

No. 682,149.

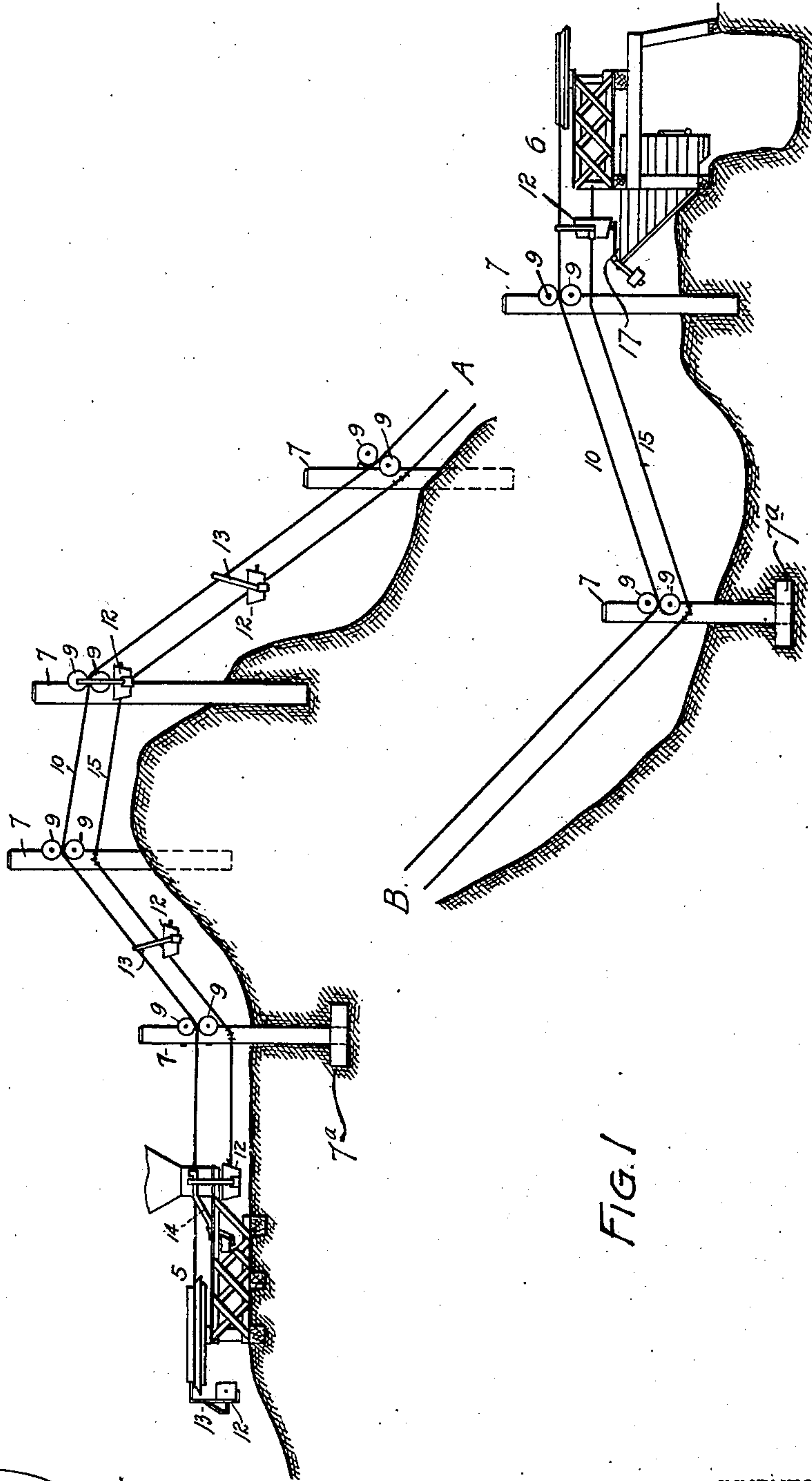
Patented Sept. 3, 1901.

