

945,581.

Fig.1

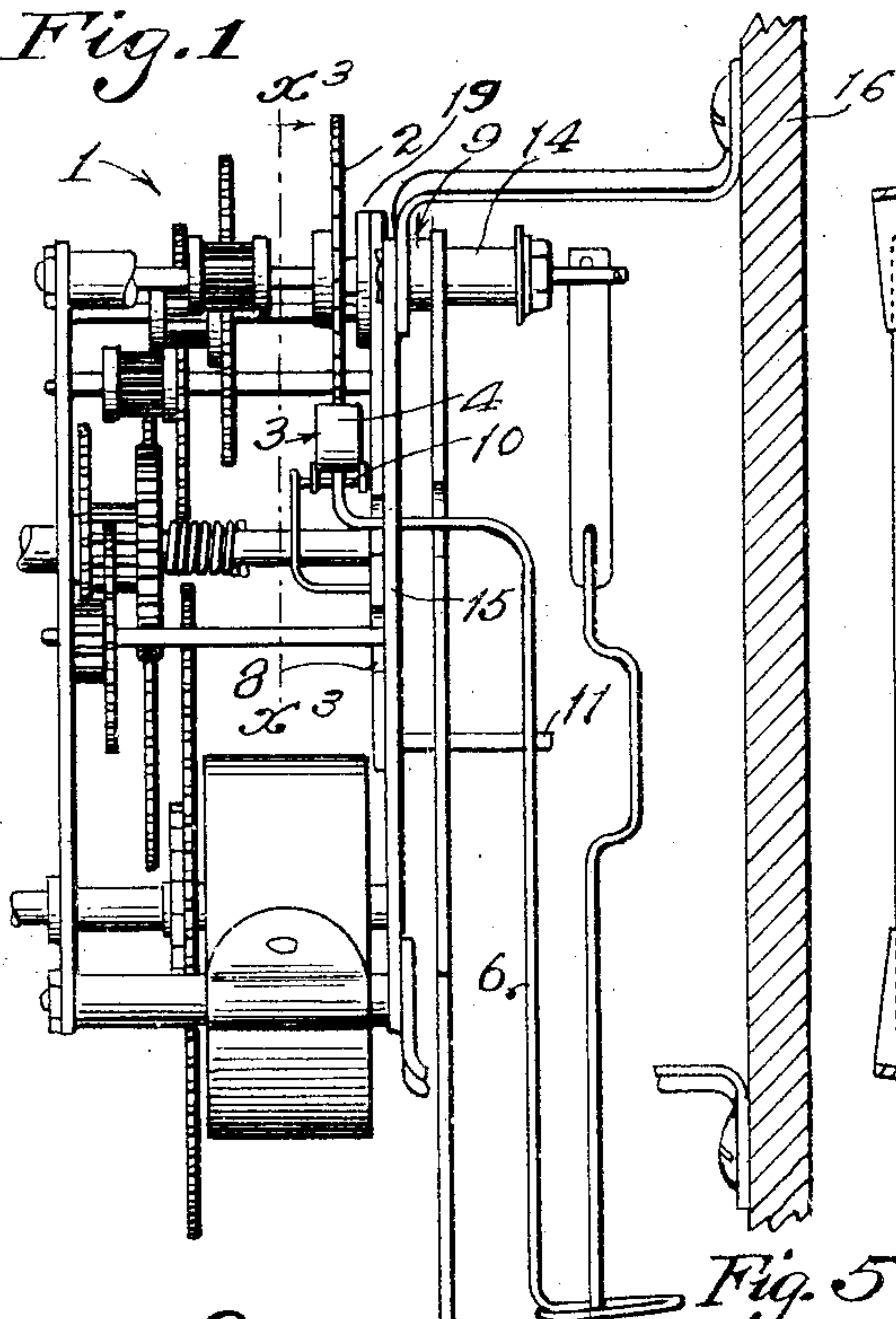


