(No Model.) 4 Sheets—Sheet 1.

W. P. QUENTELL.

TYPE WRITING MACHINE.

No. 433,820. Patented Aug. 5, 1890.

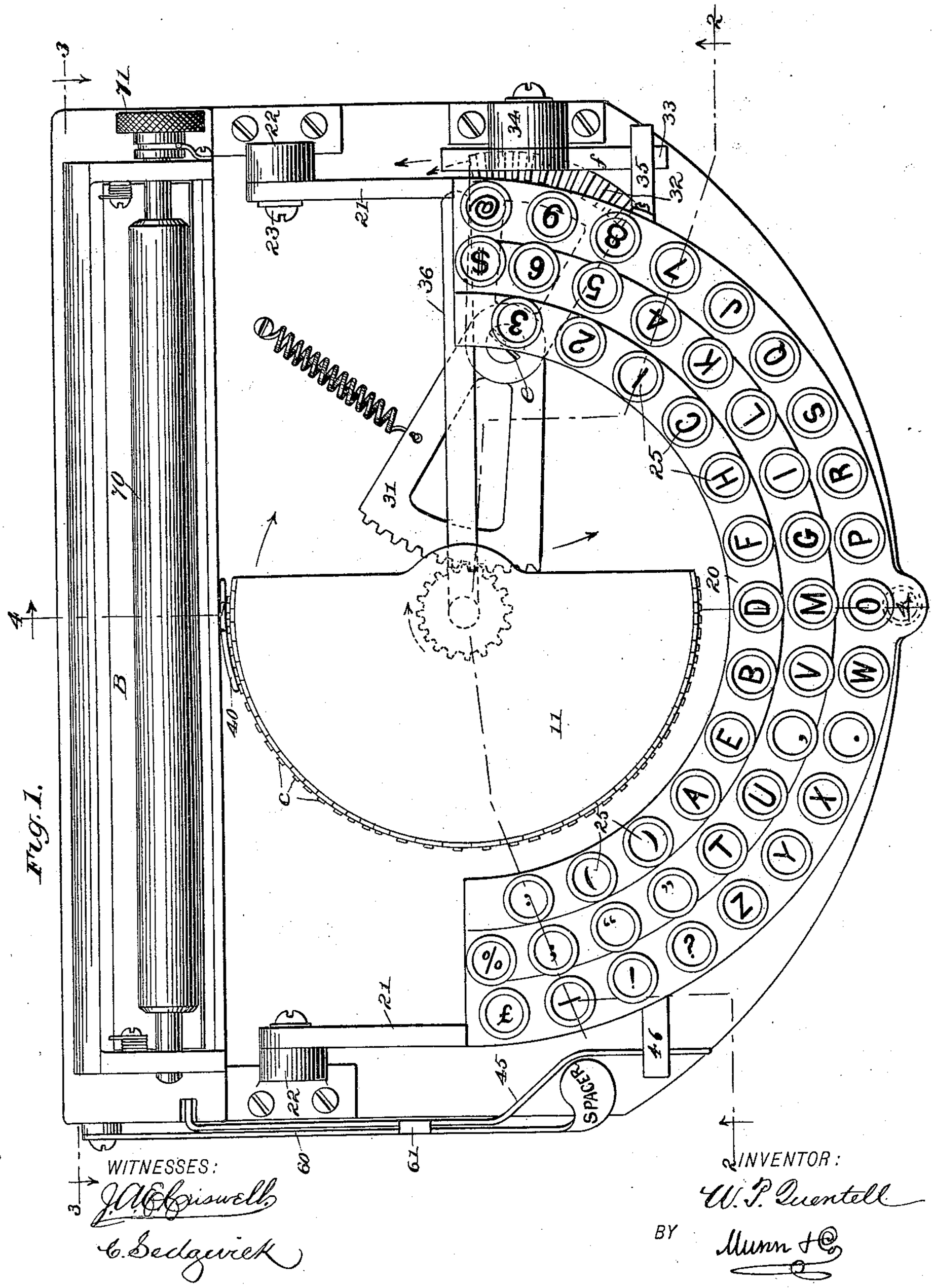

Fig. 1.

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INVENTOR:
W. P. Quentell
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TYPE WRITING MACHINE.

No. 433,820. Patented Aug. 5, 1890.

