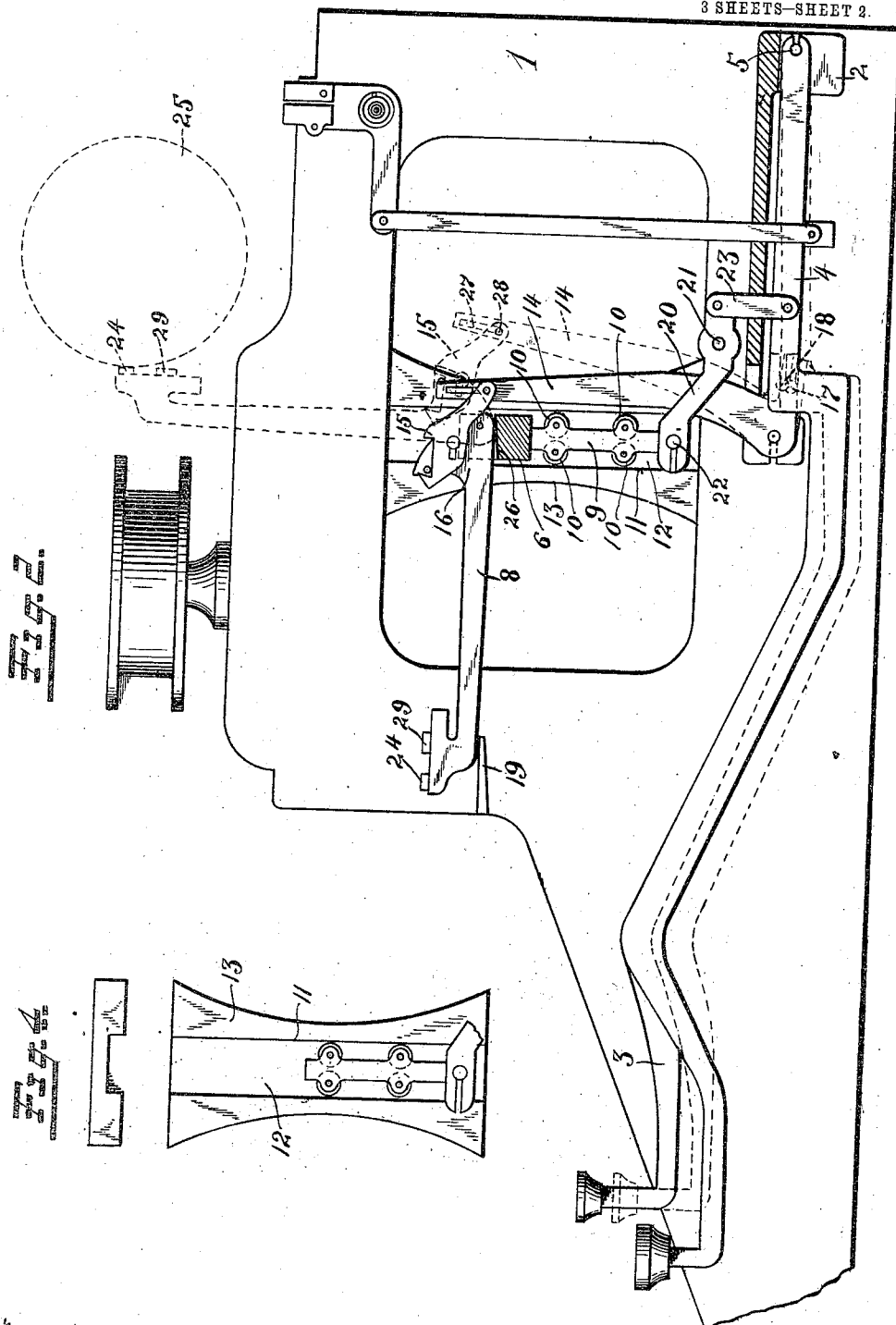


J. ALEXANDER.
TYPE WRITER CASE SHIFT MECHANISM.
APPLICATION FILED NOV. 17, 1908.

1,013,264.

Patented Jan. 2, 1912.

3 SHEETS—SHEET 2.



Witnesses:
Fred. M. Dammefelder.
Chas. A. Card.

