

No. 817,378.

PATENTED APR. 10, 1906.

A. M. LANE.
MOTOR SPRING.
APPLICATION FILED DEC. 16, 1905.

Fig. 1.

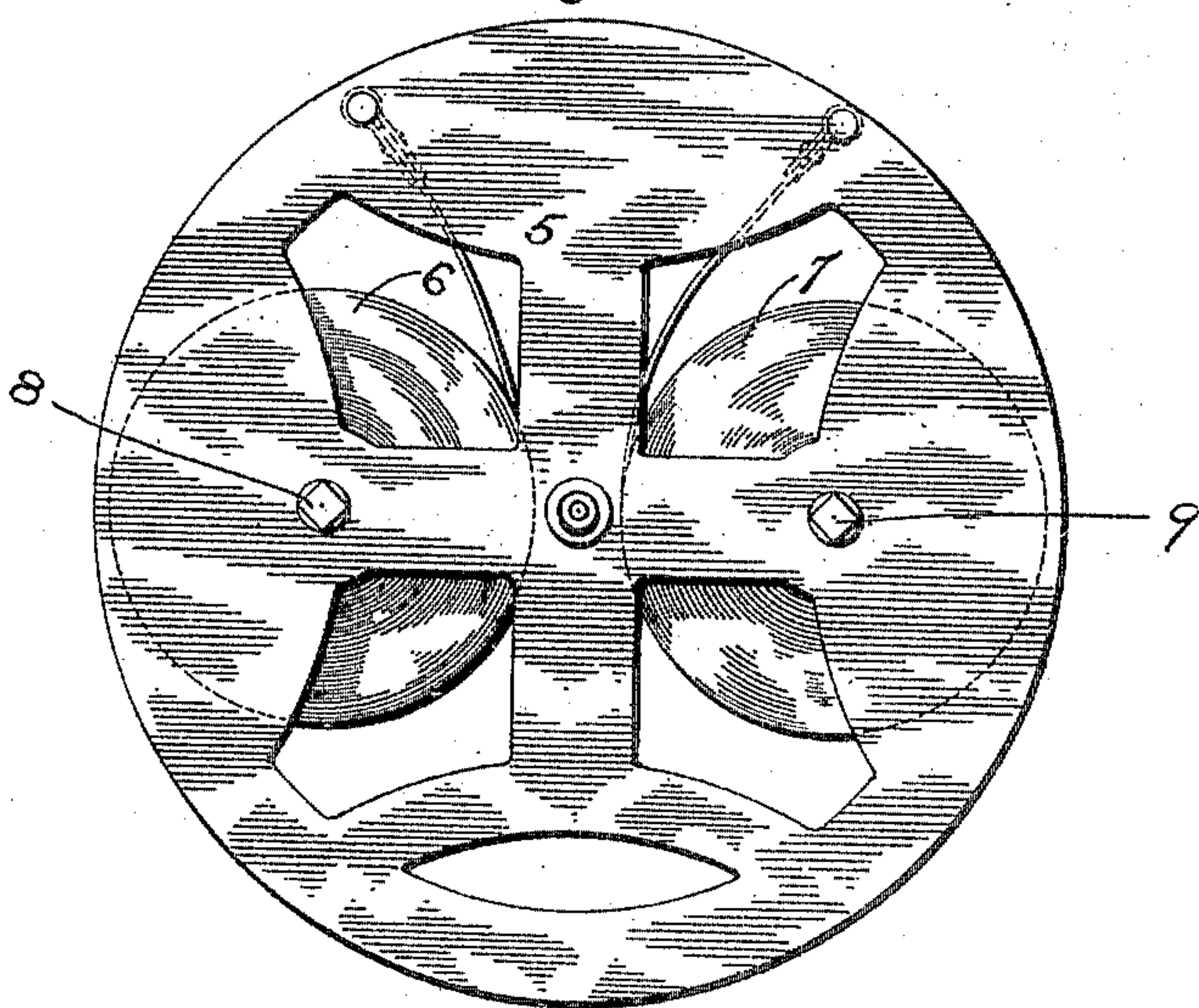


Fig. 2.

