

(No Model.)

4 Sheets—Sheet 1.

E. E. PEACOCK.
TYPE WRITING MACHINE.

No. 354,213.

Patented Dec. 14, 1886.

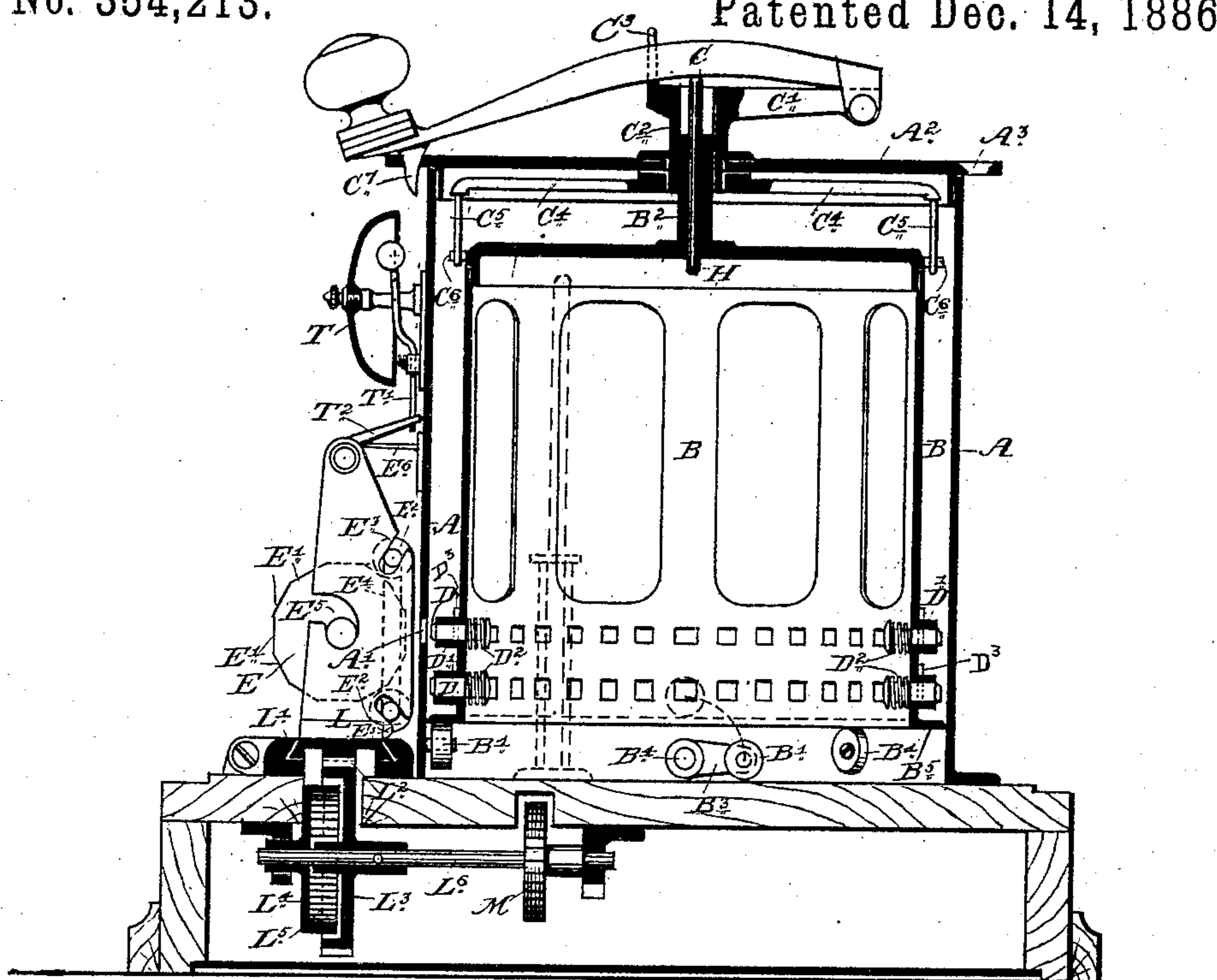


Fig. 1.