Fig. 2

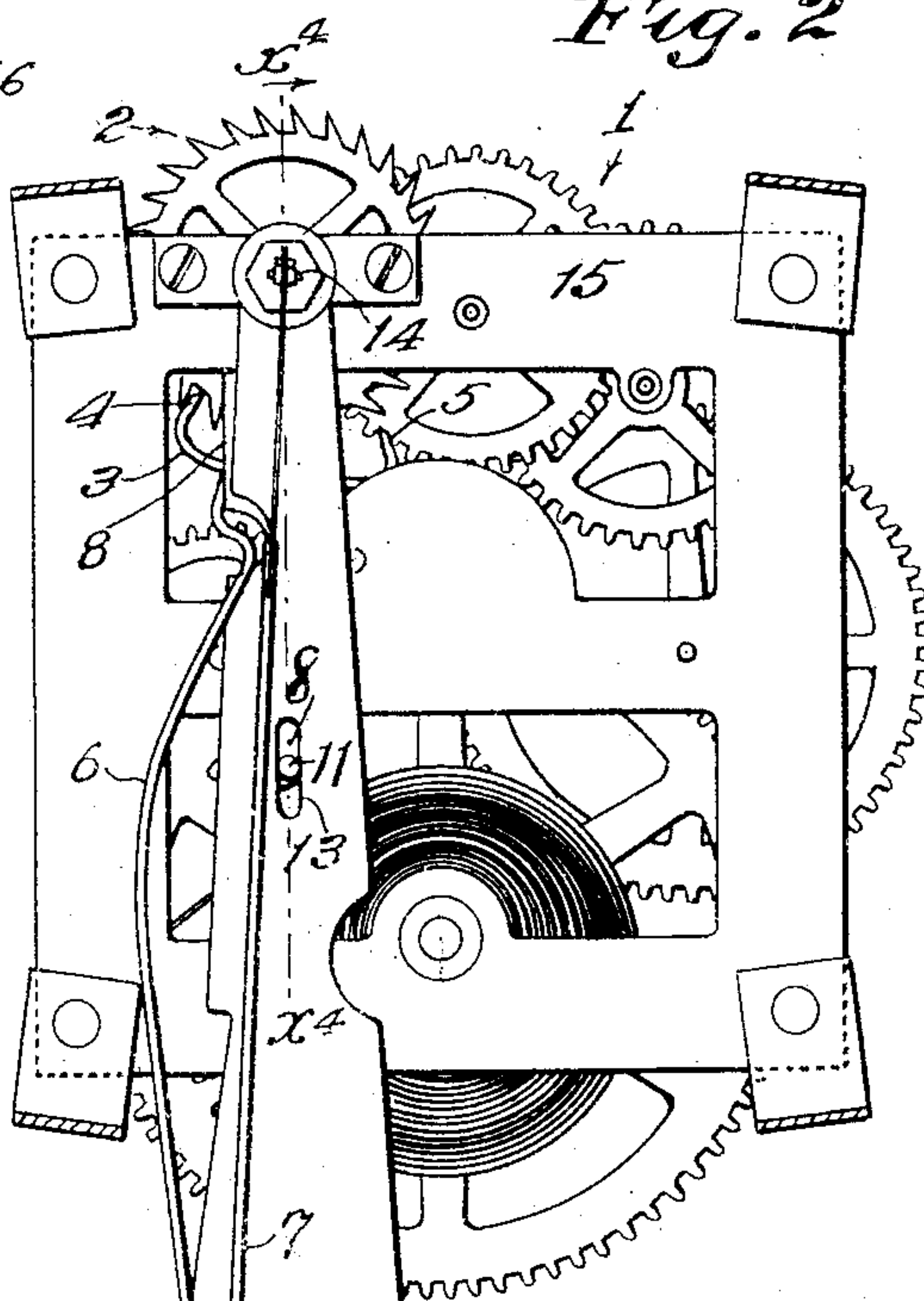


Fig. 3
x⁴

