

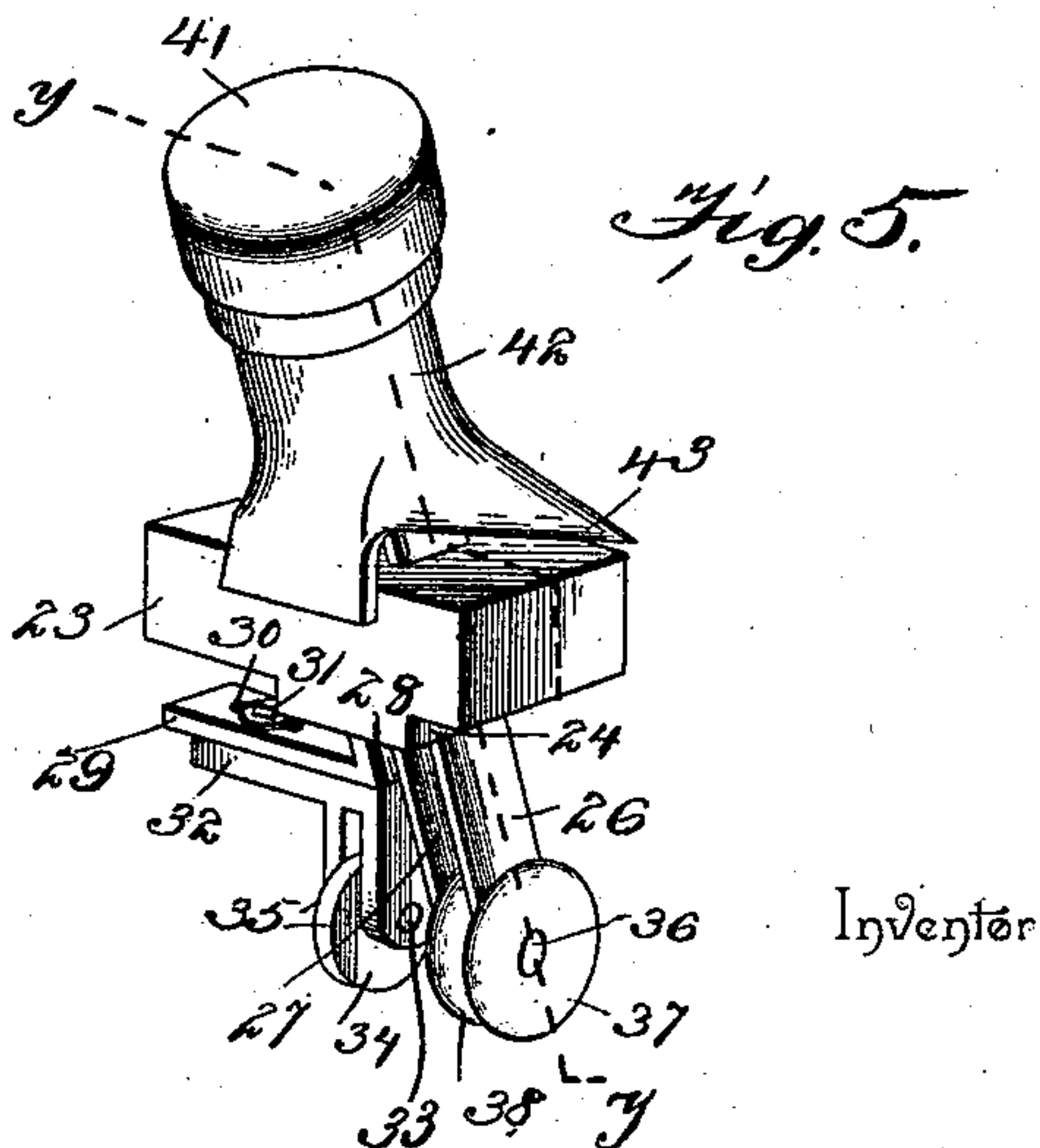
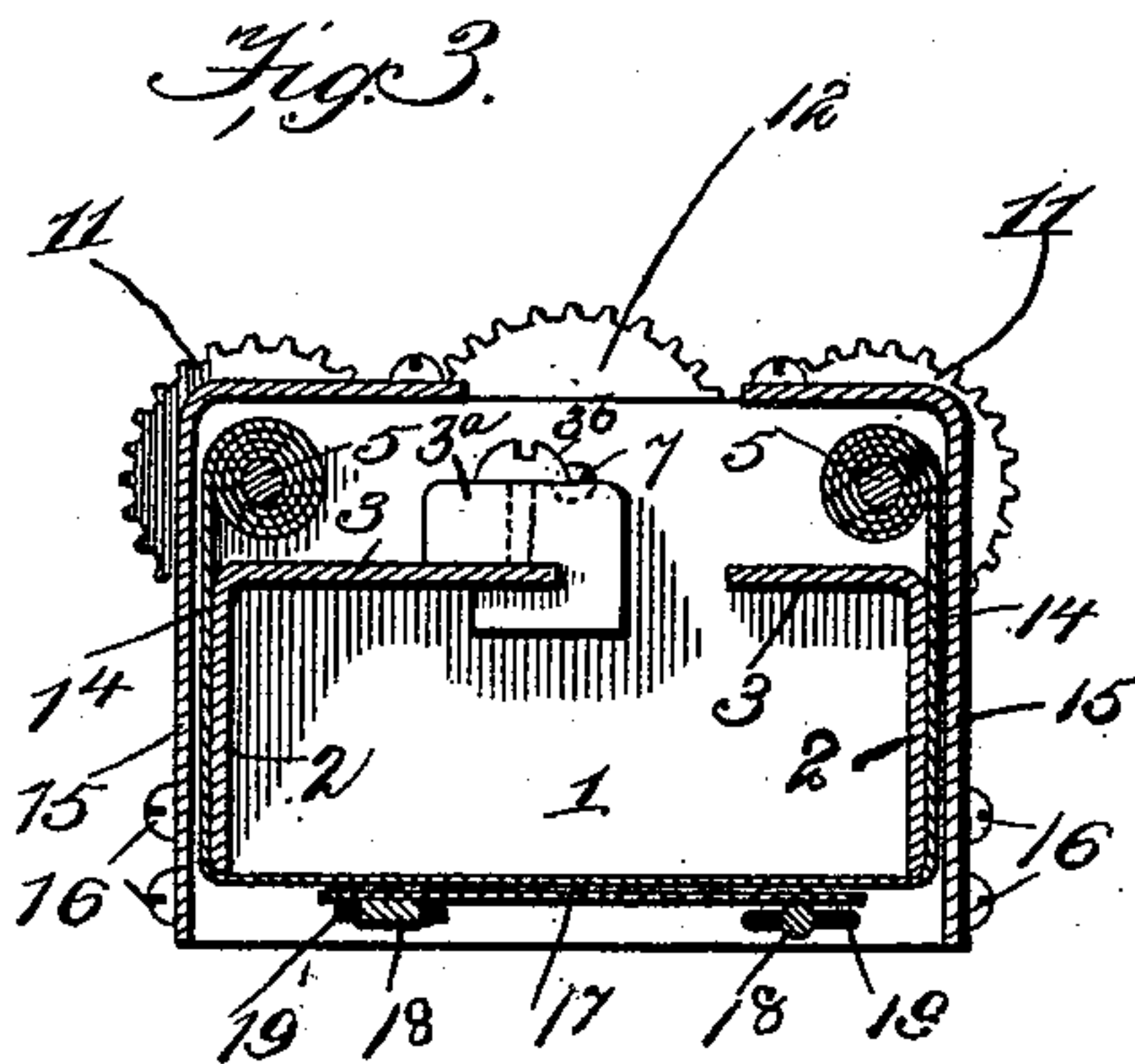
