H. E. ATHEARN.

ANTENNA FOR WIRELESS TELEGRAPHY.

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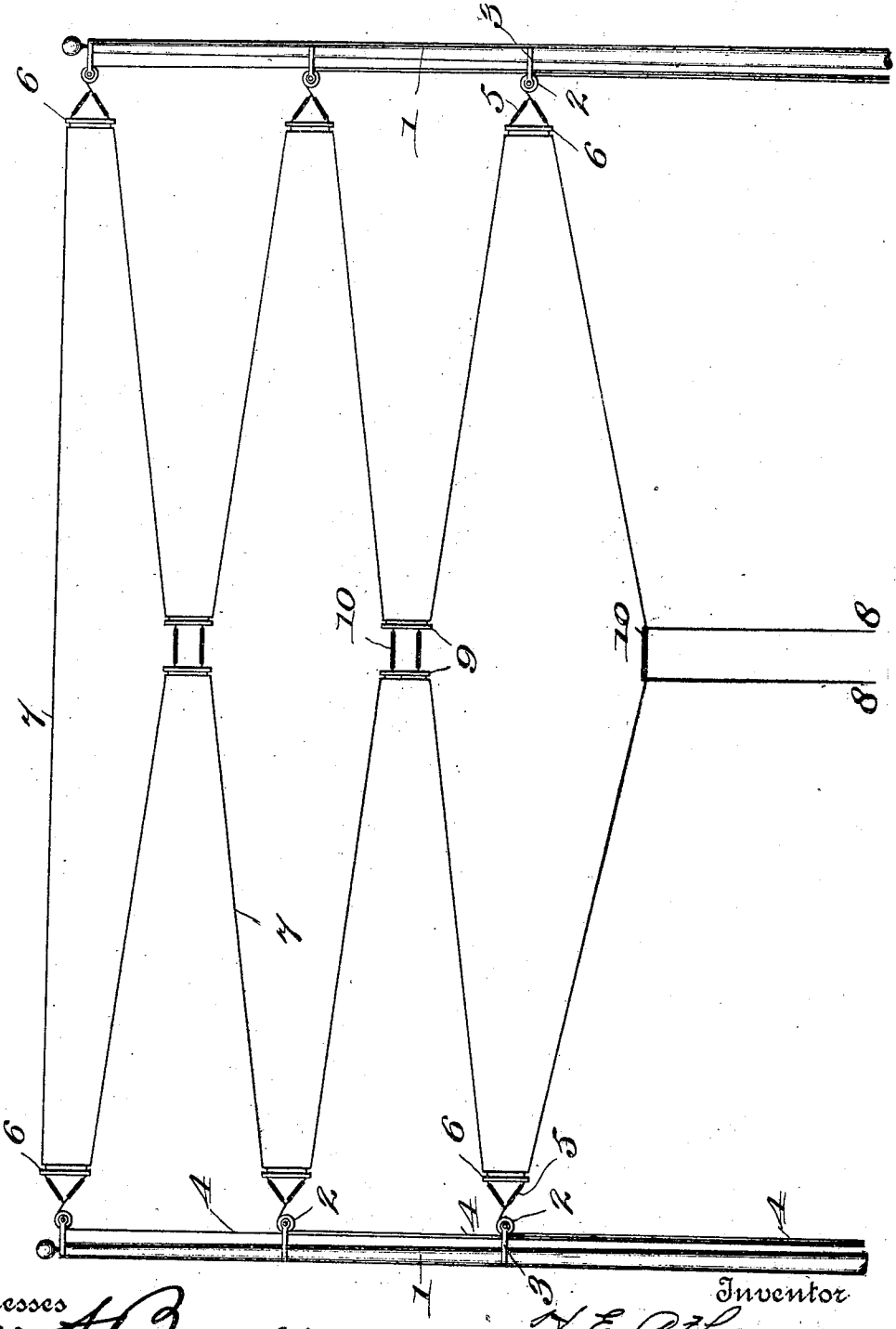

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UNITED STATES PATENT OFFICE.

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ANTENNA FOR WIRELESS TELEGRAPHY.

No. 918,255 Specification of Letters Patent. Patented April 13, 1909.

Application filed May 23, 1908. Serial No. 434,617.

To all whom it may concern:

Be it known that I, HENRY E. ATHEARN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Antennæ for Wireless Telegraphy; and I do hereby 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.

My invention relates to antenna for wireless telegraphy, and has for its object the production of such a device that will be efficient in action, simple in construction, not liable to get out of order, and very sensitive in use.

To these ends my invention consists in the novel structure and combination of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification, the figure illustrates an elevational view of my improved antenna ready for use.

