

No. 891,453.

PATENTED JUNE 23, 1908

E. E. BARNEY.
TYPE WRITING MACHINE.
APPLICATION FILED SEPT. 6, 1905

2 SHEETS—SHEET 1.

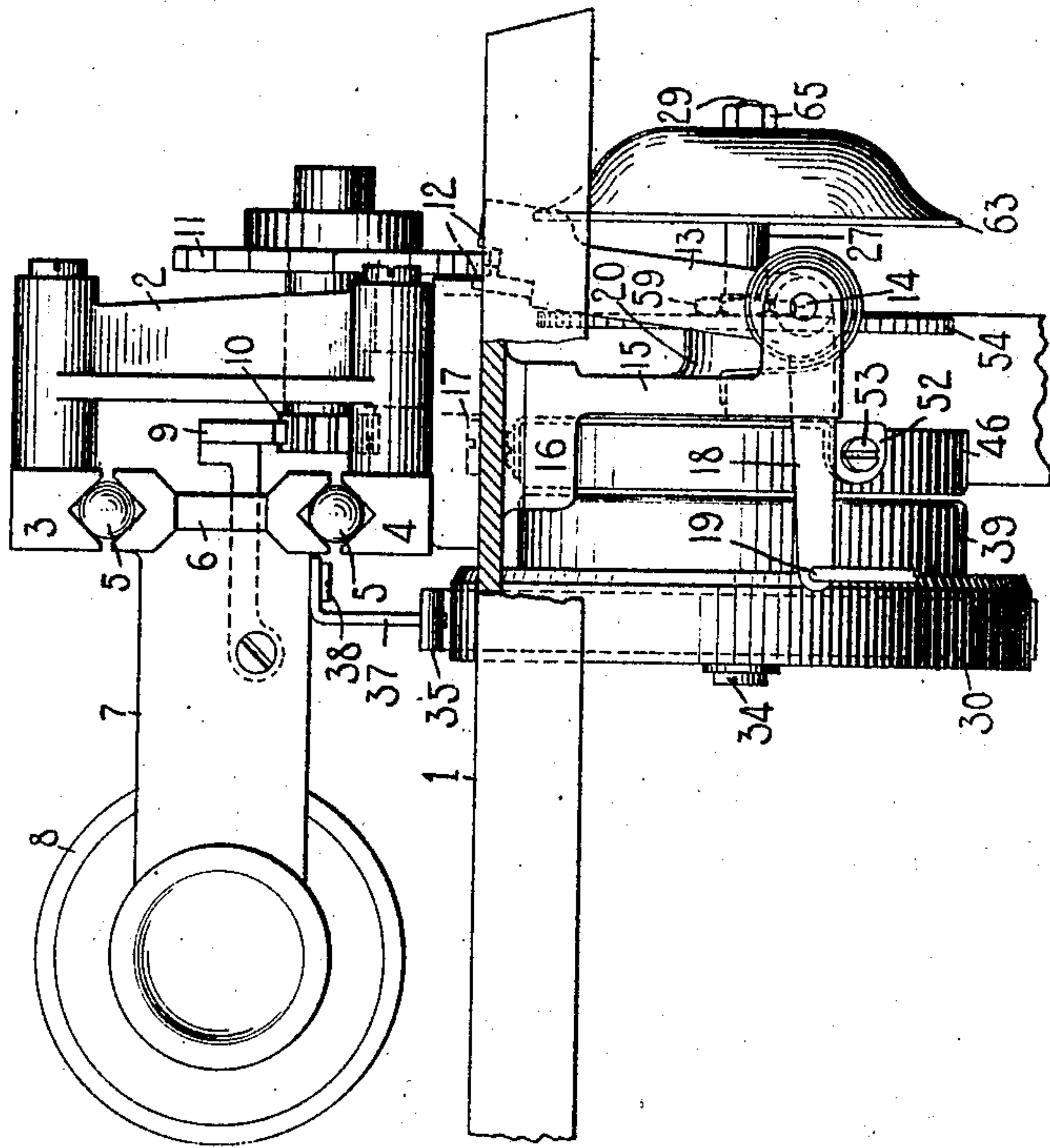


FIG. 1

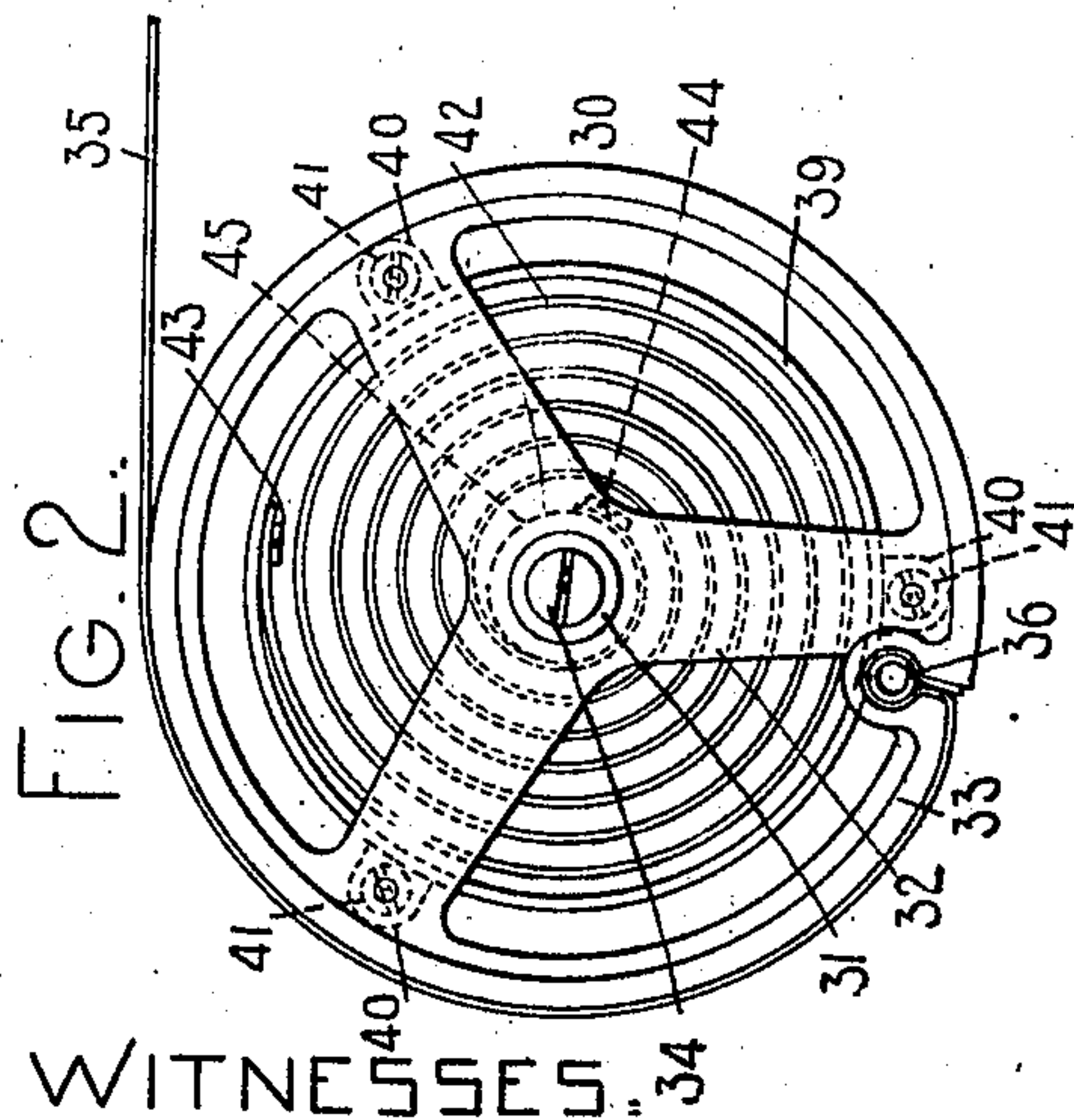


FIG. 2.