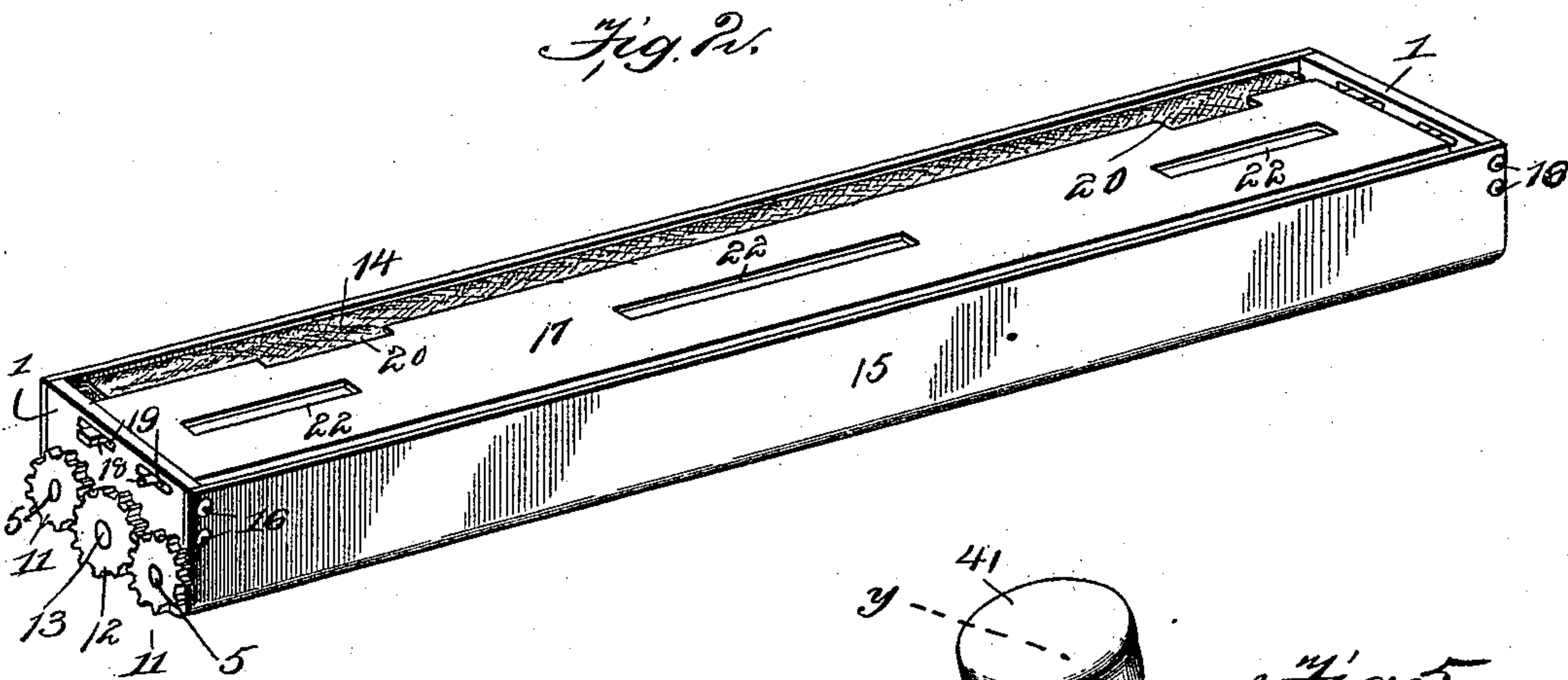
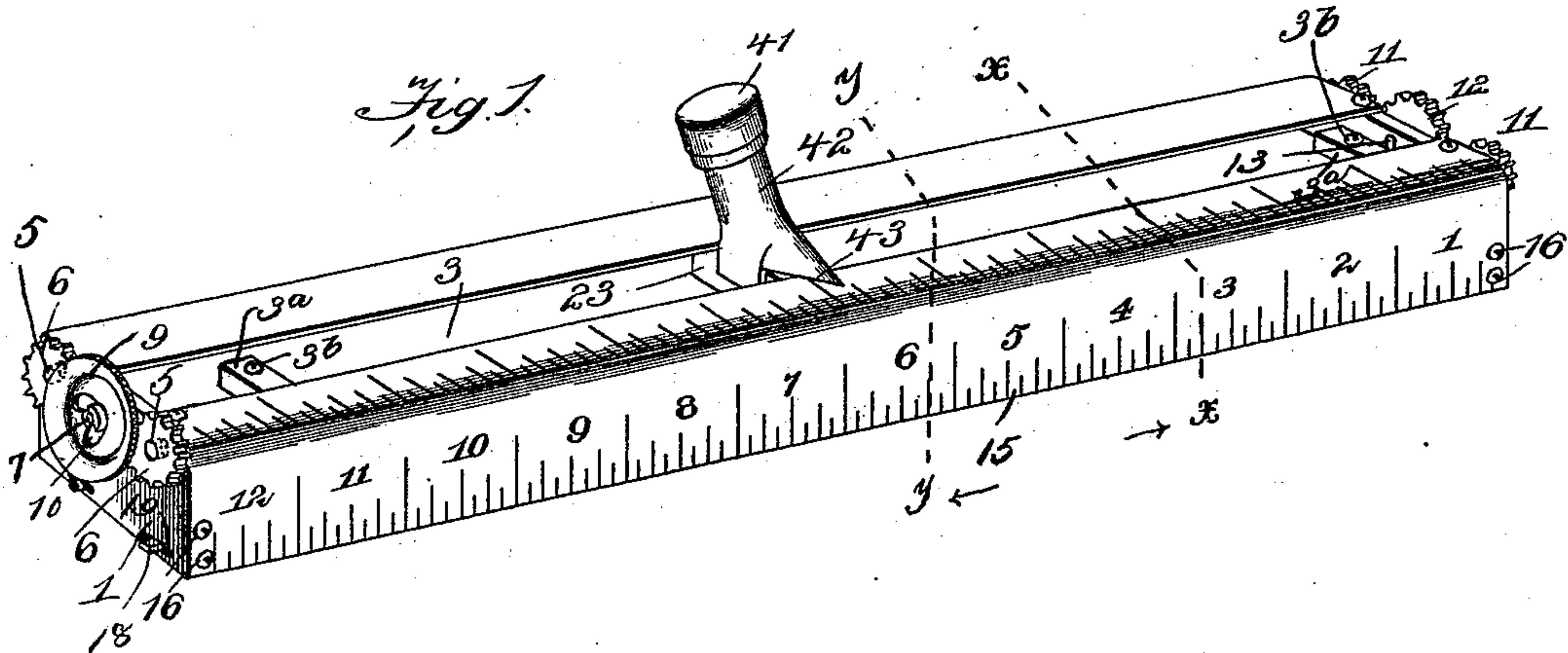
(No Model.)

