

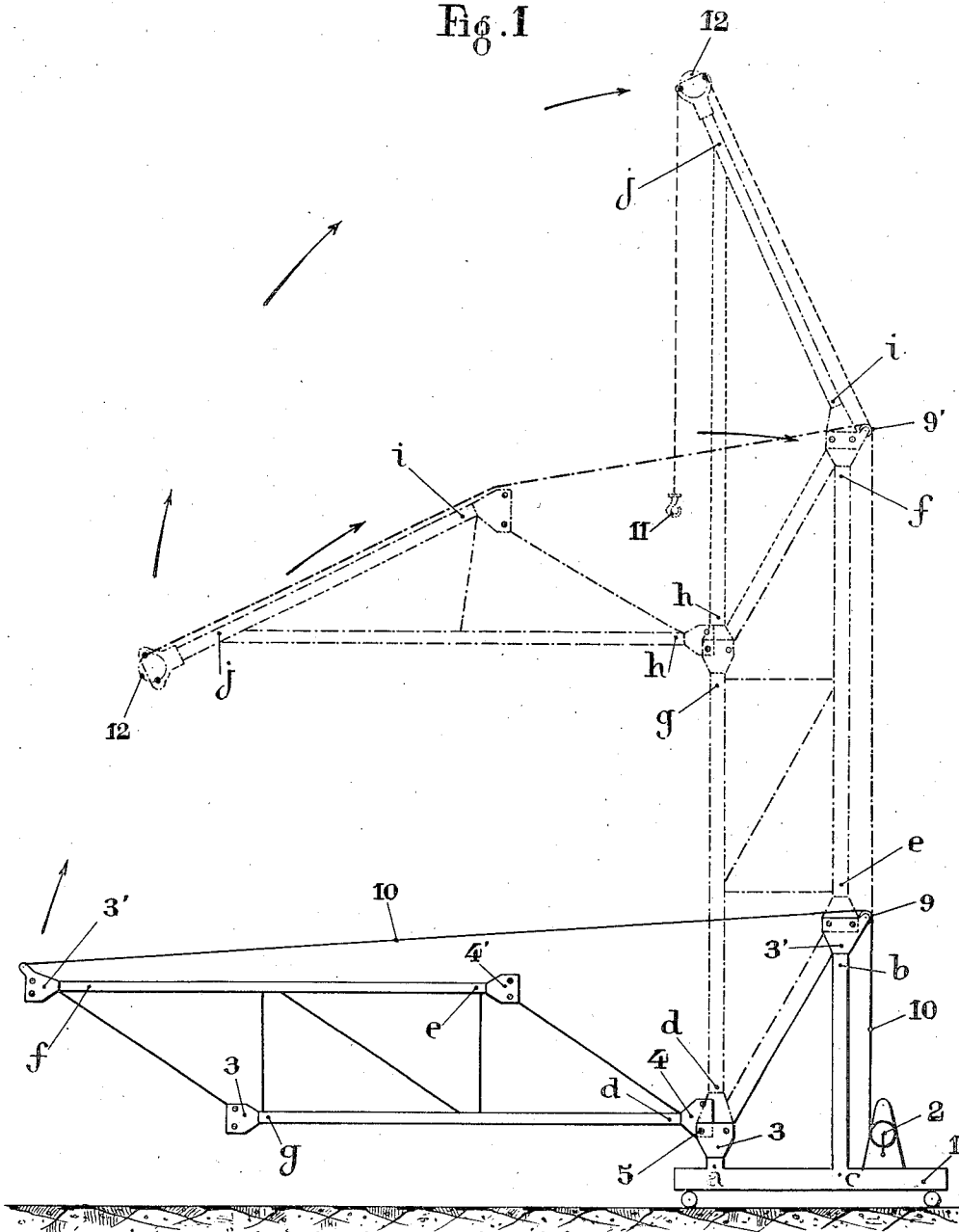
F. QUET.
PORTABLE LIFTING APPARATUS.
APPLICATION FILED MAR. 25, 1919.

1,380,591.

Patented June 7, 1921.

5 SHEETS—SHEET 1.

Fig. 1



Inventor
François Quet
by
W. E. Evans
Attorney.

1,380,591.

