

W. MORRIS.
Omnibus Register.

No. 11,939.

Patented Nov. 14, 1854.

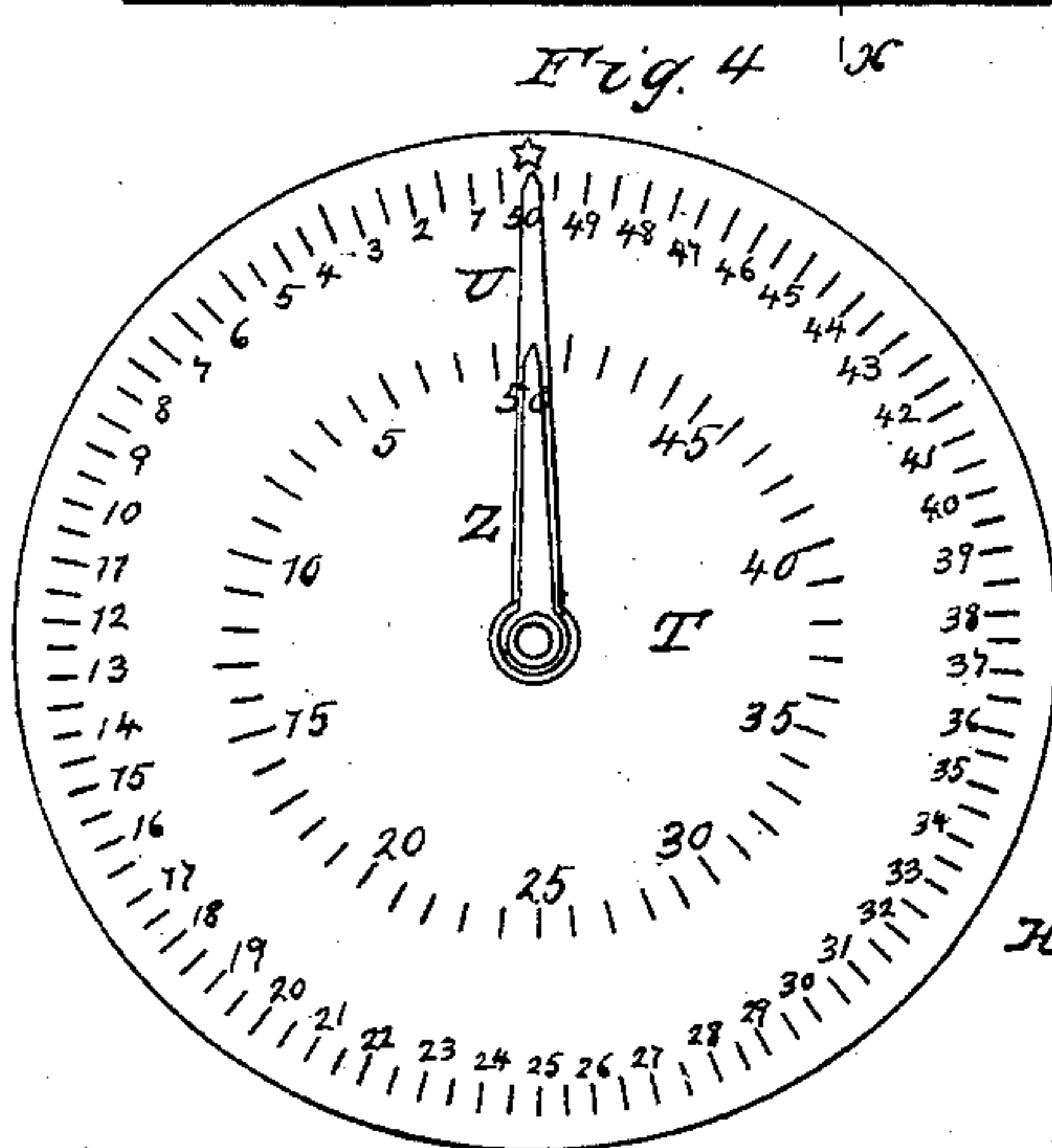
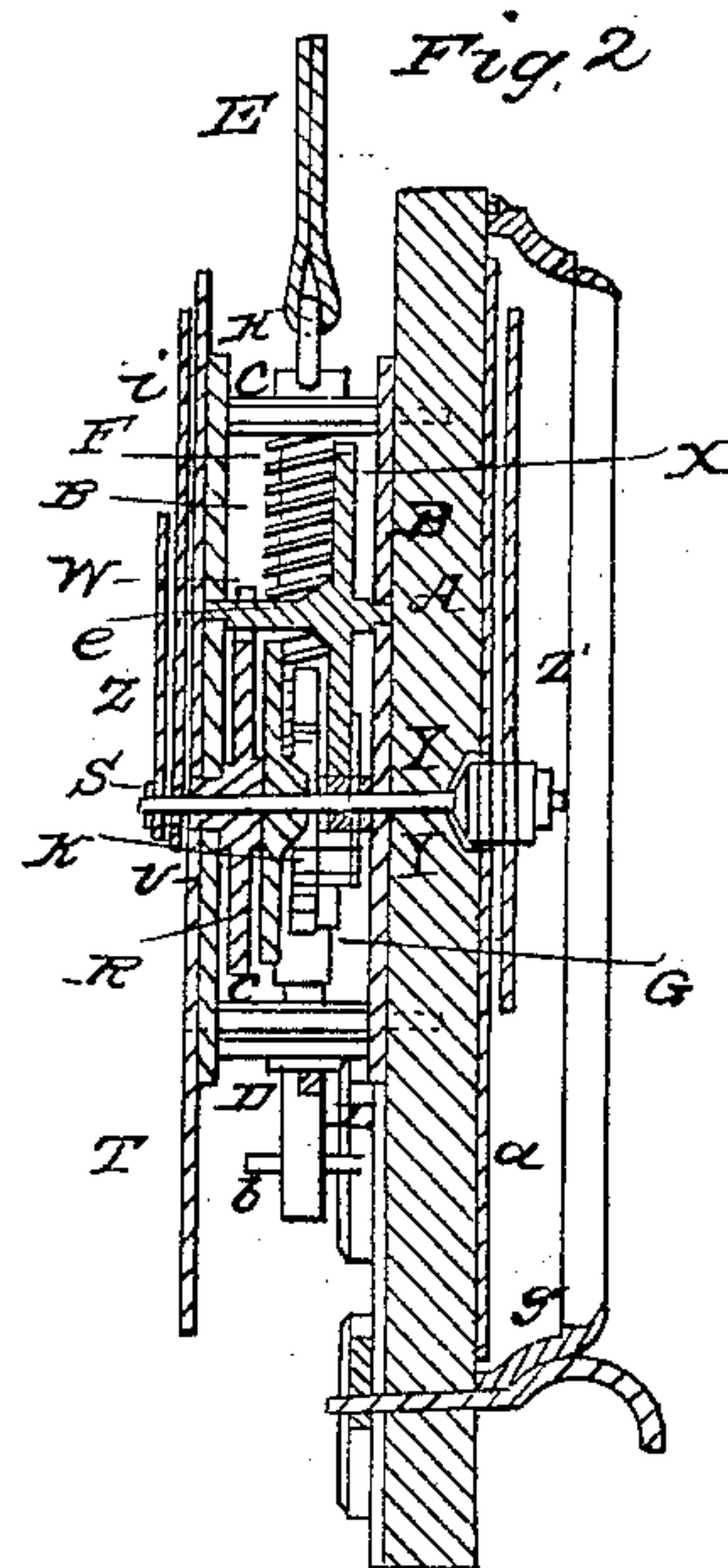