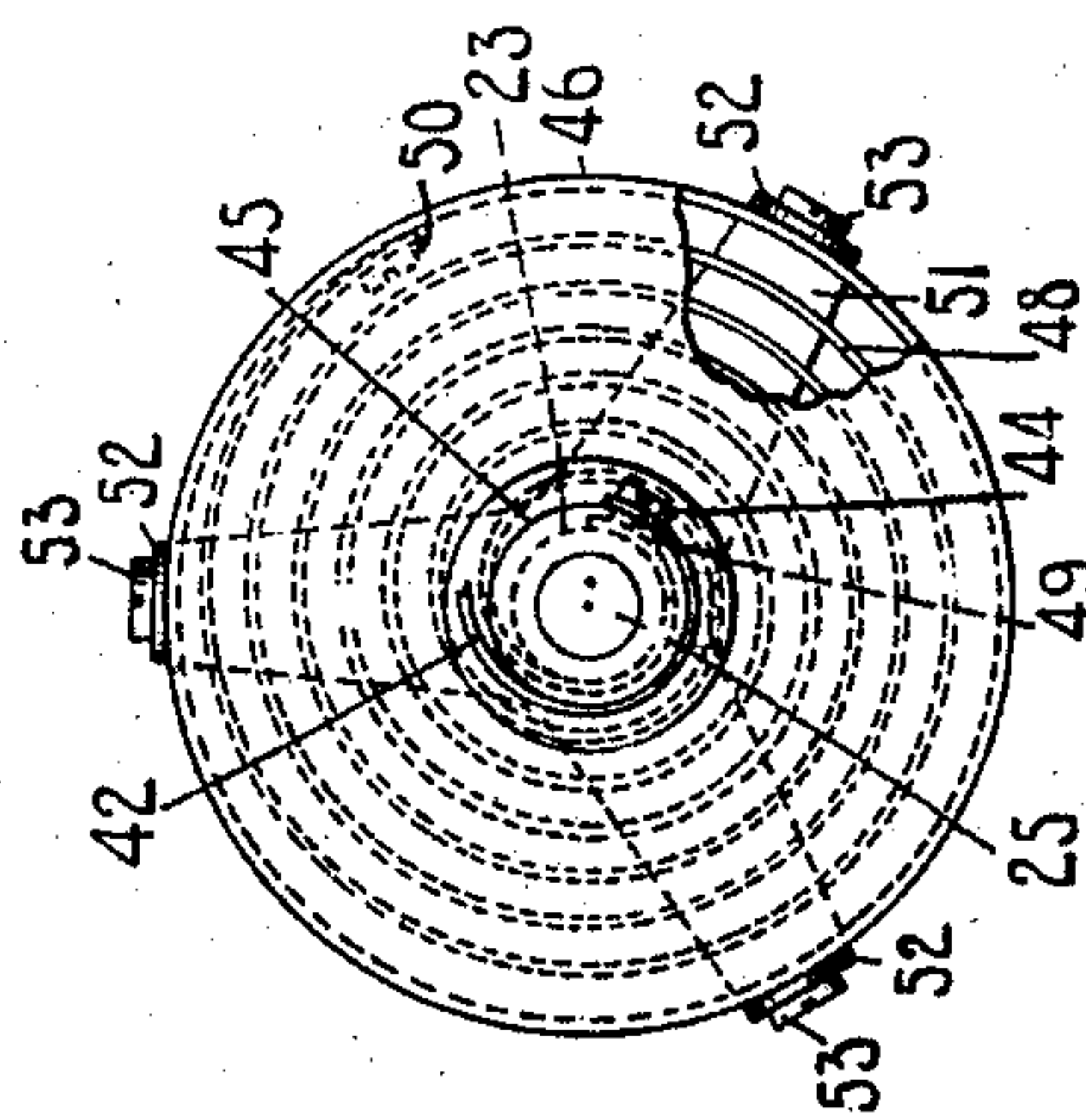


FIG. 3.

