

(No Model.)

2 Sheets—Sheet 1.

G. P. CONANT.
CLOTH MEASURING MACHINE.

No. 517,437.

Patented Apr. 3, 1894.

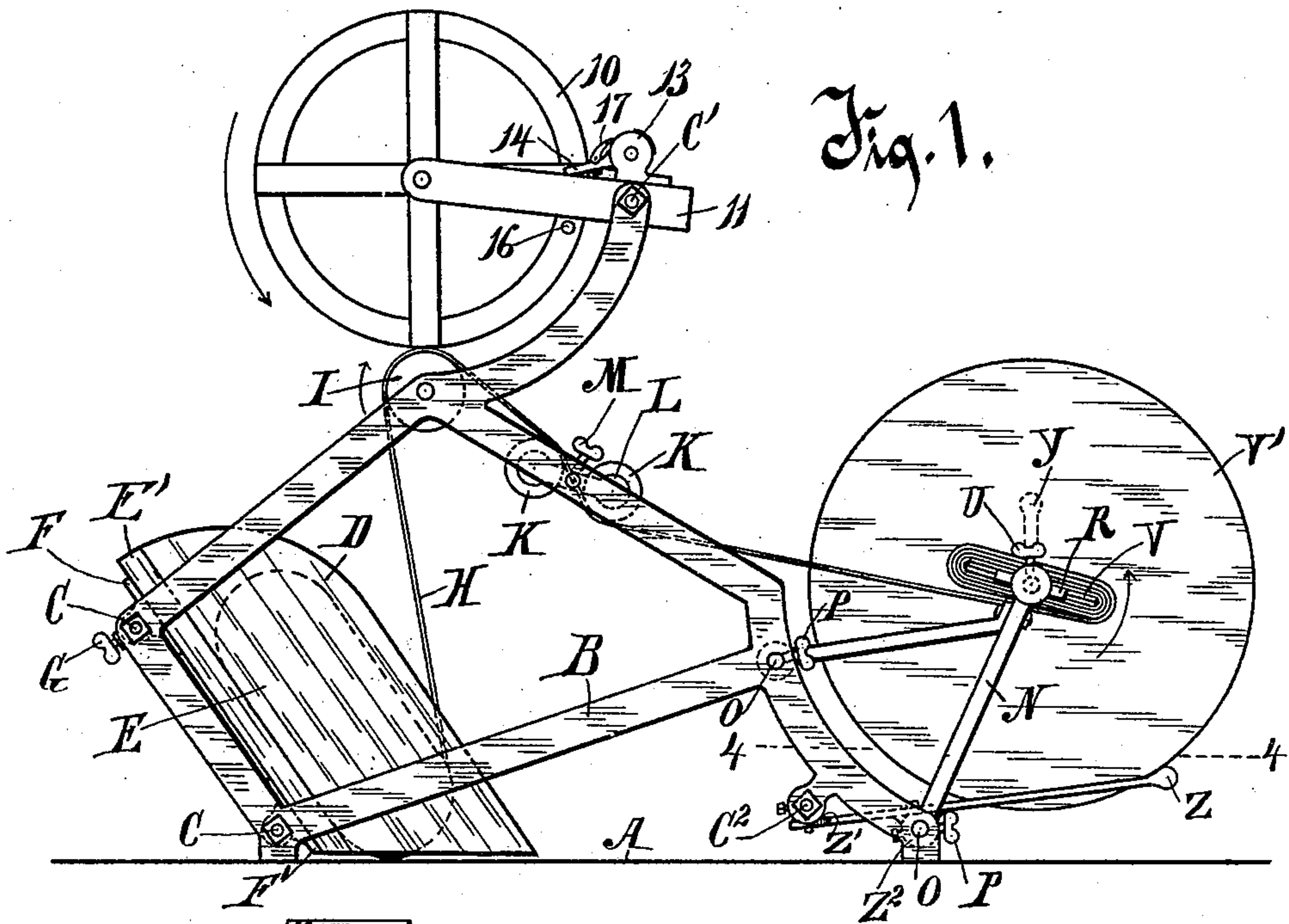


Fig. 1.

