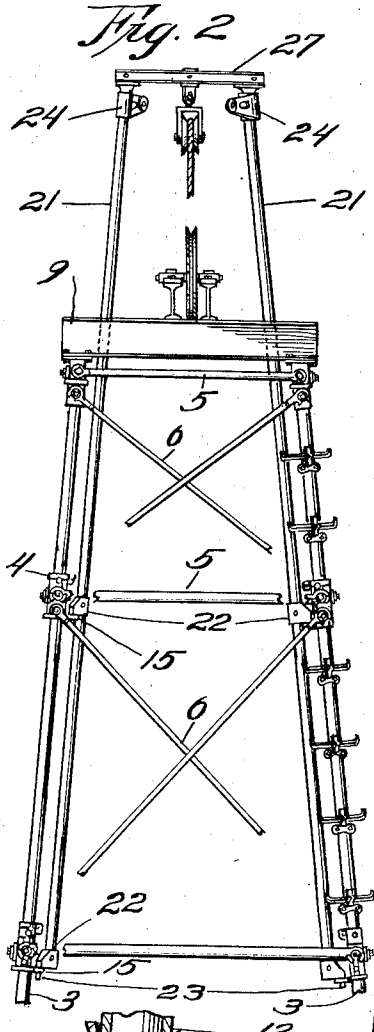
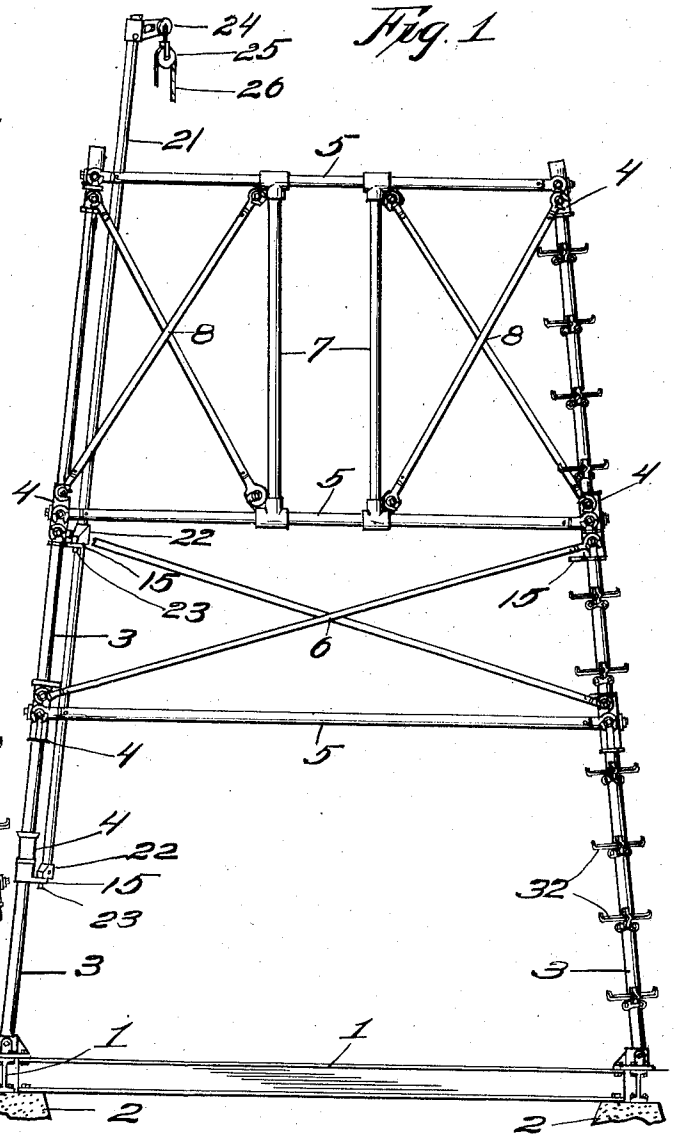
May 26, 1925. 1,539,109

F. BRANDT

ERECTING CRANE AND GIN POLE

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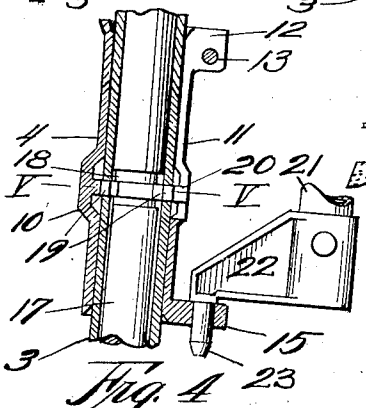


Fig. 4

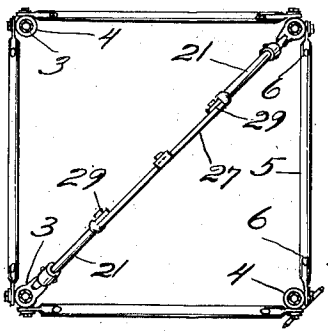


Fig. 3

Witness:

R. C. Hamilton

Inventor;
Fokko Brandt

By Thorpe & Gerard
Attys

May 26, 1925. 1,539,109

F. BRANDT

ERECTING CRANE AND GIN POLE

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Fig. 5

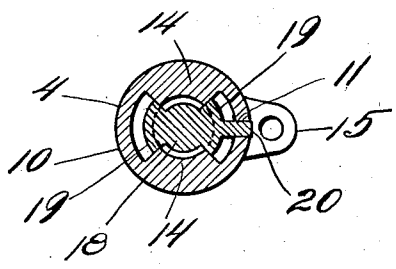


Fig. 6

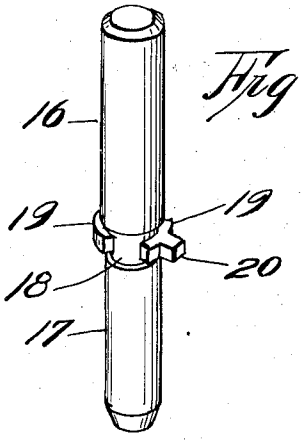
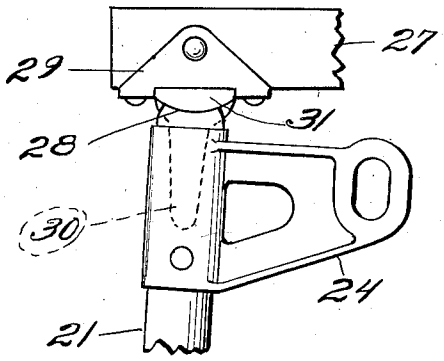


Fig. 7



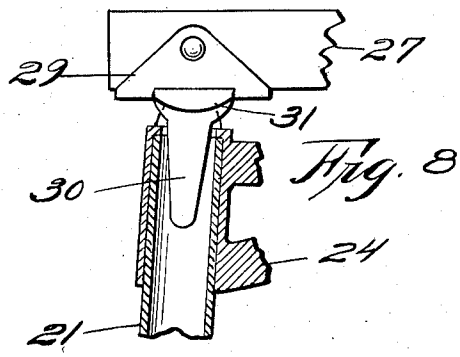


Fig. 8

Fig. 9

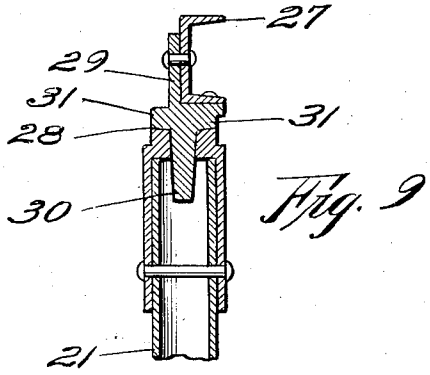
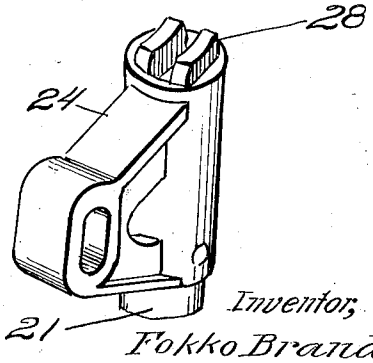


Fig. 10



Witness:

R. C. Hamilton

Inventor;

Fokko Brandt.

By Thorpe & Gerard Attys.

Patented May 26, 1925. 1,539,109

UNITED STATES PATENT OFFICE.

FOKKO BRANDT, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE BRANDT & KRELL ENGINEERING COMPANY, OF KANSAS CITY, KANSAS, A CORPORATION OF KANSAS.

ERECTING CRANE AND GIN POLE.

Application filed January 15, 1923. Serial No. 612,817.

To all whom it may concern:

Be it known that I, FOKKO BRANDT, a citizen of the United States, and resident of Kansas City, county of Jackson, State of Missouri, have invented a certain new and useful Improvement in Erecting Cranes and Gin Poles, of which the following is a complete specification.

This invention relates to erecting cranes and gin poles for derricks, and has for its object to produce an apparatus adapted for attachment to the frame of the derrick at different heights as the height of the derrick increases, for the purpose of raising or lowering parts, particularly heavy parts, for incorporation in the derrick, or for use in conjunction therewith for handling well casing, pumping apparatus and the like.

More specifically, the object is to produce lifting apparatus for enabling parts to be efficiently raised or lowered within the derrick and thereby minimize the chance of injury to workmen or others, from falling parts or the like, and utilize the derrick structure itself as a support for lifting and lowering parts without imposing lateral or twisting strains on the structure.

A still further object is to produce apparatus which can be easily and quickly secured in or removed from operative position at any elevation, and which possesses maximum strength combined with light weight and economical construction.

