

No. 868,055.

PATENTED OCT. 15, 1907.

F. L. WOLFE.
RECORDING COUNTER.
APPLICATION FILED DEC. 1, 1905.

2 SHEETS—SHEET 1.

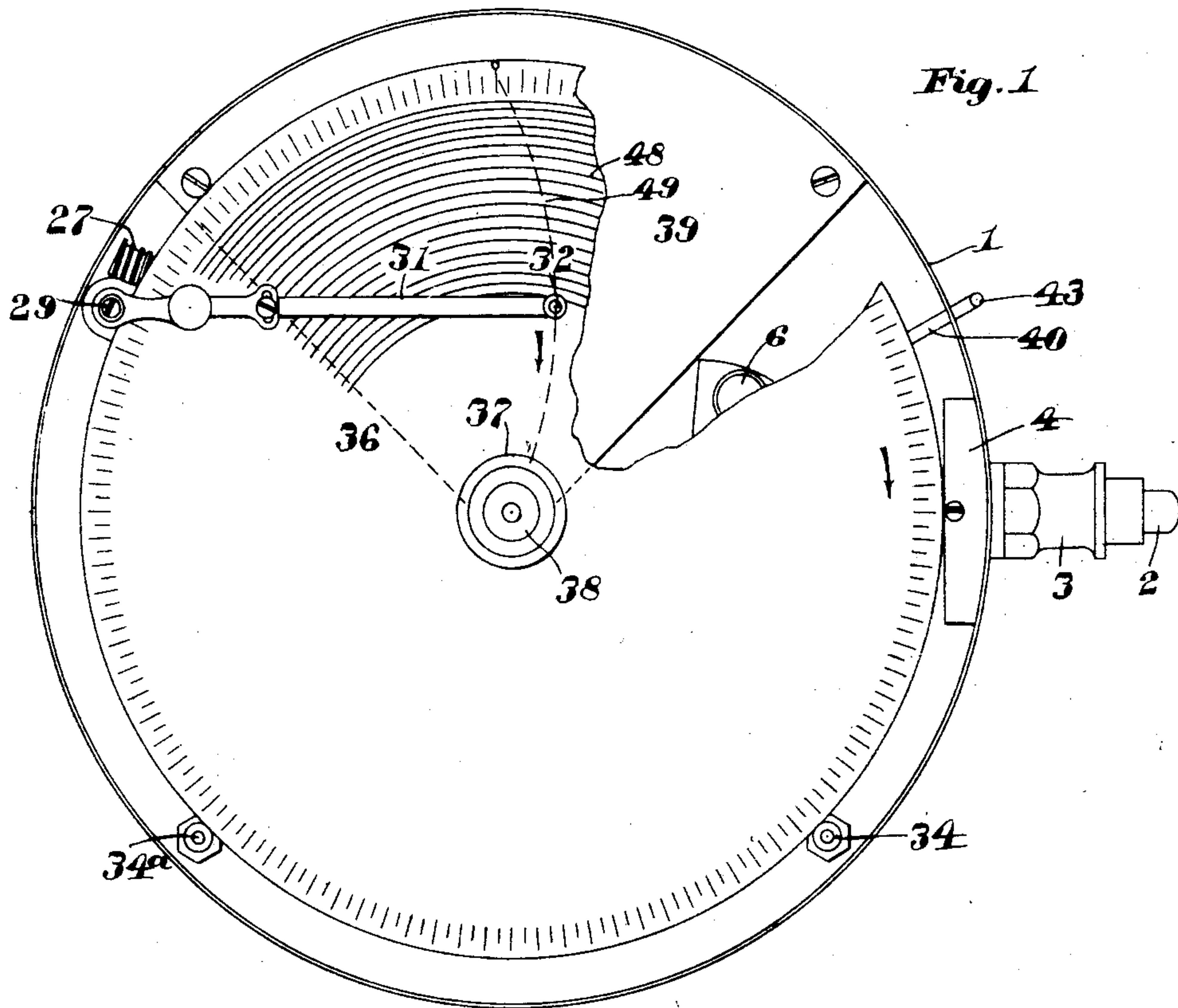


Fig. 1

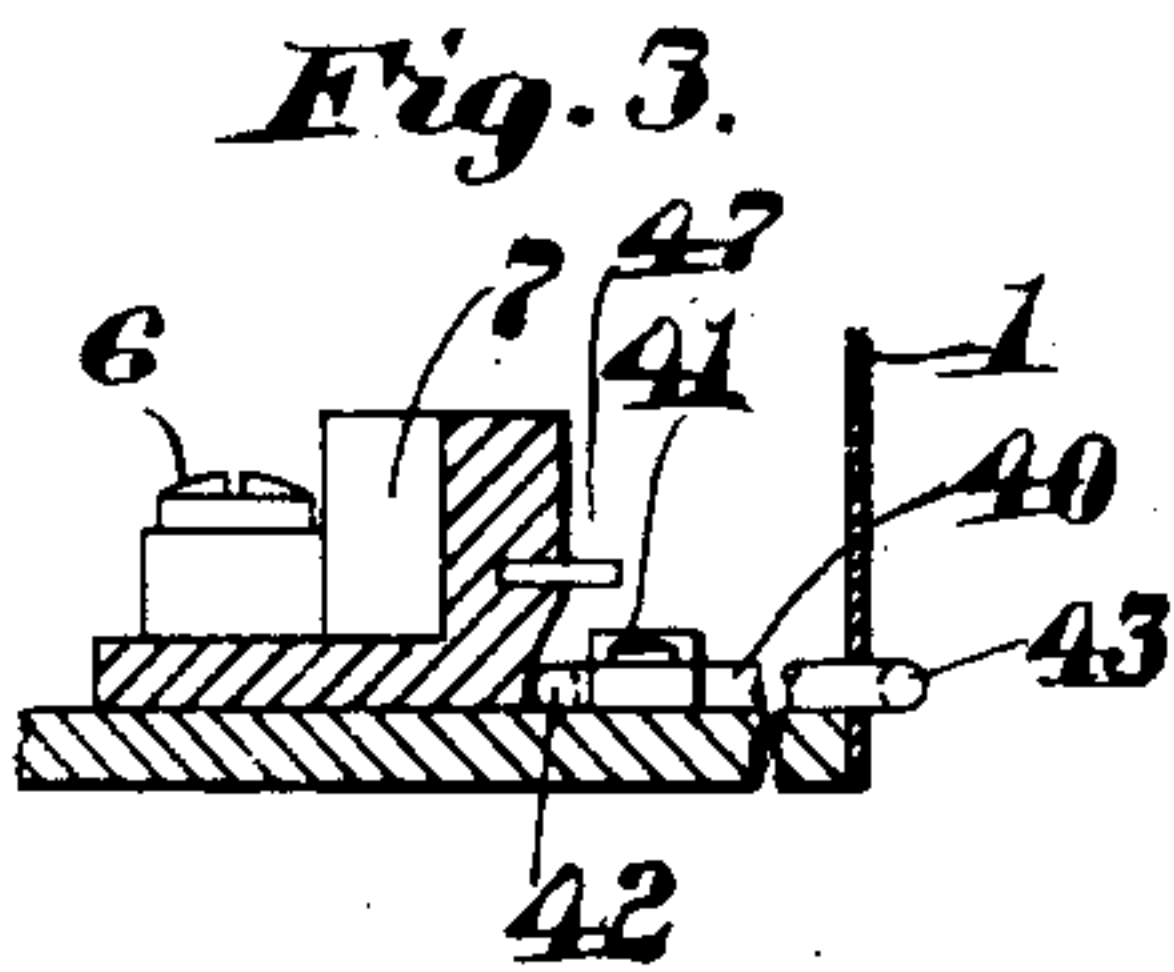


Fig. 3.