J. B. Reeves.
WITNESSES.

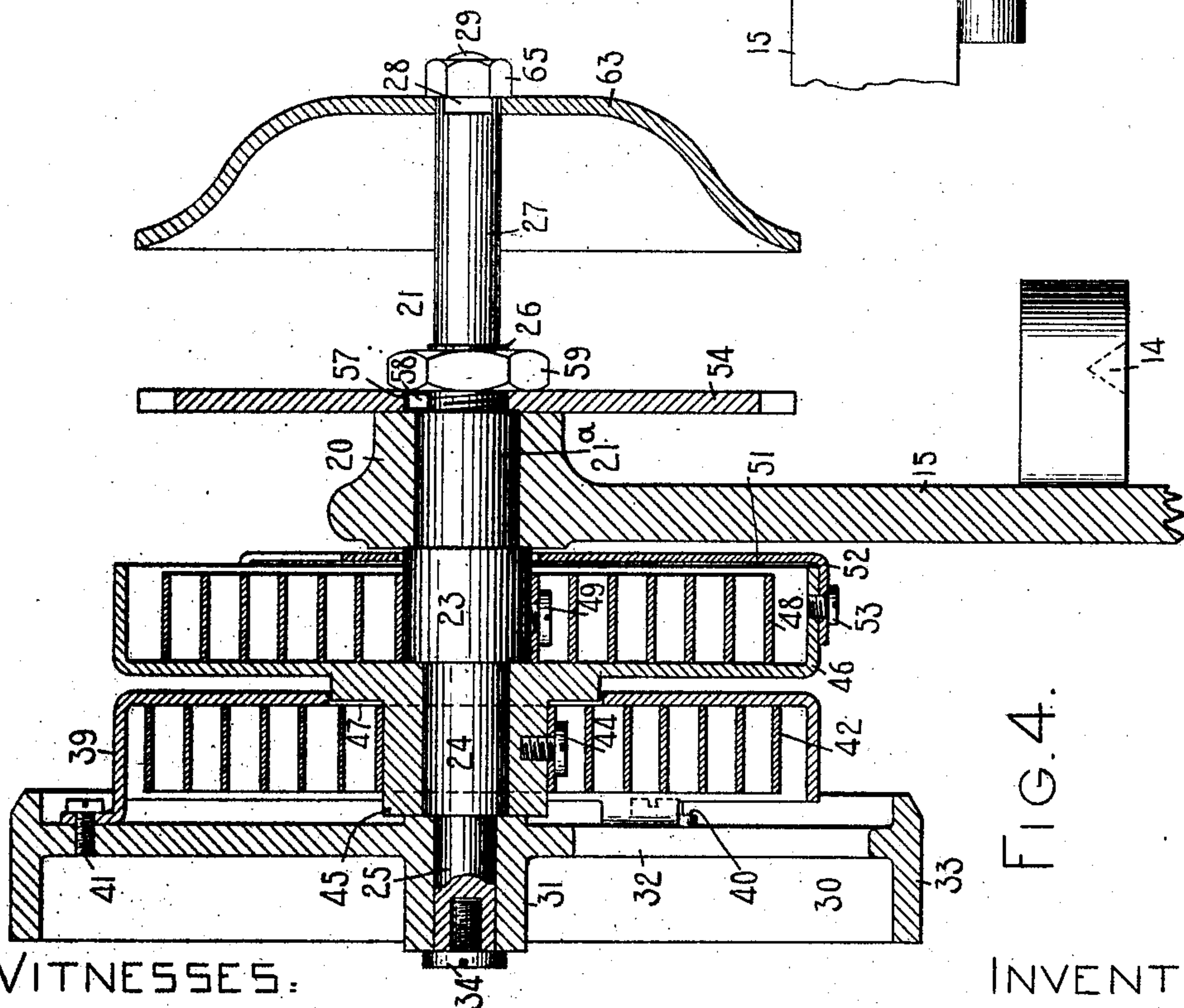
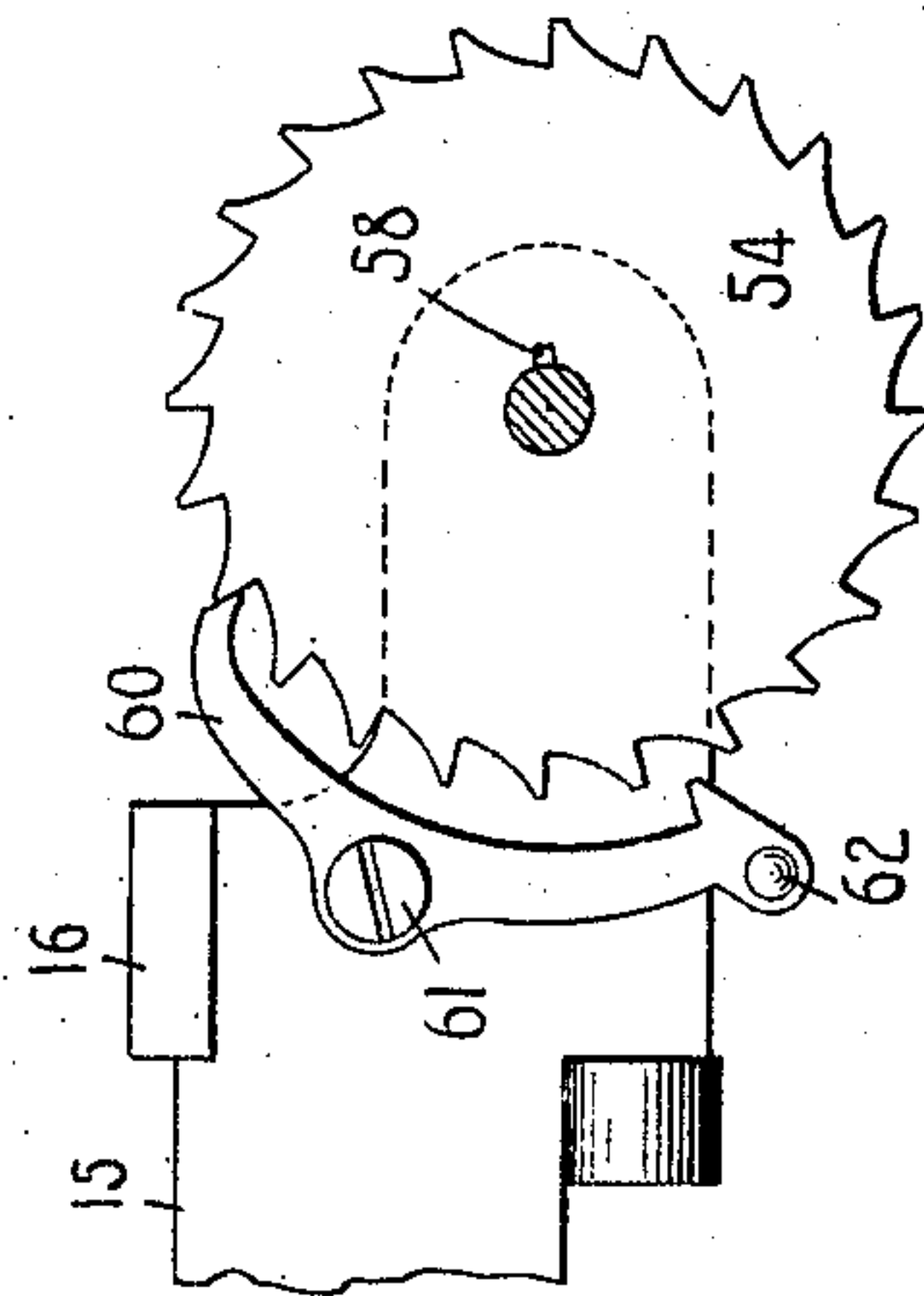