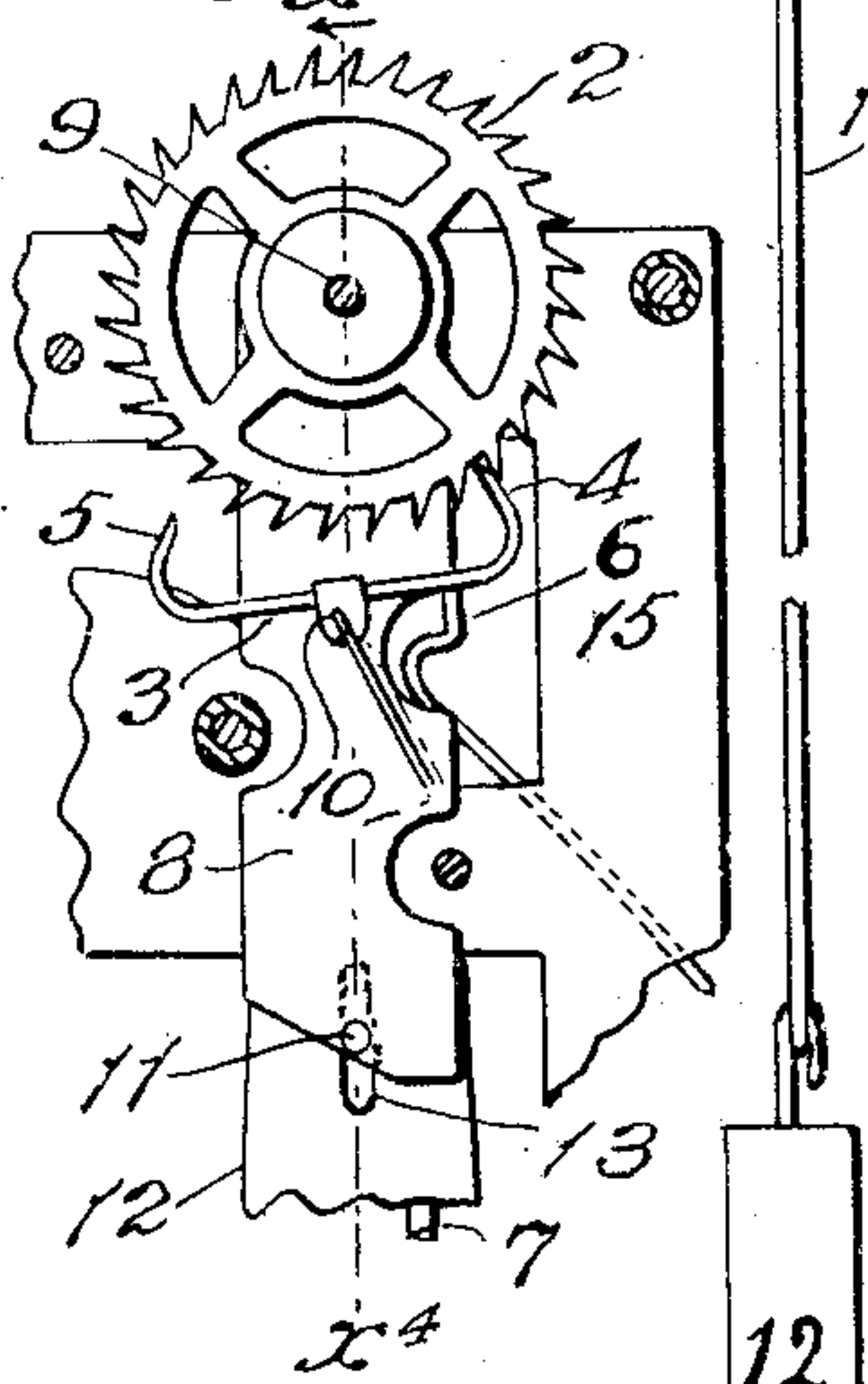


Fig. 5