2 Sheets—Sheet 1.

J. GRUNDY.
RULING DEVICE.

No. 528,476.

Patented Oct. 30, 1894.



Witnesses

John Shaw
W. S. Duwall

By *W. S. Duwall* Attorneys.

James Grundy

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(No Model.)

2 Sheets—Sheet 2.

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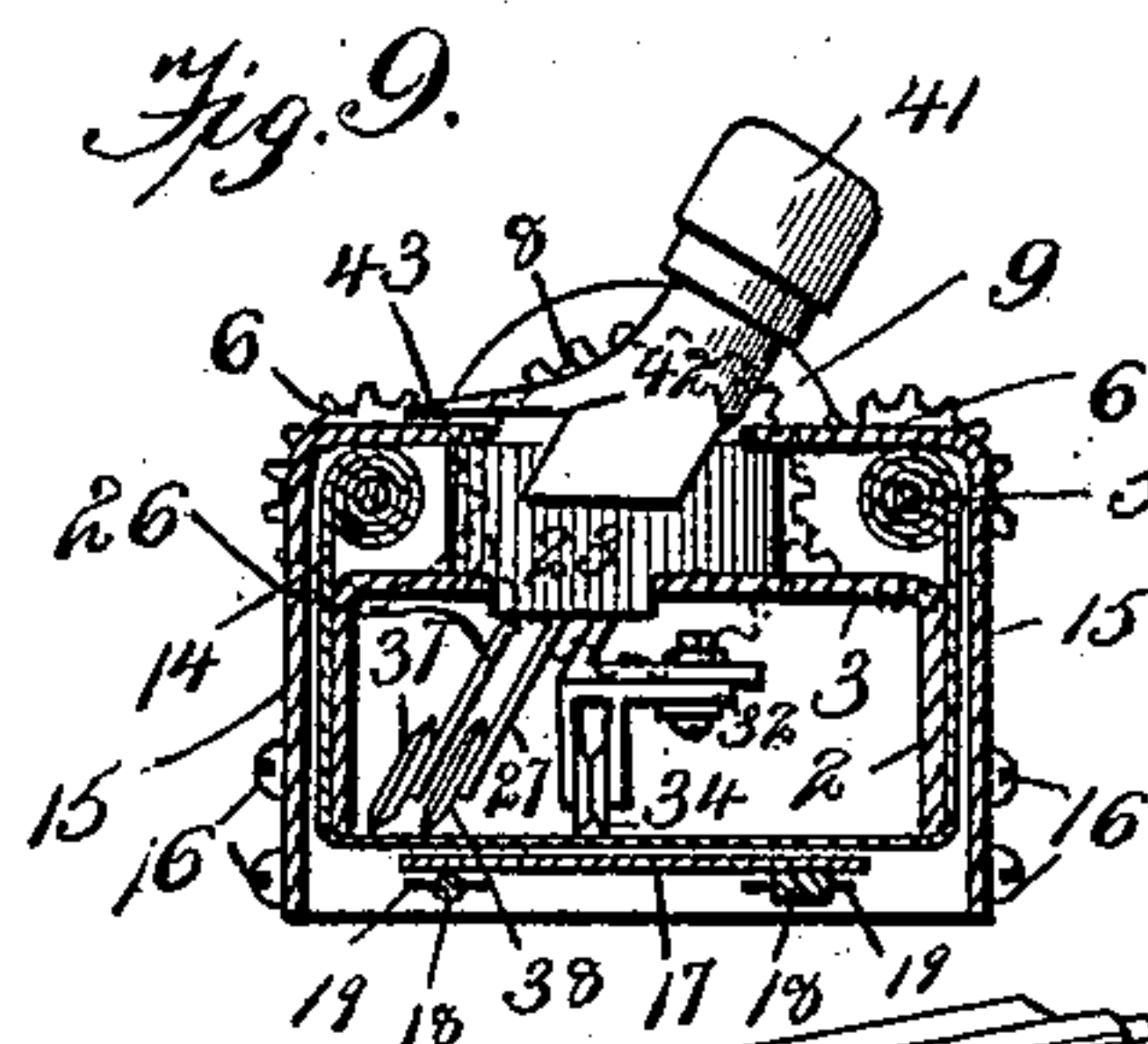
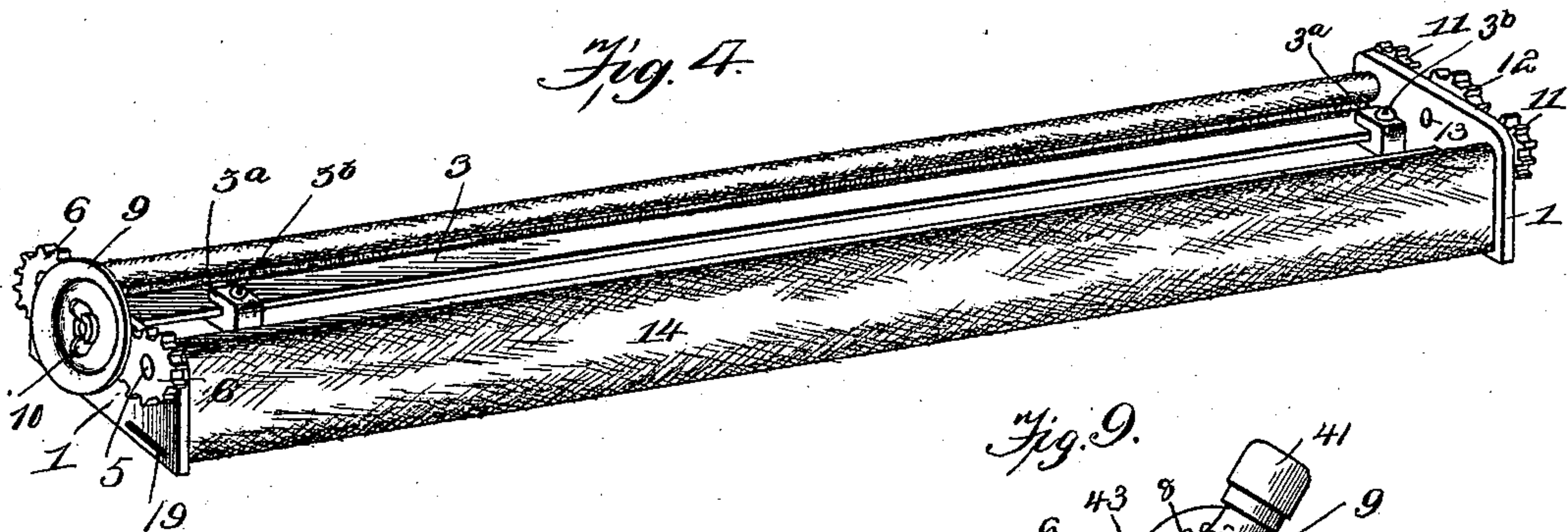


Fig. 7.