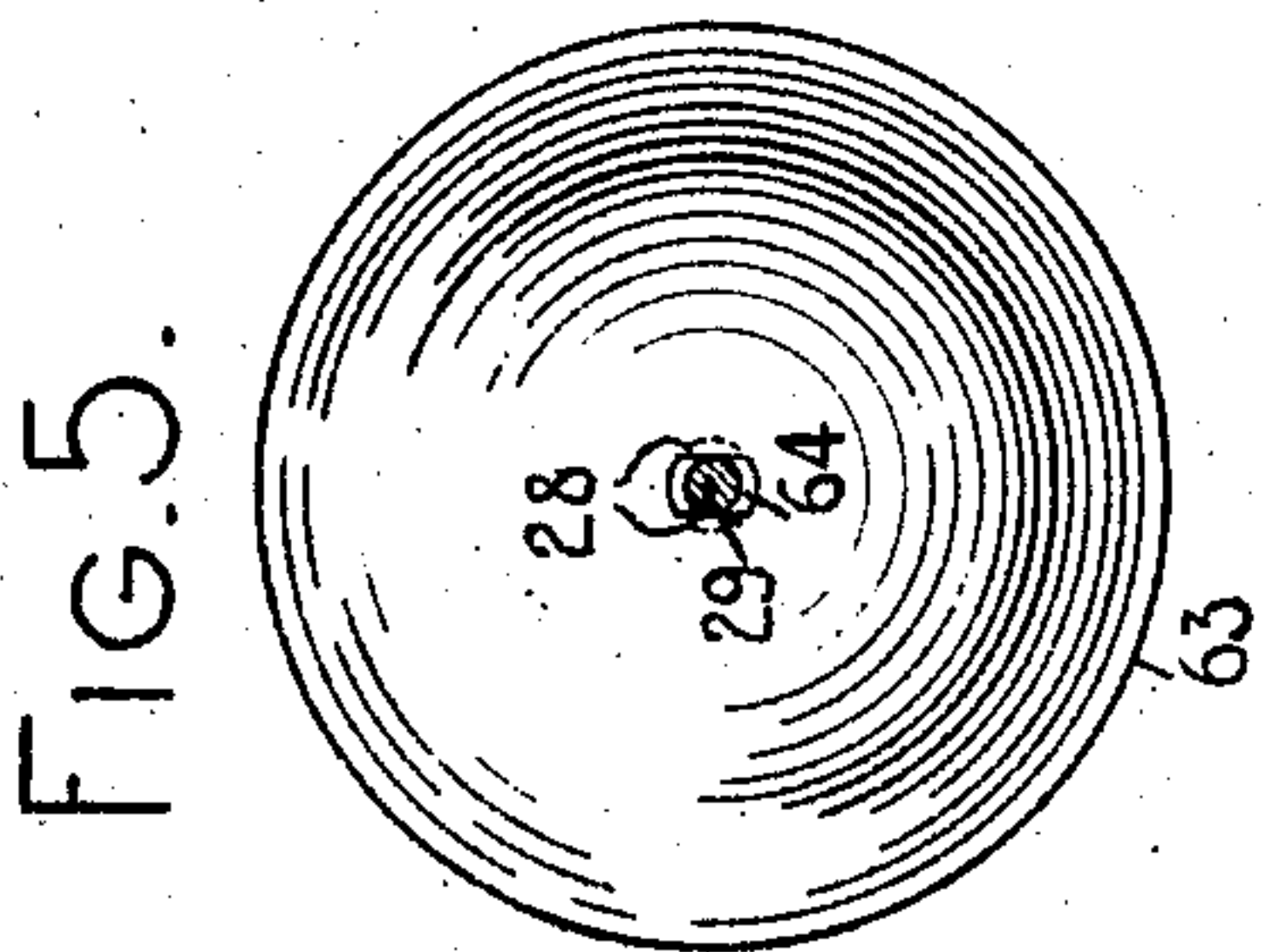
INVENTOR.
Edwin E. Barney.
By Jacob F. Fildes
HIS ATTORNEY