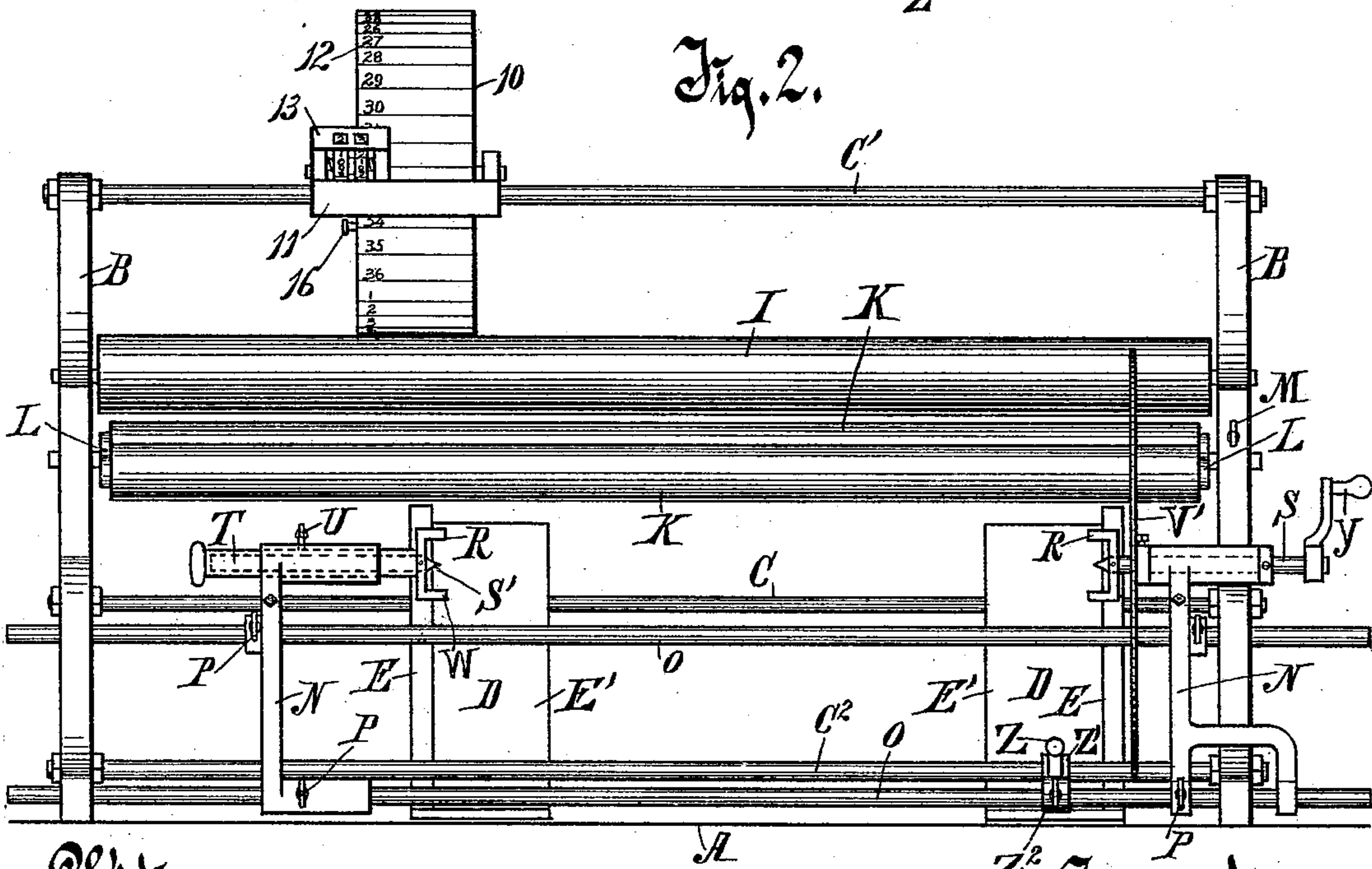


Fig. 2.

Witnesses.