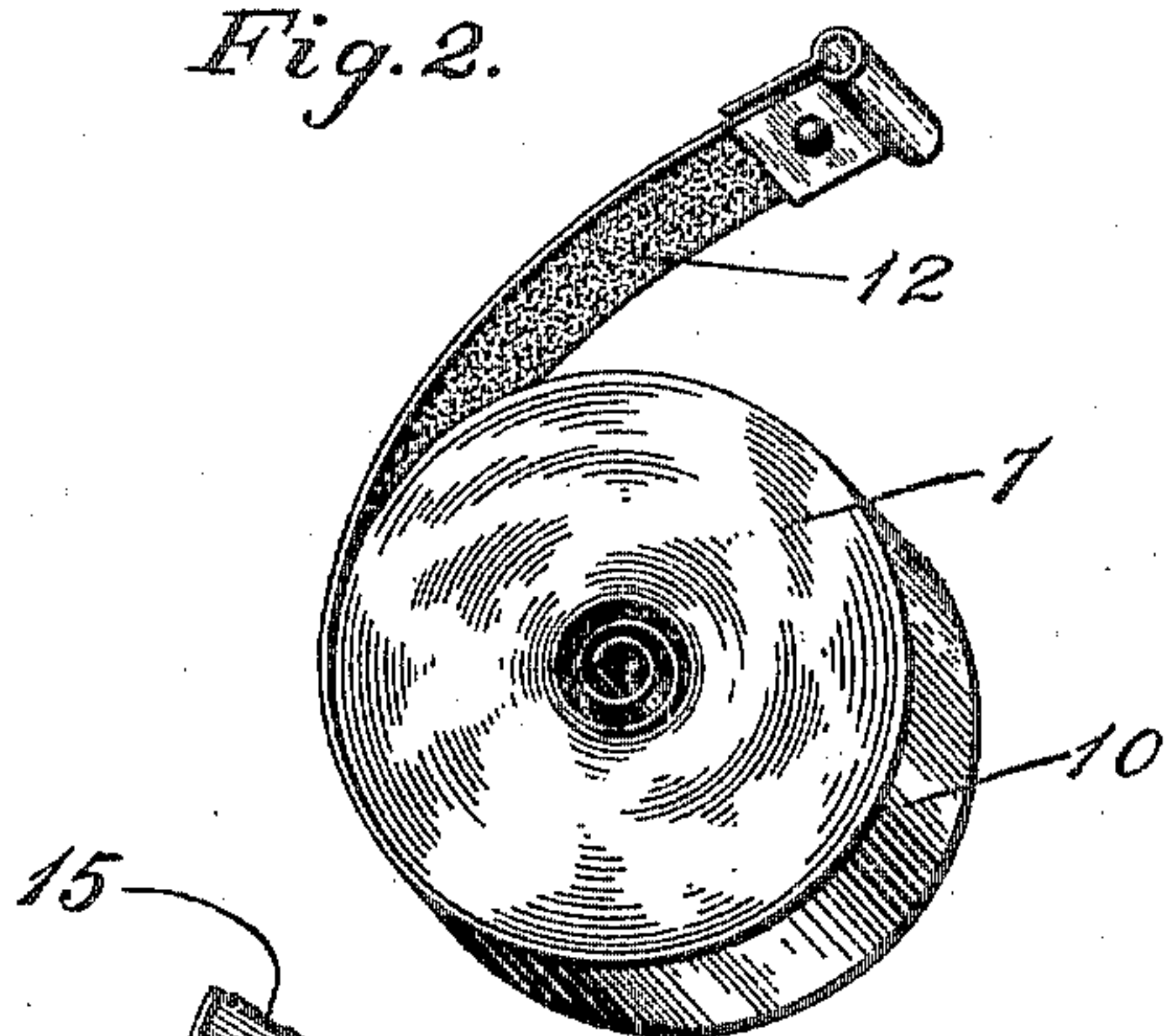