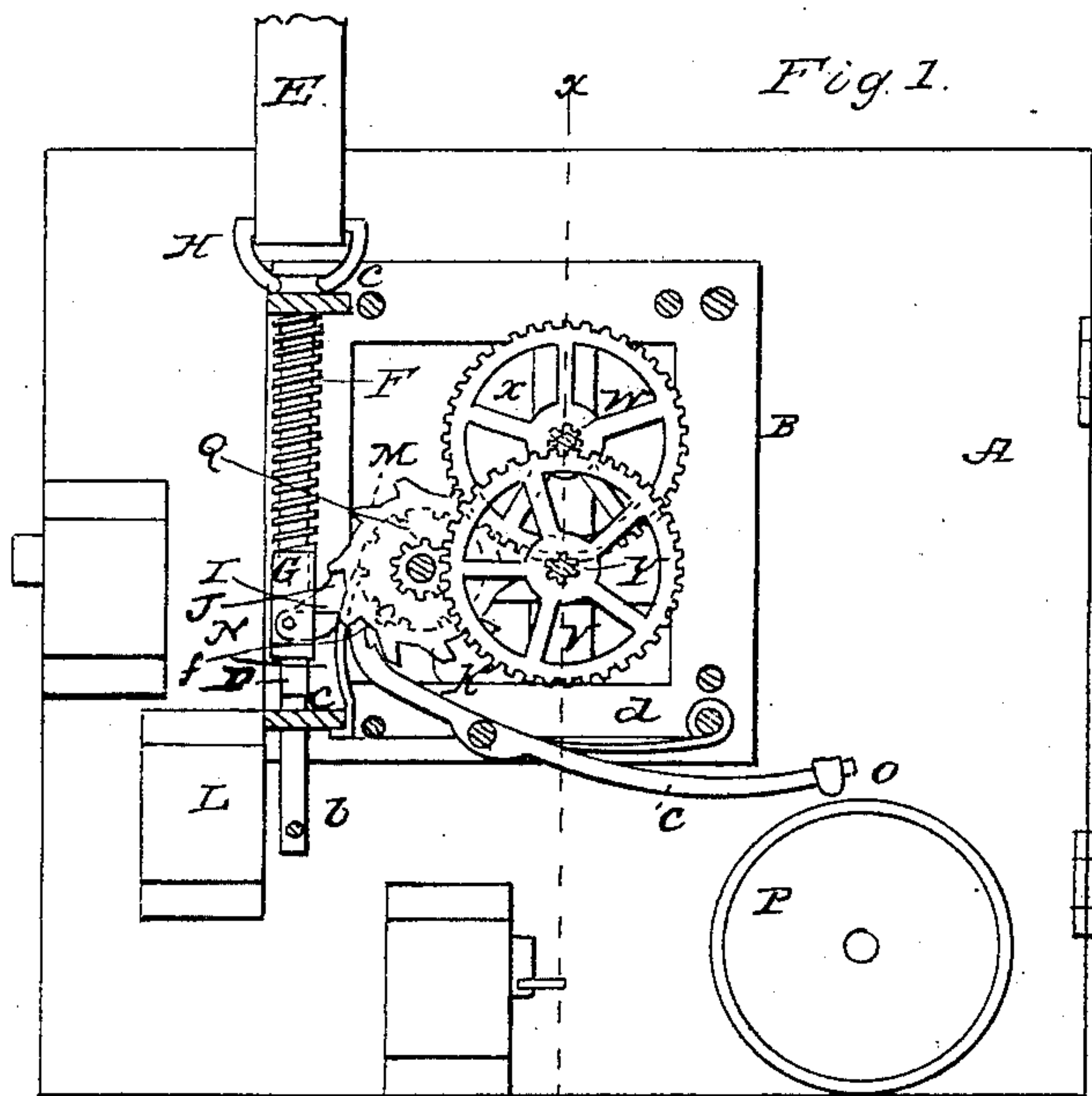