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2 SHEETS—SHEET 2.



WITNESSES:

INVENTOR:

J. B. Reeves
mwpool

Edwin E. Barney
By Jacob Felbel
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

EDWIN E. BARNEY, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

No. 891,453.

Specification of Letters Patent:

Patented June 23, 1908.

Application filed September 6, 1905. Serial No. 277,208.

To all whom it may concern:

Be it known that I, EDWIN E. BARNEY, citizen of the United States, and resident of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to carriage impelling means for typewriting machines and has for its main object to provide an improved device of the character specified.

In carrying out my invention I preferably employ a plurality of spring drums, each comprising a case or box and a main spring coiled within said case, the several main springs being connected one with another, so that with a tension equal to that of only one of the springs I am enabled to secure an extension or stretching equal to the stretching of one spring multiplied by the total number of springs employed.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of a Monarch typewriting machine to which my invention is shown as applied. Fig. 2 is a front elevation of one of the spring drums. Fig. 3 is a front elevation of the other spring drum, part of the case being shown broken away. Fig. 4 is an enlarged sectional view of the carriage impelling mechanism taken on the plane passing through its axis of rotation. Figs. 5 and 6 are rear elevations of the tension adjusting devices of the main springs.

Although I have shown my invention as embodied in a Monarch typewriting machine, it is to be understood that it may be applied to other styles of writing machines.

In the drawings, 1 is a top plate of the machine, supporting brackets 2 to which are secured top and bottom guide rails 3 and 4, these latter being grooved longitudinally to receive anti-friction balls 5. Said balls cooperate with oppositely disposed grooves in the back bar 6 of a platen carrier 7 which carries a rotary cylindrical platen 8. Mounted in the platen carrier is a carriage feed rack 9 which normally meshes with a feed pinion 10 operatively connected with an escapement wheel 11. Feed dogs 12 are adapted to cooperate with the escapement wheel, said feed dogs being carried at the top of a vibratory dog carrier or rocker 13 pivoted at 14 in a bracket 15, said bracket being pro-

vided with lugs 16 which receive screws 17 by which the bracket is fixedly secured to the top plate of the machine. The dog carrier 13 is provided with a horizontally disposed arm 18 which is connected by a link 19 with a pivotally supported universal bar of the usual construction, said universal bar extending from side to side of the machine beneath the printing key levers and spacing levers (not shown) and being adapted to be actuated by said printing and spacing levers in a known manner and thereby to cause the carriage feeding dogs 12 to cooperate with the escapement wheel 11 to permit the platen carrier and the platen to be drawn leftward across the machine under the influence of the carriage impelling mechanism presently to be described.

