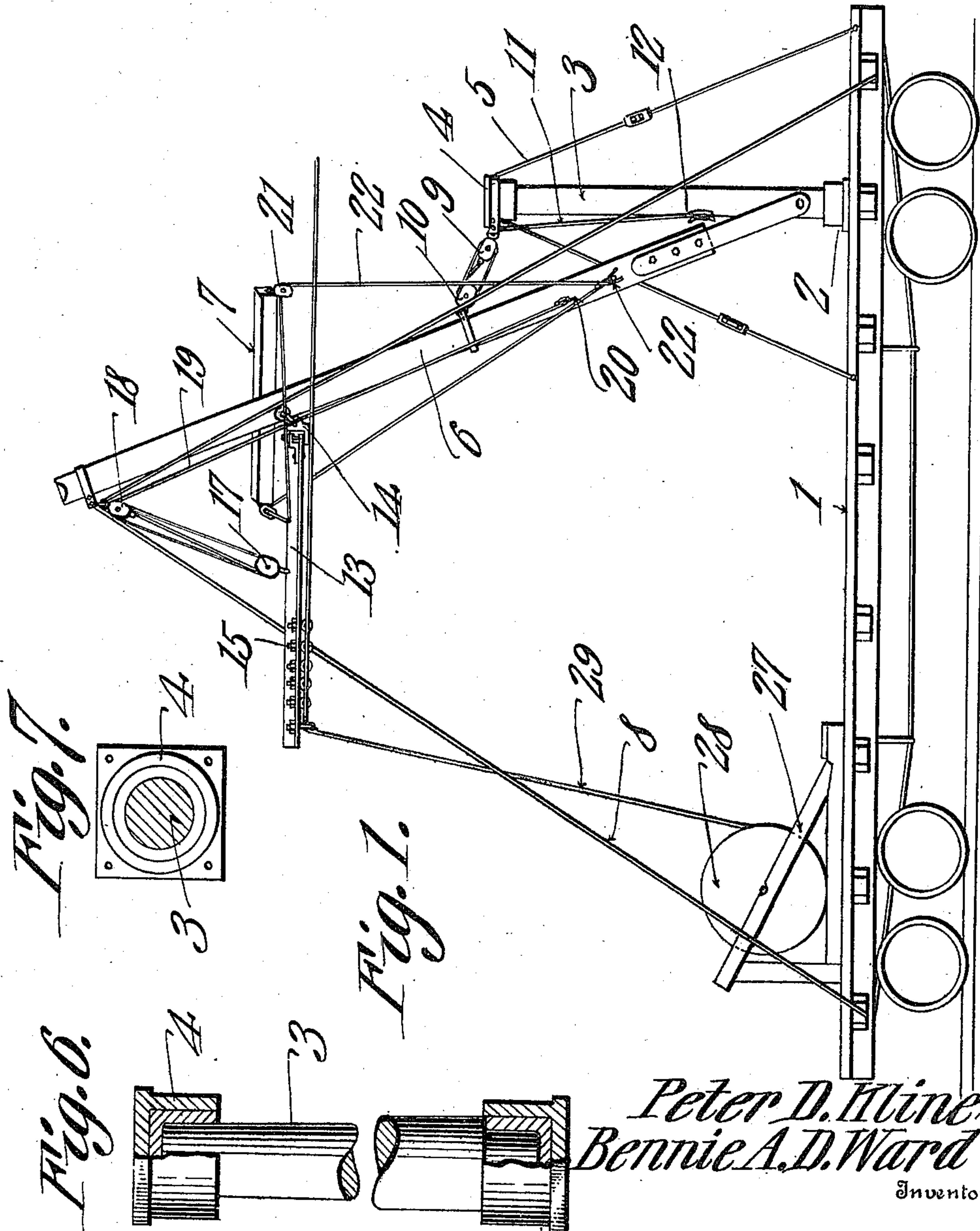


P. D. KLINE & B. A. D. WARD.
 APPARATUS FOR STRINGING WIRES, &c.
 APPLICATION FILED DEC. 10, 1909.

965,528.