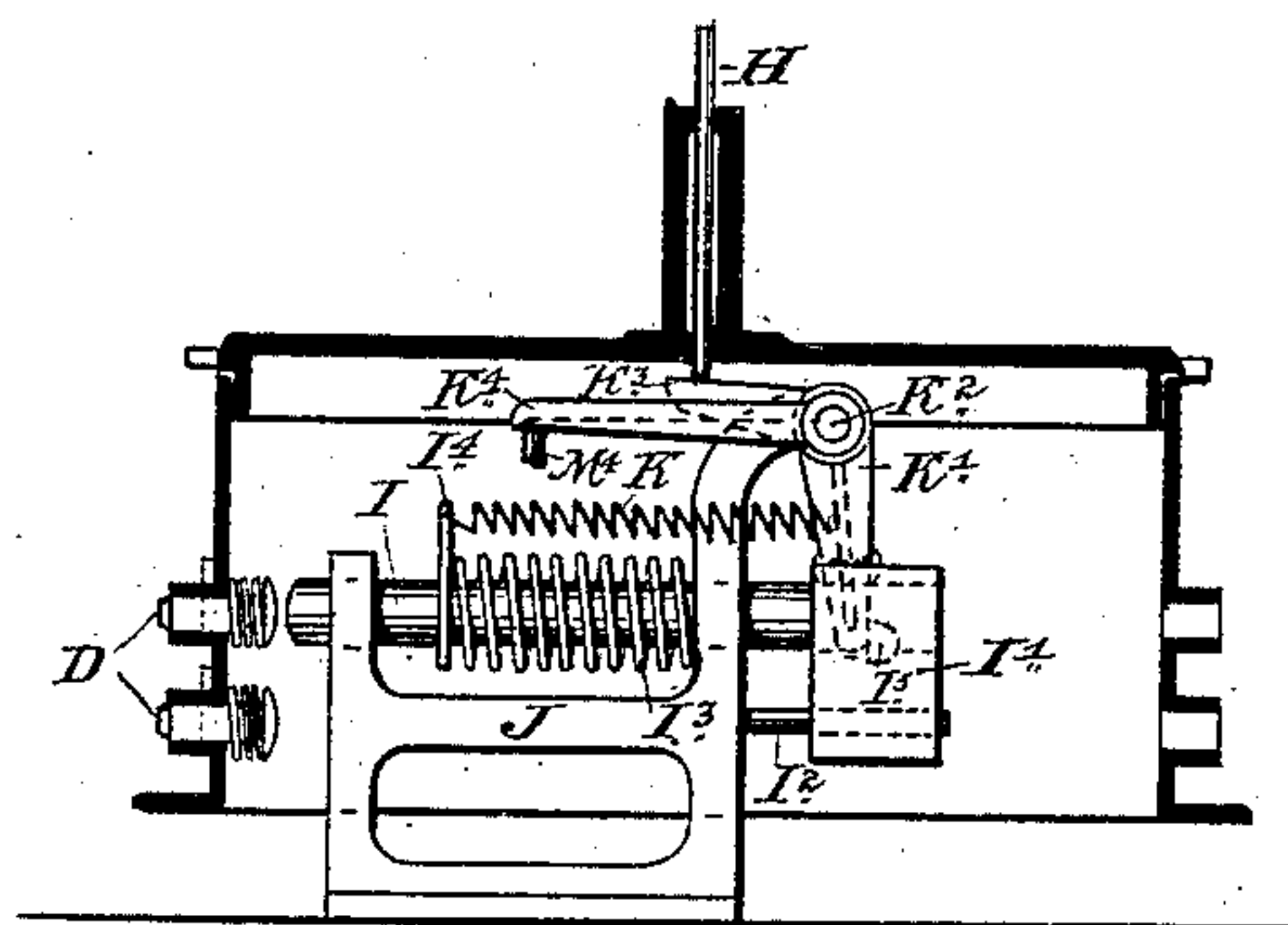


Fig. 6.

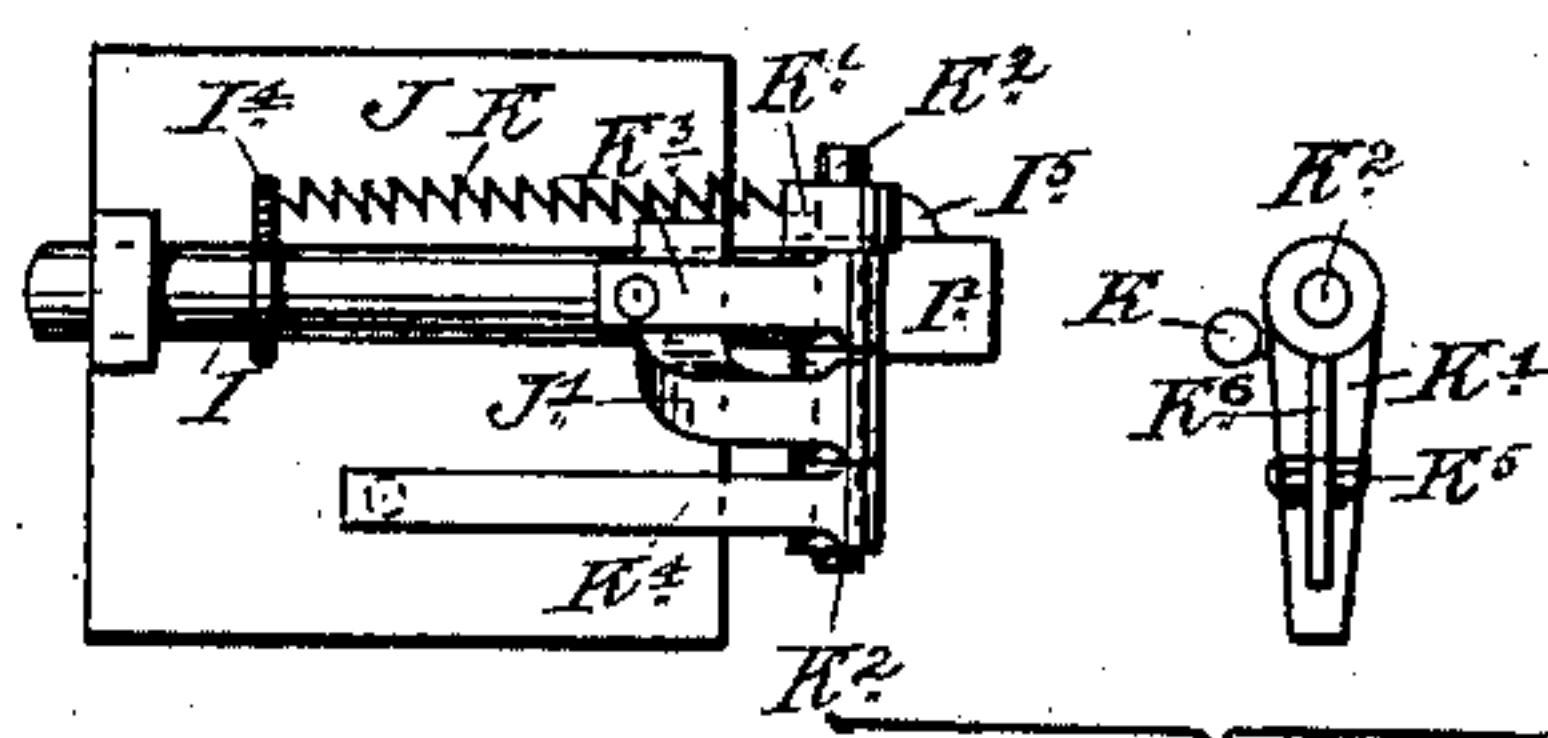


Fig. 6a.

Attest:
Paul M. Knobloch.

