The upper arm 8^a is pro-

vided at its upper end with a radial slot 10, which slot embraces a shouldered rivet 11 on the type-bar 1. The rear arm 8^b of the key-lever is shorter than either the forward arm or the upper arm and serves to operate the universal bar 12. The universal bar 12 is the forward end of a rectangular bail 13, pivoted at 14 to the action-frame 6. Upon the rear side of the bail 13 are fixed the stationary dog 14' of the escapement and the movable dog 15, which alternately engage the escapement-wheels 16 as the universal bar 12 is raised or lowered, from which it will be seen that the escapement has a very direct connection with the key mechanism. The forward ends of the key-levers 8 each terminate in a pivoted key-socket 17, the length of the key-lever 8 remaining constant. The key-sockets 17 are provided with suitable offsets, both forward and backward, to accommodate the key-stems 18 of the different rows of keys. The spacing-bar 19 is connected to a bail 20, pivoted on the wire 9 in the cross-bar 7, and operates on the rear end of its sides against the universal bar 12, the rear end of the bail 20 being formed by the cross-rod 21. The type-bars 1 are returned to their normal position of rest, as indicated in Fig. 1, by the springs 22, anchored at their lower ends in the wire 23 and each secured at their upper ends in a small ear 24 of the type-bar 1. This ear 24 is almost parallel to the direction of the type-bar 1, so that the spring 22 will have the least amount of extension during the first part of the movement of the type-bar 1, the tension accelerating as the type 64 approach the printing-point. The entire key-action and type-action so far described and also the universal bar and escapement-dogs are all mounted in the frame 6 and properly adjusted prior to being inserted in the case 25, to which they are secured by suitable studs 26. The type 64 before striking the paper on which they are to print pass between suitable guides 27, mounted on the guide-plate 28, as is usual with this class of machines.

Having described my invention, I claim—

1. The combination in a type-writer of the frame in which is mounted the key-levers and said key-levers being made with three arms,

extending radially from the pivot therefor,
one arm engaging and operated by the key,
another arm engaging and operating the type-
levers the third arm engaging and operating
5 the universal bar, all the arms extending
radially from the pivot, type-levers mounted
within said frame, springs for returning the
type-levers and key-levers to their normal
position, mounted in said frame, the said
10 frame being independent of and detachable
from the main frame or case of the machine.

2. The combination in a type-writer of the
frame in which is mounted the key-levers and
said key-levers being made with three arms,
15 extending radially from the pivot therefor, a

key engaging and operating one arm, another
arm engaging and operating the type-levers
the third arm engaging and operating the
universal bar, all the arms extending radially
from the pivot, type-levers mounted within 20
said frame, springs for returning the type-
levers and key-levers to their normal position,
a universal bar engaged by the key-levers,
mounted in said frame, the said frame being
independent of and detachable from the main 25
frame or case of the machine.

HALCOLM ELLIS.

Witnesses:

A. KNISTROM,

CARL CHRISTENSEN.