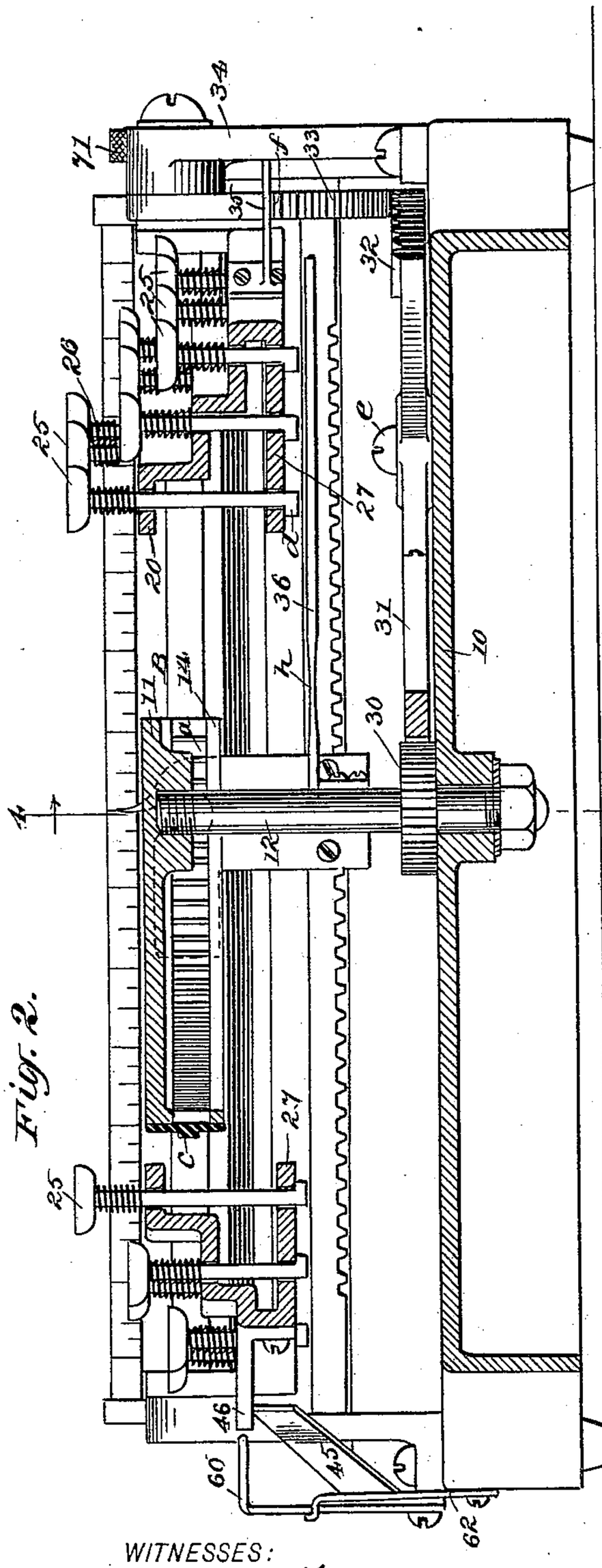

Fig. 2.