Inventor:
Edward E. Peacock
per *Henry W. [illegible]* his atty

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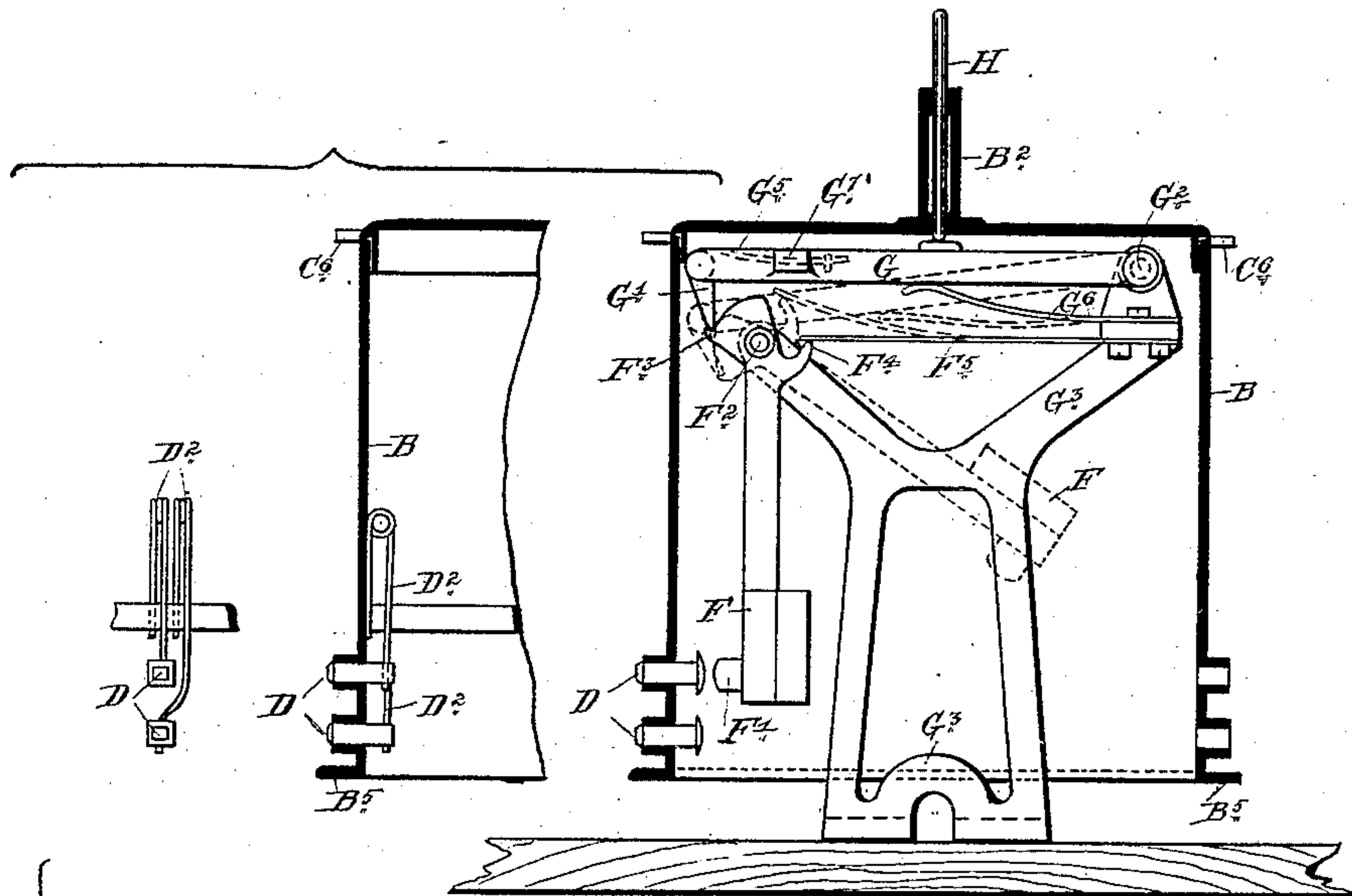


Fig. 2.

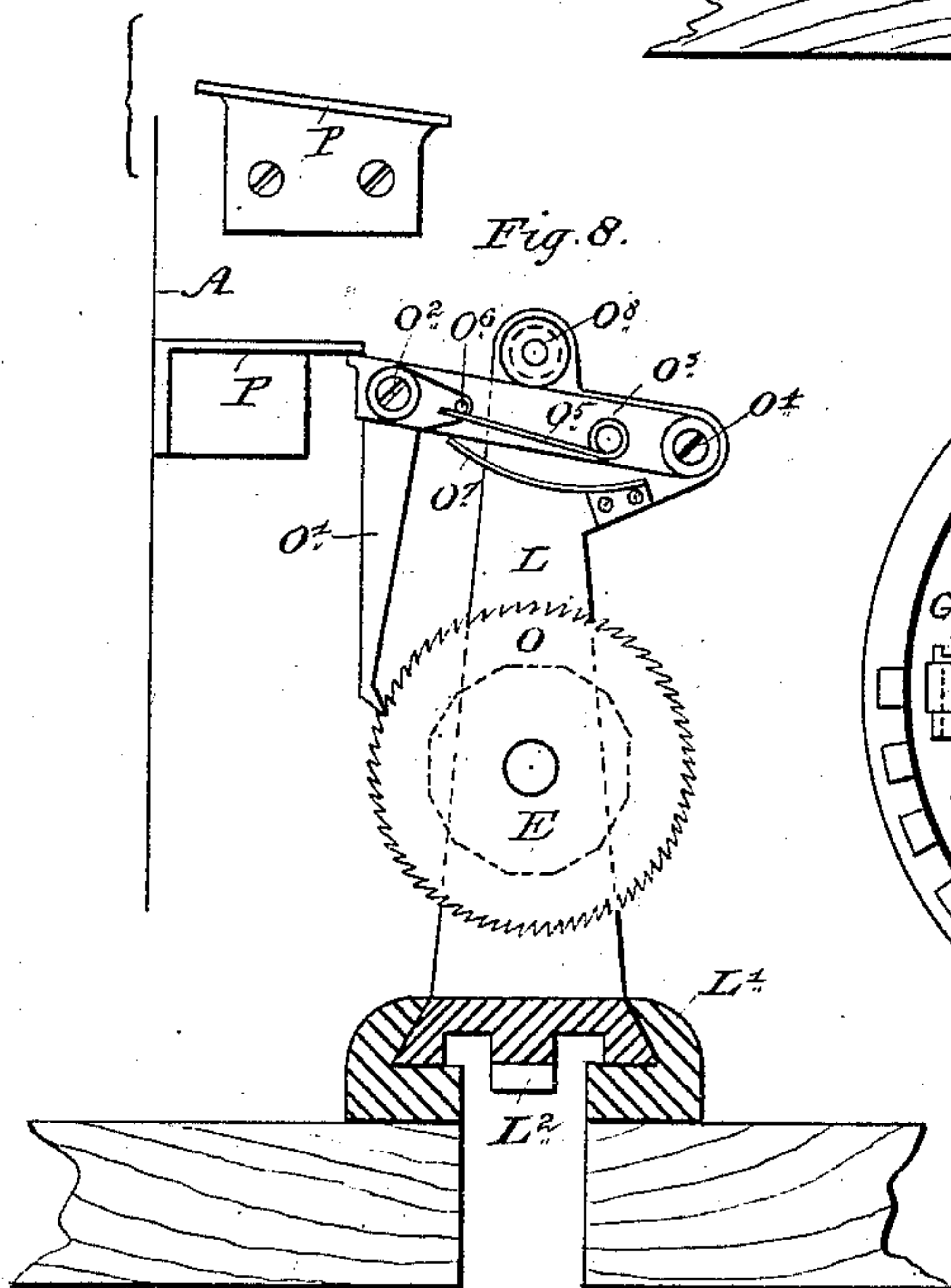


Fig. 8.