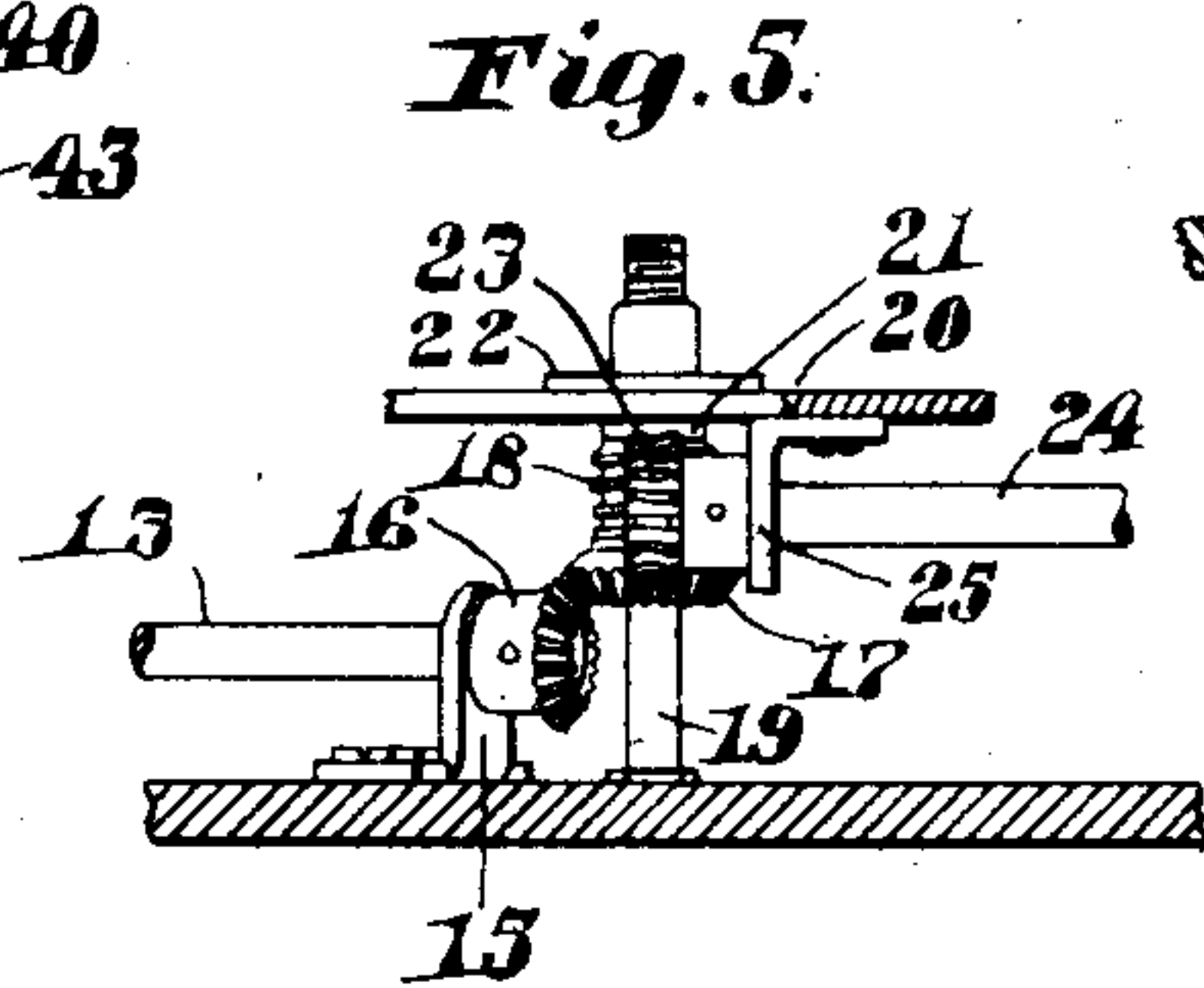


Fig. 5.