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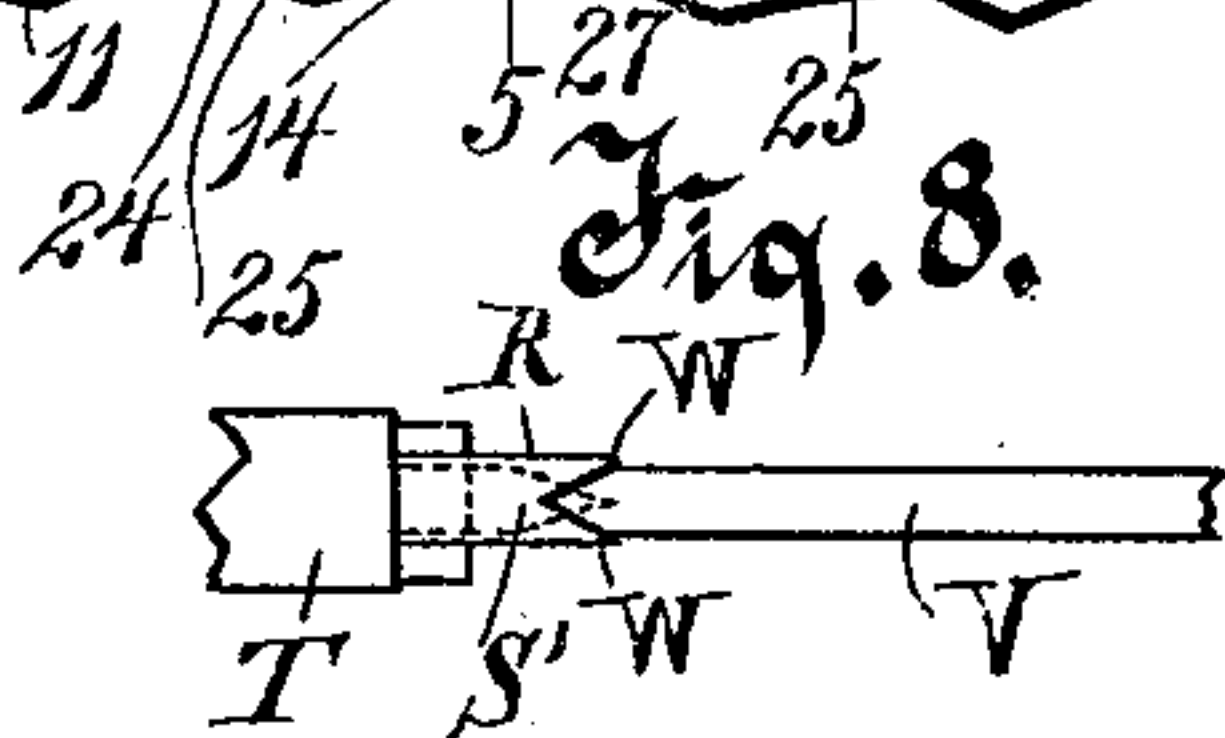