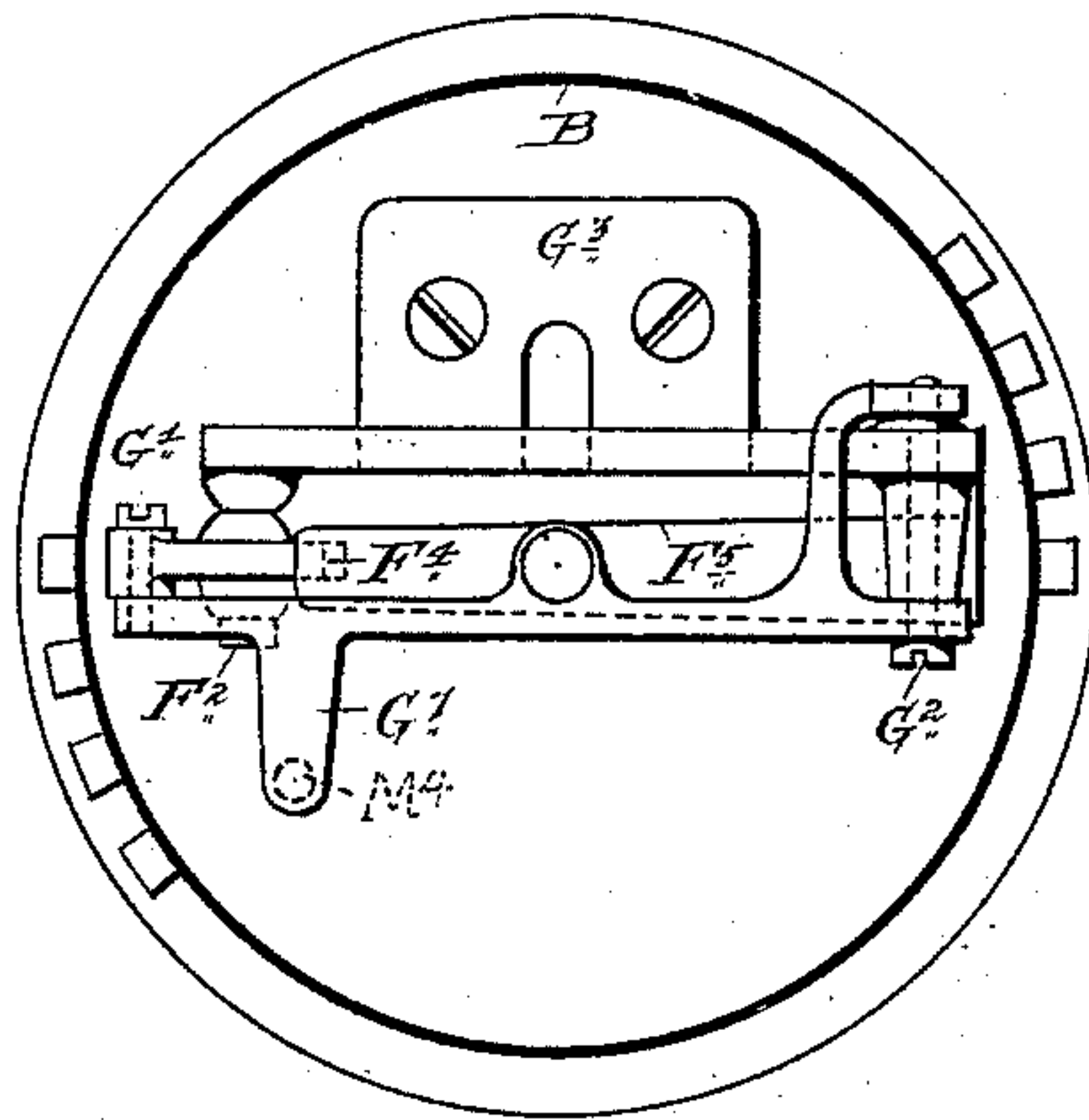


Fig. 3.

Attest:
Paul M. Knobloch
Paul M. Knobloch.

Inventor:
Edward E. Peacock
per *Henry M. [unclear]*
his atty.