5 SHEETS—SHEET 2.

A technical drawing of a mechanical device, likely a crane or lifting apparatus. The device features a main frame with two vertical supports and a diagonal beam. The base is equipped with wheels and a horizontal track. Various components are labeled with numbers 1 through 10 and letters A, B, a, b, c, d, e. The drawing includes dashed lines indicating internal structure or movement.

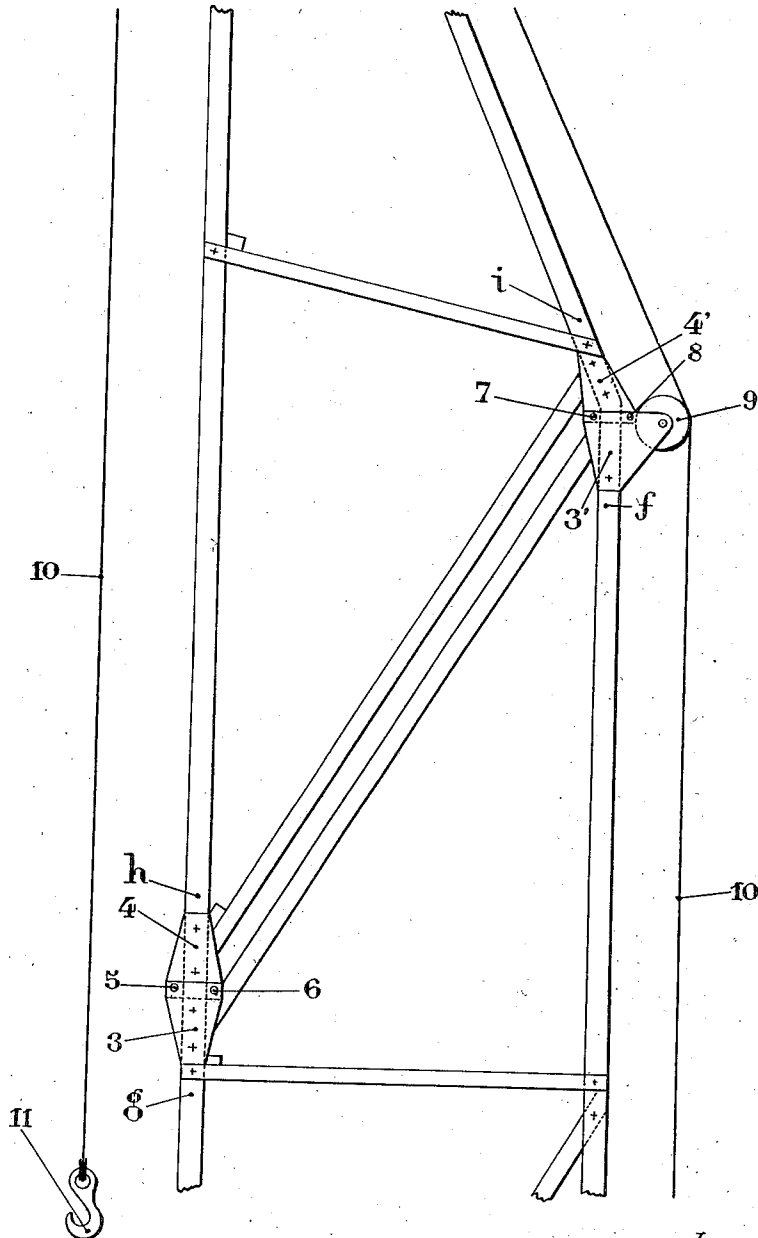
- 1**: The main horizontal base or track.
- 2**: A pulley or wheel mechanism on the right side of the base.
- 3** and **3'**: Points or components on the diagonal beam.
- 4** and **4'**: Points or components on the diagonal beam.
- 5**: A component at the bottom left of the diagonal beam.
- 6**: A component on the diagonal beam.
- 7**: A component on the diagonal beam.
- 8**: A component on the diagonal beam.
- 9**: A pulley or wheel mechanism on the right side of the frame.
- 10**: The right vertical support.
- A** and **B**: Horizontal reference lines at the top.
- a**, **b**, and **c**: Points or components at the base of the vertical supports.
- d**: A component at the bottom left of the diagonal beam.
- e**: A component on the right vertical support.

Inventor
François Dubat
by
W. E. Evans:
Attorney.

1,380,591.

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5 SHEETS—SHEET 3.

