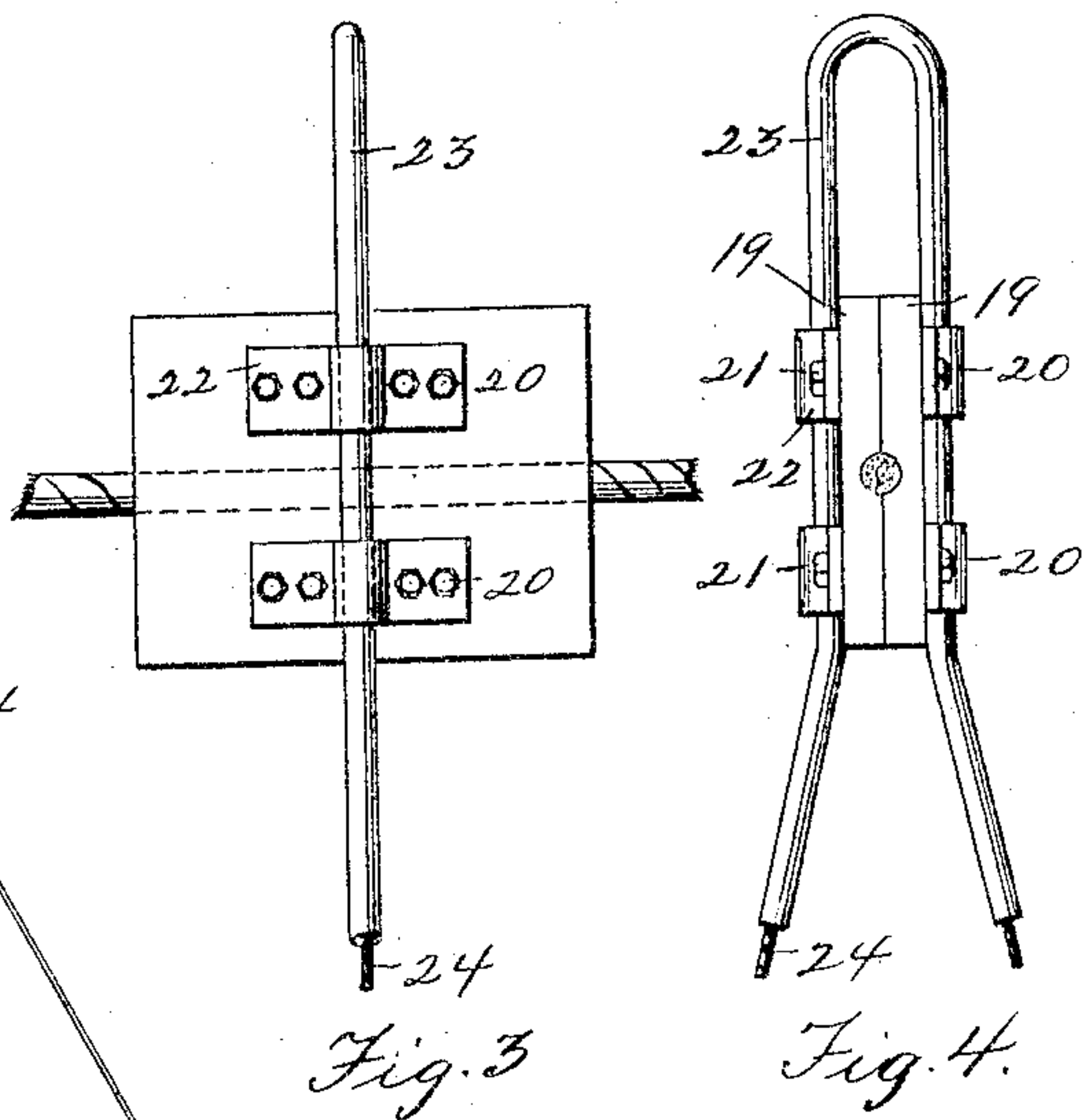