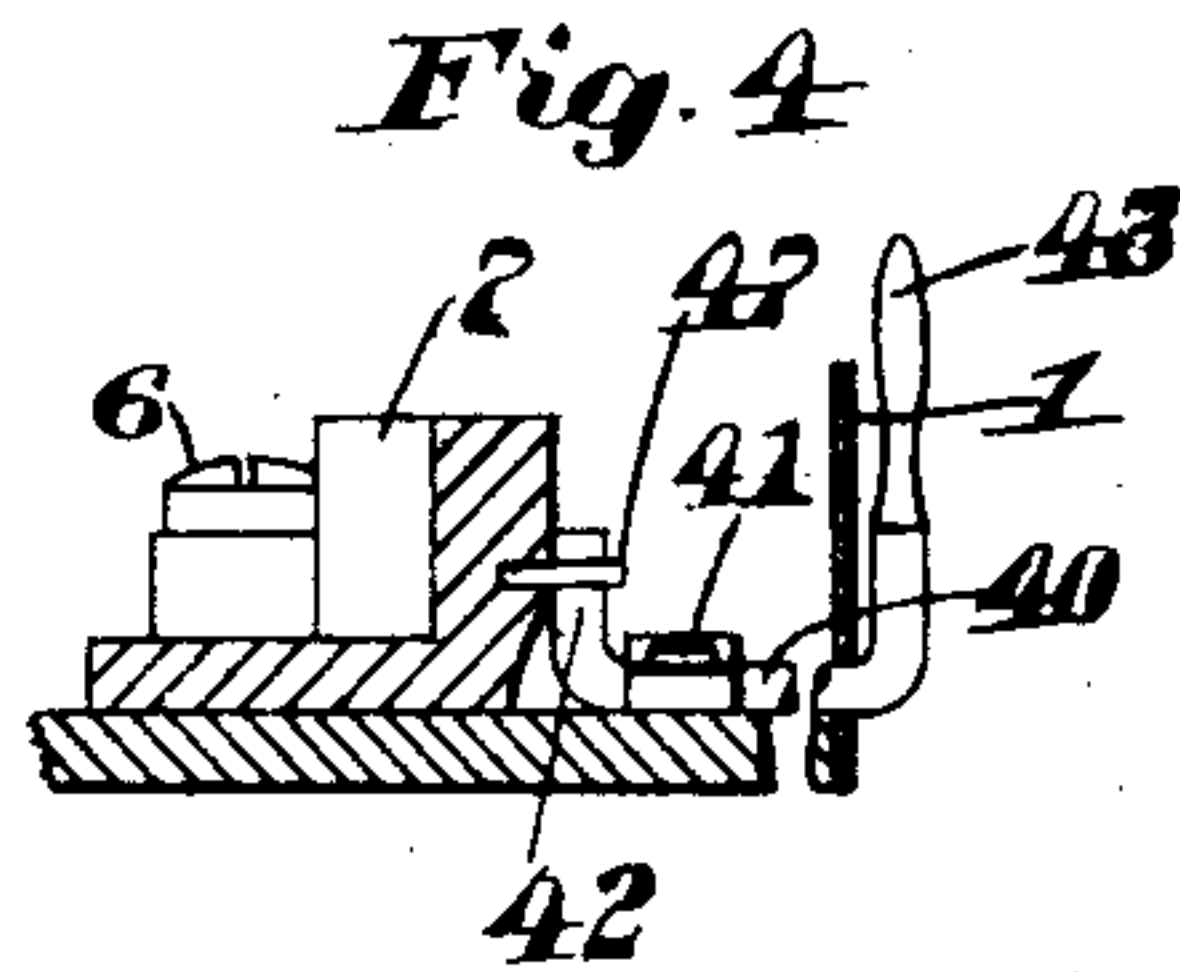


Fig. 4

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Inventor:

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2 SHEETS—SHEET 2.