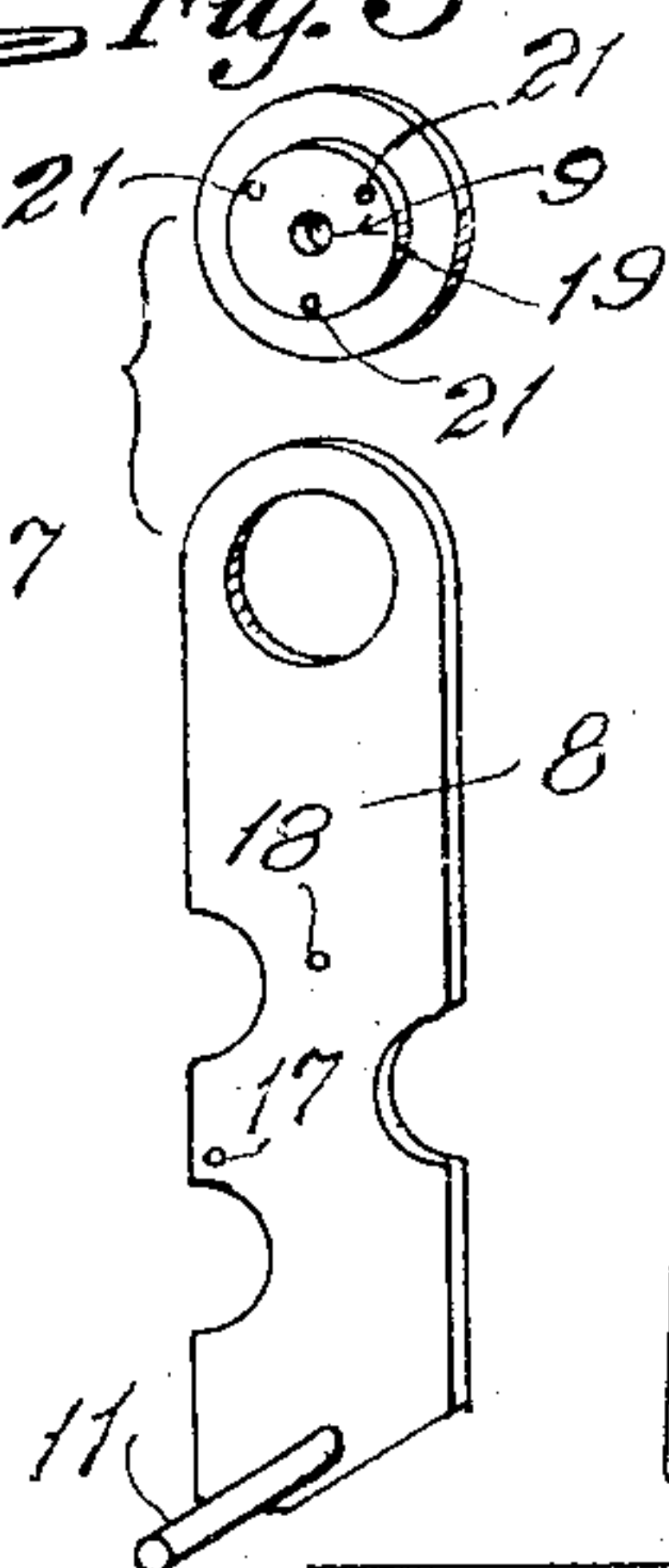
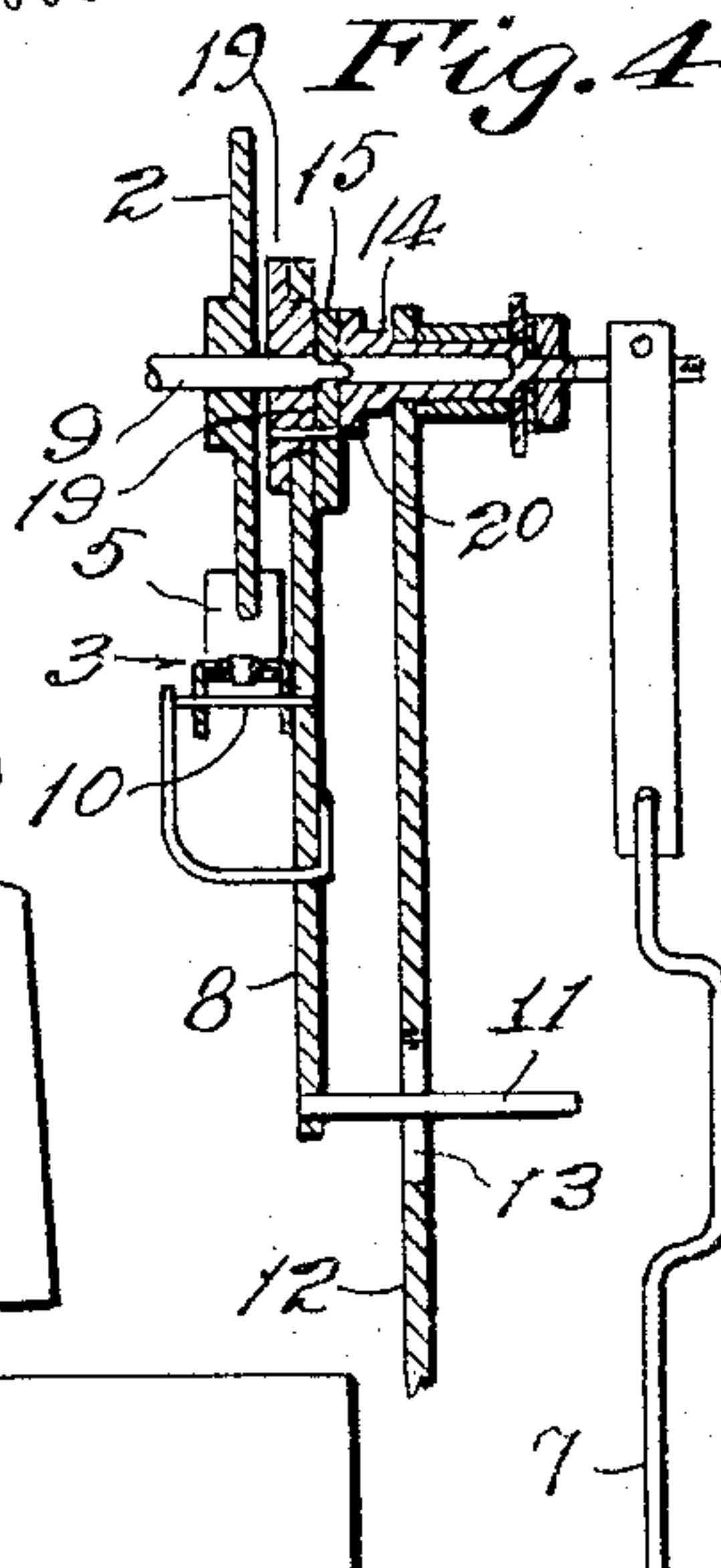