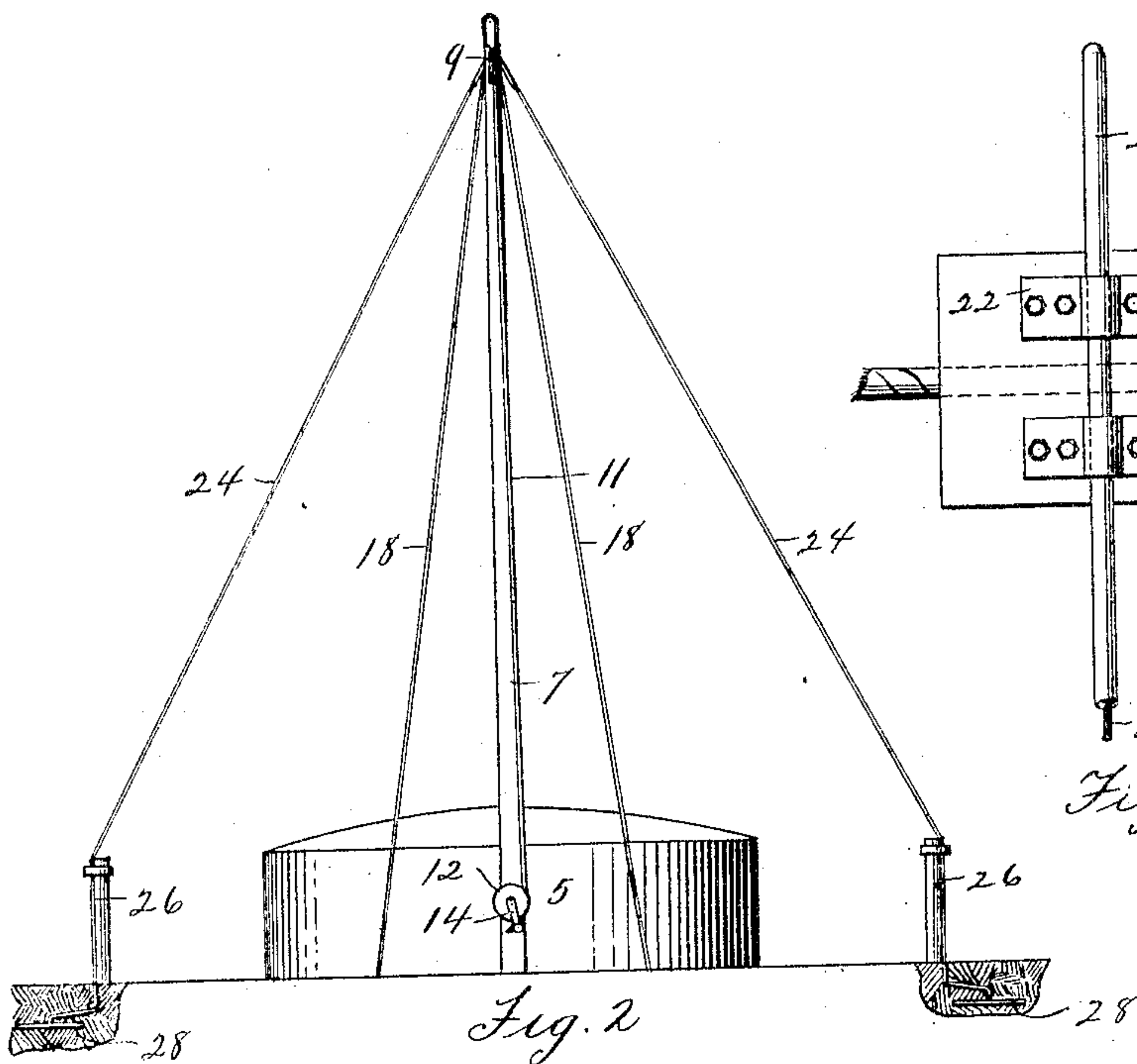