J. H. MONTGOMERY.
AERIAL WIRE ROPE TRAMWAY.

(Application filed Dec. 20, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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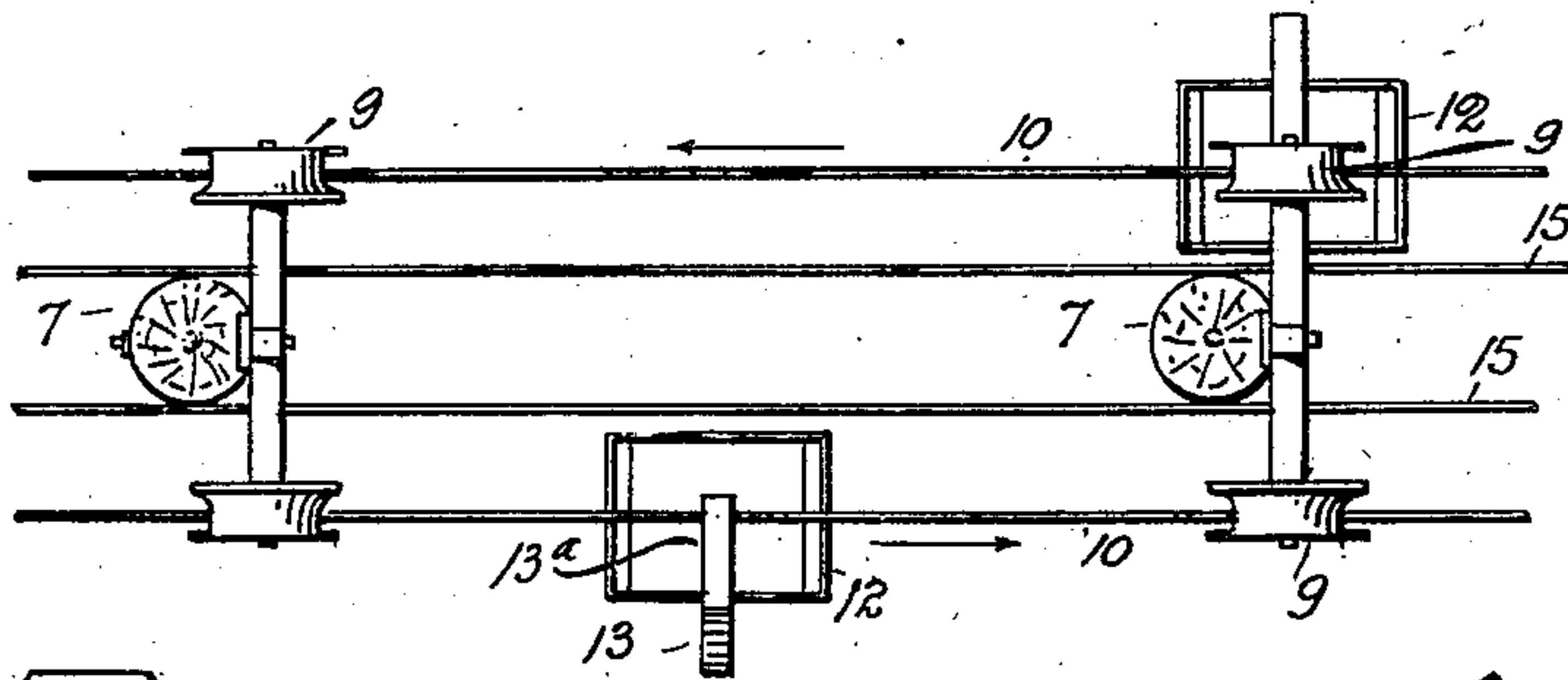