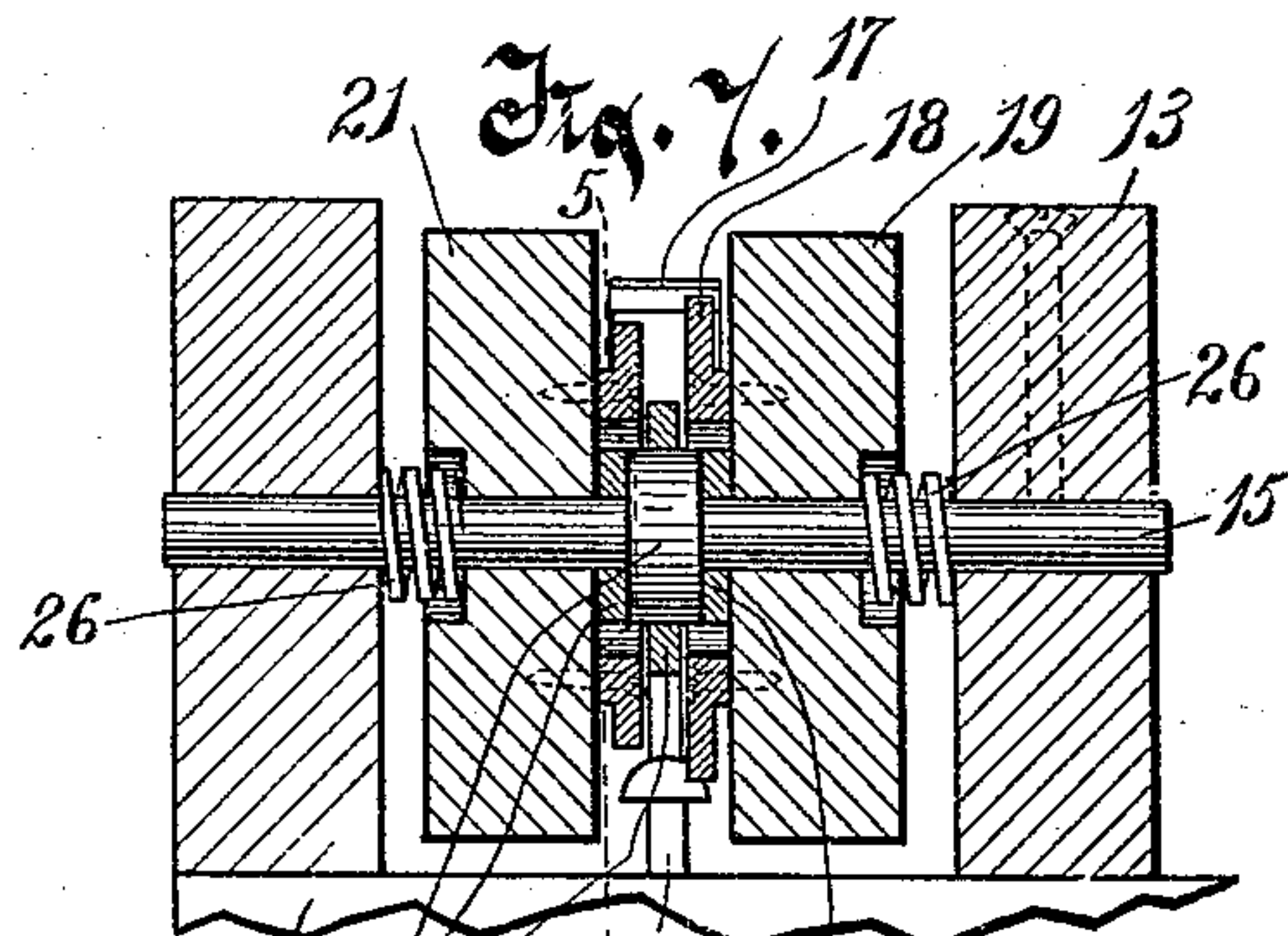
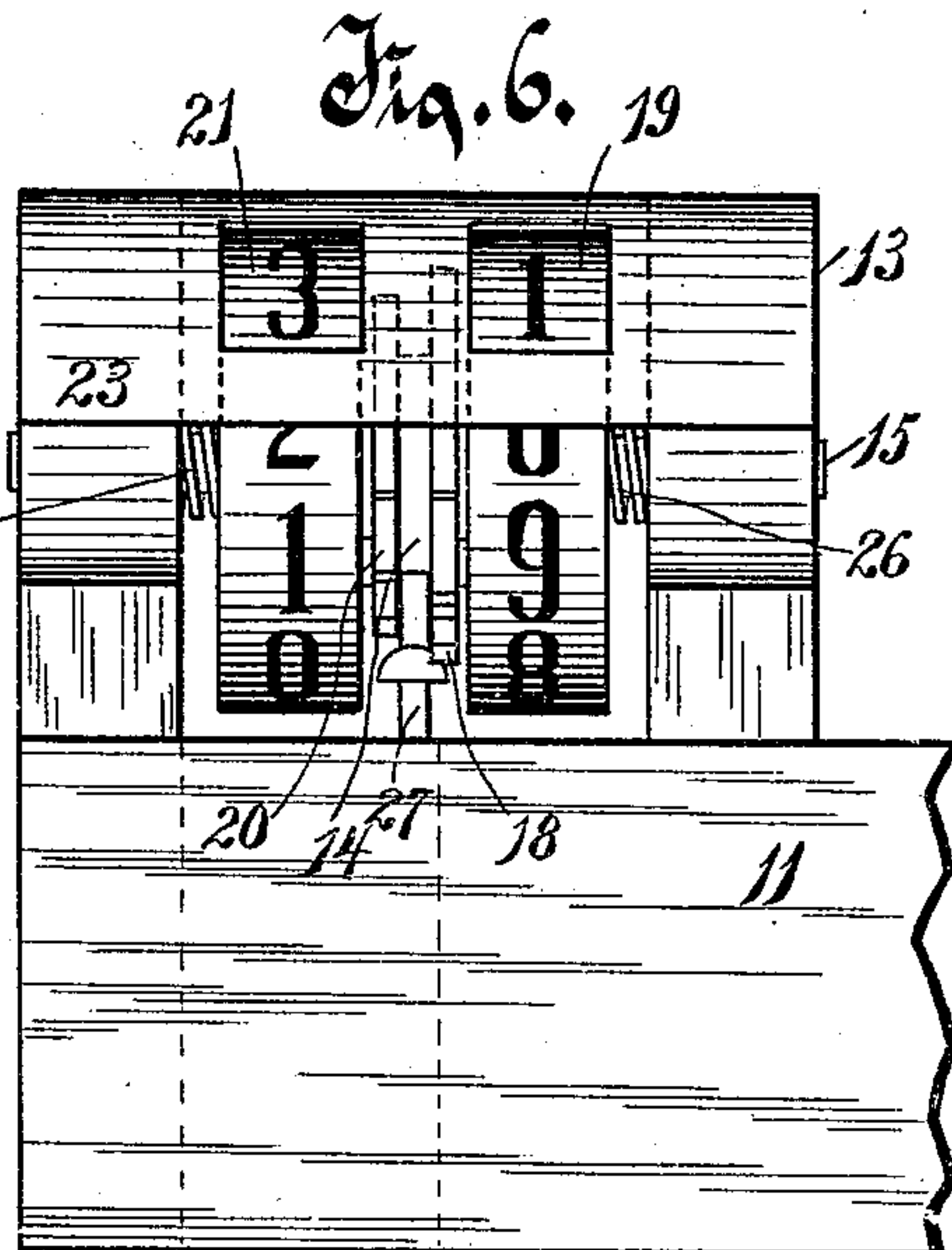