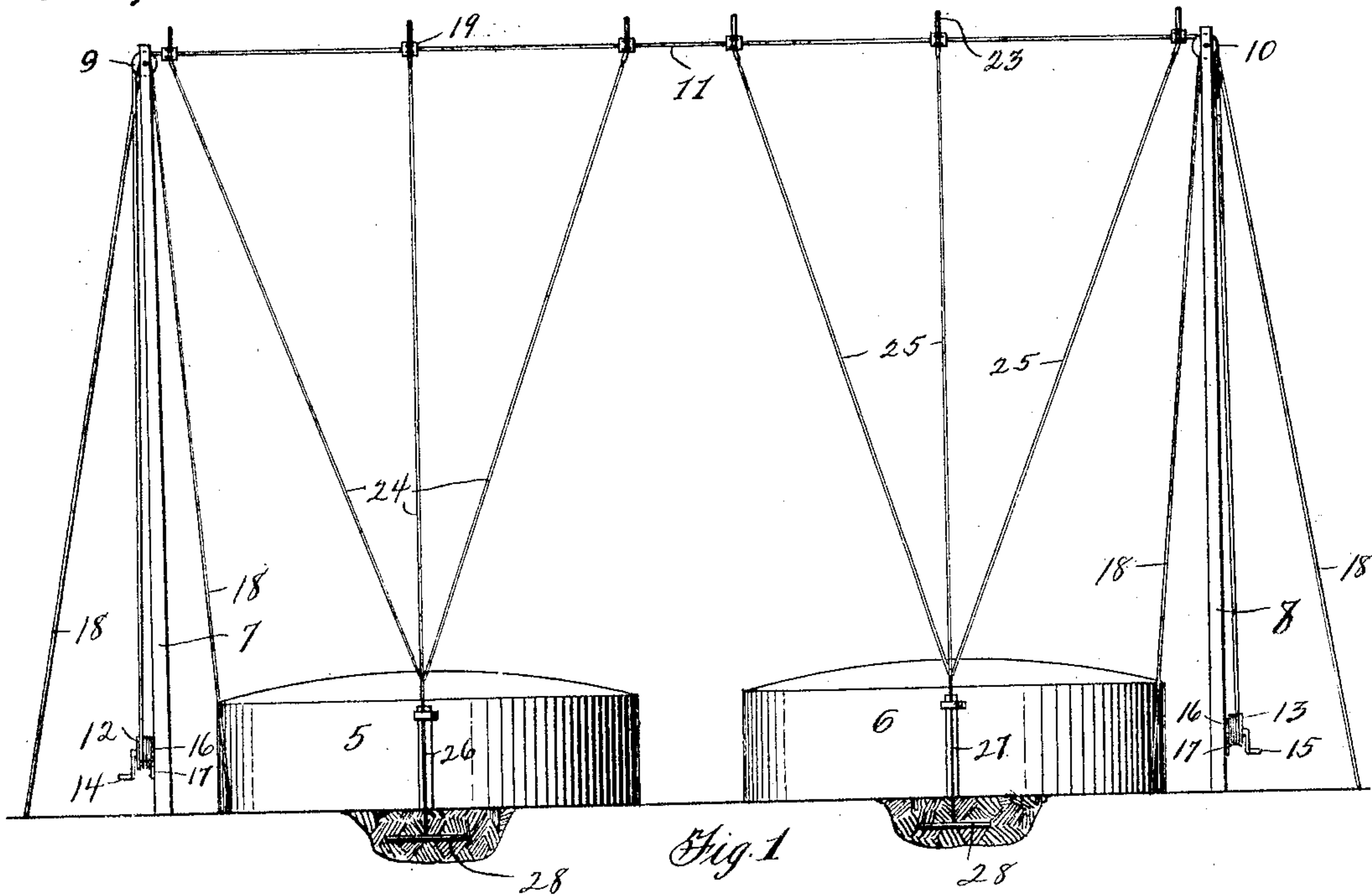