Patented July 26, 1910.

2 SHEETS—SHEET 1.



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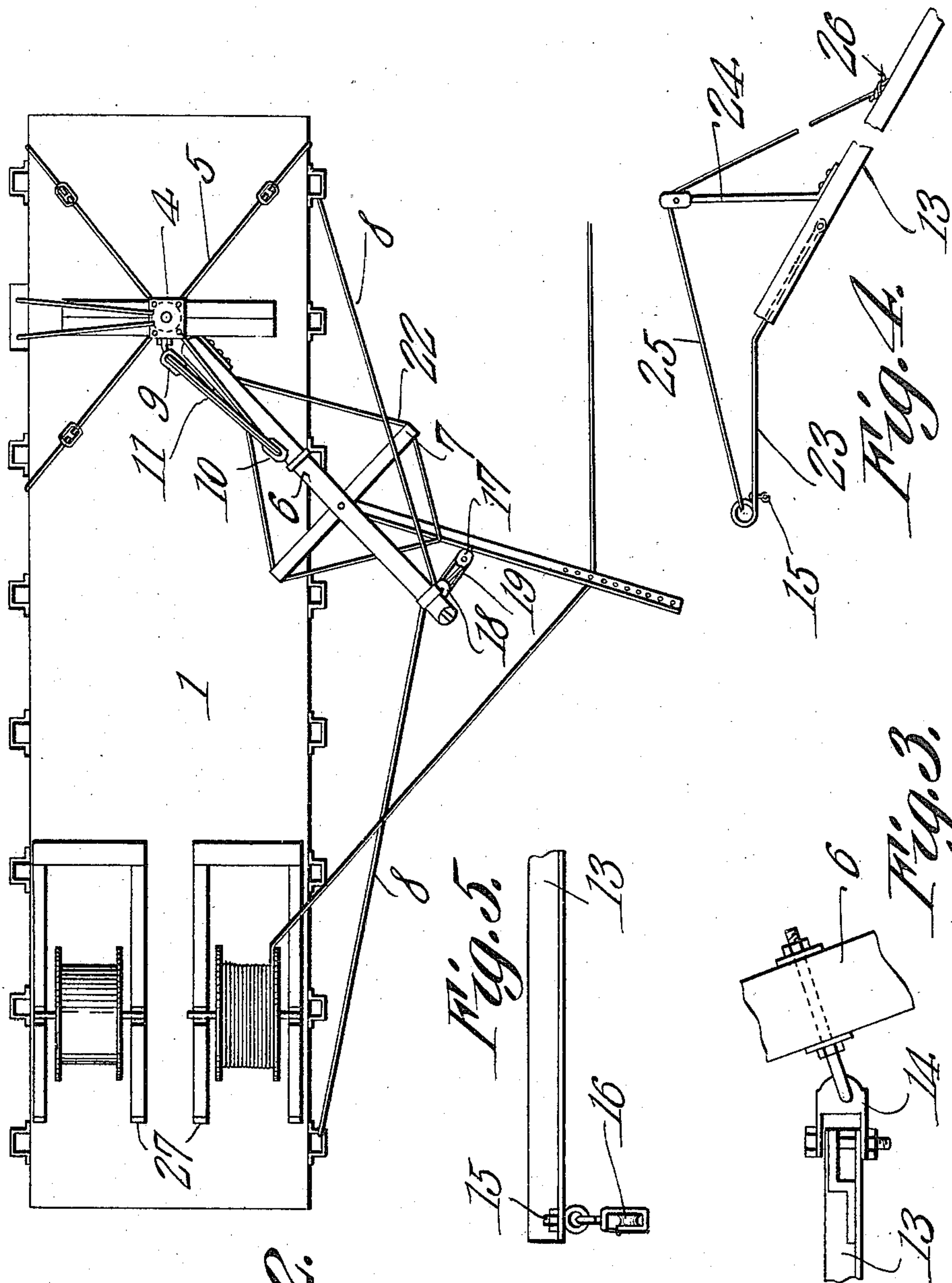


Fig. 2.