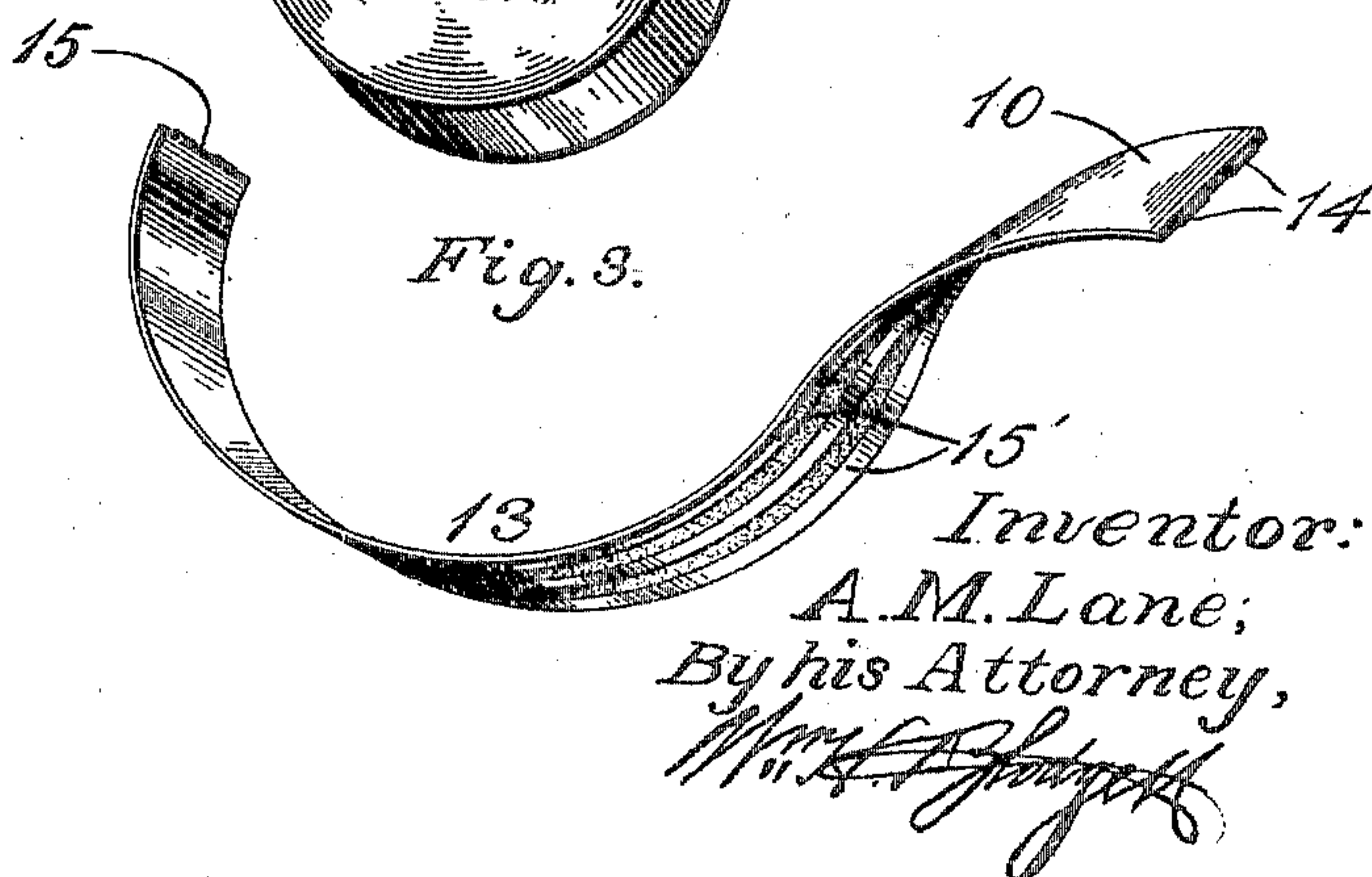