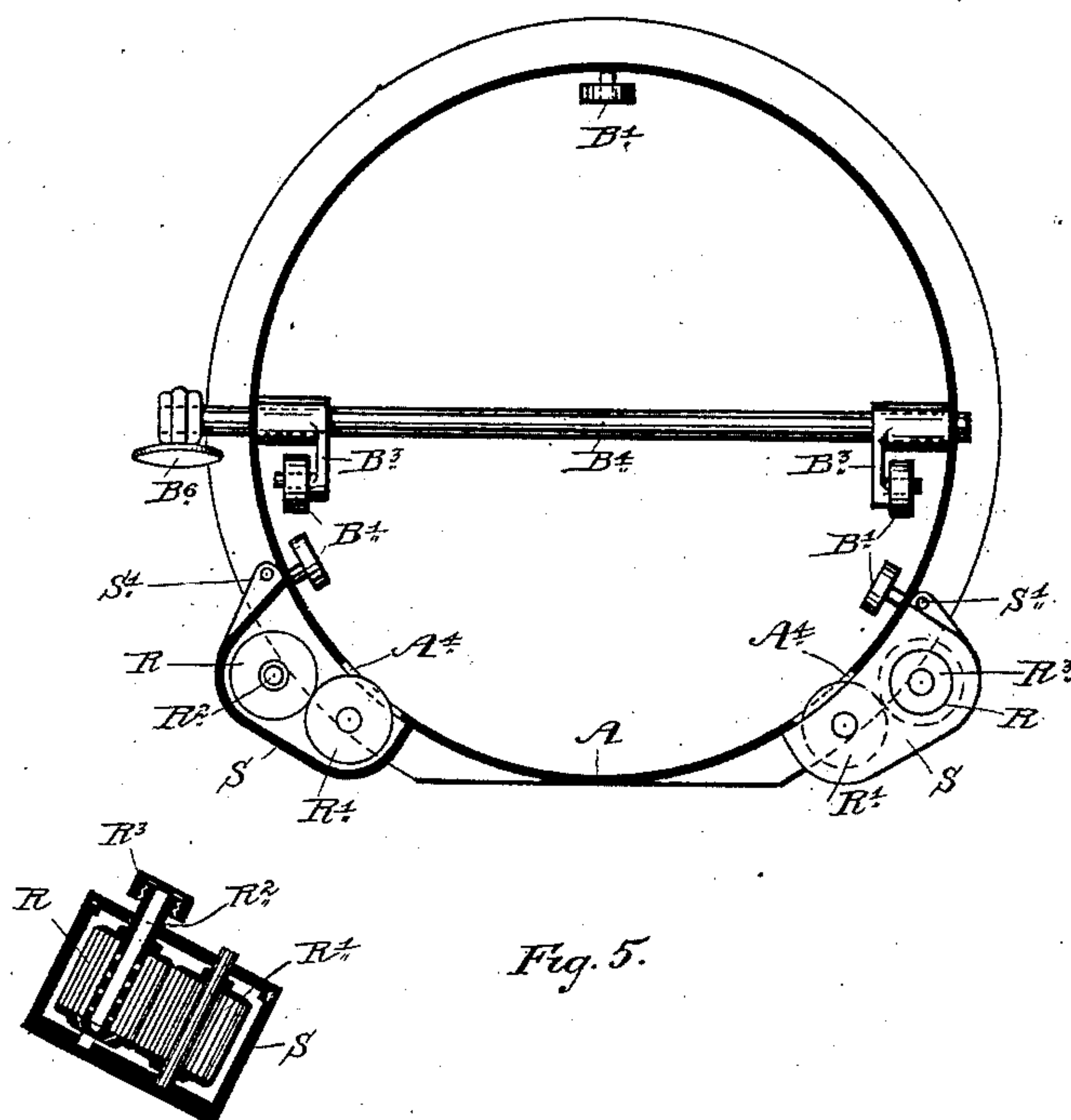
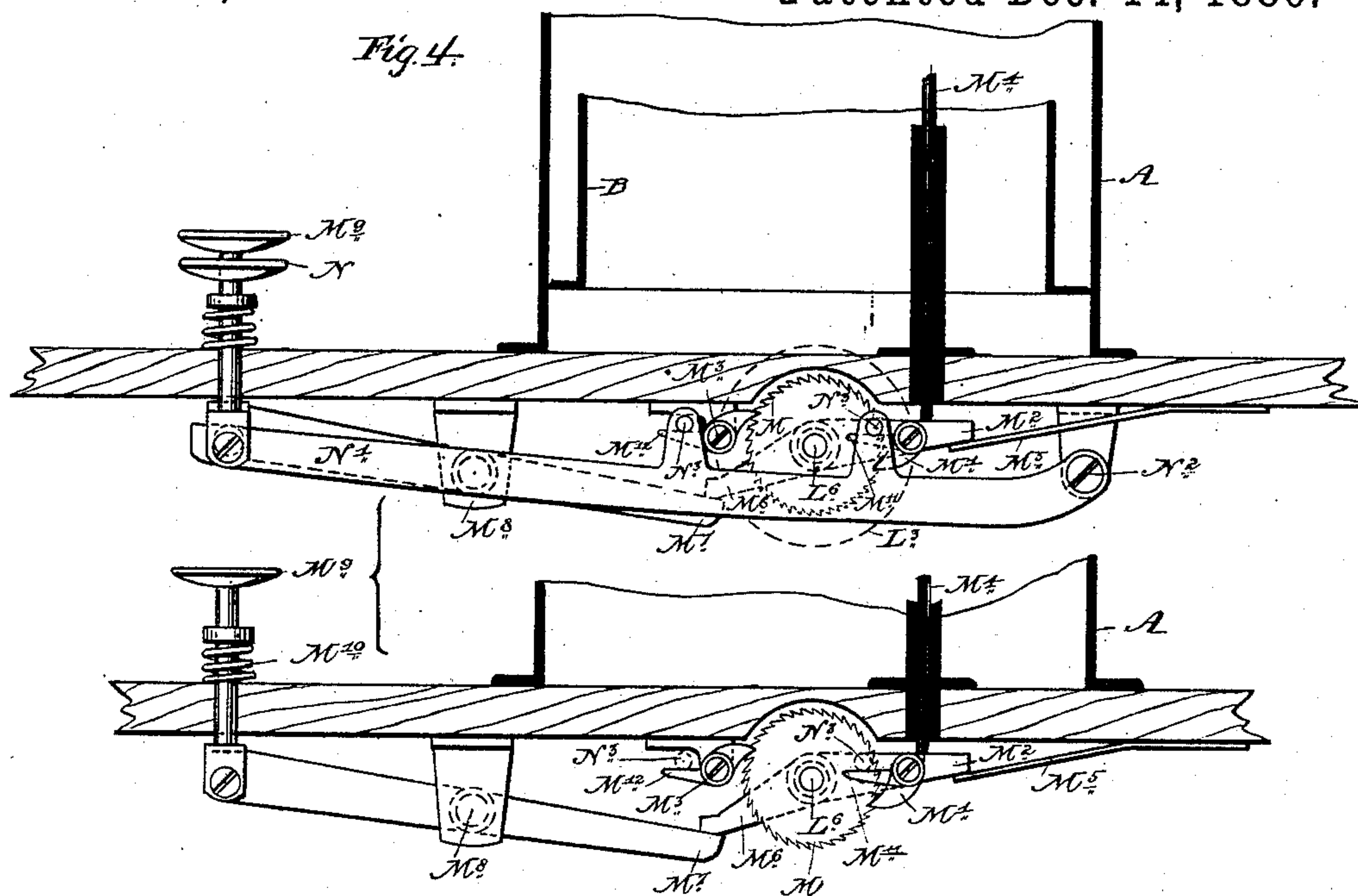
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4 Sheets—Sheet 3.

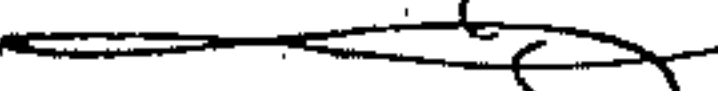
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Patented Dec. 14, 1886.



Attest:
W. C. Goulter
Paul M. Knobloch

Inventor:
Edward C. Peacock
per Henry M.  his atty

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4 Sheets—Sheet 4.