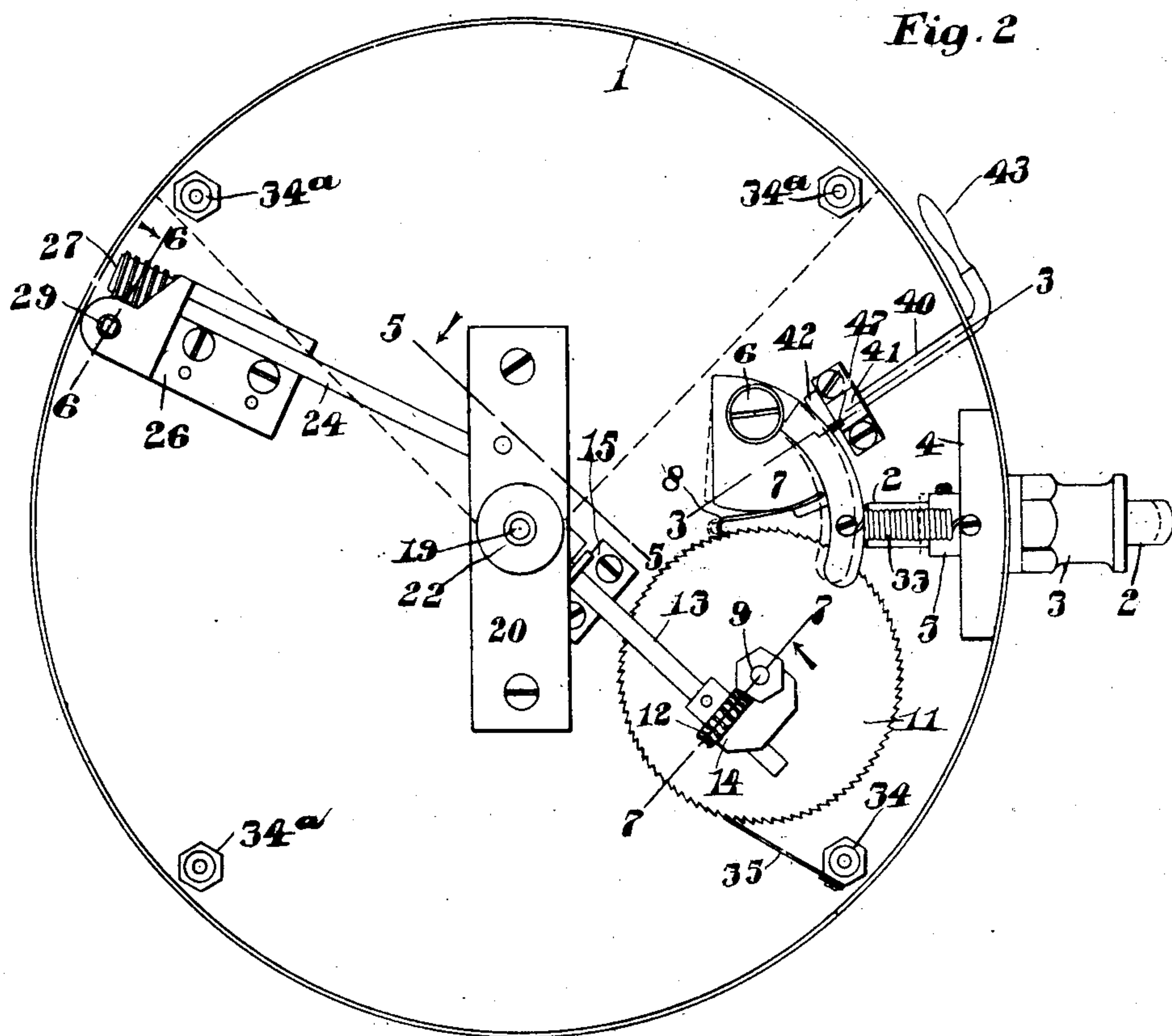


Fig. 7.