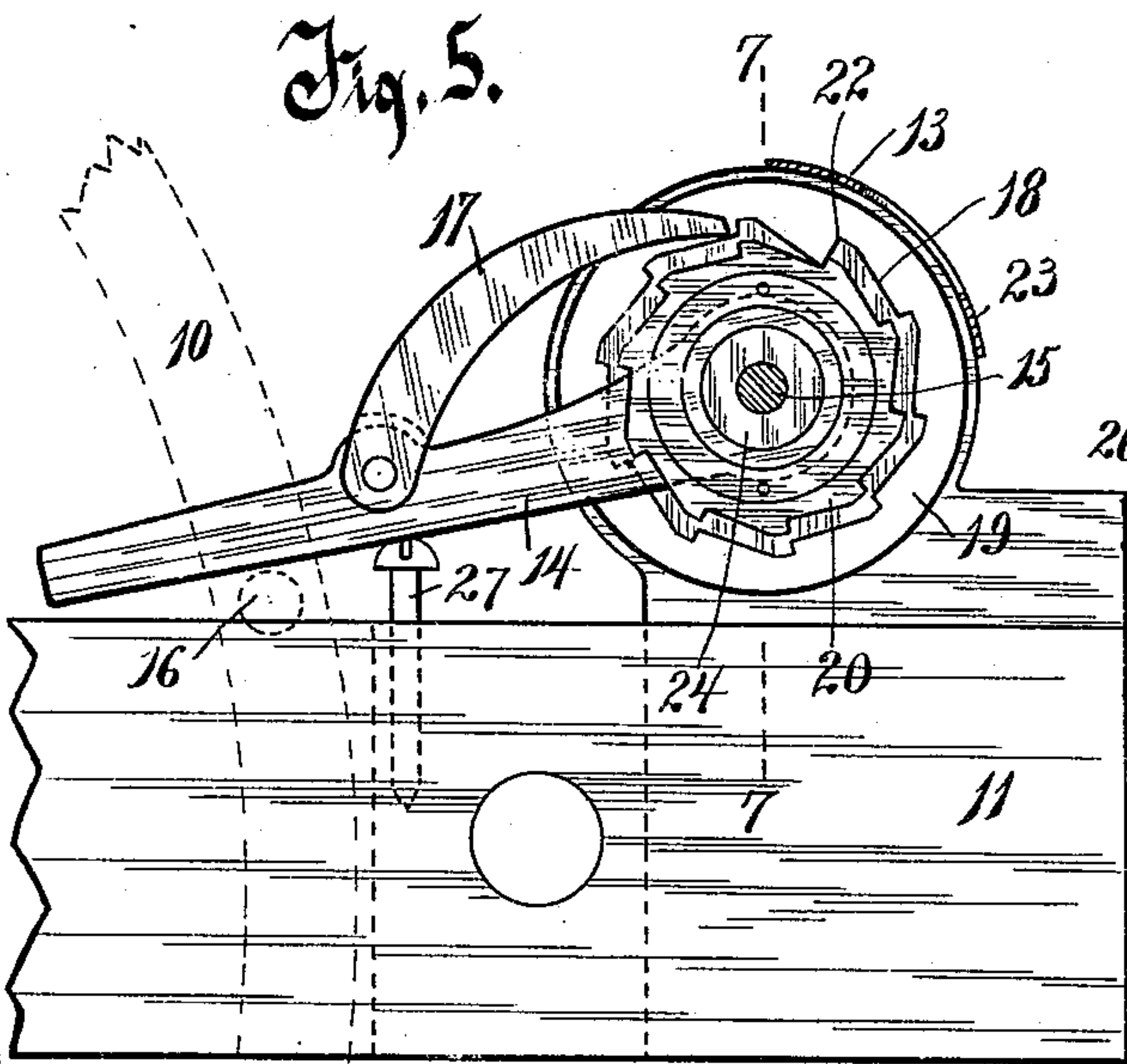