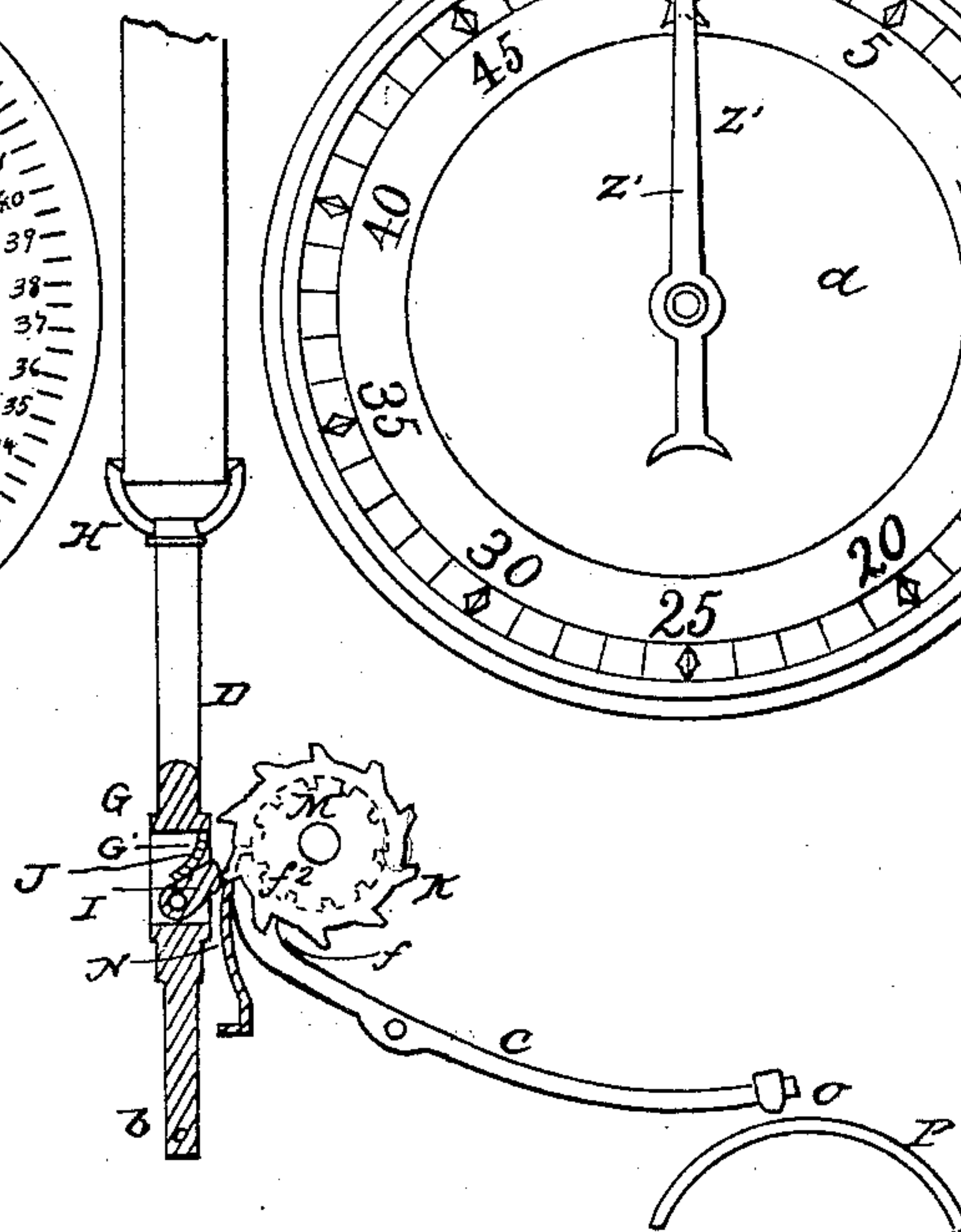
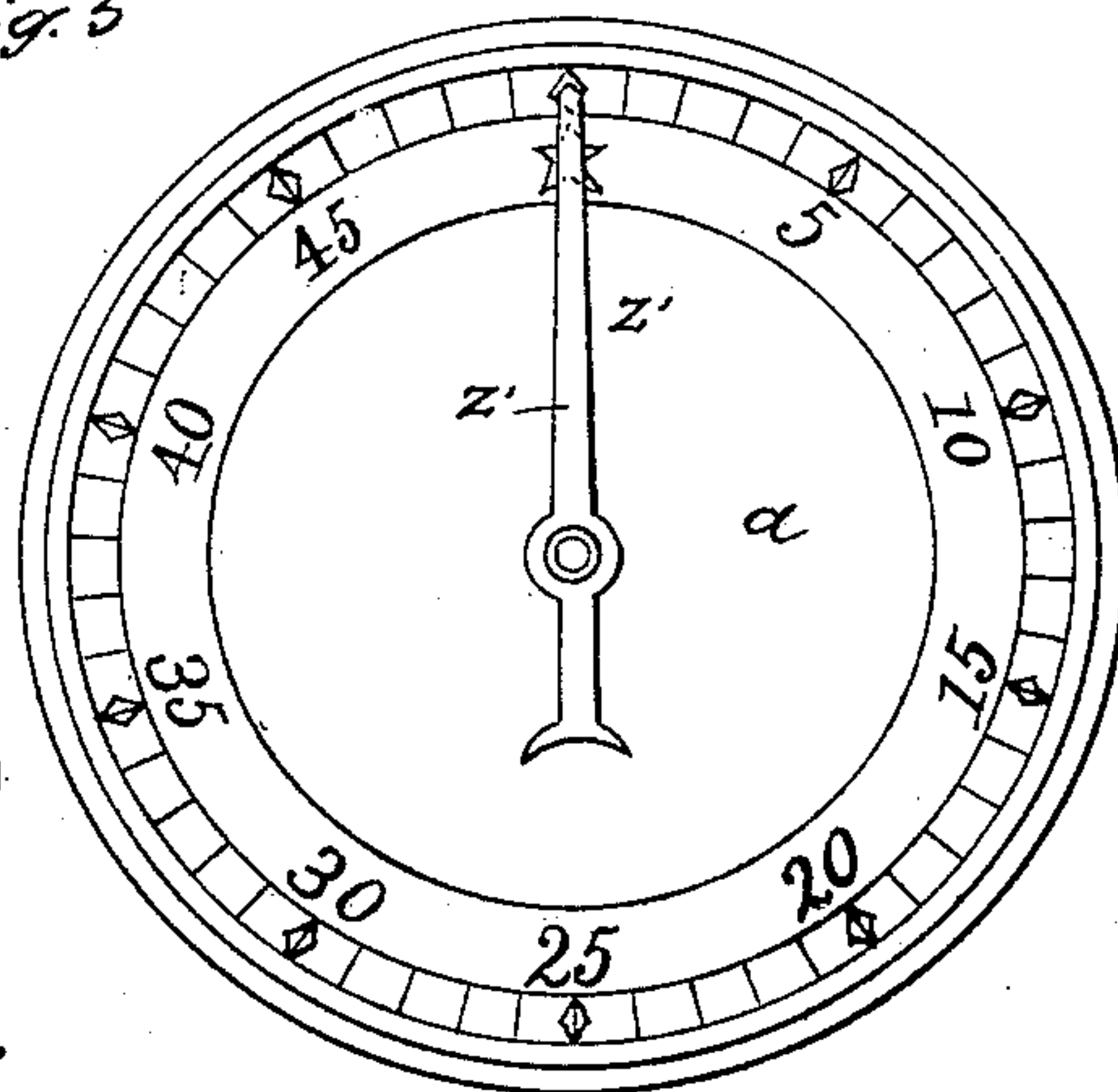