Fig. 3



Inventor
François Quet
by
W. E. Evans
Attorney.

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Fig. 4

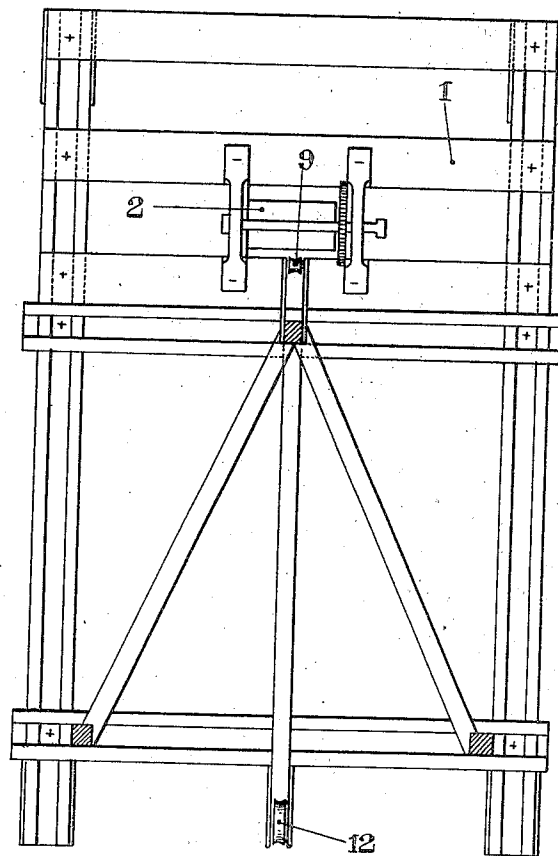
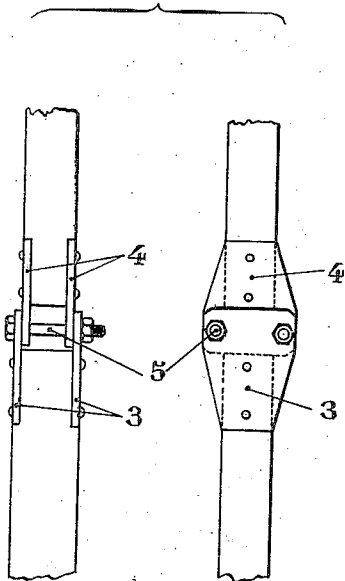


Fig. 5



Inventor
François Quet
by
W. E. Evans
Attorney.

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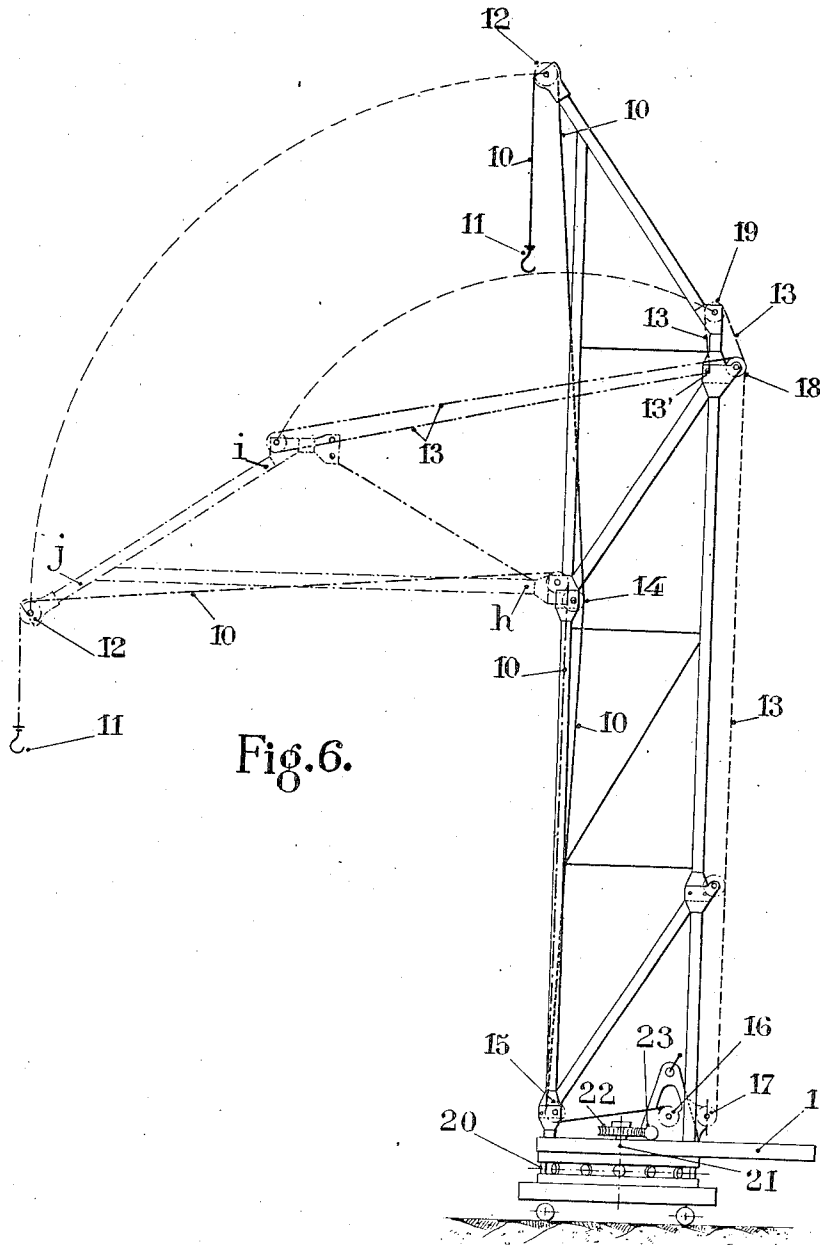