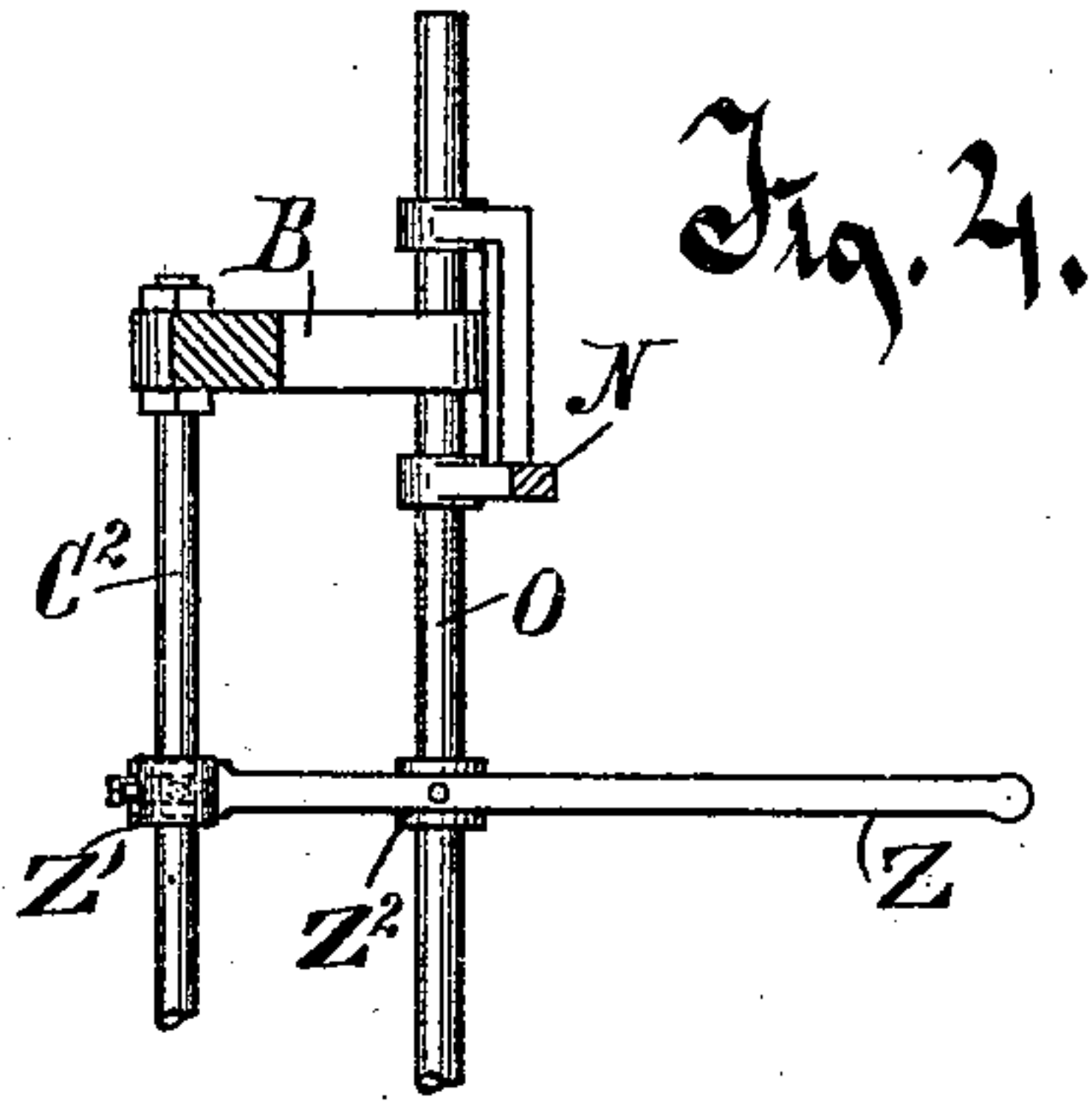
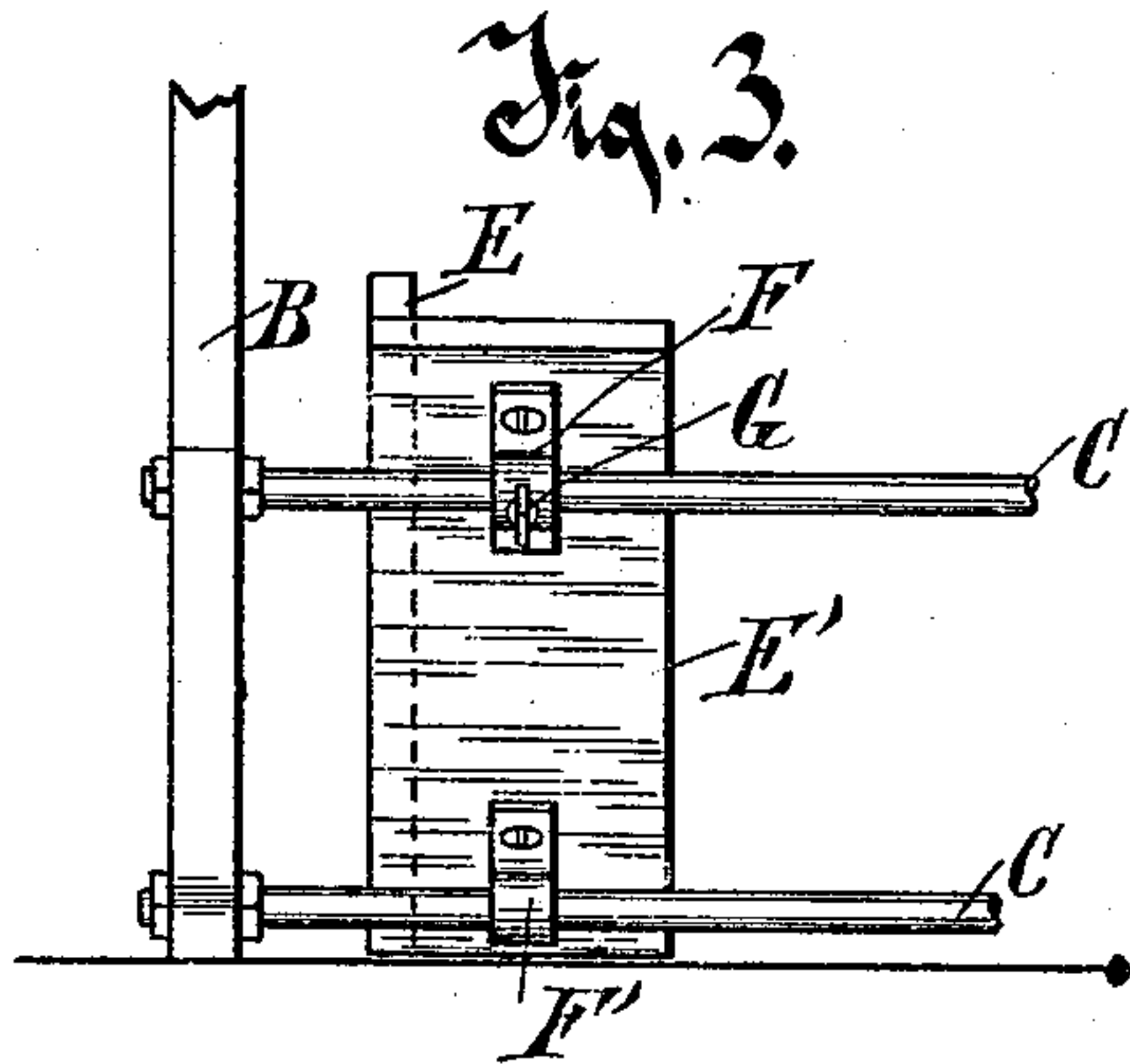
(No Model.)