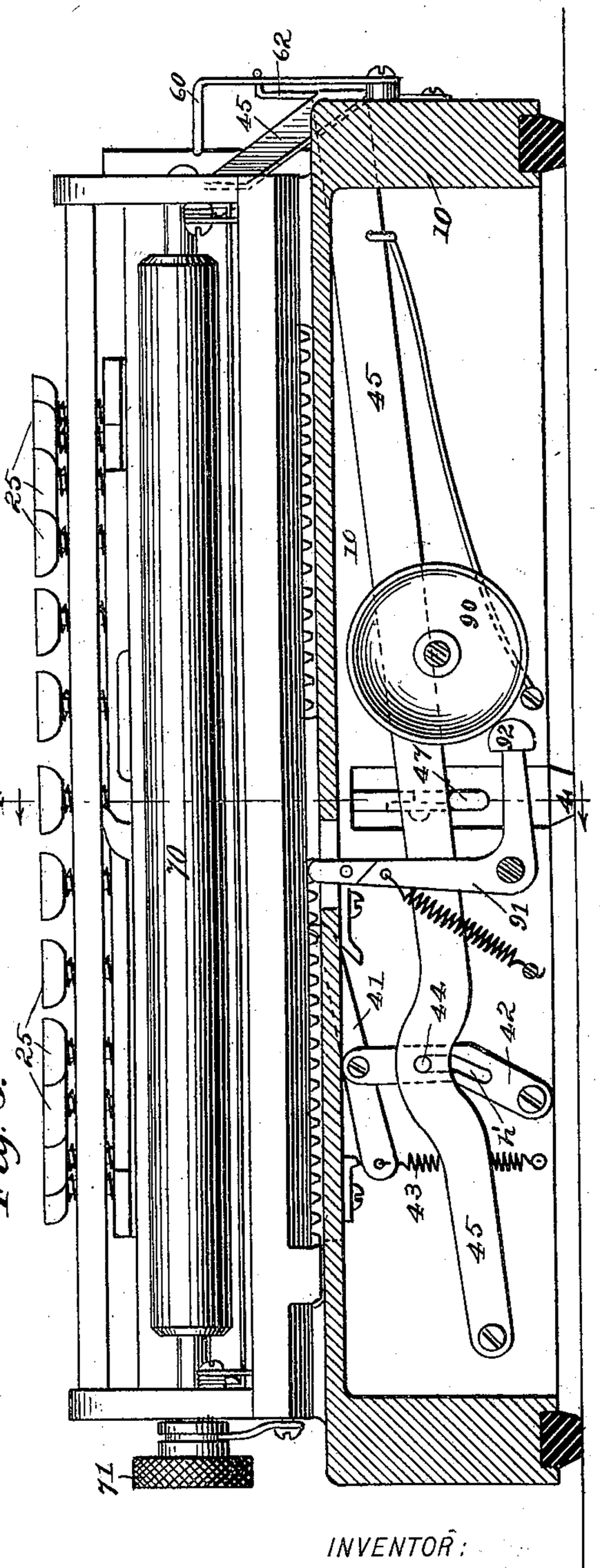

Fig. 3.

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INVENTOR:

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(No Model.) 4 Sheets—Sheet 3.

W. P. QUENTELL.

TYPE WRITING MACHINE.

No. 433,820. Patented Aug. 5, 1890.

Fig. 4.