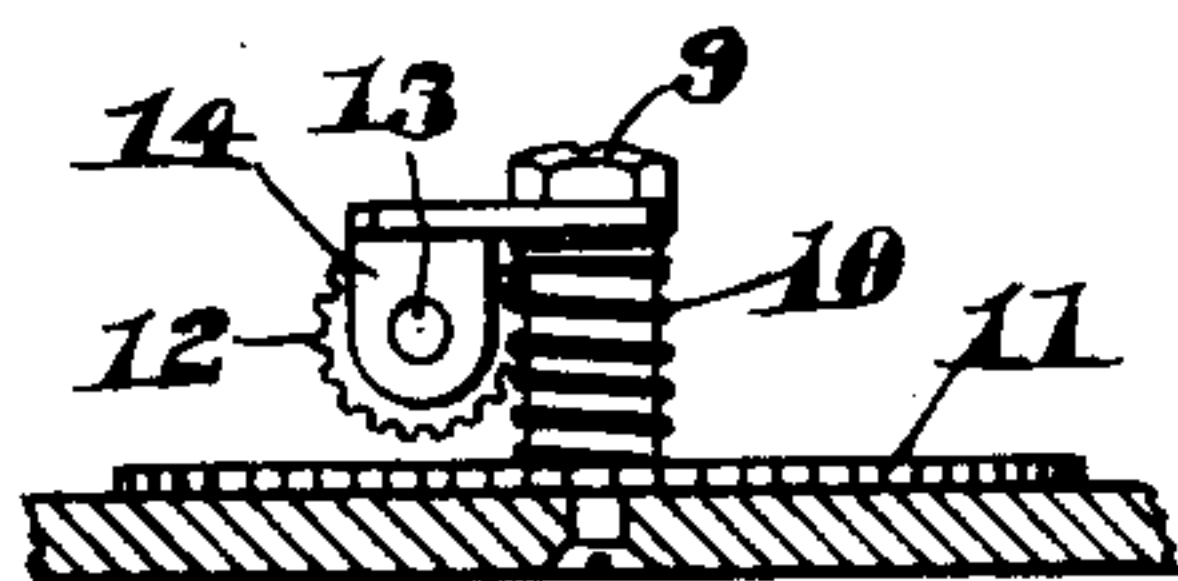
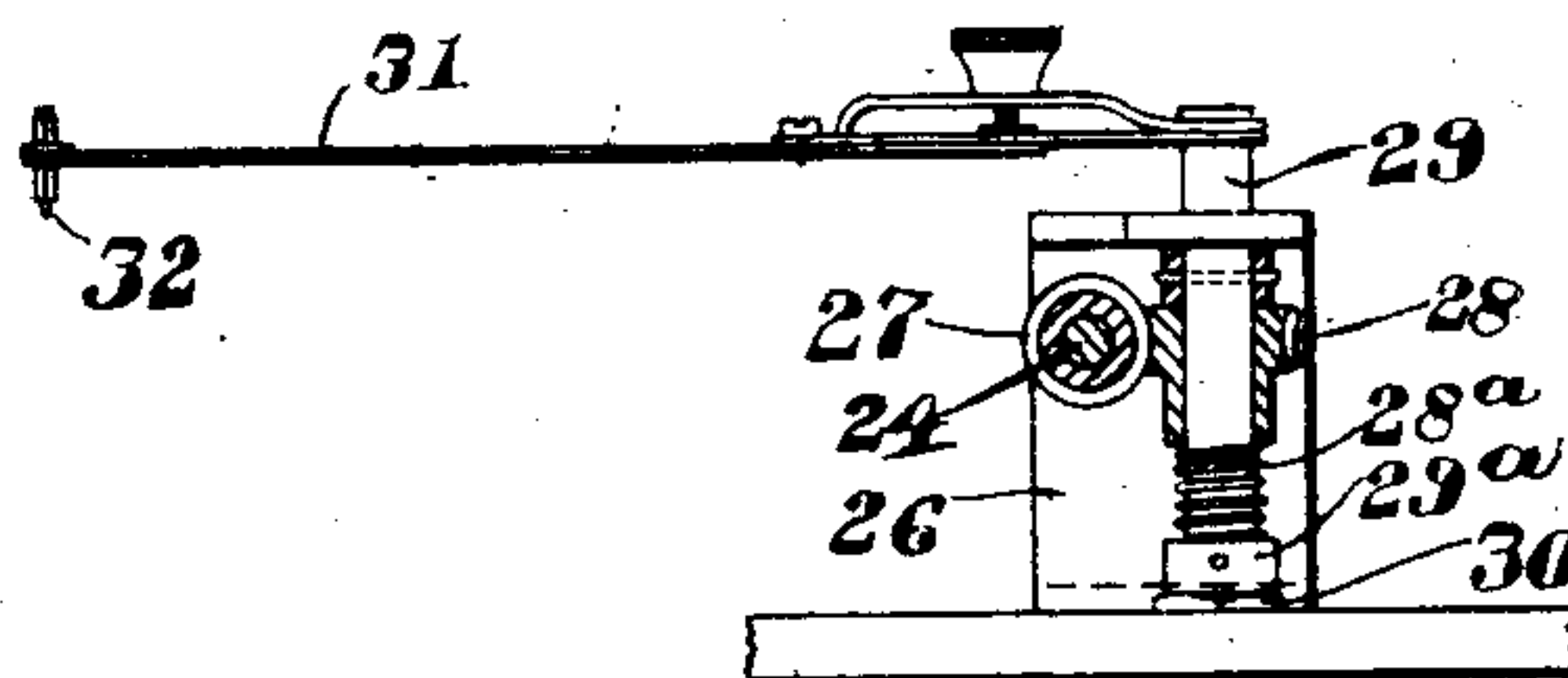