2 Sheets—Sheet 2.

G. P. CONANT.
CLOTH MEASURING MACHINE.

No. 517,437.

Patented Apr. 3, 1894.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE P. CONANT, OF LAKE GENEVA, WISCONSIN, ASSIGNOR OF TWO-THIRDS TO HARRY B. TYRRELL AND WALTER C. QUIGLEY, OF SAME PLACE.

CLOTH-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 517,437, dated April 3, 1894.

Application filed April 6, 1893. Serial No. 469,250. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. CONANT, of Lake Geneva, in the county of Walworth and State of Wisconsin, have invented a new and
5 useful Improvement in Cloth-Measuring Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The object of my invention is to produce a
10 more convenient and better automatic machine for measuring cloth than has heretofore been known.

The machine is especially adapted for use in measuring cloth in taking an inventory of
15 stock in dry goods stores when it is necessary for the purpose of ascertaining definitely the amount of cloth in each bolt, to unwind and rewind the cloth thereof.

The machine or apparatus includes the
20 measuring and registering devices and other devices for retaining and guiding the cloth while being unwound from the bolt, and still other devices for rewinding it and for straightening it out and guiding it while being re-
25 wound.

The invention consists in the apparatus and its several parts as hereinafter described and claimed, or their equivalents.

In the drawings, Figure 1 is a side elevation
30 of the complete apparatus. Fig. 2 is an end elevation as seen from the right of Fig. 1. Fig. 3 is a detail of the cloth-holding device. Fig. 4 is a detail of the cloth-winding apparatus taken on line 4—4 of Fig. 1. Fig. 5 is
35 a vertical section of the registering device taken on line 5—5 of Fig. 7 with fragments of connected mechanism. Fig. 6 is an elevation of the registering device. Fig. 7 is a central longitudinal section of the registering
40 device on line 7—7 of Fig. 5. Fig. 8 is a detail of the chuck for holding the board or spool on which the cloth is rewound.

The machine is adapted to stand on a table or counter A. The frame consists substan-
45 tially of duplicate side pieces B B located at a distance apart somewhat greater than the width of cloth as commonly manufactured and put up in bolts, which side pieces B B are connected rigidly together by rods C, C, C'
50 and C². The device for holding the bolt of

cloth in proper position being unwound consists of the duplicate and opposing and reversely arranged holders D D, each holder consisting of an end piece E and a side or back piece E'. The back pieces E' rest on
55 the rods C C and are attached movably thereto by lugs F F' (Fig. 3) and are locked thereto adjustably by set screws G turning through the lugs F against the rod C. The rods C C and the back pieces E' resting thereon are
60 arranged in planes at oblique angles to a perpendicular. The holders D D are adjustable on the rods C C to adapt them for receiving cloth of greater or less width and also to ad-
65 just the cloth to proper position with reference to the measuring device hereinafter described.

The bolt from which the cloth H is to be unwound is supported on the counter A and rests in an oblique position on the back pieces
70 E', the holders being adjusted at a suitable distance apart therefor, and the cloth is carried over a roller I journaled in the side pieces B B above the holders D, in such position that as the cloth is drawn forward over the roller
75 and thereby unwound from the bolt, the bolt will be constantly rolled over against the backs of the holders, and will thus be constantly, automatically retained in position. From the roller I the cloth passes between
80 two transverse parallel bars K K, which are a part of a tension device adapted to straighten out the cloth suitably for rewinding. This tension device consists of the two parallel bars K K, preferably cylindrical mounted parallel
85 to each other in the swinging arms L L pivoted medially by suitable trunnions therefor in the side pieces B B. The tension of the cloth passing over and between these bars K K is regulated by adjusting the obliquity of the
90 arms L L to the perpendicular at such angle as is necessary therefor, and securing the arms and the bars K in such position by means of the set screw M turning in the side piece B against a trunnion of the arms.
95

A device for rewinding the cloth consists of substantially duplicate arms N N supported adjustably on the rods O O which are somewhat longer than the width of the frame and pass movably through the side pieces B B and
100

the mechanism supported thereon. The arms N N are adjustable on the rods O O being secured in position thereon adjustably by the set screws P P. Furcate chucks R R are fixed on the inner extremities of the mandrels S S' which mandrels are mounted revolubly opposite each other in the arms N N. The mandrel S' has its bearing revolubly in a box or sleeve T which sleeve is non-revoluble but is adjustable endwise in the arm N and is secured thereto adjustably by the set screw U. The inner extremities of the mandrels S S' are pointed axially to serve as centering devices whereby conveniently and properly to place the board or flat spool V, on which the cloth is to be wound, in the jaws W W of the furcate arms of the clutch. The mandrel S is provided with a crank handle Y for rotating it. A lever handle Z pivoted to the rod C² has a fulcrum which is also pivoted medially to a rod O and is adapted for shifting the winding device laterally. The lever handle Z is pivoted to the rods C² and O respectively by means of collars Z' and Z² adjustable on said rods and secured thereto by set screws. The arms N N can be adjusted toward and from each other on the rods O O to adapt them to cloth of different widths, and the winding device can be shifted laterally limitedly by means of the rods O O sliding in the side pieces B B to adapt the winding device to properly receive the cloth from the measuring device. The mandrel S' by means of its box-sleeve T can be withdrawn rearwardly, conveniently for inserting or removing the flat spool in or from the chucks.