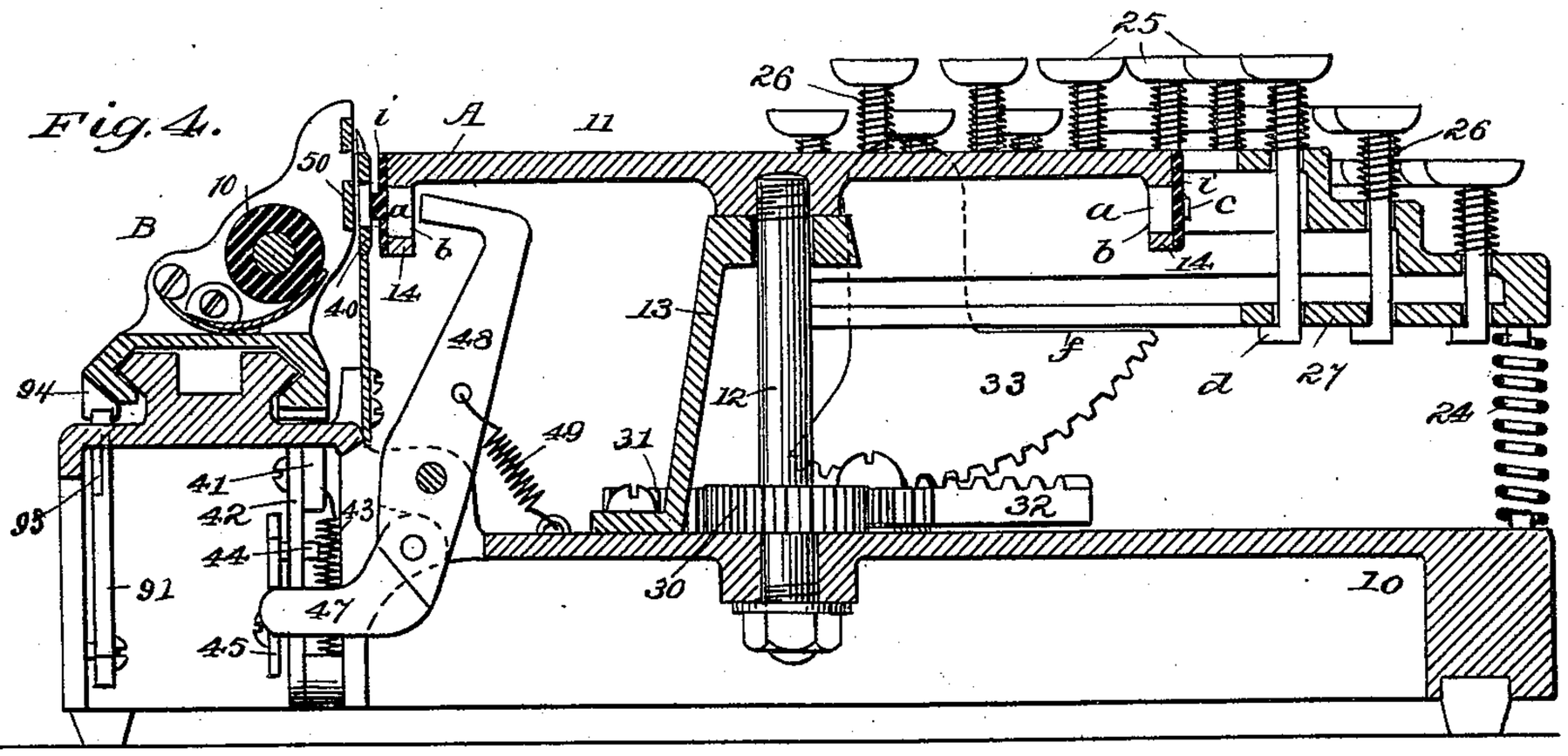


Fig. 5.