Fig. 5.

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

PETER D. KLINE AND BENNIE A. D. WARD, OF SALT LAKE CITY, UTAH.

APPARATUS FOR STRINGING WIRES, &c.

965,528.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed December 10, 1909. Serial No. 532,472.

To all whom it may concern:

Be it known that we, PETER D. KLINE and BENNIE A. D. WARD, citizens of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Apparatus for Stringing Wires, &c., of which the following is a specification.

This invention has relation to apparatus for stringing wires, cables, etc., and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a simple and effective apparatus adapted to be used for stringing wires and cables to overhead supports along roadways and with this object in view, the apparatus in one form includes a car or wheel mounted carrier adapted to travel along the roadway and provided at one end with a pivoted mast. The said mast is braced in the usual manner and a boom is pivoted at its lower end to the lower portion of the said mast and block and tackle devices are provided for raising and lowering the free end of the said boom. A cross arm is attached to the upper portion of the boom and a pivoted arm is also connected to the upper portion of the boom in the vicinity of the said cross arm. Block and tackle devices are provided for raising and lowering the said pivoted arm and also block and tackle devices are arranged upon the cross arm for swinging the said pivoted arm laterally. If desired, the said pivoted arm may be provided at its outer or free end with a pivoted section which in turn may be adjusted with relation to the inner portion of the pivoted arm. The said pivoted arm carries at its outer extremity a series of eyes through which the wires or cables are adapted to be paid out to the supports to which they are to be attached. Tackles are secured to the upper free portion of the boom and may be attached at their other ends to the end portions of the car or carrier and thus means is provided for holding the boom in a relatively fixed position with relation to the car or carrier.

In another form of the invention a mast frame is provided and to this frame is pivotally attached a frame boom and usual block and tackle devices are provided for swinging the boom with relation to the mast. This latter form of the device is especially designed to be used for stringing the wires

or cables directly above the track or roadway.

In the accompanying drawings:—Figure 1 is a side elevation of a flat car with the wire stringing apparatus mounted thereon. Fig. 2 is a top plan view of the same. Fig. 3 is a detailed side elevation showing the manner in which the arm is pivotally connected with the upper portion of the boom. Fig. 4 is a detailed side elevation of a modified form of sectional arms used in the apparatus. Fig. 5 is a detailed view of means for guiding a cable or other relatively heavy body during the process of stringing the same. Fig. 6 is a detail sectional view of the devices employed for supporting the ends of the mast. Fig. 7 is a plan view of a cap used upon the mast.

In the preferred form the apparatus includes a car or wheel mounted carrier having at one end a pedestal upon which is pivotally mounted a mast. The upper end of the mast is journaled in the head block which is provided with suitable guys connecting the same with the platform of the car or carrier.

A boom is pivotally connected at its lower end with the lower portion of the mast in the usual manner and the boom is provided in the vicinity of its upper end with a cross arm. Tackles are connected at their upper ends with the upper portion of the boom and at their lower ends are adapted to be connected with the end portions of the platform of the car or carrier and serve as means for holding the boom in relatively fixed position with relation to the car or carrier. Blocks are carried by the mast and boom respectively and a tackle passes around the said blocks and is adapted to engage a cleat mounted upon the mast and thus means is provided for swinging the upper end of the boom with relation to the mast and for holding the same in an adjusted position. An arm is pivotally connected at its inner end to the upper portion of the boom and is free for pivotal movement in any direction. That is to say the said arm is connected with the boom by means of a universal joint which may be of any design or pattern. The outer portion of the arm is provided with a series of perforations which are adapted to receive eye bolts through which the wires or cables may be guided as they are strung