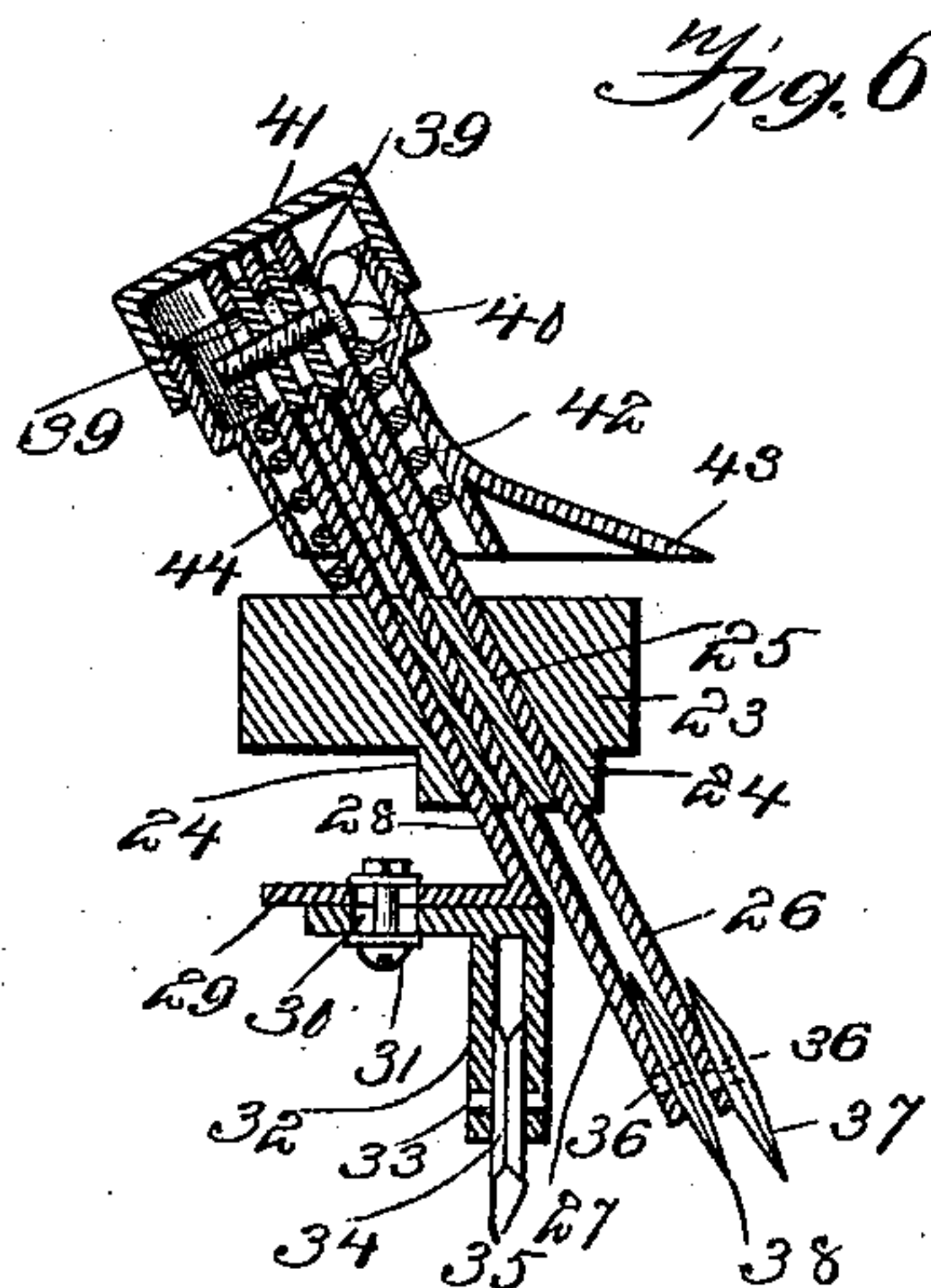
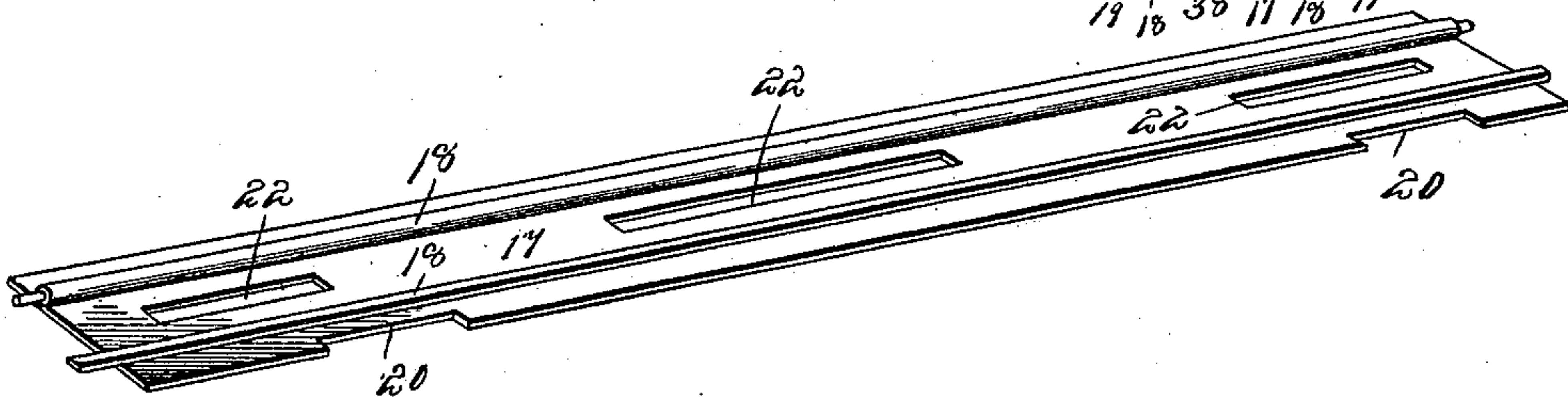