E. E. PEACOCK.
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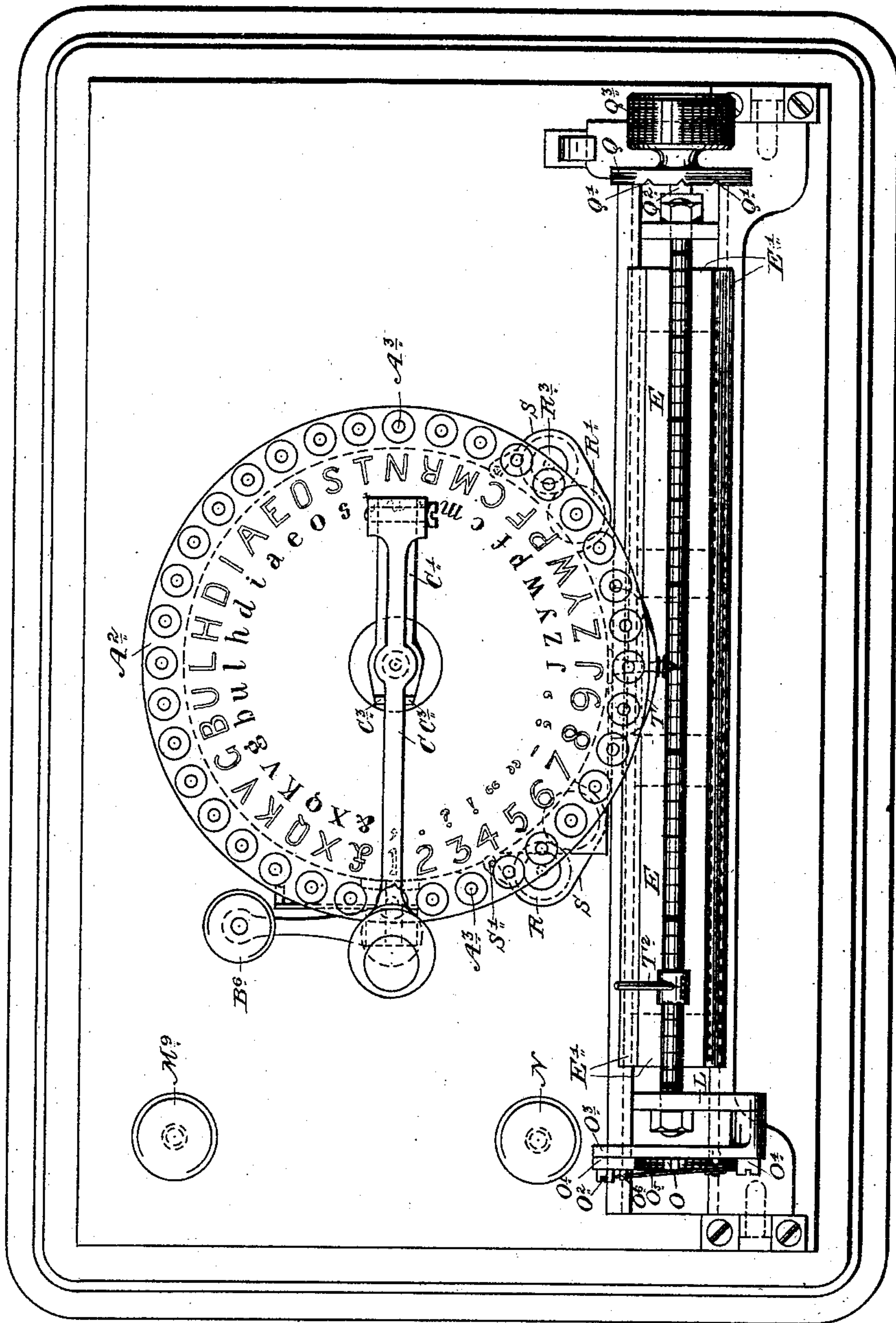


Fig. 7.

Attest:
W. C. Gault
Paul M. Knobloch.

Inventor:
Edward E. Peacock
per *Henry M. Th*
his atty.

UNITED STATES PATENT OFFICE.

EDWARD EDEN PEACOCK, OF LONDON, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 354,213, dated December 14, 1886.

Application filed June 23, 1885. Serial No. 169,496. (No model.) Patented in England October 22, 1884, No. 13,962.

To all whom it may concern:

Be it known that I, EDWARD EDEN PEACOCK, a subject of the Queen of England, residing at London, England, have invented new and useful Improvements in Type-Writing Machines, (for which Letters Patent have been obtained in England, No. 13,962, dated October 22, 1884,) of which the following is a specification.

10 This invention will be best understood by reference to the accompanying drawings, in which like letters of reference represent like parts.

15 Figure 1 is a vertical section showing the machine the full size for a foolscap-machine. Fig. 2 is a vertical section of the inner drum, with details representing a modification. Fig. 3 is a sectional plan of Fig. 2. Figs. 4, 5, 6, 6^a, and 8 are details, and Fig. 7 is a general
20 plan showing the carriage L in the middle of a line.

A is a covered cylinder or drum attached to the frame, and B is a smaller cylinder, inside A, (supported upon rollers B', which are located under the flange B⁵,) and revolving upon a vertical axis as the handle C is turned. The types D are carried in projecting tubes D' upon the periphery of B, being withdrawn to their normal position by helical springs D², Fig. 1, or by long springs, as in Fig. 2. They are prevented from falling out of the tubes into the interior of the drum B by the pins D³, which, as the types move in the tubes D', travel in slots formed therein.

35 Where the long springs D² are employed, I prefer to place them side by side and bend the one which carries the lower type, so as to bring the type in the same vertical line with the upper one, as shown in Fig. 2.

40 E is the roller upon which the paper is wound, and which may have facets E', if desired, so as to present a flat surface to the type, which, when impelled forward, passes through the hole A' in the side of A till it
45 reaches the paper, which receives the impression in the usual manner.

The types are arranged in one or more rings or rows around the cylinder B, so that to bring any particular type opposite the opening A' the cylinder B must be revolved so far as may be necessary to accomplish this. This turning

of B is managed by means of the handle C, which is jointed to the arm C' of the short tube C², which passes through a hole in the top of cylinder A. Two lugs or guides, C³, serve as an additional bearing for C, between which it lies, and against which it presses when turned. Connected with the tube C², inside drum A, are two or more arms, C⁴, whose depending forked ends C⁵ engage with pins or projections C⁶ on the side of drum B, whose hollow spindle B² fits nicely in the tube C², and serves to support the upper portion of B. By turning C, therefore, B also is turned to the same extent and upon the same central axis.

65 The upper plate, A², of the cylinder A carries the letters or other symbols arranged in rings upon it, as shown in plan in Fig. 7, and around the periphery of the plate are tapered or countersunk holes A³, in which the pointer C' is placed, according to the letter required. There is one hole A³ for each letter or symbol, and by placing the pointer C' into the hole corresponding with any required letter the corresponding type D is brought opposite the opening A', ready to mark the paper upon the roller E.

As shown in Fig. 7, two sets of letters, &c., are engraved upon plate A², but only one set need be represented on this plate if the position of both sets is the same, (A always representing A, whether large or small,) the number of different sets of letters, &c., which the machine can print depending upon the number of rows or sets of types D in the cylinder B.

80 As shown in Fig. 7, the position of the large and small letters of the alphabet on plate A² correspond; but the position occupied in the larger circle by the numerals is in the smaller circle devoted to various marks of punctuation. Therefore while printing either large or small letters with a plate so marked, it would not matter which circle was followed; but if printing numerals or punctuation-marks the position of the handle C would have to be ascertained from the respective circle appertaining thereto.