Fig. 3.



Witnesses:

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MOTOR-SPRING.

No. 817,378.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALMERON M. LANE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Motor-Springs, of which the following is a specification.

This invention relates to motor-springs, and while shown employed in connection with a timepiece-movement is limited to no specific use.

Heretofore the inner and outer surfaces of the spring have been alike, in some instances polished and in others rough, so that when the spring is wound or coiled these like surfaces will adhere with considerable tenacity and when the spring uncoils will separate from each other with a jerk or "chug," thus impairing the accurate transmission of the power of the spring and in watches or clocks the time-keeping qualities of the movement. In one common way of manufacturing springs of the kind described it is usual in fine work to impart a highly-polished surface to each side of the strip from which the spring is formed, and thus when the spring is coiled like surfaces of the convolutions will be in contact and they will stick or adhere, so that frequently several adhering convolutions will separate from the main coil with a jerk or jump and will then separate from each other.

In the preferred manner of manufacturing my improved spring the effect required may be accomplished by polishing one side of the spring and leaving the other side thereof in a rough and unpolished condition, thus preventing adherence when the coil is formed and the dissimilar sides of said strip are in contact with each other. This manner of accomplishing the object in view provides a series of minute points or projections which will separate the convolutions from each other and will prevent adherence of the same. In other words, the rough side of the strip having the minute points or projections' afore-said cannot be forced so closely into contact with the polished surface that adherence will take place, and consequently the spring will uncoil freely without the disadvantageous results above mentioned. In another way of accomplishing a like result the strip is formed with alternate rough and smooth surfaces on one side, said rough surfaces acting as points to so separate the convolutions

that no adherence will take place and affording spaces at the edges for the introduction of a lubricant.

In the drawings accompanying this specification, Figure 1 is a side view of an ordinary movement-frame, showing the time and striking springs. Fig. 2 is a perspective view of a coiled spring, showing one form in which the invention is embodied; and Fig. 3 is a perspective view, on an enlarged scale, of a partially-coiled strip, illustrating another form of the invention.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates a common form of movement-frame, 6 and 7 the motor-springs, and 8 and 9 the winding-arbors for said springs. As will be observed by inspection of Fig. 2, each spring 6 or 7 is formed with a polished surface 10, which will give the usual aesthetic effect required by taste and fashion on the exterior of the spring when coiled and with an inner roughened or unpolished surface 12. This figure therefore shows the salient feature of the invention, which resides in dissimilar surfaces on the sides of the strip from which the spring is formed, so that in the coiling operation two unlike surfaces will be in contact and adherence of the coils will be prevented.

In Fig. 3 another form of the invention is shown on a greatly-enlarged scale, and in said figure the strip 13 of the spring is provided with an outer polished surface 10, as in Fig. 2, and with longitudinal rough surfaces 14, constituting microscopic ribs or projections separated from each other by a smooth or polished surface 15 and having smooth edges 15'. These ribs or roughened surfaces while shown continuous may be interrupted, if desired, and they will afford, like the minute projections of the roughened surface 12, a series of contact-points, separating the convolutions from each other, preventing the adherence of said convolutions, and forming air-spaces between each pair of convolutions, so that in the uncoiling operation of the spring there will be no contact of the surfaces of said convolutions, except at points around the periphery of two dissimilar surfaces, which points will accomplish the result described and will enable the spring to utilize its power evenly on the movement or other mechanism with which it is employed. Furthermore,

the polished edge surfaces 15' are convenient for the introduction of oil or other lubricant should such be desired.

Having thus described my invention, what
5 I claim is—

1. A spring having a smooth surface on one side, and a surface having points or projections on its opposite side, said surfaces being in contact when the spring is coiled, and
10 preventing adherence of the convolutions.

2. A spring having a polished surface on one of its sides and a roughened surface on its opposite side.

3. A coiled motor-spring having an externally-polished surface, and an internally- 15 roughened surface.

4. A motor-spring having a polished surface on one of its sides, and an unpolished surface on its other side, said surfaces being in contact when the spring is coiled. 20

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

ALMERON M. LANE.

Witnesses:

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