The parts hereinbefore referred to generally resemble those found in the Monarch machine, and it is not thought necessary to describe them with any greater degree of particularity.

At its left end the bracket or support 15 is provided with a perforated boss 20 which serves as a bearing for an axle or shaft for the carriage impelling devices, said shaft being designated as a whole by the reference numeral 21. The portion of the shaft 21 which turns within the boss 20 and which is designated by the reference 21^a is succeeded, forward of the boss, by an enlarged portion 23 followed by a reduced portion 24, the portion 24 being followed or succeeded by a portion 25 of still smaller diameter. Rearwardly of the portion 21^a the axle 21 is provided with a reduced threaded portion 26 succeeded in turn by a further slightly reduced portion 27, which near its rear end is flattened on two sides, as indicated at 28, and which terminates in a small threaded end portion 29. Mounted upon the portion 25 at the forward end of the axle 21 is a band wheel 30 comprising a hub 31, spokes 32 and rim 33. The hub 31 is confined between the shoulder formed by the junction between the portions 25 and 24 of the axle 21 and a headed screw 34 which screws into the front end of the axle, the construction being such that the band wheel 30 turns freely on the axle but is prevented from moving longitudinally thereof. A band or strap 35 has one end fastened to the band wheel, as indicated at 36, the other end of said band 35 being connected

with an arm or hook 37 depending from the platen carrier 7 and secured thereto by a screw 38 (Figs. 1 and 2). The ratchets and the beveled gear of the ribbon mechanism, which in the Monarch machine are carried at the front end of the main spring shaft or axle, have not been shown in the drawings since they are not material to the present invention.

10 A cylindrical main spring case or box 39 is provided with tabs or ears 40 which are perforated for the passage of small headed screws 41 which are received in threaded openings in the spokes 32 of the band wheel and serve to secure the case 39 to said band wheel. 15 That end of the case 39 which adjoins the band wheel 30 is open, the opposite end being closed. Confined within the case 39 is a coiled main spring 42, the outer end whereof is secured by a screw 43 (Fig. 2) to the rim of the case, the inner end being secured by a screw 44 to a collar 45 integral with and projecting forwardly from a second main spring case 46. As best appears in Fig. 4, the collar 20 portion 45 of the second case protrudes through an opening 47 in the closed end of the forward main spring case 39, and said collar has its bearing on the portion 24 of the axle 21. It will be perceived that by the construction illustrated in Fig. 4 the second 25 main spring 46 is prevented from moving longitudinally of the shaft 21 by reason of the fact that its collar portion 45 is confined between the hub 31 and the shoulder formed by the meeting of the portions 23 and 24 of the axle. A second main spring 48 is coiled within the box or case 46, the inner end of said spring being fastened by a screw 49 to the axle 21 and the outer end being fastened 30 to the rim of the case 46 by a screw 50. The rear end of the case 46 is open and a three-armed confining member or guard 51 maintains the said spring in position within its case, said guard being provided with ears 52 through which pass screws 53, the latter 35 screwing into the rim of the case 46.

The tension adjusting ratchet wheel 54 fits over the threaded portion 26 of the axle 21 and is provided with an opening 57 which receives a pin 58 driven into the axle, the ratchet wheel being thereby prevented from rotating independently of the axle 21. A nut 59 is screwed on the threaded portion 26 against the rear face of the ratchet wheel 55 which is confined between said nut and the shoulder formed by the junction of the portions 26 and 21^a of the axle. From an inspection of Fig. 4, it will be understood that the axle 21 turns freely in its bearing in the 60 bracket 15, but is prevented from endwise movement by the ratchet wheel 54 and the shoulder formed at the junction of the parts 23 and 21^a of said shaft.

A double pawl 60 is pivoted at 61 to the 65 bracket 15 and is provided with a handle or

finger portion 62 by which it may be manipulated in the ordinary manner to cooperate with the teeth of the ratchet wheel 54.