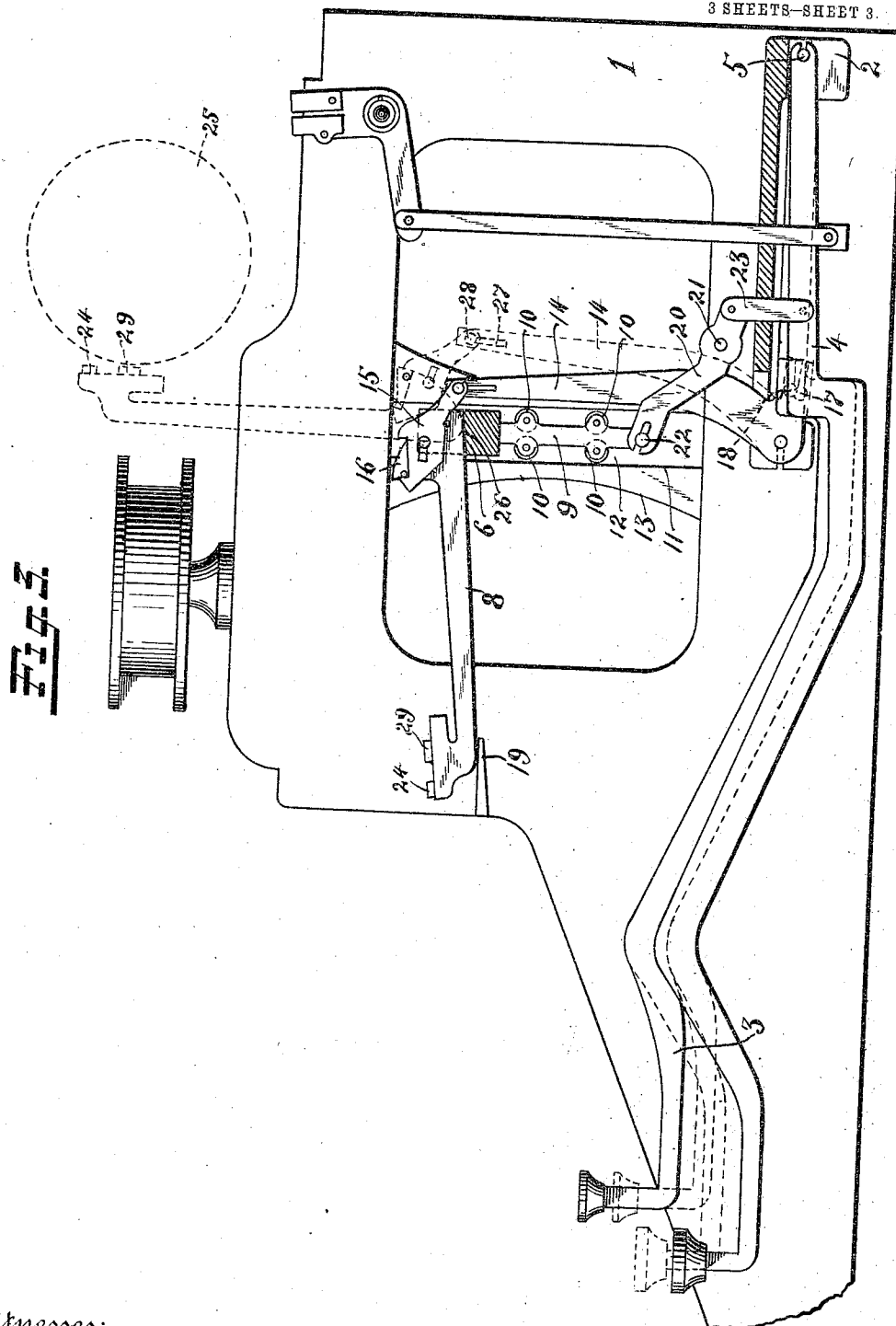
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UNITED STATES PATENT OFFICE.

JESSE ALEXANDER, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO D. N. THAYER, OF NEW YORK, N. Y.

TYPE-WRITER CASE-SHIFT MECHANISM.

1,013,264.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed November 17, 1908. Serial No. 462,991.

To all whom it may concern:

Be it known that I, JESSE ALEXANDER, a citizen of the United States, residing at Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Type-Writer Case-Shift Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in typewriting machines and is particularly concerned with improvements in the case or type-shift mechanism.

The object of the invention is to provide means for shifting the type-bars to bring the upper case type or capitals into proper relative printing position with respect to the platen; to simplify the construction for this purpose, and reduce it to the fewest number of parts whereby the lightest possible impulse will be required upon the shift key to accomplish the shifting operation.

With these and other objects in view, the invention consists in the construction and arrangement of parts a preferred embodiment of which is illustrated in the accompanying drawings, in which,

Figure 1 is a front elevation, with the machine frame in section, of the type-bar support or cradle. Fig. 2 is a vertical sectional view on the line 2-2 Fig. 1, showing the mechanism in position to print lower case type. Fig. 3 is a view similar to Fig. 2 showing the type-bar mechanism shifted to position to print upper case type. Fig. 4 is a detail view in plan and side elevation of that portion of the typewriter frame which contains the type shift mechanism runway.