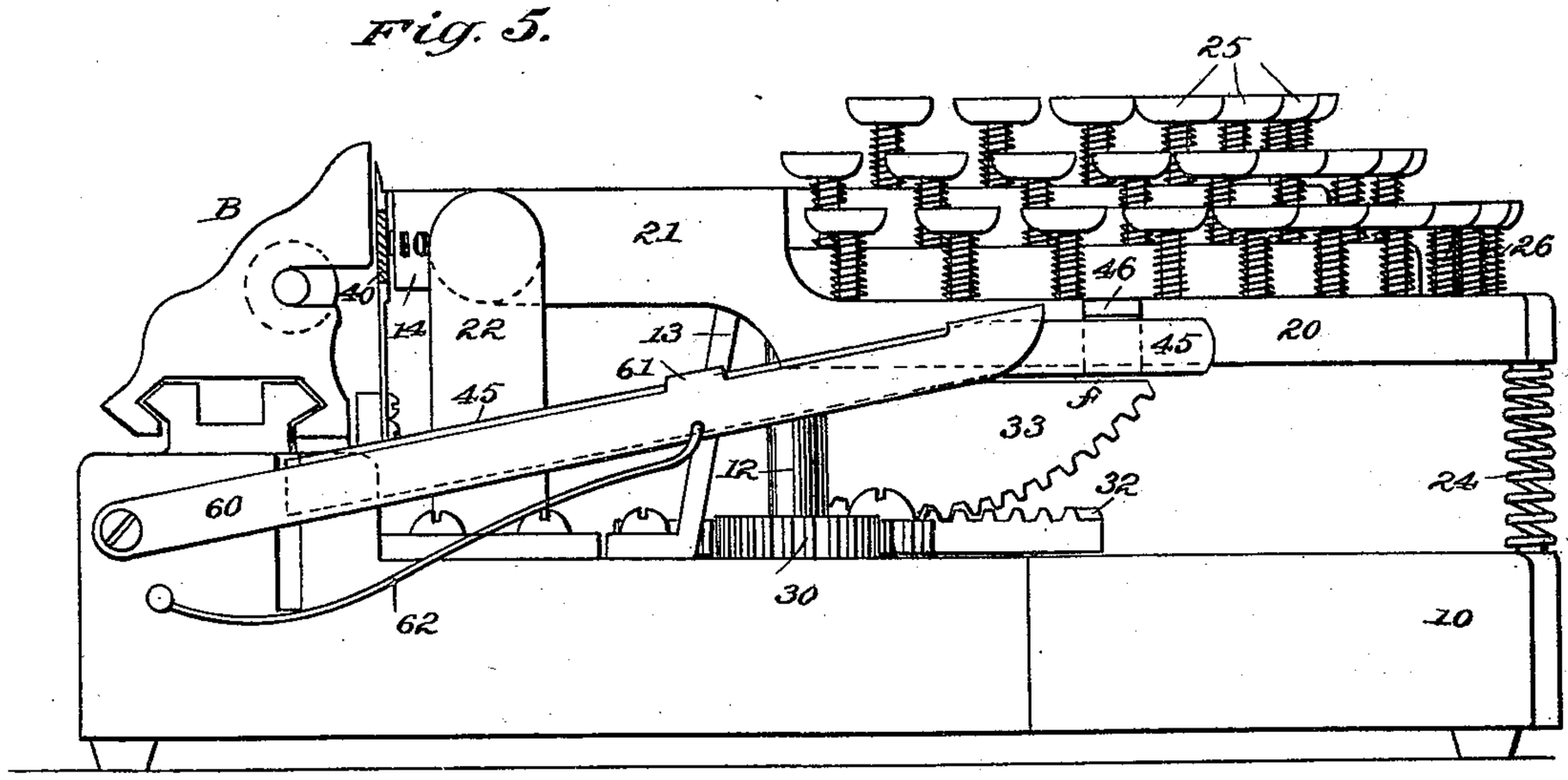
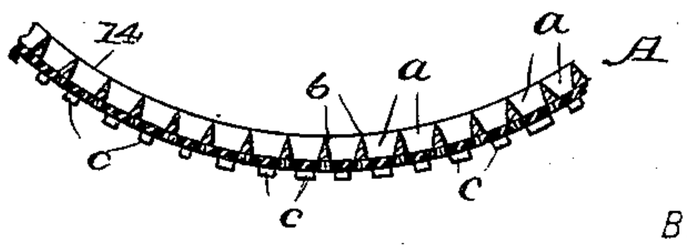