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANK L. WOLFE, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO CROSBY STEAM GAGE AND VALVE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

RECORDING-COUNTER.

No. 868,055.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed December 1, 1905. Serial No. 289,877.

To all whom it may concern:

Be it known that I, FRANK L. WOLFE, a citizen of the United States, and a resident of Medford, in the county of Middlesex and State of Massachusetts, have invented
5 certain new and useful Improvements in Recording-Counters, of which the following is a specification.

My invention relates to recording counters, and its object is to provide means for accurately recording the number of revolutions, reciprocations, or similar operations, in the machine to which the recorder may be at-
10 tached.

It is an improvement of the recording counter invented by me for which a patent application filed in the United States Patent Office, July 28, 1905, Serial Num-
15 ber 271,587, is now pending, and consists principally of the combination of a rotary pencil with a rotary chart.

It is illustrated by the accompanying drawing in which—

Figure 1 is a plan view of the counter with a portion
20 of the chart broken away. Fig. 2 is a plan view of the counter with the chart and disk and pencil arm removed. Fig. 3 is a vertical section on the line 3—3, Fig. 2. Fig. 4 is a section similar to Fig. 3 and showing the arms 42 and 43 raised. Fig. 5 is a vertical section
25 on the line 5—5, Fig. 2. Fig. 6 is a vertical section on the line 6—6, Fig. 2, with pencil arm. Fig. 7 is a vertical section on the line 7—7, Fig. 2.

The several parts of the recording counter are mounted in the case 1. The reciprocating rod 2 extends
30 through, and is in sliding contact with, the hub 3 with its base 4 mounted in the rim of the case, and on the inner end of the rod is fixed the adjustable collar 5 which limits its outward movement. Upon the spindle 6 is mounted the spring actuated arm 7 to which is fixed the
35 spring pallet 8. Upon the spindle 9 is revolvably mounted the screw 10 to which is affixed the ratchet wheel 11, and which engages the gear 12 fixed on the shaft 13 journaled in bearings 14 and 15, arranged respectively on said spindle 9 and the case, and carrying
40 on its inner end the bevel gear 16 which engages the bevel gear 17 fixed on the exteriorly threaded sleeve 18 mounted upon the spindle 19 and having a reduced outer end. The upper end of said sleeve 18 extends through the frame 20 fixed to the case, and is furnished
45 with the collars 21, 22 which engage said frame and prevent longitudinal movement of said sleeve. This sleeve 18 engages the gear 23 fixed on the rod 24 journaled in bearings 25 and 26 fixed respectively to said frame 20 and to the case. The outer end of this rod 24
50 carries a worm 27 which engages the sleeve gear 28 mounted on the shaft 29, journaled in bearing 30 in the case and in bearing 26, and having fixed to its upper end the pencil arm 31 carrying the pencil 32. The spring 33 which is fastened to the base 4 and to the arm
55 7 is extended by the inward movement of the recipro-

cating rod 2 and recoils thereby causing the reciprocating rod to move outwardly and the spring pallet 8 to rotate the ratchet wheel one tooth.