In the embodiment of my invention herein selected for illustration, the typewriter comprises the frame 1 having a suitable cross-bar or support 2 at the rear to which the key levers 3, and type shift lever 4, are pivoted as at 5.

6 indicates a type-bar support or cradle suitably slotted as at 7 in which slots the heels of the type-bars 8 are pivoted. The cradle or type-bar support 6 is supported upon the upright members 9 which as shown in Figs. 2 and 3 are provided with anti-friction rollers 10 which engage the side walls 11 of runways 12 in the upright members 13 of the machine frame.

The mechanism for actuating the type-bars 8 to printing position, except for connections permitting shift of the type, as

hereafter described forms no part of the present invention as the same is covered by my copending application, Serial No. 462,990; filed 17 day of November, 1908. But for convenient reference it may be stated the same consists of the actuating levers 14 which are connected by means of links 15 to the heels 16 of the type-bars. The lower end of each actuating lever 14 is connected by means of an arm 17 and the pin and slot connection 18 to the key levers 3. The outer ends of the type bars when at rest are supported upon a web or flange 19 secured to the machine frame.

The case or type shift mechanism proper comprises the levers 20 which are pivoted upon either side of the machine frame as at 21 and are connected at their forward ends by a pin and slot connection 22 with the lower ends of the supporting arms 9 of the type-bar support or cradle 6. The rear ends of the levers 20 are connected with the shift key 4 by means of a link 23.

In the normal position of the type-bars or that indicated in Fig. 2, or when said bars are in position to bring the lower case or small type 24 into printing position, with respect to the platen indicated in dotted outline 25, the type-bar support 6 will occupy the lower position as indicated in said figure. When it is desired to shift the type-bars to upper case position or that illustrated in Fig. 3 the shift key 4 is depressed whereby through the link connection 23, and lever 20 connected to the supports 9 of the type-bar support or cradle 6 said type-bar support is raised or shifted to upper case position as shown in said Fig. 3. The effort necessary to accomplish the shifting operation is materially lessened by the simplicity of the construction, the few parts and the action of the friction rollers 10 against the side walls 11 of the runway 12 in the machine frame. In order to permit the type-bars to be supported at their outer ends by the support 19 when said bars are shifted to upper case position, the bases of the slots 7 of said type-bar support are inclined as at 26 so that as the type-bar support is raised, the type-bars will merely revolve slightly about their pivot points and their outer ends will remain at rest in contact with the support 19. Also to permit the shifting of the type-bars without interfering with the actuating connection between the actuating lever 14

and the link 15 by which said lever is connected to the type-bar; said lever 14 is slotted at 27 to permit the pivot pin 28 of the link 15 to rise therein during the shifting operation. It is to be understood that the connections between the actuating lever 14, link 15 and the type-bar 8 are so proportioned that the change in relative position of these parts during the shifting operation will not interfere with the proper operation of the type-bar to printing position. By the shifting operation the type-bars 8 are so positioned that the upper case type 29 will be brought to the proper printing position with respect to the platen 25 when said type-bars in their shifted position are actuated by the type-bar key levers 3. When the printing of an upper case letter or upper case letters is completed, the shift key is released whereupon the type-bar support and the connections thereto will by gravity resume their normal or lower case position.

While I have herein described a particular embodiment of my invention, it is to be understood the same may be altered in detail and other arrangement of parts without departing from the spirit or scope thereof.

What I claim is:

1. A printing and type shift mechanism for typewriting machines, comprising a

movable type bar support, type bars carried thereby, actuating levers for said type bars extending parallel with said support, sliding connections between said type bars and actuating levers, a shift key and connections between said shift key and said type bar support for moving said support to bring said type bars to upper case position.

2. A type shift mechanism for typewriting machines comprising a frame having vertical runways therein, a type-bar support having guiding arms located in said runways, said arms having antifriction rolls to engage said runways, a shift key, and operating connections between said key and support arranged to permit rectilinear movement of the latter to and from upper case position.

3. A type shift mechanism for typewriting machines comprising a frame having straight run-ways therein, a type bar support having depending guiding arms located adjacent said run-ways and having antifriction rolls to engage said run-ways, a shift key, and lost motion connections between said key and support to permit rectilinear movement of the latter to and from upper case position.

JESSE ALEXANDER.

Witnesses:

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