Fig. 6.

Inventor
François Quet
by
W. E. Evans
Attorney.

UNITED STATES PATENT OFFICE.

FRANÇOIS QUET, OF NICE, FRANCE.

PORTABLE LIFTING APPARATUS.

1,380,591.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANÇOIS QUET, a citizen of the French Republic, residing at 12 Rue Dabray, Nice, France, have invented certain new and useful Improvements Relating to Portable Lifting Apparatus, of which the following is a specification.

The present invention relates to a portable lifting apparatus so constituted as to be mounted, erected and put into position for service in the minimum of time and by means provided upon it, that is to say without the assistance of any other apparatus. The articulated structure which besides the pedestal or base and the upper part, constitutes the essential feature, comprises a number of interchangeable elements or sections whose mounting offers no difficulty and can be effected in the place in which the apparatus is to be used.

One construction of the improved apparatus is represented by way of example in the accompanying drawings in which—

Figure 1 is a diagram of the whole of the apparatus in the course of being mounted and erected.

Fig. 2 shows on a larger scale the pedestal or base and the lower part of one of the sections of the structure to which it is connected.

Fig. 3 shows also on a larger scale the lower part of the upper section connected to the upper part of a lower section of the apparatus.

Fig. 4 is a horizontal section on the level of the line A B of Fig. 2.

Fig. 5 is a detail front and side elevation of the connecting plates employed.

Fig. 6 is a diagrammatic view in side elevation of a structure in which the upper part can take any position between the vertical position and the horizontal position.

The lifting apparatus thus represented comprises a pedestal or base *a b c* of any suitable construction carried upon a truck 1 having upon its platform a winch 2 of any suitable construction and operation, one or a number of elements or running sections *d e f g* (see Fig. 1) and an upper element or section *h i j*. These various parts are preferably of a triangular transverse section as illustrated in Fig. 4 so that thus in side view they always present oblique assembling planes such as *a b*, *d e*, *g f*, *h i*. The connection of the sections is effected by means of bolts passing transversely through the

connecting plates and they are constructed by means of wood, of iron bars or of steel tubes assembled in position if desired at the place in which the apparatus is to be used and in any case in such manner as to form a rigid structure.

The connecting plates 3 3' and 4 4' disposed at the angles adjacent the assembling planes are disposed one beside the other so that one set of connecting plates 4 4' carried by one section are disposed between the connecting plates 3 3' of the other section and the respective connecting plates are provided with holes for the passage thereof through of connecting bolts, there being for example two connecting bolts. The bolts in question are designated by the references 5 and 6 for the connecting plates at the lower end of the assembling planes and by the references 7 and 8 for the connecting plates at the upper end of the assembling planes. The bolt 5 serves besides as a pivotal axis in the erection of the apparatus.