FIG. 2

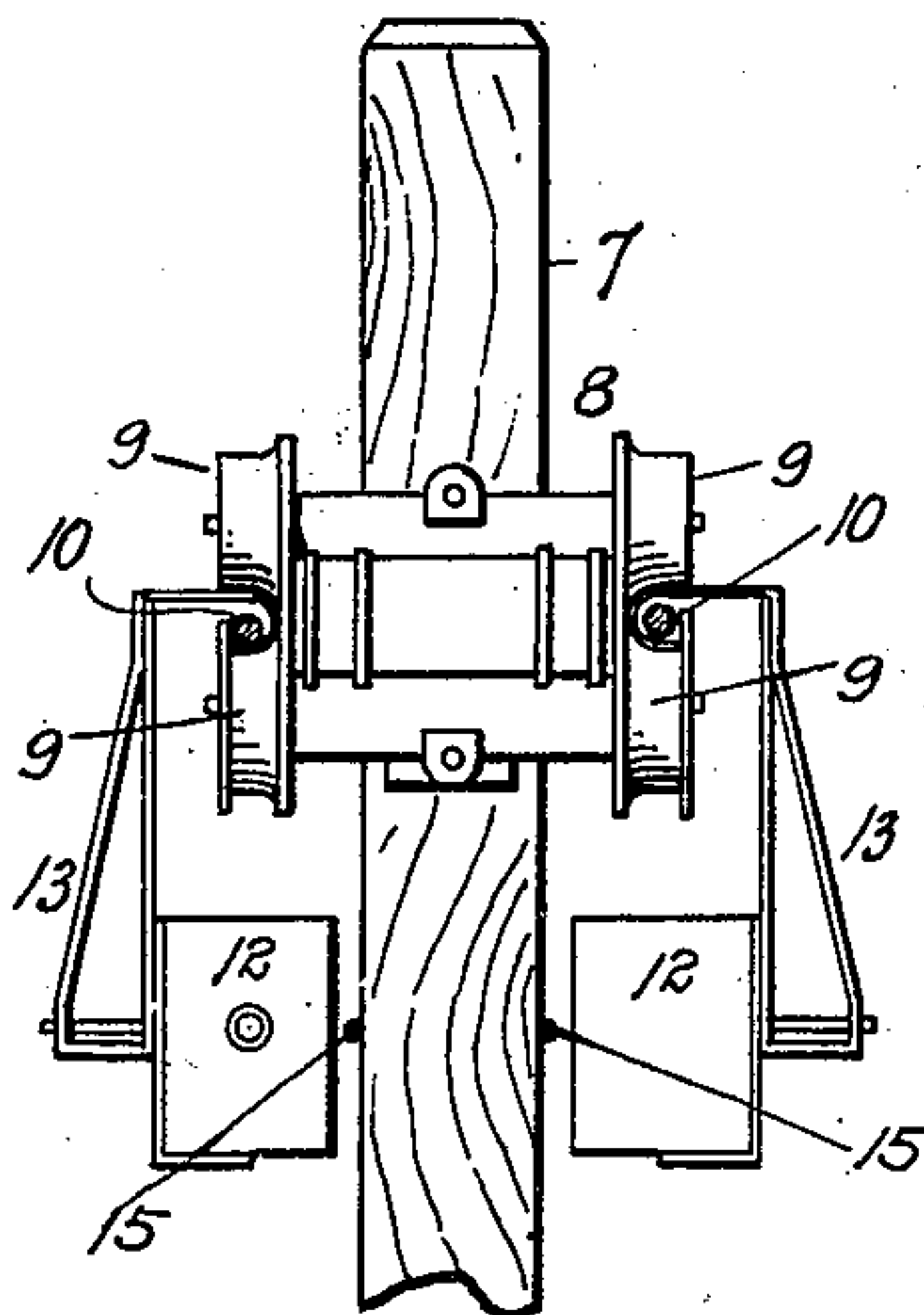