Arranged on the stud 34 is the spring pawl 35. The compressed spring 28^a mounted on the shaft 29 and con-
60 fined between the sleeve gear 28 and the collar 29^a frictionally controls the shaft 29 by its pressure and thus enables the operator to move the pencil arm independently of the sleeve gear. The collar 22 on the upper end of the sleeve 18 constitutes a rotary support for the
65 chart 36 held against said support by the washer 37 and thumb nut 38. The disk 39 made in sections for convenience in handling rests upon studs 34, 34^a, is perforated centrally to fit over the collar 22 and supports the rotary chart 36 perforated centrally to fit over
70 the reduced outer end of the sleeve 18. The rod 40 is mounted in bearings in the case and in the lug 41 fixed to the case and has arms 42 and 43 at its inner and outer ends, the arm 42 being in contact with and adapted to actuate the spring actuated arm 7. The
75 stop 47 limits the movement of the arm 42. This rod 40 with its arms 42 and 43 constitutes a switch for moving and holding the arm 7 and thereby throwing and holding the spring pallet 8 out of engage-
80 ment with the ratchet wheel 11 to enable the operator to stop the operation of the counter without stopping the reciprocating rod 2 or the machine actuating it, when for any purpose he may desire to do so.

The operation of the machine is as follows: The reciprocating rod, being driven inwardly by pressure ap-
85 plied at its outer end and that pressure being removed, is driven outwardly by the spring actuated arm 7, thereby moving the ratchet wheel one tooth, and through the gears just described rotating the chart a certain distance and also the pencil a certain distance. This op-
90 eration being continued, the pencil describes a spiral upon the moving chart as it approaches the center of the chart, and this spiral indicates the number of strokes of the reciprocating rod.

The pencil arm is made equal in length to the radius
95 of the chart.

The chart may be graduated and the gears may be made of such relation as desired. Those shown in the drawings are conventional. If the chart be divided
100 into 1000 graduations, and each graduation represents one reciprocation of the rod 2, each spiral described by the pencil will represent 1000 reciprocations of the rod 2, and each intersection of the spiral 48 with the radial arc 49 will indicate a thousand reciprocations starting with the point marked zero (0) on the chart.
105

The position of the pencil at any moment indicates the number of reciprocations of the arm 2. The operator may note the position of the pencil at the start, or set the pencil as desired, and may also note the time of starting, and at any time thereafter he may note just
110

how many strokes the rod has made during the interval.

Having described my invention, what I claim and desire to secure by Letters Patent is—

- 5 1. A recording counter comprising a case and mounted therein a reciprocating rod, a ratchet wheel driven by said rod, gears driven by said ratchet wheel, a rotary chart support rotated by such gears, a rotary pencil arm rotated by such gears, a pencil mounted in the free end of such pencil arm and in contact with such chart support, said reciprocating rod extending through said case and being operative from without; substantially as described.
- 10 2. A recording counter comprising a case and mounted

therein a reciprocating rod, a ratchet wheel driven by said rod, gears driven by said ratchet wheel, a rotary 15 chart support rotated by such gears, a rotary pencil arm rotated by such gears, a pencil mounted in the free end of said pencil arm and in contact with said chart support, with means operative from without said case for actuating said reciprocating rod; substantially as described. 20

In testimony whereof I have affixed my signature, in presence of two witnesses.

FRANK L. WOLFE.

Witnesses:

IDA F. WOLFE,
RALPH W. FOSTER.