As shown in Fig. 1, one row of type D is at the proper level to print through A'—say small letters—and to print capitals the lower row of type must be brought to the level of A'. This is done by raising the whole cylinder B

by means of the crank B^3 , secured upon the shaft B^4 , which preferably extends across the drum B , and carries a second crank B^3 on its other end. These cranks carry rollers B' at their ends, which, when the cranks are turned up, support the drum B at a higher level than before, so as to bring the lower row of types opposite opening A' . The length, therefore, of the crank B^3 from the center of B^4 to the periphery of B' must be such as to lift the cylinder B the exact distance necessary to bring the lower row of type opposite the opening A' . (See Figs. 1 and 5.)

The drum B is just as free to revolve when raised as when down, as it is carried on rollers B' in both cases, and the spindle B^2 slides up in the tube C^2 , and the pins C^6 slide up in the forks C^5 . The shaft B^4 is turned in any suitable manner, as by a crank and button, B^6 , outside the cylinder A , which may be retained either up or down by any convenient form of spring or spring-detent, such, for instance, as the spring of an ordinary pocket-knife. This crank and button is shown in Figs. 5 and 7.

Having now explained that the printing is accomplished by types D , supported in the revoluble drum B , which types are normally withdrawn into said drum, but are capable of being projected through opening A' in the cylinder A , and how the drum is revolved and raised so as to present whatever type may be required opposite the opening A' , I will now proceed to show how the types D are forced against the paper. There are two alternative modes of doing this, which are illustrated respectively in Figs. 2, 3, and 6 of the accompanying drawings.

In Figs. 2 and 3, F is an arm or hammer, suitably weighted, if necessary, pivoted at F^2 , and provided with the projection or striking-head F' , which strikes the type. The pivot end of F is formed into a cam or equivalent, having a spur, F^3 , upon which rests the end of a pawl or catch, G' , pivoted to the arm or lever G , which is jointed at G^2 to the frame G^3 , which is secured to the bottom of the machine. The cam also carries another spur, F^4 , which serves as a bearing for the spring F^5 , secured at its other end to the frame, and by pressing upon the spur F^4 tending to press the striking-head toward the type. The spring G^5 controls the movements of pawl G' . The pin H fits easily in the hollow spindle B^2 , its lower end resting upon lever G , and its upper end supporting the handle C . Lever G is kept raised by spring G^6 . In use the handle C , which in its normal position is raised up, is turned to the required letter and depressed, the pointer C^7 entering the hole A^3 corresponding with the letter selected, and the handle then taking the position shown in Fig. 1. The pin H is thus forced down, pushing lever G before it. Lever G carries pawl G' with it, and pawl G' , acting on the spur F^3 , raises the hammer F , as shown in dotted lines in Fig. 2, until the spur attains such an angle that G' can no longer remain upon it, when it slips off and the striking-

head F' falls under the influence of its own weight and of the spring F^5 sharply upon the type D , driving it forward against the paper which receives the impression. As soon as the pressure is removed from handle C , lever G at once returns under the influence of spring G^6 to its normal position, raising handle C with it, as already explained.

In Fig. 6 the bolt or hammer I is carried in the frame J , and is weighted at I' , the weight I' working upon the guide-pin I^2 . The helical spring I^3 surrounds the bolt I , and when extended fills the space between the end of the frame J and the collar I^4 , secured to or forming part of the bolt I . One end of the spring K is fixed to collar I^4 , and the other to lever K' , which is secured on the spindle K^2 , which spindle also carries the levers K^3 and K^4 ; and is supported in the arm J' of frame J , as shown. The lever K' (a back view of which is shown in Fig. 6^a) is in two pieces, connected by a knuckle-joint at K^5 , and kept normally in the same plane by the spring K^6 , and when at rest it is in front of the lug I^5 , projecting from the weight I' . The action is as follows: The pin H being pressed in by the action of handle C depresses lever K^3 , turning spindle K^2 , which moves lever K' , and so draws back the bolt I and compresses spring I^3 between collar I^4 and frame J . The radial motion of lever K' gradually withdraws it from the lug I^5 until it is disengaged, when the bolt I flies forward under the influence of spring I^3 and strikes the type D sharply on the head, driving it forward, as in the former instance. The forward movement of the bolt I stretches spring K , which, as soon as the blow has been delivered, brings bolt I back until collar I^4 presses against spring I^3 . The spring K , being in a state of tension, pulls lever K' back into its former position, raising lever K^3 , pin H , and handle C at the same time. As K' passes back, it comes in contact with lug I^5 , the spring K^6 gives, and the jointed portion of K' mounts the rounded or inclined outer surface at I^5 , and thus slips past, resuming its normal position as soon as it has cleared lug I^5 .

The method of traversing the paper so as to cause each succeeding letter to print upon fresh paper will be understood by reference to Figs. 1, 4, and 8. The roller E , which carries the paper, is supported in a carriage, L , rather longer than the roller and free to travel longitudinally in the guide L' . On the under side of carriage L is a toothed rack, L^2 , Figs. 1 and 8, with which gears the toothed wheel L^3 . The spring-barrel L^4 contains the watch-spring L^5 , the outer end of which is fastened to the barrel L^4 and the inner end to the extended boss of wheel L^3 or to the spindle L^6 , upon which L^3 is secured. A ratchet-wheel, M , is also fixed upon spindle L^6 , which latter is free to revolve in suitable bearings. All this is shown in Fig. 1. Turning to Fig. 4, which is a partial vertical section taken at right angles to Fig. 1, we get a side view of the ratchet-wheel M , with which engage two pawls. One, M' ,

is pivoted to the lever M^2 , which is free to turn about its center on the spindle L^6 , and the second, M^3 , pivoted to a bracket fixed to the frame-work of the machine. The end of lever M^2 is depressed by the pin M^4 , which is pushed down by the handle C every time it is worked. This may be managed in any convenient manner; but preferably by the lug G^1 , Figs. 2 and 3, projecting from the lever G over the top of pin M^4 , and forcing it down as the lever is depressed. In the modification shown in Fig. 6, the motion of pin M^4 is obtained from the lever K^4 , which is secured upon the spindle K^2 . The end of lever M^2 (see Fig. 4) is kept against the bottom of pin M^4 by the spring M^5 , and as the pin descends and the lever M^2 turns it takes pawl M' with it, thus turning the ratchet-wheel M and toothed wheel L^3 , which, gearing with the toothed rack L^2 of the carriage L , causes the latter to travel in its guide L' , thus presenting a fresh space of paper to the hole A' ready to receive the next letter. The various parts are of course adjusted so as to impart the right amount of traverse to the carriage at each stroke. The lever M^2 has a projecting end or tail piece M^6 , which rests upon the lever M^7 , pivoted at M^8 , and is operated by the button M^9 , kept raised when not in use by the spring M^{10} . It will thus be seen that upon pressing the button M^9 the lever M^7 is raised, lifting with it the tail-piece M^6 and depressing M^2 and pawl M' , thus turning ratchet-wheel M and moving roller E . This is the method adopted for spacing or providing the spaces between the words.