FIG. 3

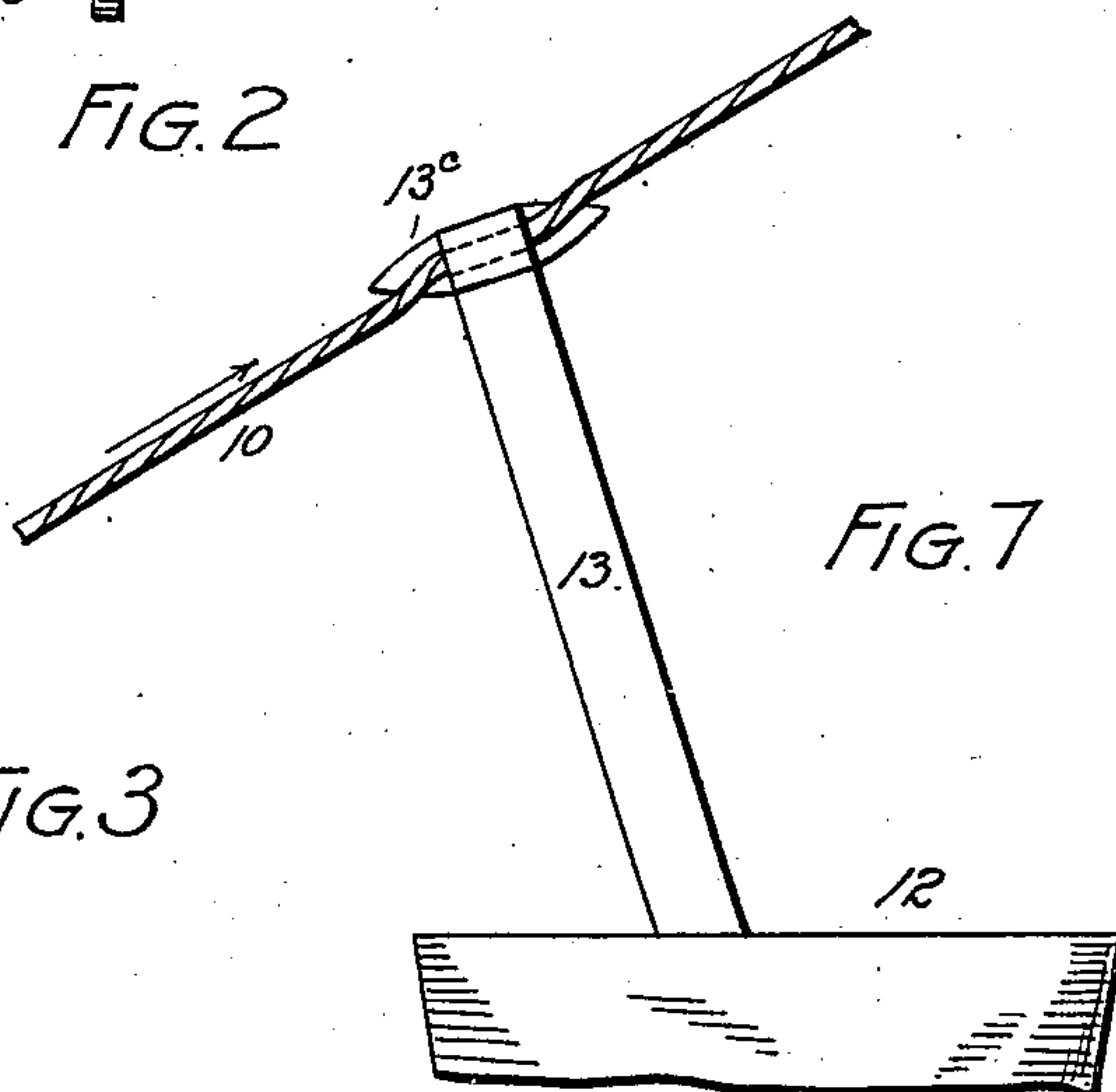


FIG. 7