Fig. 4



Witnesses
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by
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his atty

UNITED STATES PATENT OFFICE.

JUNZO OGAWA, OF LOS ANGELES, CALIFORNIA.

AUTOMATICALLY-PLUMBED CLOCK.

945,581.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed November 2, 1908. Serial No. 460,774.

To all whom it may concern:

Be it known that I, JUNZO OGAWA, a citizen of Japan, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Automatically-Plumbed Clocks, of which the following is a specification.

This invention relates to means whereby the operative parts of the escapement for pendulum-clocks will be automatically held in true operative relation to each other regardless of whether the clock-case or frame is or is not plumb.

The accompanying drawings illustrate the invention in the best form in which I contemplate embodying the same.

Figure 1 is a side elevation of a clock constructed in accordance with this invention. Portions of the frame and case are broken away to contract the view. Fig. 2 is a front elevation of the same, omitting the case. Fig. 3 is a view from line α^3 , Fig. 1, looking in the direction of the arrow. Fig. 4 is a fragmental section on line indicated by α^4 , Fig. 2, looking in the direction of the arrow. Fig. 5 is a view of the escapement hanger and its pivotal bearing detached.

1 designates in a general way the clock-movement provided with the usual anchor-escapement comprising the escapement-wheel 2 and verge 3 provided with the usual pallets 4 and 5, and controlled through the rod 6 by the pendulum 7 all of which may be of the usual construction.

8 is a hanger suspended to swing from a pivot 9 that is coaxial with the escapement-wheel 2. Said hanger carries the pivot 10 upon which the verge 3 is mounted, and is provided with a pin 11 that is controlled by a plummet 12 that is provided with a slot 13 through which the pin 11 extends and into which it fits with sufficient nicety to be held by the plummet in true position without binding. Said plummet 12 is suspended from a pivot 14 that is coaxial with the pivot

9 of the hanger and with the axis of the escapement-wheel 2.

The pin 11, the pivot 10 of the verge and the pivot 9 of the hanger are arranged in such relation that when the plummet hangs plumb, the pivot 10 of the verge will be vertically beneath the axis 9 of the escapement-wheel. Consequently, the pallets 4, 5 will properly engage the escapement-wheel as the pendulum 7 swings. In case the clock-frame leans to right or left, the plummet 12 shifts the pivot 10 of the escapement-pawl to true position. In case the clock is tilted either forward or back, the slot in the plummet accommodates the movement of the pin and does not shift the hanger.

15 designates the frame and 16 the case of the clock.

17 and 18 designate holes in the hanger for mounting the wire that forms the verge pivot 10.

19 designates a bushing that forms the pivotal bearing for the hanger around the pivot 9. Said bushing is held by pins 20 passed through the frame 15 and through holes 21 in the bushing.

I claim:

In a clock, the combination with a plummet provided with a slot in its face, hung coaxial with the escapement-wheel, of a hanger also hung coaxial with the escapement and carrying the escapement verge mounted thereon, a forwardly projecting pin seated in said hanger and engaging the slot in said plummet, whereby the relative position of the escapement-wheel and verge remain unchanged by the sidewise or forward or backward tilting of the clock out of plumb.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 27th day of October 1908.

JUNZO OGAWA.

In presence of—

JAMES R. TOWNSEND,
MUTSU ISHIZAKA.