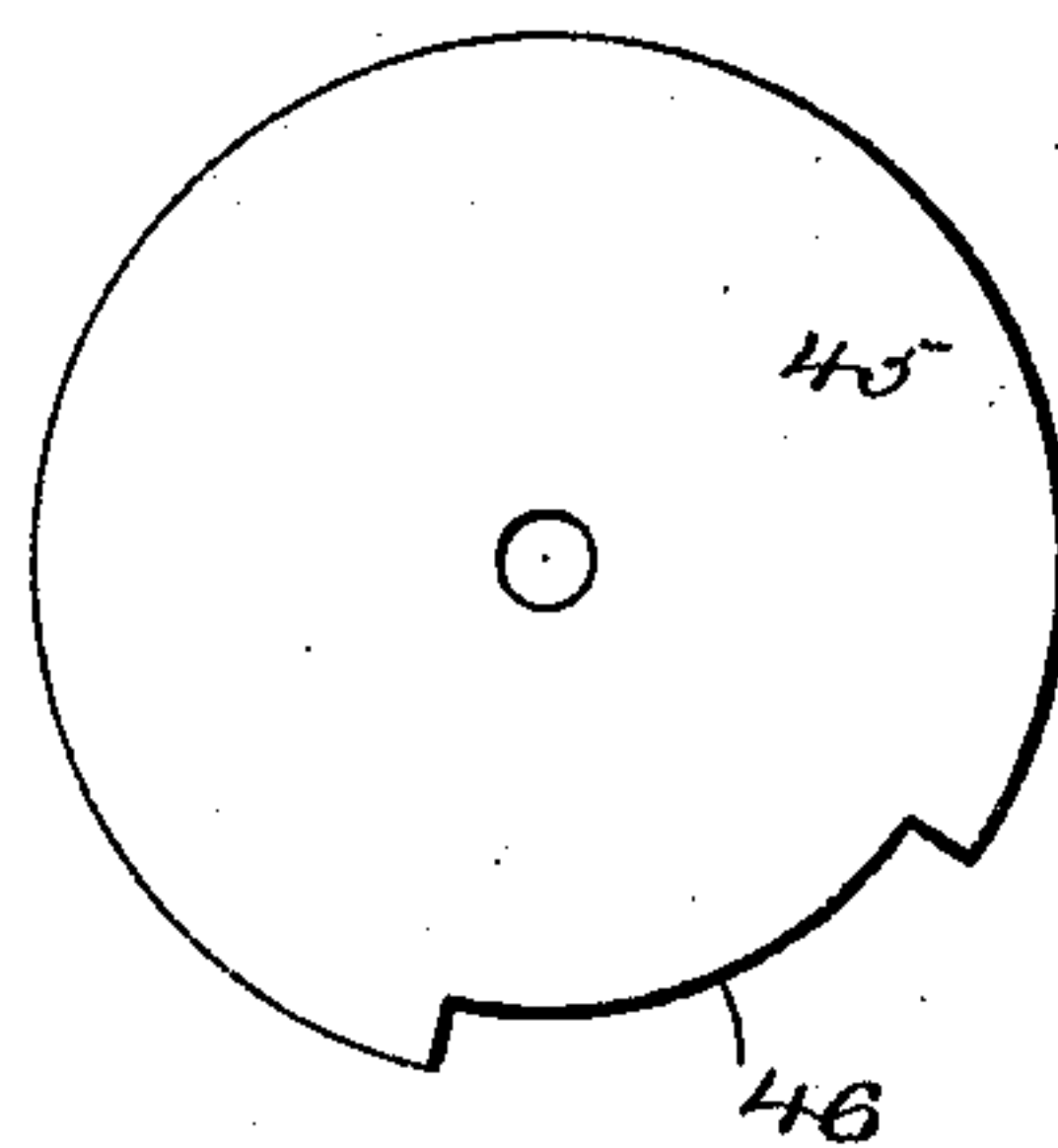