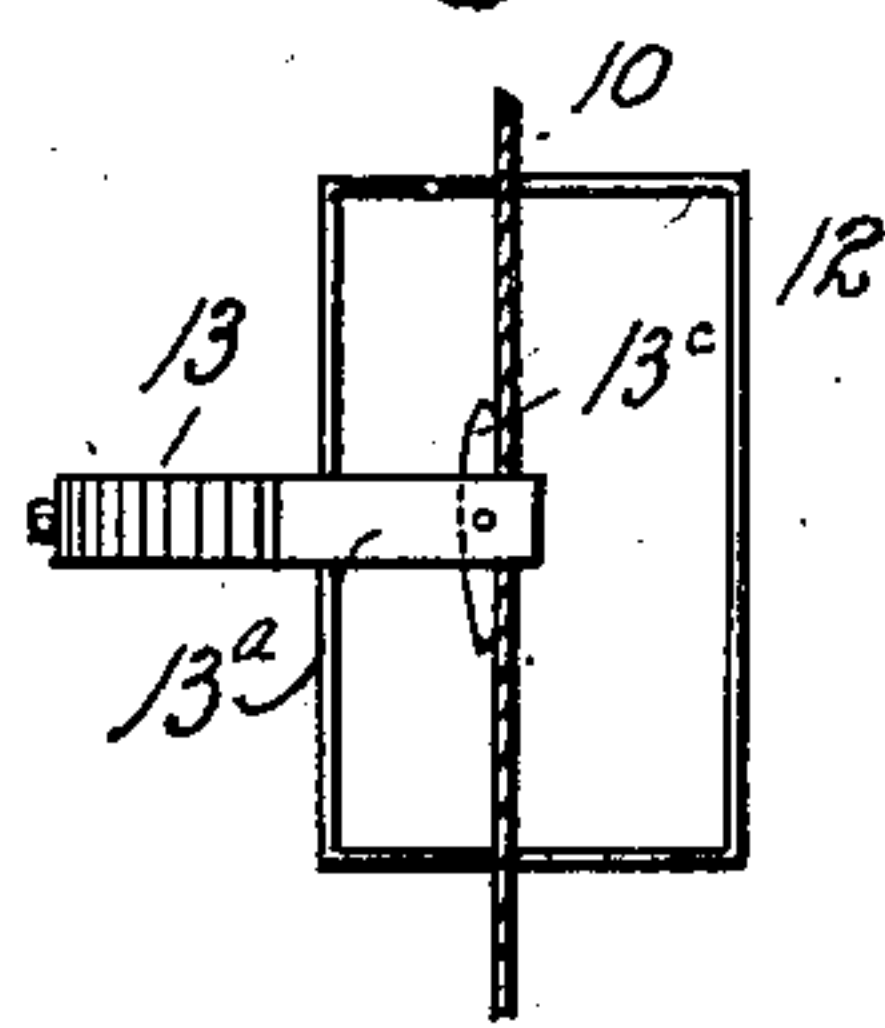


FIG. 6.