Fig. 6.



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(No Model.) 4 Sheets—Sheet 4.

W. P. QUENTELL.

TYPE WRITING MACHINE.

No. 433,820. Patented Aug. 5, 1890.

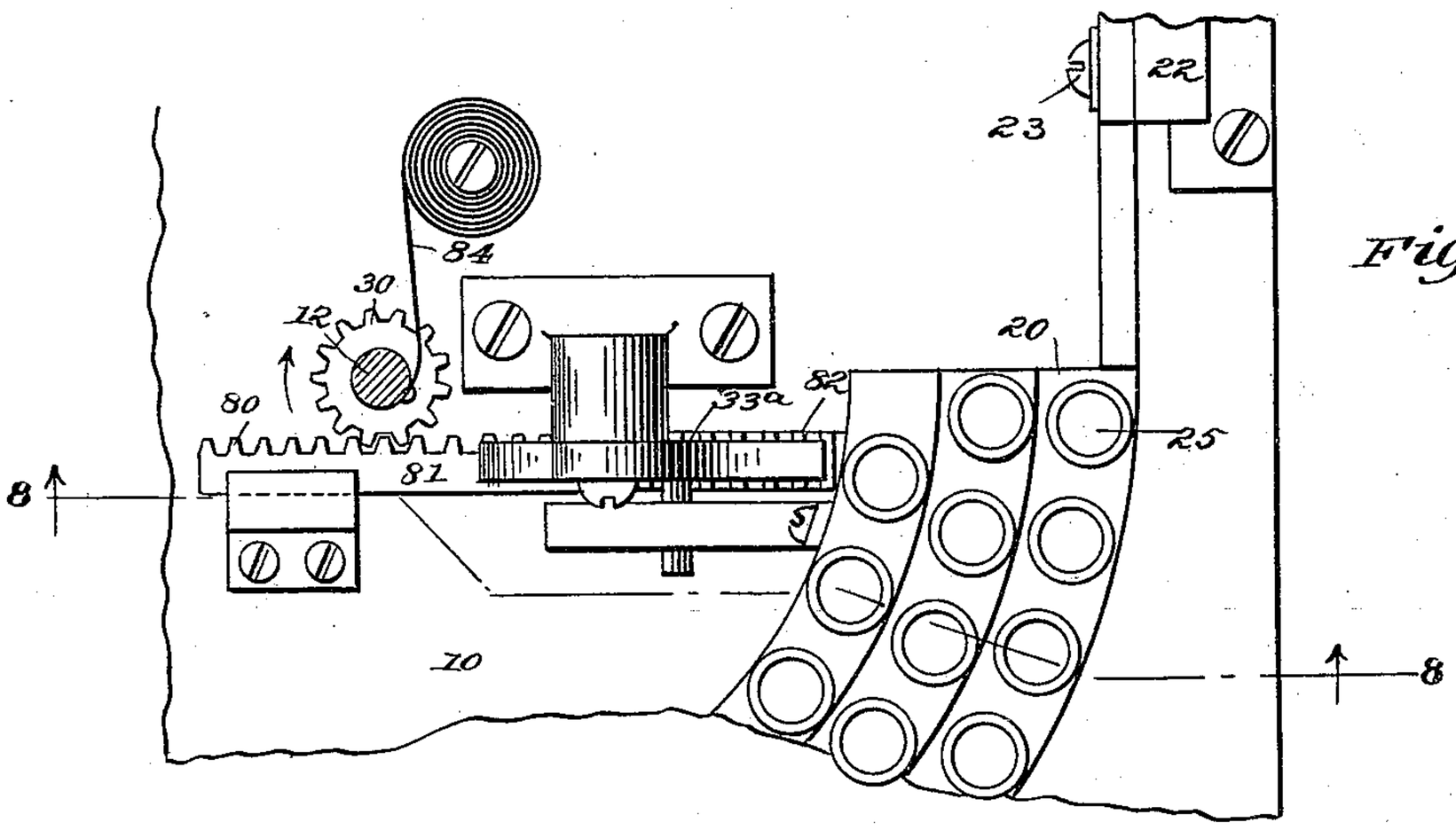

Fig. 7.

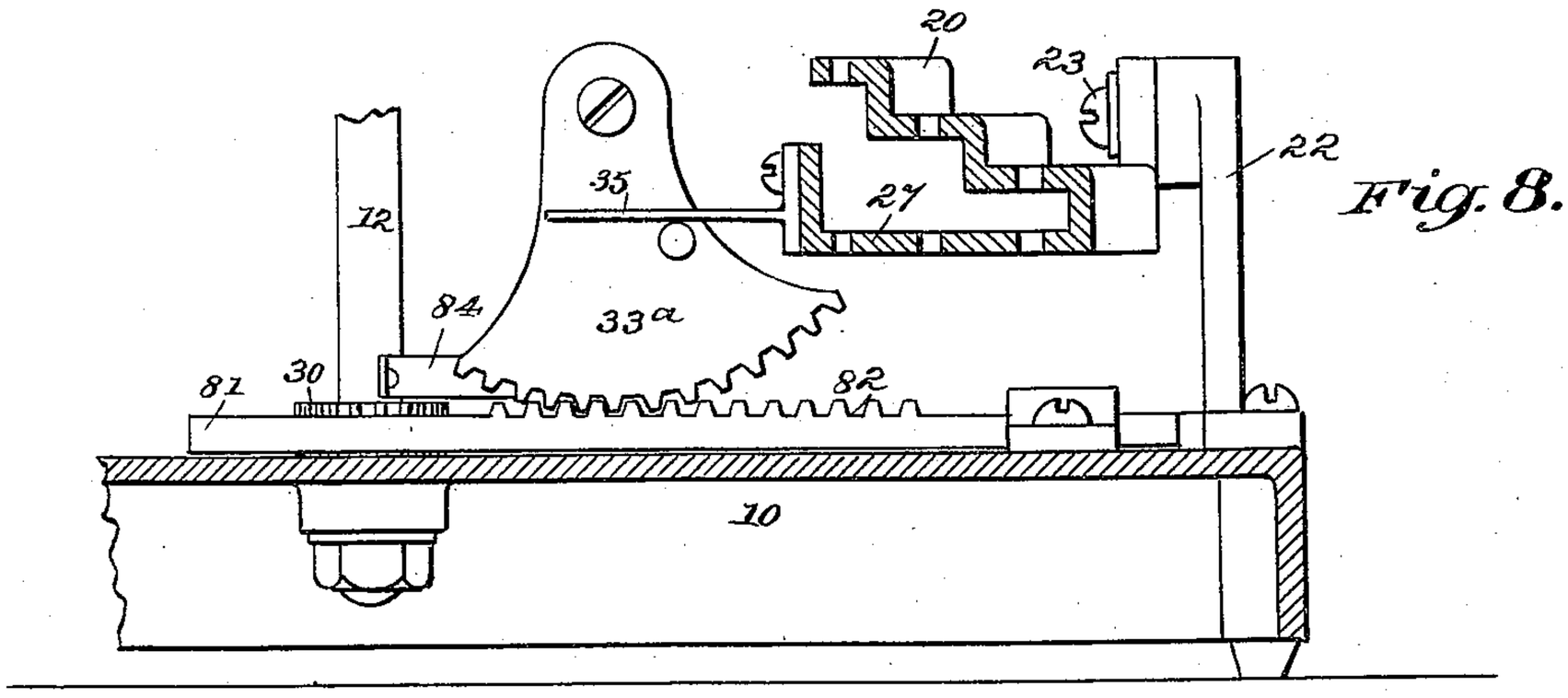

Fig. 8.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM P. QUENTELL, OF KANSAS CITY, MISSOURI.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,820, dated August 5, 1890.