The supporting masts 1, are of any suitable construction, and dimensions, and are preferably two in number, although more may be employed if desired. These masts are provided with the pulley blocks 2, secured to the masts by the straps 3, and through these pulleys reeve the hoisting ropes 4, carrying at their upper ends the insulators 5, and spreaders 6, so secured together as to form triangles with the spreaders occupying the bases of the same, as shown. To these spreaders are secured loops of an antenna wire 7, having the ends 8, which lead to the instruments in the operating room. This wire 7, beginning at one end 8, about midway between the two masts, passes upwardly and over to the lower spreader 6, secured to one of the hoist ropes 4 on one of said masts, and is then secured to said spreader, as shown. It then passes upwardly and back to a point about midway between the masts, where it is secured to another spreader 9; thence upwardly and over again to another spreader 6, carried by another hoist rope 4, on the said mast to which it is likewise secured; thence upward and back to the mid position between the masts where it is secured to still another spreader 9; thence back to the mast and so on until as many loops are formed as desired. When the wire reaches the topmost spreader 6, it then crosses over to the other mast where it is secured to the topmost spreader 6 belonging to said other mast, and then the loops are repeated on said other mast on the way down, until the bottom spreader 6 is reached, when the other end of the wire is brought to a position midway between the masts, where the two ends are secured to the insulator 10, and thence led into the operating room. Each of the spreaders 9, midway between the masts are also joined to the insulators 10, and in such a way as to hold the ends of the individual loops of the wire opposite each other, as shown. This zigzagging of the wire back and forth between the masts, of course, may be continued to any extent desired, and may likewise be distributed between more than two masts to secure greater intercepting power, or greater stability. In all cases, the efficiency of the apparatus will in a measure depend upon the area inclosed by the wires, and the instruments made more sensitive as this area is increased. If the wires were stretched straight across from one mast to the other, they would be apt to sag and be blown into contact with each other, thereby varying the area inclosed by them, and rendering the antenna as a whole less reliable than is the case when the loops are secured in the middle by the spreaders 9 and insulators 10, as shown. The hoisting ropes serve to readily raise and lower the loops for the purpose of getting them into position and for repairs.

Of course, I do not desire to be limited to the exact details of construction above disclosed, since it is evident that the same may be widely varied without departing from the spirit of my invention.

What I claim is:—

1. In wireless telegraph antennæ, the combination of suitable supports, and a plurality of wire loops extending horizontally and lying in a vertical plane between said supports, substantially as described.

2. In wireless telegraph antennæ, the combination of a plurality of masts, and a single wire formed into loops extending horizontally and lying in a vertical plane between and supported by said masts, substantially as described.

3. In wireless telegraph antennæ, the combination of a plurality of masts; a single wire formed into loops extending horizontally and lying in a vertical plane supported by said masts, the ends of said loops meeting

between said masts; and means for securing said meeting ends together, substantially as described.

4. In wireless telegraph antennæ, the combination of a plurality of masts; a single wire formed into a plurality of loops of a length less than the distance between said masts; suitable supports for said loops on said masts; and suitable means for joining said loops together between said masts, substantially as described.

5. In wireless telegraph antennæ, the combination of a plurality of masts; and a single continuous wire formed into a plurality of loops extending in a vertical plane and supported by said masts, substantially as described.

6. In wireless telegraph antennæ, the combination of a plurality of masts; a single continuous wire formed into a plurality of loops extending in a vertical plane, of a length less than the distance between, and supported by said masts; and a plurality of insulators joining said loops between said masts, substantially as described.

7. In wireless telegraph antennæ, the combination of a plurality of masts; a single continuous wire formed into a plurality of loops lying in substantially a vertical plane, each loop of a length less than the distance between said masts, and provided with a spreader; a plurality of supports on said masts for said loops, and insulators for joining the ends of opposing loops between said masts, substantially as described.

8. In wireless telegraph antennæ, the combination of a plurality of masts; a single continuous wire formed into a plurality of loops lying in substantially a vertical plane, each loop of a length less than the distance between said masts, and provided with a spreader; a plurality of supports comprising pulleys on said masts for said loops, and insulators for joining the ends of opposing loops between said masts, substantially as described.

9. In wireless telegraph antennæ, the combination of a pair of masts, each provided with a plurality of pulleys; a single continuous wire adapted to be led out of and returned to the operating room and formed into oppositely disposed loops extending in a substantially vertical plane and meeting each other between said masts; insulators joining said loops at their meeting points; a spreader for each loop; and hoisting ropes passing over said pulleys, adapted to raise and lower said loops, substantially as described.

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

HENRY E. ATHEARN.

Witnesses:
HENRY PALMER LEWIS,
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