The connecting plates 3 3' are provided with lugs to carry the spindle of a pulley over which passes a cable 10 winding off the drum of the winch 2 whose extremity is provided with a suspension hook 11 which passes over a pulley 12 disposed at the extremity *j* of the upper section. Each section of the structure is mounted horizontally as illustrated in full lines in Fig. 1 upon trestles and is brought to the height of the lower connecting plates or the front stops of the pedestal or base or of the preceding section erected so that the pivoting bolts 5 may be put into position. Then the cable 10 is placed upon the pulley 9' mounted upon the connecting plates 3' of the pedestal or base or of the preceding section erected. The winch put into operation by the traction exercised brings the section articulated at 5 into the vertical position as indicated in dot and dash lines Fig. 1 and in this position the connecting bolts 6, 7 and 8 (Fig. 2) are put into position. In this way the erection proceeds until the last section is erected when the upper section *h i j* is mounted as illustrated in the dot and dash lines Fig. 1 and this section is erected in the same manner as illustrated in the dotted lines Fig. 1.

The apparatus is dismantled in a similar and reverse manner, all the constituent parts of the apparatus being taken apart piece by piece for facilitating transport.

The wheels of the truck 1 may be provided with plane or flanged rims for running upon a plane surface or upon rails.

In the arrangement represented in Fig. 6 the radius of action of the lifting apparatus is augmented and it is possible to use it in lifting loads situated between the foot of the apparatus and its maximum radius of operation. This result is attained by the means hereinafter described.

The upper part or section *h i j* of the apparatus instead of being fixed by means of connecting bolts upon the stop at the rear is maintained by a cable 13. This upper part carries at the top a pulley 12 upon which passes the lifting cable 10, but this cable which passes the length of the part of the structure beneath the upper part or section upon the pulleys 14 and 15 is wound upon one of the drums 16 of the winch of which there are two. Upon the other drum 17 is wound the cable 13 which passes over the pulleys 18, 19 and is connected at 13' to the extremity of the highest support of the last intermediate section.

In view of this arrangement it is possible to obtain by the operation of the cable 13 not only the two extreme positions of the upper part of the structure *h i j* (the vertical position indicated in full lines, the horizontal position indicated in dot and dash lines), but any intermediate position corresponding to the position of the load. For this purpose and for completing the arrangement there is disposed between the movable platform 1 and the frame carrying the road wheels a circular track 20 integral with the central pivot 21 at the extremity of which is mounted a toothed wheel 22 engaged by an endless screw 23 driven by the winch which can be operated by hand or by motor whereby the structure may be turned in any direction desired. It is possible then within a maximum radius equal to the height of the upper part or section of the structure to take all loads and carry them no matter what distance with reference to the foot of the apparatus to the extremity of the maximum radius without having to displace the apparatus upon the ground.

I claim:

1. A jib crane comprising a structural framework constructed of separate com-

ponent parts, the said component parts being pivotally connected with each other by horizontal bolts and having oblique assembling planes proceeding from the pivotal axis, the said oblique plane of one component part in the erection of the structure being brought to bear upon the corresponding oblique assembling plane of the other component part already erected, and means for completing the connection of the respective component parts to form integral members of the structure, substantially as described.

2. A jib crane comprising a structural framework constructed of separate component parts, the said component parts being pivotally connected with each other by horizontal bolts and having oblique assembling planes proceeding from the pivotal axis, the said oblique plane of one component part in the erection of the structure being brought to bear upon the corresponding oblique assembling plane of the other component part already erected, and means for completing the connection of the respective component parts to form integral members of the structure and for disconnecting any one of the upper component parts to permit of its rotation upon the said horizontal bolts in its use as a jib, substantially as described.

3. A jib crane comprising a structural framework constructed of separate component parts, the said component parts being pivotally connected with each other by horizontal bolts and having oblique assembling planes proceeding from the pivotal axis, the said oblique plane of one component part in the erection of the structure being brought to bear upon the corresponding oblique assembling plane of the other component part already erected, means for completing the connection of the respective component parts to form integral members of the structure and for disconnecting any one of the upper component parts to permit of its rotation upon the said horizontal bolts in its use as a jib, and flexible means for raising or lowering one of the upper component parts of the structure in its use as a jib, substantially as described.

FRANÇOIS QUET.