T. M. STEVENS.  
LIGHTNING ARRESTING APPARATUS.  
APPLICATION FILED JAN. 3, 1910.

962,536.

Patented June 28, 1910.



Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS M. STEVENS, OF WATERTOWN, MASSACHUSETTS.

## LIGHTNING-ARRESTING APPARATUS.

962,536.

Specification of Letters Patent. Patented June 28, 1910.

Application filed January 3, 1910. Serial No. 535,949.

*To all whom it may concern:*

Be it known that I, THOMAS M. STEVENS, a citizen of the United States of America, residing at Watertown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Lightning-Arresting Apparatus, of which the following is a specification.

This invention relates to devices for protecting oil tanks from lightning, though the invention may also be used in connection with gas tanks if desired.

The object of the invention is to provide improved means for supporting a plurality of electrical conductors in operative relation to such tanks, said conductors being adapted to intercept the electrical discharge accompanying a flash of lightning, and to conduct the same to the ground at a safe distance from the tanks.

A further object of the invention is the provision of improved means for raising and lowering the conductors if it is desired to have access to them for the purposes of adjustment or repair.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawing, Figure 1 is a side elevation of a pair of gas tanks illustrating the manner of mounting the lightning conductors in relation thereto, Fig. 2 is an end elevation of the parts shown in Fig. 1, Fig. 3 is a side elevation of a loop and clamp hereinafter described, and, Fig. 4 is an end elevation of one of said clamps and loops.

Like numerals designate corresponding parts in all of the figures of the drawing.

Referring to the drawing, the numerals 5 and 6 designate the tanks that it is desired to protect. While I have shown two of these tanks, it is apparent that any number of tanks may be protected by duplicating the parts hereinafter described. Masts 7 and 8 are located upon opposite sides of the tanks and these masts carry at their upper ends pulleys 9 and 10. A metallic cable 11 passes over these pulleys and the ends of said cable are wound upon windlasses 12 and 13, these windlasses being adapted to be manually actuated by cranks 14 and 15. Ratchet wheels 16 and pawls 17 hold the windlasses against retrograde movement after the cable has been wound thereon. This

pawl and ratchet structure, being well known in many arts, requires no further description.

Suitable guy wires or ropes 18 aid in supporting the masts 7 and 8. Secured at intervals along the cable 11 are clamping blocks 19, said clamping blocks being held in position by bolts 20 and nuts 21, see Figs. 3 and 4. These bolts pass through the clamping blocks 19 and through keepers 22. The side members of loops 23 pass through these keepers and these loops are maintained in position thereby. These loops are preferably formed of non-corrosive metal tubing through which extend copper, conductive, stranded cables 24 and 25. It will be noted that upon each side of the tank 5, the cables 24 are arranged in a set and in like manner the cables 25 are arranged in a set adjacent to tank 6. Upon each side of each of the tanks, the cables of a set are brought together at 26 at a height about equal to the height of the tank. From this point downwardly, they are supported by running parallel with comparatively short poles 27 until they enter the ground where they are connected with ground plates 28. By providing the windlasses herein shown and described, it is apparent that the entire aerial structure may be elevated and lowered at will, for the purposes of making adjustments and repairs thereto. It is apparent that it would be practically impossible for the electrical discharge from a flash of lightning to get within the area protected by the structure above described.

The masts employed could be of any feasible height and I contemplate making them about two hundred feet high where the tanks are thirty feet high. This will result in intercepting the lightning at such a distance above the tank as to obviate the possibility of the gas arising from said tanks being ignited.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.



Having described my invention, what I claim is:

1. A lightning arresting structure comprising a pair of spaced masts, a cable extending between said masts, a plurality of lightning arresting members secured at intervals upon said cable, an electrical conductor leading from each of said lightning arresting members, ground plates to which said electrical conductors are connected, and means for bodily raising and lowering said cable and the parts carried thereby.

2. In a device of the character described, the combination with a pair of spaced masts, of pulleys mounted at the upper ends of said masts, a cable passing over said pulleys, windlasses upon which the ends of said cable are adapted to be wound, lightning arresting members secured at intervals upon said cable, electrical conductors leading from said members, and ground plates to which said conductors are connected.

3. A lightning arresting structure comprising a pair of spaced masts, a cable extending between said masts, a plurality of clamps secured at intervals upon said cable, a plurality of looped metallic tubes secured

to said clamps, electrical conductors extending from said tubes, and ground plates to which said conductors are connected. 30

4. The combination with a plurality of tanks to be protected, of spaced masts between which said tanks are located, pulleys mounted at the upper ends of said masts, a cable extending between said masts and passing over said pulleys, means for tightening and loosening said cable, a plurality of lightning arresting members clamped upon said cable and spaced at intervals therealong, a plurality of electrical conductors leading from said members, a pole located upon each side of each of the tanks, said electrical conductors being arranged in sets with relation to each tank, the conductors of a set passing down the corresponding pole, and ground plates to which the lower ends of said conductors are connected, substantially as shown and described. 45

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

THOMAS M. STEVENS.

Witnesses:

J. W. BRITTON,

JAS. ADAMS COWY.