Fig. 8.



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UNITED STATES PATENT OFFICE.

JAMES GRUNDY, OF PATERSON, NEW JERSEY.

RULING DEVICE.

SPECIFICATION forming part of Letters Patent No. 528,476, dated October 30, 1894.

Application filed August 21, 1893. Renewed October 4, 1894. Serial No. 524,929. (No model.)

To all whom it may concern:

Be it known that I, JAMES GRUNDY, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Ruling Device, of which the following is a specification.

My invention relates to a ruling device; the objects in view being the production of a convenient, cheap, and easily operated device of this class adapted for ruling or marking lines on paper and especially designed for use by book-keepers and others employed upon books, and for ruling or marking lines for day-books, journals, ledgers, cash-books, or for other purposes; to accomplish such ruling expeditiously and without liability of smearing or the necessity of blotting.

With these and various other objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a ruling device embodying my invention. Fig. 2 is a bottom perspective of the same. Fig. 3 is a transverse sectional view on the line $x-x$ of Fig. 1. Fig. 4 is a detail in perspective of the frame, the side and bottom strips removed. Fig. 5 is a detail in perspective of the marker. Fig. 6 is a vertical sectional view of the same on line $y-y$ Fig. 5. Fig. 7 is a detail of the movable bottom. Fig. 8 is a detail hereinafter described. Fig. 9 is a sectional view on the line $y-y$, Fig. 1.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my invention I employ a pair of opposite end-walls 1, and connect the same by opposite longitudinal side-walls 2, forming an oblong frame. The end-walls between the side walls are connected by a pair of horizontal parallel way-bars 3, the front one of which is considerably broader or wider than the other and therefore forms an intermediate way at one side of the longitudinal center of the frame, the said way-bars being let into the end-walls and supported in any suitable manner.