Application filed January 8, 1890. Serial No. 336,236. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PREHN QUENTELL, of Kansas City, in the county of Jackson and State of Missouri, have invented a new and Improved Type-Writer, of which the following is a full, clear, and exact description.

This invention relates to type-writers, the object of the invention being to provide a simple, cheap, and durable type-writer, and one wherein the alignment will be practically perfect; and to the ends named the invention consists of certain novel constructions, arrangements, and combinations of elements as will be hereinafter fully explained and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of my improved type-writer. Fig. 2 is a sectional view taken on the broken line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional view on line 3 3 of Fig. 1. Fig. 4 is a cross-sectional view on lines 4 4 of Figs. 1, 2, and 3. Fig. 5 is a side view of the machine. Fig. 6 is a sectional view of a portion of the type-segment. Fig. 7 is a plan view of a portion of the machine, the view being given to illustrate a modified construction, and the type-segment standard being shown in section; and Fig. 8 is a sectional view on line 8 8 of Fig. 7.

In the drawings, 10 represents the base-plate or frame of the machine, above which there is mounted a segmental disk 11, such disk being carried by a shaft 12, that is preferably steadied and guided by a bracket 13. The disk 11 is formed with a downwardly-extending vertical flange 14, which said flange has as many apertures *a* as there are finger-keys in the machine, such apertures being narrower at the peripheral edge of the flange than at the inner face thereof, so that the faces of the webs or partitions *b*, between the apertures, are inclined, as represented in Fig. 6, such inclined faces serving as guides for the hammer, as will be hereinafter explained.

To the peripheral face of the flange 14, I secure the type-characters *c*, such characters being of rubber or of metal united to rubber strips *i*, a single character being carried in front of each one of the apertures *a*, and the several characters being mounted upon independent strips or upon a strip common to all of the characters, but divided between the characters. Hereinafter in speaking of the disk 11, its flange 14, and the characters carried thereby, I shall term such parts a "type-segment," and designate them by the letter A.

The key-board, which is shown at 20, is provided with arms 21, that are connected to standards 22 by pivot screws or bolts 23, the key-board being normally held in horizontal position by a spring that is preferably arranged as shown at 24 in Figs. 4 and 5. The keys 25 are arranged in any desired number of banks, (three of such banks being shown in the drawings,) and these keys are normally held upraised by springs 26, that are coiled about their stems, all undue elevation of the keys, however, being prevented by laterally-extending projections *d* that are formed at the lower ends of the key-stems, such projections bearing against a plate 27 that is carried by the key-board. The tension of the springs 26 is materially less than that of the spring 24, so that at the initial pressure upon any one of the keys 25 such key will be depressed and its stem will be thrown some distance below the plate 27. The purpose of this arrangement will be presently explained.

Upon the shaft 12 there is mounted a gear 30 that is engaged by a segmental gear 31, that is pivotally supported at a point *e*. (See Figs. 1 and 2.) A segmental crown-gear 32 is made integral with or rigidly connected to the hub of the gear 31, and this crown-gear is engaged by a segmental gear 33 that is pivotally supported by a standard 34 and formed with a shoulder *f* that is overlapped by a yielding arm 35 that extends laterally from the key-board 20. The shaft 12 carries an arm 36 that extends, as represented in Figs. 1 and 2, to a point beneath the plate 27 of the key-board 20, and in practice I prefer to form this arm 36 so that it will yield vertically at the point *h*, but will be rigid in so far as any horizontal movement is concerned.

From the construction above described, it will be seen that if one of the keys 25 be de-

pressed its stem will be carried below the plate 27 at the initial pressure upon the key, and the key having been brought to rest upon the board any continued downward pressure will carry the key-board against the tension of its spring 24, and as the key-board so moves, the arm 35 will tend to throw the gear 33 in a direction such that the gear 32 will move, as indicated by its arrow, (see Fig. 1,) and this movement of the gear 32 will carry the gear 31, as indicated, and the type-segment will be moved thereby in the direction of its arrow, the forward movement of the type-segment being checked by the downwardly-projecting stem of the depressed key, which stem will act as a stop and limit the movement of the arm 36, the characters upon the type-segment being so relatively arranged that when any particular key is depressed, the corresponding character carried by the type-segment will be in printing position at the time of the arrest of the type-segment, in the manner just described. In advance of the type-segment there is an inking-pad 40, against which the type bear as the segment is turned.