Fig. 5



UNITED STATES PATENT OFFICE.

WILLIAM MORRIS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN OMNIBUS-REGISTERS.

Specification forming part of Letters Patent No. **11,939**, dated November 14, 1854.

To all whom it may concern:

Be it known that I, WILLIAM MORRIS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Apparatus for Registering the Fares of Omnibuses and other Carriages, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a view of the back or concealed part of the improved apparatus, the index-plate containing the numeral and fifty marks, and the hands that revolve around the face of the same, and the cast plate of the frame for holding the parts together being removed so as to more fully expose the parts to view. Fig. 2 is a vertical section of same at the line *xx* of Fig. 1. Fig. 3 is a view of the front index-plate exposed to the view of the passengers in the omnibus or other carriage and on which the numeral-marks for indicating the fares received are marked. Fig. 4 is a view of the marked face of the back index-plate on which the numbers for indicating to the agent or other person having access to the same are marked. Fig. 5 is a section of the spring-bolt and cog for operating the ratchet-wheel, spring-stop, and double pawl for operating the bell-hammer and preventing a recoil of the ratchet-wheel and the consequent striking of the bell without registering a number on the index-plates.

Similar letters in the several figures refer to corresponding parts.

The nature of this invention and improvement consists in forming a notch near the end of the bell-hammer bar, in such a manner as to cause it to act as a double pawl on the toothed wheel to prevent the recoil of the same and the consequent striking of the bell without recording a fare on either of the index-plates, as well as to enable each successive tooth of the ratchet or toothed wheel to operate on the bar and cause the hammer to strike the bell upon the registering of each fare, and also in combining therewith a channeled wheel and spring-stop, the latter bent at its end to form a cog which enters the channels in said wheel upon the registering of each fare and striking of the bell, and prevents the toothed wheel from being drawn beyond the point necessary to indicate one

fare at each drawing of the spring-bolt and cog.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation.