The two upper corners of the end-walls are provided with bearing-openings and in the same are mounted longitudinally disposed

winding-shafts 5 which have their ends projecting beyond the end walls and at one end are provided with small spur-wheels 6. Upon a stub-shaft 7, projecting from that end-wall at which the spur gears are situated and between said gears, there is mounted an intermediate spur-gear 8, the same having its teeth at opposite sides engaging with the spur-gears 6. This gear has fixed to its outer face a milled thumb-disk 9, so that rotations of the disk impart similar movements to the intermediate spur-gear 8, and any turn rotates in opposite directions the said spur-gears 6 of the winding-shafts. The spur-gear 8 and the milled disk 9 are held in position upon the shaft by means of a thumb-screw 10 which is threaded upon said shaft, and which being removed will permit of a withdrawal of the spur-gear 8 and milled disk 9. The opposite ends of the winding shafts also project beyond the end-wall of the frame and are there provided with spur-gears 11 which mesh with an intermediate gear 12 that is mounted on a stub-shaft 13 projecting from said end-wall, the said spur-gears being mere idlers and employed for giving a smooth rotation to the shafts as influenced by the milled disk which is designed to be turned by hand.

An inked ribbon or fabric 14 of a width agreeing with the length of the ruler-frame has its opposite edges securely connected to the winding-shafts and is supported thereby and extends down the exteriors of the side-walls and across the bottom of the ruler-frame. It will be obvious that by rotating the milled disk the position of the ribbon will be shifted, that is to say, it will be paid out or unwound from one shaft and wound or taken up by the other shaft in a commensurate degree. The opposite side-walls, 2 are covered by the ribbon, and have arranged thereover L-shaped external side-walls 15, the same being secured by screws 16 in position upon the end-walls, and these external side walls are suitably polished or otherwise ornamented so as to render the device attractive. These side walls do not meet at their upper edges, and combine to form an intermediate space, as shown.

Any suitable bottom may be employed, or in fact, the bottom may be omitted and simply the ribbon form the bottom. In the con-

struction of the bottom I may employ soft sheet brass or other metal or material. In the present instance, however, I have illustrated the same as formed of sheepskin and indicated it by the numeral 17. This sheepskin bottom is secured or stretched between two slidable bars 18, the ends of which are mounted in elongated slots 19 with which the end-walls are provided. This bottom is provided at its front edge with recesses or openings 20, and in rear of the same may be provided with oblong openings 22 situated as desired and of suitable shape for a purpose hereinafter obvious. It will be seen that by moving the shaft in the slots the positions of the openings in the bottom may be altered.

Any suitable construction or arrangement of marking device may be employed in connection with my ruler, that is to say, may be mounted upon the ways within the ruler frame and the marker may be either stationary or rotary as desired. In the present instance I employ a movable carriage 23, the same having formed in its opposite edges recesses 24 which engage with the opposite ways 3 over which the carriage is designed to move. The carriage is provided with an inclined slot or opening 25, from which extends a series of, in this instance, three shanks designated as 26, 27 and 28 respectively, and arranged from front to rear. The rearmost shank is L-shaped, that is provided with a lower horizontal portion 29 and the same is provided at said point with a slot 30 in which is arranged an adjustable screw 31 that serves to connect thereto an inverted L-shaped arm 32. The front end of the arm 32 is thickened and bifurcated, and has journaled loosely therein as at 33 a grooved wheel 34. This wheel being grooved peripherally forms a pair of parallel superficial marking-ribs or edges 35. The shanks 26 and 27 are provided with small stub-shafts or axles 36, and upon them are mounted marking-wheels 37 and 38, the former being on the shank 26 and the latter on the shank 27. The upper ends of the three shanks are slotted as at 39, the entire series being connected by means of a transverse clamping-screw 40. These upper ends are covered by a cap 41, whose lower end is threaded onto a cylindrical casing or sleeve 42 that extends down into the opening between the edges of the external side walls, and is provided at its front side with a pointer or finger 43 which moves over one of said side-walls, namely, the front, and over a scale with which the said side-wall is provided. A coiled spring 44 is arranged around the several shanks and is interposed between the clamping-screw before mentioned and the upper side of the carriage, so that being an expansive spring, it serves to support or normally elevate the several marking-wheels above and out of contact with the inked ribbon.

I have illustrated a detail of a modified

construction of marking disk, designating the same as 45. (See Fig. 8.) This is merely a disk with a portion of its periphery removed leaving a recess 46. Of course various portions may be removed if desired. Such a wheel might be employed and would thus obviate the necessity of employing the notched bottom shown, in that, as will be obvious, it would if brought in contact with the ribbon and the latter arranged over a page or sheet of paper, simply mark at intervals.

In fact various changes in my invention may be made without departing from the spirit thereof or sacrificing the advantages, and I therefore would have it understood that I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same in any manner desired in order to secure the ends in view.

It will be obvious that in operation the ruler is placed upon the page of a book desired to be ruled or any other sheet of paper, and that through the medium of the hand of the operator bearing upon the cap, the aforesaid shanks may be either singly or as a whole pressed downward, whereby their wheels are in contact with the inked ribbon. The shanks are capable of independent adjustment, so that any one or a combination may be employed. When the wheels 37 and 38 are in contact with the ribbon they will make a double line in length, or when the wheels 37 and 34 are in contact with the ribbon they will make a single and a double line a short distance apart, and so on. When the bottom of the ruler is moved backward or forward so as to bring the openings in position under the wheels, it will be observed that they will mark only where openings occur, all as will be obvious and as will be necessary in balancing, for instance, a ledger.