The carriage B may be mounted upon any proper way or track—such, for instance, as that shown in the drawings—such carriage being provided with a rack that is engaged by any appropriate feeding mechanism—as, for instance, a pawl 41, that is pivotally connected to a link 42, and normally held in engagement with the rack by a spring 43. The link 42 is formed with a cam-slot h', that is entered by a stud 44, carried by a lever 45, said lever extending forward to a point beneath a projection 46, that is carried by the key-board 20, so that at each depression of the key-board the pawl 41 will be thrown forward and the carriage advanced one step. The lever 45 also bears upon an articulated arm 47, that is connected to a hammer 48, this hammer being normally held retracted by a spring 49, the arrangement being such that as the lever 45 is forced downward, and just after the desired character has been brought to printing position, the hammer will be thrown forward and the type will be carried against the paper, which paper at this time is backed up by a platen 50, carried by the carriage B. After the hammer has been advanced, as above described, any continued downward movement of the key-board will bring about the feeding of the carriage, and in order that the carriage may be advanced without the throwing of the key-board at times when it is desired to space, I mount a spacing-lever 60, as shown best in Figs. 1 and 5, this lever being provided with a lip 61, that overlaps the lever 45, whereby if the lever 60 be depressed the lever 45 will be carried downward and the carriage will be advanced.

70 is the feeding-roller, provided with a milled head 71 for rotating it. The alarm mechanism is an ordinary one and consists in a bell 90, a bell-crank lever 91, pivoted to the frame below the rear edge of the carriage, the horizontal arm of the lever having a hammer 92 adjacent to the bell, and the vertical arm having at its upper end the usual hinged section 93 projected through a slot in the frame or base into the path of the lug 94. As I lay no claim to the alarm the above explanation will suffice.

In Figs. 7 and 8 I illustrate a construction wherein the gear 30 is engaged by the vertically-arranged teeth 80 of a rack 81, such rack being controlled by a segmental gear 33^a, which gear engages horizontal teeth 82, formed on the rack 81.

In order that the parts arranged as above described may be returned to their normal positions, I provide a spring 84, that is arranged as shown in the drawings, or the spring might be connected directly to the rack.

As before stated the arm 36 is free to yield at the point h in a vertical line, this movement being necessary to provide for the continued downward movement of the key-board after such arm has struck against the depressed key-shank.

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

1. The combination, in a type-writer, with the type-carrier and a hammer therefor, of a pivotally-mounted key-board successively operating the said carrier on its axis or bearing, and the hammer, substantially as set forth.

2. The combination, in a type-writer, with the type-carrier and the vertically-rocking key-board geared thereto, of the carriage and the hammer, both actuated by depressing the said key-board, the depression of a particular key serving to stop the movement of the carrier, substantially as set forth.

3. The combination, with a vertically-pivoted type-segment having an arm that will yield in a vertical line, but that is held against yielding in a horizontal line, of a pivotally-mounted horizontal key-board, keys having stems that extend below such board, springs arranged in connection with the keys, a spring arranged to uphold the key-board, said spring being of greater tension than the key-springs, and connections between the type-segment and the key-board, substantially as described.

4. The combination, with a type-segment, of a pivotally-mounted key-board formed with a plate 27, keys which pass through apertures formed in the key-board and plate, springs by which the keys are normally held raised, a spring by which the key-board is normally held in a horizontal plane, said spring being of higher tension than the key-springs, a yielding arm 36, also arranged in connection with the type-segment, a segmental gear 33, an arm carried by the key-board and arranged to bear upon a shoulder formed upon said segment, and connections between the segment and gear 30, substantially as described.

5. In a type-writer, the combination, with a type-segment, a gear 30, arranged in connection therewith, and an arm 36, formed with a yielding section *h*, and arranged in connection with the type-segment, of a pivotally-mounted key-board, spring-supported keys carried thereby, the shanks of said keys extending downward beneath the board, a spring arranged in connection with the key-board, said spring being of greater tension than the key-springs, an arm that extends outward from the key-board, a segmental gear 33, that is engaged by the arm and rigidly-connected gears 32 and 31, the gear 32 being engaged by the gear 33, while the gear 31 engages the gear 30, substantially as described.

6. In a type-writing machine, the combination, with a type-segment and a means for operating the same, of a pivotally-mounted key-board, a projection or arm 46, carried thereby, a lever 45, a hammer, and a spring arranged in connection with the hammer, substantially as described.

WM. P. QUENTELL.

Witnesses:
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C. H. HODGE.