The panel A, to which the register is secured, is made of the proper size and form to fit in the space in the front part of the omnibus below the driver's seat or other convenient and conspicuous place, being hung on hinges and provided with a lock L after the manner of an ordinary swinging door, and is marked on its exposed surface to indicate to the passengers the object of the register, and may be made otherwise ornamental. To the front surface of this panel is secured the metallic frame B, in which the driving parts of the apparatus are supported by means of screws which pass through the metallic frame into the panel and also serve to hold the two flat parts of the frame together, said parts being kept the required distance apart by the studs arranged at the corners between them. The two studs C, at the right-hand corners, are made flat and are perforated with openings to allow the admission of a spring-bolt D which slides in them, and to the rising and falling motion of which they form guides. This bolt is provided with a strap E at its upper end for operating the register, and is surrounded by a spiral spring F, which is kept in a state of tension between the upper stud C and the upper portion of a rectangular enlargement G of the bolt D in such manner as to bring the shoulder of the cast loop H, to which the strap is attached, in contact with the upper surface of the upper stud after the registering of each fare. Through the enlarged part of the bolt is formed a slot G', in which is secured on a pivot a curved cog I, moving on said pivot when required and pressed downward by means of a spring J, acting on its upper surface, so as to cause its lower surface to rest against the lower end of the slot, and its upper surface to assume a horizontal position when it has descended its full extent and has detached itself from contact with the toothed wheel upon which it previously operated in its upward stroke.

The toothed wheel K is arranged between the plates of the frame B in such relation to

the spring-bolt D and cog I as to cause said cog to come in contact with a tooth of the wheel K upon every upward stroke, and is secured on a shaft turning in openings in the frame upon which, and immediately in contact with the toothed wheel, is also secured a wheel M, having radial channels formed in its periphery of sufficient depth to admit the bent end or cog of the spring N, secured to the lower flat stud C, which is pressed by the elasticity of the said spring into the channels as they are brought next the same in their revolutions, so as to form a stop to prevent the possibility of the toothed wheel, after it is moved sufficiently far, to cause the hammer O to strike the bell P, moving beyond this distance; but not of sufficient power to prevent said bent end or cog of the spring N from being forced out of said channels by their curved or rounded surfaces at the periphery of the wheel acting on the sides of the same when the spring-cog I is drawn in contact with the teeth of the wheel K with the required force. A small pinion Q, with ten cogs formed on its periphery, is likewise secured on the shaft of the toothed wheel, which pinion meshes in gear with a cog-wheel R, having fifty cogs on its periphery, secured on a horizontal shaft R', supported in openings in the frame. Next this cog-wheel and on the same shaft is a hub S, turning loosely on said shaft and extending through an opening in the outside plate of the frame, in which it rests and revolves, and projecting sufficiently far beyond the concealed dial or index plate T to receive the hand U, which is secured on the square end of the same, surrounding the shaft and revolves with the cog-wheel V, to indicate the fares in fifty marks on the concealed index-plate T. A cog-wheel V having eighty cogs is secured on this hub, between the cog-wheel R and outside plate of the frame, which cog-wheel meshes in gear with a small pinion W of eight cogs on a horizontal shaft turning in openings in the frame, on which is also secured a cog-wheel X of eighty cogs, corresponding in every respect with the cog-wheel V, and meshing in gear with a pinion Y of eight cogs on the shaft R', on the ends of which the hands Z Z', for indicating the fares in numerals, are secured. These latter hands Z Z' revolve with the same degree of speed as the shaft R', the hand Z being secured on the inner end of said shaft beyond the hand U for indicating the fifty marks and made to point to the numeral marks on the concealed index-plate, and the hand Z' secured on the opposite end of the said shaft R' being made to point to the numeral marks on the exposed dial or index plate a.