From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a very simple and convenient device that may be employed in ruling ledgers, day-books, cash-books, &c., in an expeditious manner, and that I avoid the necessity of frequent blotting, smearing, or transferring as is the case with the ordinary red ink and ruling pen; and that, furthermore, the openings may be cut in the bottom to suit the ledger in connection with which the ruler is to be employed.

A pair of slotted sliding blocks 3^a are mounted on the ways 3 and may be secured at any point thereon by means of set-screws 3^b which bind upon the ways, such blocks constituting stops between which the marking device may operate, so that by its use lines of varying lengths, as employed in day books or journals, may be produced.

Having described my invention, what I claim is—

1. In a ruler of the class described, the combination with a frame and an inked fabric

arranged therein; of a marker mounted to slide within said frame from end to end thereof over the inked fabric and adapted to contact therewith, substantially as set forth.

2. In a ruler, the combination with a frame and an inked fabric arranged therein, of a marker arranged to slide or travel within the frame from end to end thereof, and supported for an up and down movement over said inked fabric, substantially as set forth.

3. In a ruler, the combination with a frame; of an inked fabric arranged within the frame, of a marker mounted to slide within the frame from end to end, and normally and yieldingly supported above and out of contact with the inked fabric, and means for adjusting said fabric, substantially as set forth.

4. In a ruler, the combination with a frame, an inked fabric arranged therein, of ways arranged over the inked fabric, a carriage mounted for reciprocation upon the ways, and a marking-device supported yieldingly by the carriage and adapted for contact with the inked fabric, substantially as specified.

5. In a ruler, the combination with a frame, and an inked fabric arranged therein, of ways arranged over the inked fabric, a carriage mounted for reciprocation in the ways, and a plurality of marking devices supported by the carriage, substantially as specified.

6. In a ruler, the combination with a frame, an inked fabric arranged therein, and a way arranged above the inked fabric, of a carriage mounted for movement upon the way, a plurality of marking devices carried by the carriage, means for supporting them out of contact with the fabric and for adjusting them in such contact, substantially as specified.

7. In a ruler, the combination with a frame, an inked fabric arranged therein, and a way above the same, of a carriage mounted for movement upon the way, a plurality of independent marking-devices carried by the carriage, and means for adjusting one or all into contact with the fabric, substantially as specified.

8. In a ruler, the combination with an oblong frame, opposite winding shafts, means for rotating the same, an intermediate way, and an inked ribbon connected to the shafts and extending across the bottom of the frame, of a carriage mounted for reciprocation upon the way, and a plurality of marking-devices supported by the carriage and adapted to be brought into contact with and move over said ribbon, substantially as specified.

9. In a ruler, the combination with a framework, a way arranged therein, a carriage provided with marking-devices arranged upon the way, a marking-fabric arranged under the marking devices across the bottom of the frame, of a bottom having openings in line with the travel of the marking-devices, substantially as specified.

10. In a ruler, the combination with a frame-

work, a way arranged therein, a carriage provided with marking devices arranged upon the way, and a marking fabric arranged under the marking-devices across the bottom of the frame, of a movable bottom having openings in line with the travel of the marking-devices, substantially as specified.

11. In a ruler, the combination with the oblong frame comprising end-walls, side-walls, and external inverted L-shaped side-walls, of horizontal ways connecting the end-walls, winding-shafts arranged in the end-walls and projecting beyond the same; a marking ribbon connected to the winding-shafts and extending down between the side-walls and across the bottom of the frame, spur-gears mounted on the ends of the winding-shafts, intermediate stub-shafts, intermediate gears arranged thereon and engaging the spur-gears, a milled disk carried by one of said intermediate gears, and a marking device arranged upon the ways, substantially as specified.

12. In a ruler, the combination with the oblong frame having ways, and the subjacent marking fabric, of a carriage notched to receive the ways and provided with an inclined slot, a series of shanks 26, 27 and 28 arranged in the slots and having their upper ends slotted and connected by the clamping screw 40, the lower end of the shank 28 being laterally bent to form a horizontal portion 29 having a slot 30, and a screw 31, the inverted L-shaped arm 32 secured by the screw to the horizontal portion 29 and bifurcated at its lower end, the grooved wheel journaled in the bifurcation, and the marking wheels 37 and 38 carried by the shanks 26 and 27, the interposed spring between the screw 40 and top of the carriage, the sleeve having a pointer encircling the spring, and the threaded cap removably mounted on the upper end of the sleeve, substantially as specified.

13. In a ruler, the combination with the oblong frame, the inked fabric, and the movable marker, of opposite parallel rods arranged in slots in the end-walls of the frame, and a yielding bottom wall carried by the bars and having openings adapted to be aligned with the path traversed by the marking devices, substantially as specified.

14. In a ruler, the combination with an oblong frame, an inked fabric, and a superimposed marking-device, of a bottom movably mounted upon the under side of the frame below the inked fabric and having openings, substantially as specified.

15. In a ruler, the combination with a frame, an inked fabric arranged therein, and ways arranged over the inked fabric, of a carriage carrying marking devices mounted for sliding on the ways, and adjustable stops arranged on the ways in the path of the carriage, substantially as specified.

16. In a ruler, the combination with a framework, an inked fabric arranged therein, and

a way arranged over the fabric, of a carriage
arranged upon the way for movement and
provided with marking devices, and slotted
blocks constituting stops arranged upon the
5 way and provided with binding screws for
impinging upon the way, substantially as
specified.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

JAMES GRUNDY.

Witnesses:

H. P. DILLISTIN,

WM. HUGHES.