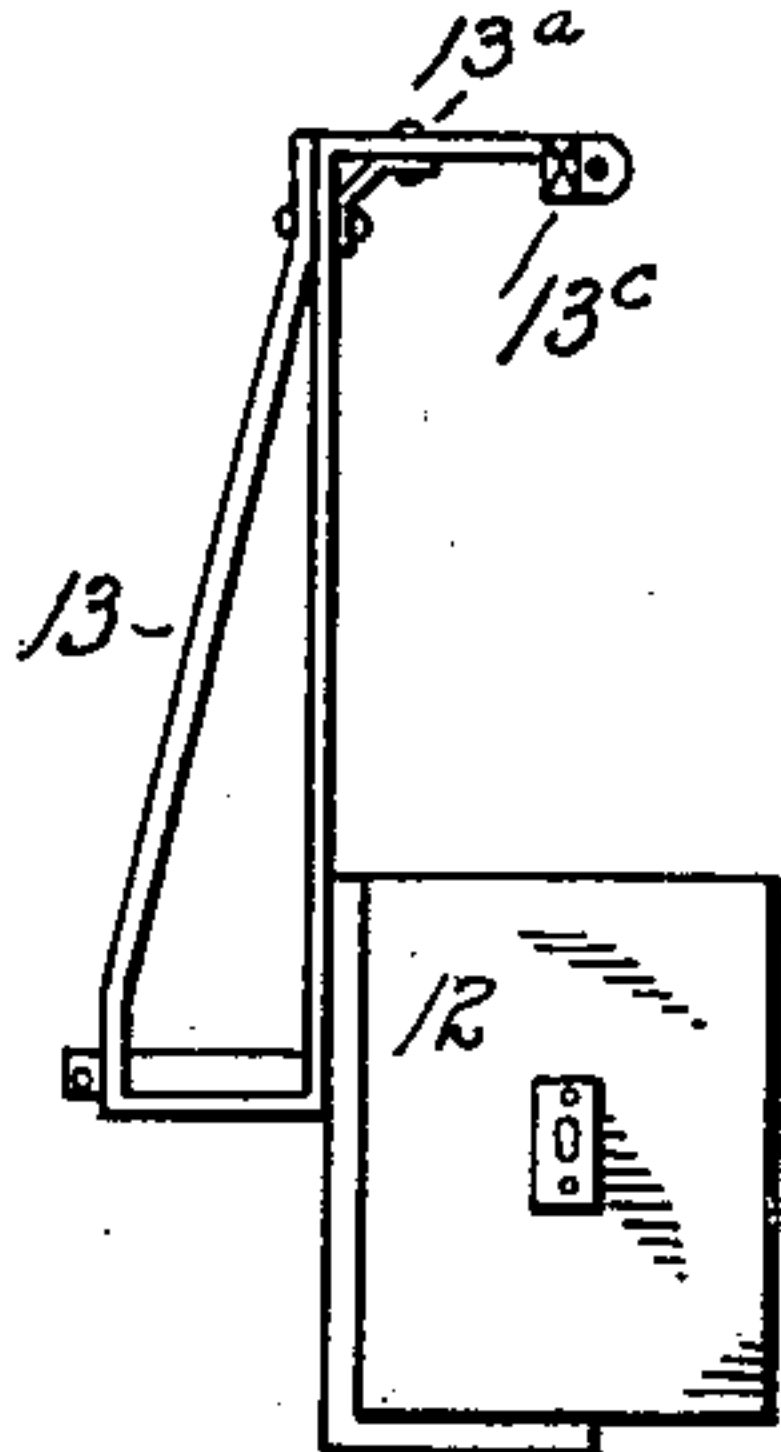


FIG. 4

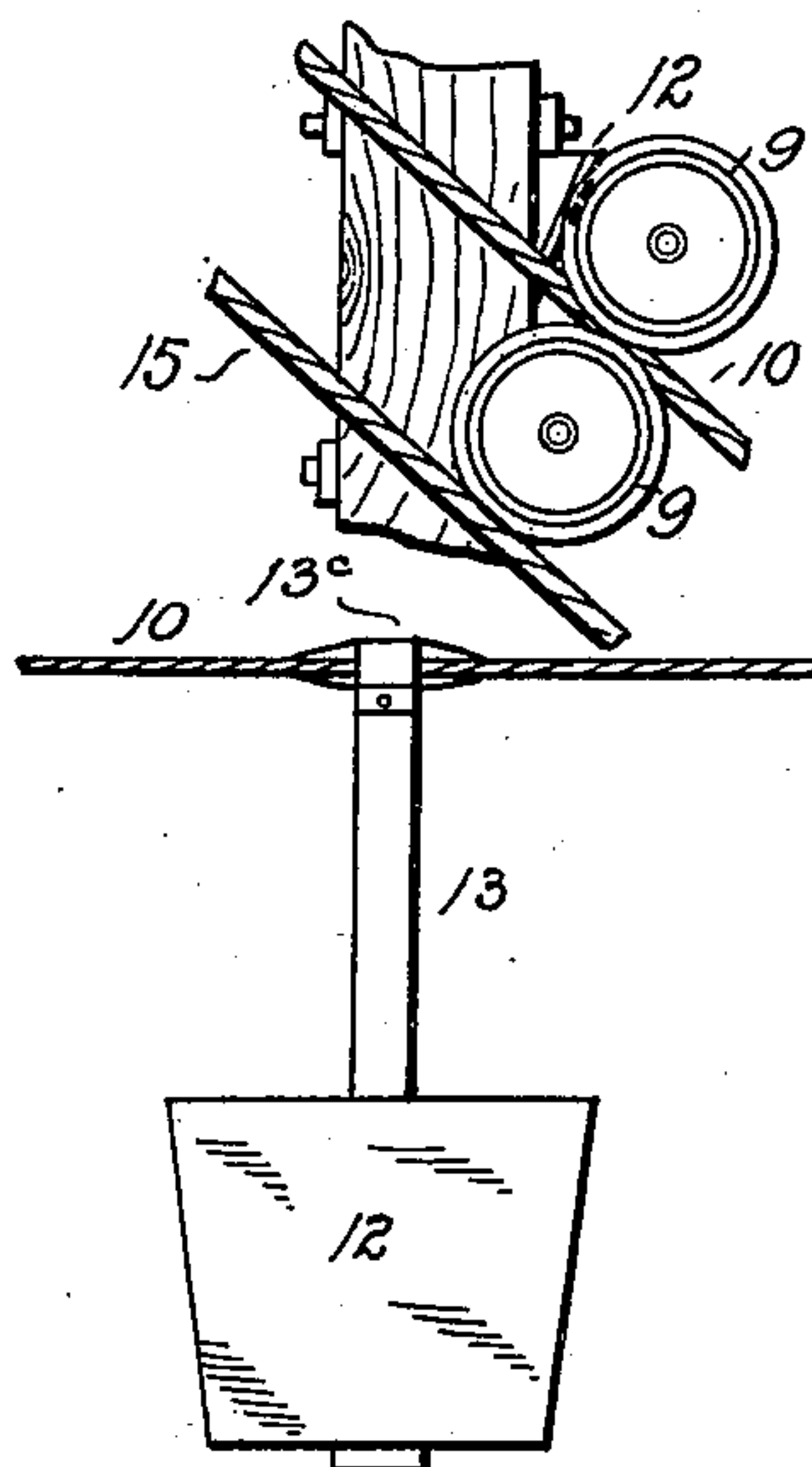


FIG. 8.

FIG. 5

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JAMES H. MONTGOMERY, OF DENVER, COLORADO.

AERIAL WIRE-ROPE TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 682,149, dated September 3, 1901.

Application filed December 20, 1900. Serial No. 40,581. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. MONTGOMERY, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Aerial Wire-Rope Tramways; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in aerial wire-rope tramways. I term my improved tramway a "single-pole" system for the reason that the supports for the guide-pulleys upon which the wire rope or cable travels consist of single poles or posts as distinguished from trestles or tower-like structures which are ordinarily employed in systems of this class.

The invention will now be described in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of my improved tramway system shown in two parts, the line being broken away at A and continued at B on account of the limited dimensions of the sheet. Fig. 2 is a fragmentary top view of the same, a portion located intermediate the terminals being shown on a larger scale. Fig. 3 is a fragmentary front view of one of the poles and its attachments on a larger scale, the cable and buckets being shown in place. Figs. 4, 5, and 6 are front, side, and top views, respectively, of a bucket shown on a larger scale than in Fig. 3. Fig. 7 is a fragmentary side view of a bucket shown on a scale still further enlarged. Fig. 8 is a fragmentary side view illustrating the arrangement of the guide-pulleys on an incline.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the loading-station, and 6 the dumping-station, of my improved system. Intermediate these terminals are located the poles or posts 7, which, as shown in the drawings, are set into the ground

the necessary depth to obtain the required stability for the performance of their function. These poles are comparatively short and are therefore easily anchored. Their number is sufficient to cause the line to follow and conform to the general contour of the ground-surface, thus keeping the entire apparatus comparatively close to the surface, where it is less liable to be affected by wind and easily accessible in case repairs are needed. To each pole is secured a bracket 8, upon which four pulleys 9 are mounted. Two pulleys, one above the other, are located on each side of the pole and form supporting-guides for the endless cable 10, which passes between a pair of pulleys on each side of the pole. Where the inclination of the cable is substantially the same on both sides of the pole, the upper portion of the bracket 8 is tipped forwardly or away from the pole, so that a line passed through the axis of the upper and lower pulleys 9 shall form an angle with the pole, which occupies a vertical position. This may be accomplished by securing a wedge-shaped piece 12 to the post (see Fig. 8) and fastening the upper portion of the bracket thereto. On comparatively steep inclines it is evident that if the axis of the upper and lower pulleys were in a line parallel with a pole the cable while passing through or between the pulleys must abruptly change its direction, which is not desirable where the incline extends on both sides of the supporting-pole.