The pawl M^3 serves only as a detent to prevent wheel M from turning back and the carriage L from running back to the commencement of its journey, which it would do under the influence of the watch-spring L^5 unless prevented. When it is desired to return the carriage to the commencement of its journey or to an intermediate position, the button N is depressed, carrying with it the lever N' , which is pivoted at N^2 , and carries the lugs, from which project the pins N^3 , which engage with the tails M^{11} and M^{12} of the pawls M' and M^3 . Upon lever N' going down, these tails are pulled down also, with the effect that both pawls are simultaneously disengaged from the teeth of wheel M , which is then free to turn, and carriage L at once returns under the influence of spring L^5 to its standing-point or until stopped by the release of button N , when the pawls M' and M^3 re-engage with the teeth of M , Fig. 4.

The turning of roller E when a line is completed, so as to present a fresh surface for the next line, is accomplished as follows: Upon the spindle of the roller E is fixed the ratchet-wheel O , with which engages the pawl or detent O' , pivoted at O^2 upon the movable arm O^3 , which is pivoted at O^4 upon the carriage L . The inclined plate P is fixed upon the outer drum or case, A , as shown in Fig. 8, in a position to engage with the end of O^3 during the return of the carriage L to the commencement

of its journey. As it travels back, the inclined plate forces down the arm O^3 , and pawl O' being engaged with one of the teeth in ratchet-wheel O , the wheel, and roller E with it, is turned the required distance to present the new surface for the next line. Pawl O' is kept in gear with wheel O by the spring O^5 , which engages with a pin, O^6 , projecting from O' , and the movable arm O^3 is kept raised (except when depressed by plate P) by spring O^7 , the stops O^8 preventing it from going too high and perhaps catching against the end of the plate.

At one end of the roller E , Fig. 7, or upon its spindle, is fixed the disk Q , indented at the required places Q' to receive a spring-detent, Q^2 . These indentations Q' are so spaced as to bring the allotted space for each succeeding line opposite the type-line. The indentations Q' and detent Q^2 are so shaped as to hold the roller while the line is being printed, but yield to the increased pressure exerted by the plate P , the spring causing the detent promptly to engage the next indentation when one has passed. The milled knob Q^3 is provided upon the end of the roller-spindle for the purpose of turning the roller by hand.

For the purpose of retaining the paper properly upon the roller E , and preventing it from crumpling, the two small rollers E^2 are provided parallel with roller E , journaled at each end in slots E^3 in the ends of carriage L , Figs. 1 and 7. They are kept in place and pressed upon roller E by the rubber rings E^4 , one at each end, and can be readily removed when desired. The roller is also readily removable, being journaled in a similar manner in the slots E^3 of the ends of carriage L . The upper one of these rollers, or, if preferred, a cross-stay, which binds together and strengthens the ends of L , is marked or graduated in any convenient manner, so that by referring to the index E^6 , which is fixed to the casing A in a vertical line above the hole A' , through which the printing is effected, the operator can tell how much of a line is printed and where to stop.

As an additional safeguard to prevent over-running the paper, the belt T is provided and secured to the casing A . The tail of the hammer T' projects, as shown, so that it may be moved by the arm T^2 , which can be set at any desired position upon the graduated roller E^2 or upon the stay or other portion of the carriage L . The graduated roller or stay is, however, preferred, as the operator knowing the size of the paper he is using can at once set the arm in the proper position by the marks without having to measure. The arm moves along with the carriage till it comes in contact with the hammer-tail T' , which is moved with it till it slips past, and under the influence of a spring, in the ordinary way, flies back and rings the bell.

The inking device is shown in Fig. 5, and consists of two rollers, R R' , capable of revolving upon vertical spindles outside the case A . The first roller, R , has a hollow spindle, R^2 ,

closed by a cap, R^3 , and perforated so as to allow the ink which is poured into the hollow spindle to pass to the roller R and be taken up by the absorbent material of which it is composed. The second roller, R' , touches the first one and receives the ink from it. It projects through an opening, A^4 , in the case A , so that as the inner cylinder, B , is revolved the types are successively brought into contact with it and their faces inked as they pass. When first starting to use the machine, the drum B should be revolved a few times, so as to ink all the type. After that the turning of the drum necessary to the use of the machine is sufficient to keep the type inked.

The first roller, R , must either be made of or covered with absorbent material—such, for instance, as felt—which will absorb and retain the ink. The second roller, R' , may be made of material suitable to the nature of the ink intended to be used. When roller R is only covered with the felt or equivalent, the central portion must be of open material, such as will permit the ink to pass through, or holes must be made in it to allow of the ink passing. These rollers are protected by a suitable case, S , which may be hinged at S' , so that it may be moved out of the way when the rollers have to be got at, as for cleaning. There are preferably two sets or pairs of these inking-rollers; but any convenient number, from one upward, may be used.

I claim—

1. In a type-writer, the combination, with a stationary cylinder provided with a single opening, a rotatable tubular type-carrier inclosed therein and carrying a series of type

in superposed peripheral rows, operated to be projected through corresponding peripheral openings in said carrier, and a central shaft around which the type-carrier revolves, of a lever connected with the type-carrier for rotating and positioning the same to bring a type-opening and type to register with the opening in the cylinder, said type-carrier having a vertical movement upon the central shaft independent of the lever, and means, such as described, for adjusting the carrier vertically, as and for the purpose specified.

2. The combination, with the carriage L , toothed on its underside, a gear-wheel mounted on a horizontal shaft and meshing with the teeth on the carriage, and a spring acting upon said shaft, of the ratchet-wheel M , the rods M^7 N' , keys M^9 N , lever M^6 , pawls M' and M^3 , and spring M^5 , said parts being arranged and operating substantially as and for the purpose specified.

3. The combination, with the longitudinally-sliding bolt I , weighted at one end, the levers K' K^3 K^4 , pivoted on the same shaft, a stop on the weight of the sliding bolt, and the shaft H , of springs for shooting the bolt I and returning the various parts into their normal position, said parts being arranged and operating substantially as and for the purpose specified.

In testimony whereof I have hereto set my hand in the presence of the two subscribing witnesses.

EDWARD EDEN PEACOCK.

Witnesses:

ALFRED J. BOULT,
H. B. BRIDGE.