The usual alarm bell 63 is positioned on the portion 27 of the axle, said bell being provided with an opening 64 (Fig. 5) having parallel sides which cooperate with the flattened faces 28 of the axle to prevent rotary movement of said bell independently of said axle. The bell is held in place by a nut 65 which is 70 screwed on the threaded portion 29 of the axle. The rim of the bell 63 is knurled or roughened so that said bell may be readily turned by hand, the rotation of the bell also causing the rotation of the axle 21. 75 80

In operation the bell is turned to the right, as viewed from the rear of the machine, thereby causing the rotary movement of the axle 21 as just described. The rotation of the axle causes a winding of the main spring 85 48, the inner end of which is fastened to said axle and a portion of the motion is communicated through the spring to its case 46 and thence to the main spring 42, the inner end whereof is secured to the collar 45 integral with said case 46. The case 39 will not be rotated at this time, since the platen carrier 7 (with which said case 39 is connected through the arm 37, band 35 and band wheel 30) is prevented from moving in letter space 90 95 direction by its escapement mechanism in a well known manner. It will be understood, therefore, that this turning of the bell 63 will wind up both of the main springs 48 and 42, the motion being divided between them. 100 The turning member or bell 63 is rotated until the desired tension of the springs is attained, the unwinding of said springs being prevented by the cooperation of the pawl 60 with the ratchet wheel 54. 105

If now the printing keys or space key be operated, the escapement devices will be caused to cooperate to permit the platen carrier and platen to be drawn leftward across the machine a letter space distance at a time 110 under the influence of the main springs 42 and 48. These springs being connected in series will theoretically be wound up and unwound together and the tensions of the two springs will at all times be equal. It is found 115 in practice, however, that the friction in the bearing of the main spring case 46 must be overcome before the case 46 will turn, the result being that the rotative movement of the rear spring drum, by which term is comprehended the case and the main spring within 120 said case, is periodic or jerky instead of continuous, but the periodicity is not such as to interfere with the successful operation of the mechanism. 125

It will be understood that I provide a construction of carriage impelling mechanism which, with a tension equal to that of only one main spring, will enable the platen carrier and platen to be drawn back to begin a 130

new line twice as far as when but one main spring is employed. It will further be understood that by increasing the number of main springs and by connecting them in series, either in the manner shown or in a manner equivalent thereto, a travel of the carriage may be had several times greater (the distance depending upon the number of springs employed) than is available when only one spring is employed.

My invention is particularly adapted for use in machines in which long platens and wide platen carriers are used, since in such machines the travel of the carriage is considerably greater than in ordinary machines. When my invention is applied to such wide carriage machines, the platen may be fed a letter space distance at a time throughout its length under a main spring tension which is not perceptibly greater than that employed for a machine having a platen of the ordinary length. I do not, however, desire to be understood as limiting the use of my invention to machines having platens longer than ordinary as said invention may be advantageously used with any length of platen.

Various changes in the construction of the parts and in the manner of connecting and arranging them may be made without departing from the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of a carriage, a band wheel connected with said carriage by a band or strap, an axle on which said band wheel is adapted to turn, a casing or drum attached to said band wheel, a second casing or drum having a hub portion projecting through an opening in the first named casing, a coiled spring within said first named casing and connected at its outer end thereto and at its inner end to said

hub, and a second coiled spring within the second named casing and connected at its outer end thereto and at its inner end to said axle.

2. In a typewriting machine, the combination of a carriage, a band wheel connected with said carriage by a band or strap, an axle on which said band wheel is adapted to turn, a casing or drum attached to said band wheel, a second casing or drum having a hub portion projecting through an opening in the first named casing, a coiled spring within said first named casing and connected at its outer end thereto and at its inner end to said hub, a second coiled spring within the second named casing and connected at its outer end thereto and at its inner end to said axle, a ratchet and pawl mechanism coöperative with said axle, and a bell alarm fixed to said axle and serving as a finger piece or knob for turning it.

3. In a typewriting machine, the combination of a carriage, a band wheel connected with said carriage by a band or strap, an axle supported on the frame of the machine and on which said band wheel rotates, a pair of casings or drums each containing a coiled spring and connected in series with each other, each of said casings or drums being open at one side or end and closed at the other, the closed ends of said drums facing each other, and one of said drums being detachably connected with said band wheel which serves as a guard for the spring within said drum, and a confining member or guard for the other of said drums.

Signed at Syracuse, in the county of Onondaga, and State of New York this 28th day of August A. D. 1905.

EDWIN E. BARNEY.

Witnesses:

JOHN S. MITCHELL,
G. A. AUMENT.