from support to support or as shown in Fig. 5 of the drawings snatch blocks may be attached to the eye bolts 15 and may be used as means for guiding the wire or cable from support to support. Blocks 17 and 18 are attached to the arms 13 and boom 6 respectively and a tackle 19 passes around the said blocks 17 and 18 and extends down along the boom 6 to a cleat 20 to which it may be adjustably attached. The said tackle 19 together with the blocks 17 and 18 serve as means for raising or lowering the outer free end of the arm 13 with relation to the upper portion of the boom 6. Blocks 21 are attached to the ends of the cross arm 7 and tackles 22 pass around the said blocks 21 and are connected at their upper ends with the arms 13 and at their lower ends are adapted to be wound about a cleat 22 mounted at the lower portion of the boom 6. The said tackles 22 serve as means for swinging the arm 13 laterally with relation to the boom 6.

In the form of apparatus as shown in Fig. 4 of the drawings a section 23 is pivotally connected with the outer end of the arm proper 13 and a standard 24 is mounted upon the outer portion of the arm 13. A tackle 25 passes over the upper end of the standard 24 and is connected at one end with the outer extremity of the arm section 23 and at its other end is adapted to be wound about a cleat 26 mounted upon the arm 13. By this arrangement the arm 13 may be shifted at any desired angle to a horizontal line while the arm section 23 may be positioned approximately parallel with a horizontal line.

Skids or smooth supports 27 are mounted upon the end portion of the platform of the car or carrier 1 and are adapted to support spools 28. From the said spools cable or wire strands 29 may be passed through the eyes of the guide bolts 15 or their equivalent and from the said bolts the strands of wire or cable may be strung on poles located at the side of the roadway along which the car or carrier 1 is adapted to pass. Thus a simple and effective apparatus is provided for elevating and holding the strands of wire or cable while they are being strung from pole to pole.

Having described the invention, what we claim as new and desire to secure by Letters Patent is:—

1. An apparatus for stringing wires and the like comprising a carrier, a mast mounted upon the carrier, a boom pivoted to the mast, means for swinging the boom with relation to the mast and for holding the same in an adjusted position, a cross arm attached to the upper portion of the boom, an arm pivotally attached to the boom for

universal movement, guiding devices carried by the pivoted arm, means for swinging the pivoted arm with relation to the boom and for securing the same in an adjusted position, and tackles operatively engaging the extremities of the cross arm and secured to the pivoted arm for swinging the same laterally.

2. An apparatus for stringing wires and the like comprising a carrier, a mast mounted upon the carrier, a boom pivoted to the mast and having in the vicinity of its upper end a cross arm, an arm pivotally connected to the upper portion of the boom for universal movement, guiding devices carried by the arm, block and tackle devices for swinging the arm vertically with relation to the boom and block and tackle devices operatively connected with the cross arm and said pivoted arm to swing the pivoted arm laterally.

3. An apparatus for stringing wires and the like comprising a carrier, a mast mounted upon the carrier, a boom pivoted to the mast and having in the vicinity of its upper end a cross arm, an arm pivotally attached to the upper portion of the boom, means for swinging the said arm vertically with relation to the boom, means for swinging the said arm laterally with relation to the boom, which means is in part supported by the cross arm, a section pivotally attached to the outer portion of the said pivoted arm and carrying guiding devices and means for swinging the said sections vertically with relation to the said pivoted arm.

4. An apparatus for stringing wires and the like comprising a carrier, a mast mounted upon the carrier, a boom pivoted to the mast, a cross arm attached to the boom in the vicinity of the upper end thereof, an arm pivoted to the boom adjacent the cross arm and being capable of universal movement, means for swinging the pivoted arm vertically with relation to the boom, means guided by the cross arm for swinging the pivoted arm laterally, an arm section pivotally connected with the said pivoted arm, means for swinging the said arm section vertically with relation to the pivoted arm, and spool supporting skids mounted upon the carrier and wire guiding devices carried by the said arm sections and located in elevated positions with relation to the spool supporting skids.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

PETER D. KLINE.
BENNIE A. D. WARD.

Witnesses:

GEO. R. SMITH,
N. KLINE.