The mode of operating this improved register is as follows: When the hand Z', moving over the index-plate containing the numeral marks and exposed to the view of the passengers, is moved on its shaft R', so as to bring it opposite and to point to the star indicating number 50 at the top of the said plate, and

the concealed hand Z at the opposite end of the shaft points to the same number on the inner plate T in the numeral index, and the hand U, attached to the barrel or thimble on the hub S, likewise points to 50 the apparatus is set, ready to commence the recording of the fares, the passengers witnessing the event as it is told by the striking of the bell, and the simultaneous movement of the hand Z' over the index-plate a fully exposed to their view. Upon a fare being paid the driver or other person on the box draws upon the strap E and raises the spring-bolt D until the pin b at its lower end strikes the lower flat stud C, causing the spring-cog I to come in contact during its ascent with the tooth of the wheel K next the spring-bolt, and to cause the bent end of the spring stop or cog N to be forced out of the channel opposite the tooth operated on, and to turn the said toothed wheel sufficiently far as to bring the next succeeding tooth of the said wheel to the place previously occupied by the first-named tooth, causing the notched end of the hammer rod or bar c to be forced from the center of said wheel, and the spring d to act upon it and press the hammer O at its opposite end against the bell P as soon as the acute edge of the tooth has left the pawl end with the required degree of force to give the desired alarm. This movement of the toothed wheel causes the pinion Q to move the cog-wheel R with which it meshes, and the shaft R', so as to bring the hands Z Z', attached at its ends, opposite the corresponding radial marks on the concealed and exposed index-plates, indicating one fare, while the pinion Y on the shaft R', meshing in gear with the cog-wheel X on the shaft e, and the pinion W, meshing in gear with the cog-wheel V on the hub S, to the square part of the barrel or thimble end of which the hand U is attached, causes said hand to be moved but a short distance at each stroke of the spring-bolt D, the distance or speed being reduced to such a degree by the relative sizes of the cog-wheels V X and pinions W Y as to cause said hand U to move only one 50 mark in its slow circuit over the concealed index-plate T to every revolution of the hands Z Z', thus enabling the fares received to be denoted in 50's to the extent of five thousand. At the same time that the spring-bolt causes the spring-cog I to turn the toothed wheel K to the extent to produce the effect stated the bent end or cog of the spring N enters the next channel in succession in the wheel M, brought opposite it, and holds the toothed wheel to prevent it being drawn beyond the required distance and assists the hammer-bar c to prevent a recoil of the same during the descent of the spring-bolt and cog I past the same, the curved surface of the cog I striking on the upper portion of the tooth to be next operated on and being turned on its pivot (the spring J yielding to admit it doing so) and forced into the slot G' in the enlarged part G of the spring-bolt sufficiently to allow

it to pass by and free itself from contact with the same when it is pressed downward and brought to its original position. In case the operator should not draw the spring-bolt and cog I sufficiently far to disengage the tooth next the one operated on from the pawl f^2 of the hammer-bar c of the bell O and register a fare, the spring d operating on the hammer-bar will keep the pawl end of the bar pressed against the toothed wheel and cause the protuberance or tooth f of the hammer-bar to act as a stop or pawl against the tooth next but one in succession to the one to be operated on next in turn by the spring-cog I, as represented in Fig. 5, and thus prevent the recoil of the toothed wheel and the consequent striking of the bell without the registering of a fare by the sudden movement of the end of the bell-handle bar into the deepest part of the notch of the tooth situated next but one in succession to the one last operated on.

The panel to which the register is secured is provided with locks for securing the glass face and frame g , inclosing the exposed dial-plate or index a , and the concealed dial or index plate T from access except by the agent or other authorized person, and with another lock L near the lower end of the spring-bolt

D, so as to lock the bolt above the pin b in the same to prevent mischievous persons from operating the register when the omnibus is standing and at other times when the driver is absent from his seat.

Having thus fully described my invention and the manner of operating the same, I wish it to be understood that I do not claim the exclusive use of a spring-notched pawl engaging with the driving-wheel; but

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

Forming a notch f near the end of the bell-hammer bar c next the toothed wheel K, so as to cause the same to act as a double pawl or stop on the teeth of said wheel and prevent a recoil of the same when the spring-bolt D and cog I have not been drawn sufficiently high to strike the bell and record a fare, and the consequent striking of the bell by the pawl end of the bar c being allowed to move quickly upward upon said recoil, substantially as herein set forth.

WM. MORRIS.

Witnesses:

CHARLES D. FREEMAN,
TH. KAMMERER.