The body 12 of the bucket is pivotally mounted on a pendant 13, which extends upwardly from the outside of the bucket or the side more remote from the poles 7 when the buckets are in position on the cable. The bucket-pendant is provided at its upper extremity with an arm 13^a, extending at right angles to the pendant. The free extremity of this arm is provided with an opening adapted to receive the cable. The arrangement is such that the arm grips the cable automatically (see Fig. 7) on inclines with sufficient force to cause the bucket to be carried along thereby, while where the cable runs horizontally the gravity of the bucket is sufficient to cause it to travel with the cable, except where a stop 14 is located, as at the loading-station. (See Fig. 1.) This stop is fulcrumed on a

suitable support and normally occupies a position to stop the bucket directly beneath the loading hopper or bin. As soon as the stop-arm is lowered to release the bucket the latter moves on. The arm 13^a of the pendant grips the cable directly above the center of the bucket. This arm is provided with a stop or pilot piece 13^c, which causes the hooked extremity of the bucket-pendant to maintain its proper relative position while passing the supporting-pulleys.

It will be observed by reference to the drawings (see Fig. 3) that the normal path of the buckets is in close proximity to the poles 7. In order to prevent the buckets when influenced by the wind or other cause from swinging inwardly and striking the poles, the latter are provided on each side with a guard-wire 15, which is secured to the poles by staples, as shown at 16, or by means of other suitable fastening devices. These guard-wires extend the entire length of the line between the terminal stations.

A weighted lever 17, normally projecting upwardly into the path of the bucket, engages and tips it at the dumping-station. (See Fig. 1.)

The poles 7 where they are subjected to the upward strain of the cable, especially when located in a valley or gulch where the cable extends upwardly on both sides, should be specially anchored to prevent them from being pulled out of the ground. As shown in the drawings, the bottom of each pole, located as aforesaid, is provided with a cross-piece 7^a, which forms a secure anchorage against the upward strain or tendency of the cable to draw the pole out of the earth.

Having thus described my invention, what I claim is—

1. In an aerial-tramway system, the combination with an endless cable and buckets, of a line of single poles, brackets mounted on the poles and projecting therefrom on opposite sides, two pairs of pulleys mounted on

each bracket, and a pair of cooperating pulleys engaging the cable on each side of the pole, the individual pulleys of each pair, engaging the cable at the same point and being located respectively above and below the cable.

2. In an aerial-tramway system, the combination with an endless cable and buckets, of a line of single poles, brackets mounted on the poles and projecting therefrom on opposite sides, two pairs of pulleys mounted on each bracket, and a pair of pulleys engaging the cable on each side of the pole, the upper pulley of each pair being located a sufficient distance from the vertical pole, on inclines to allow the cable to pass between the pulleys without changing its normal direction.

3. In an aerial-tramway system, the combination with an endless cable and buckets, of a line of supports, brackets mounted on the supports and projecting therefrom on opposite sides, two pairs of pulleys mounted on each bracket, the arrangement being such that a pair of cooperating pulleys, engages the cable on each side of the support, the individual pulleys of each pair engaging the cable at the same point and being located respectively above and below the cable.

4. In an aerial-tramway system, the combination with an endless cable and buckets, of a line of supports, brackets mounted on the supports, and projecting therefrom, a pair of pulleys mounted on each bracket, the upper pulley of each pair being located a sufficient distance from the support, on inclines to allow the cable to pass between the pulleys without changing its normal direction substantially as described.

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

JAMES H. MONTGOMERY.

Witnesses:

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