For automatically measuring the cloth a wheel 10 is journaled in a yoke 11 pivoted and swinging on the rod C'. The circumference of the wheel 10 is thirty-six inches or one yard in extent, the periphery being divided into thirty-six sections of one inch each and numbered at 12 in a series from 1 to 36 correspondingly. This wheel rests on the cloth H above the roller I and is rotated by the movement of the cloth moving equally therewith so that when one yard of the cloth passes beneath the wheel the wheel will make one revolution. The revolutions of this wheel are automatically counted and recorded by a registering device 13 mounted on the yoke 11. The registering device consists of a swinging arm 14 pivoted on a rod 15, fixed in the yoke 11, the arm 14 being arranged to be engaged and lifted temporarily and releasably by a stud 16 fixed in the wheel 10. This stud 16 is fixed in the wheel in such manner as to lift the arm 14 at the time of its completing each revolution, and just as the number 36 on the wheel passes the roller I. The arm 14 is provided with a gravity pawl 17 arranged to engage the teeth of an annular rack 18 on a sight wheel 19 mounted and revoluble axially on the rod 15. The sight wheel 19 has the numerals from 1 to 10 arranged circumferentially at equal distances apart on its periph-

ery, and there are ten teeth in the rack 18 corresponding with the numbers on the sight wheel 19. Another annular rack 20 somewhat smaller in diameter than the rack 18 is rigid to the sight wheel 21 which is also mounted revolubly on the rod 15 adjacent to the wheel 19. The pawl 17 is of such width and is so arranged as to extend over the racks 18 and 20 but is held out of contact with the rack 20 by reason of the greater diameter of the rack 18, on which it always rests, except only that the notch in front of the tooth 22 (corresponding with the "0" on the sight wheel 19) is deeper than the other notches on the same wheel, being sufficiently deep to let the pawl down so as to engage a tooth on the rack 20, whereby the pawl as it is lifted by the wheel 10 when in engagement with the tooth 22, engages also with a tooth of the rack 20 and at the same time rotates it correspondingly. The sight wheel 21 is also provided with the numerals from 1 to 10 arranged circumferentially on its periphery at equal distances apart, corresponding with the ten teeth on the rack 20. By this construction the sight wheel 19 is moved one notch, or number, at each revolution of the wheel 10, and the wheel 21 is rotated one notch at each revolution of the wheel 19 so that while the wheel 10 by the numbers on its periphery shows the number of inches of cloth that have passed beneath the wheel succeeding each complete revolution, the sight wheel 19 shows the number of revolutions of the wheel 10 up to ten revolutions thereof, and the sight wheel 21 shows the number of tens of revolutions of the wheel 10 or of revolutions of the wheel 19 so that the two sight wheels 19 and 21 show the number of yards of cloth measured up to 99 the limit of their capacity. A hood 23 fixed to the yoke 11 over the wheels 19 and 21 is provided with sight apertures through which the proper numerals are seen indicating the revolutions made by the measuring wheel.

A collar 24 is rigid on the rod 15 and washers 25, 25 are interposed between the collar and the wheels 19 and 21 respectively. Springs 26 coiled about the rod 15 are interposed between the wheels 19 and 21 and the adjacent rod-supporting parts of the yoke 11, whereby the wheels are held yieldingly up to the collar 24. The arm 14 rides on the collar 24. An adjusting screw 27 turned into the yoke 11 beneath the arm 14 limits the movement of the arm and of the pawl 17 in that direction.

A disk V' fixed axially on the mandrel S near the clutch serves as a guide and a gage in rewinding the cloth.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cloth measuring apparatus, the combination with a frame, of non-revoluble cloth-holders consisting of end pieces and back pieces rigid to each other, the back pieces being arranged obliquely to the perpendicu-

lar, the holders being supported on the frame and adjustable toward and from each other, substantially as described.

2. In a cloth measuring apparatus, the combination with a frame and means for winding cloth, of a tension device, consisting of two parallel bars fixed at a distance apart in swinging arms pivoted medially and adjustable in the frame, at oblique planes to the plane of motion of the cloth by means of a set screw or its equivalent substantially as described.

3. In a cloth measuring machine, a measuring wheel adapted to be rotated by the movement of the cloth, a pawl adapted to be operated by contact with the wheel at each revolution thereof and two sight wheels adjacent

to each other revoluble about the same axis, each sight wheel being provided with an annular rack of greater and less diameters respectively, the one of greater diameter having a single notch of such depth as to permit the pawl to engage and operate both racks concurrently at one motion of the pawl, the rack of greater diameter being otherwise adapted to prevent the pawl from engaging the rack of lesser diameter, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE P. CONANT.

Witnesses:

CHAS. S. FRENCH,
EMORY A. BUELL.