With these objects in view, the invention consists in certain novel and useful features of construction and combinations of parts as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which:—

Figure 1 is a side elevation of the lower part of a derrick in course of erection and showing a crane in its lowest operative position thereon;

Figure 2 is a side elevation of the top of the derrick and showing the gin pole thereto in operative position;

Figure 3 is a top plan view of the gin pole with the derrick in horizontal section adjacent the plane of the lower ends of the legs of the gin pole;

Figure 4 is an enlarged vertical section through the adjacent end of one pair of the leg sections of the derrick and the sleeve connecting such sections, the figure also showing the relation between said sleeve and the lower end of a crane;

Figure 5 is a section on the line V—V of Figure 4;

Figure 6 is a perspective view of a pilot pin employed at the adjacent ends of superposed leg sections of the derrick;

Figure 7 is a fragmentary side elevation of the gin pole construction;

Figure 8 is a similar view with a part in central vertical section;

Figure 9 is a vertical section of the same construction taken at right angles to the section of Figure 8; and

Figure 10 is a detail perspective view of part of the crane and pin pole construction.

In the said drawings, 1 indicates the base frame of a derrick or the like, resting on concrete piers 2, the corner posts 3 of the derrick being composed of sections connected together by coupling sleeves 4. The sleeves at corresponding heights, are connected by horizontal tie bars 5, and sleeves of adjacent levels with one or more exceptions noted, are connected by crossed braces 6. At a suitable height, one tier or panel of the derrick, at one side, as shown, has adjacent tie bars 5 connected intermediate their length by spaced uprights 7, to leave a space or passage for the operation of a walking beam (not shown) if desired, and the framework at opposite sides of said uprights is stiffened by crossed braces 8. The special construction of the framework, however, is important in this connection only in relation to the sectional construction of the corner posts and in the special type of coupling sleeves for the sections of said posts, as the constructional features mentioned are important with respect to the crane and gin pole. Reference is also made at this point to the crown block assembly 9, at the top of the derrick, though the particular construction thereof is of no importance as regards this invention, except in the fact that it is composed of parts preferably assembled together after individual elevation to operative position and disconnected so that such parts or elements may be individually lowered to the ground.

Referring now to the corner post construction, each coupling sleeve is shrunk on the underlying section end receives the overlying section. In the plane of the adjacent

ends of the post sections the coupling is diametrically enlarged as at 10, (see Figure 4) and from the lower end of such enlargement is split as at 11 to its upper end. At opposite sides of the split are lugs 12 to be brought together to clamp the sleeve upon the upper post section, by a clamping bolt 13. Centrally of the said enlargement, the coupling sleeve is provided at diametrically opposite points with inwardly-projecting segmental lugs 14 (see Figure 5) abutted at its under and upper sides by the ends of the underlying and overlying post sections, and at its lower end the coupling sleeve is provided with a perforated lug 15. To strengthen the post section connections but primarily for guarding against relative turning movement of said sections, a pilot pin is provided, composed of an upper portion 16 secured immovably in the upper post section, a reduced lower portion 17 fitting in the underlying post section and a neck portion 18 from which projects opposite segmental lugs 19 fitting in the spaces between lugs 14 and cooperating with the latter in carrying the load and preventing relative turning movements of the post sections, the pins also having tongues 20 projecting through the slits 11 to serve as guides in readily interposing the lugs 19 between the lugs 14 and thereby insure longitudinal alinement of all of the perforated lugs 15 of the respective corner posts of the derrick to provide for the ready support of a crane or gin pole element, as for the proper support thereof, two of the sleeve-lugs 15 are employed, as will be noted by reference to Figures 1 and 2.

For quickly and easily raising or lowering post sections, braces, etc. as the erection or dismantling of the derrick progresses, one or more cranes will be found convenient, and such cranes when coupled in pairs to constitute what is known as a gin pole, serve for raising and lowering material and the like within the derrick.

The type of crane employed, comprises a pipe 21 provided with a pair of arms 22 having depending pins 23 for pivotally engaging a pair of lugs 15 of adjacent sleeve couplings, said pipe having an oppositely-projecting arm 24 at its upper end for the support of a sheave 25 and a lifting and lowering rope 26. As in the erection and dismantling of the derrick, the usefulness of the crane at any particular level ceases, it is shifted to a higher or lower level and engaged with a different pair of lugs 15, this adjustment being repeated until all parts have been raised or lowered.

When the derrick is completed and it is desired to provide for lifting beams for the crown block or other heavy parts, a pair of cranes are secured as explained, on diagonally-opposite corner posts, and connected at their upper ends by a bar 27 (see Figures 2 and 3). To make such connection secure and provide a stable and self-adjustable connection at each end of the bar, the arms 24 at the top of the cranes, are provided with diametrically slotted concave heads 28, and brackets 29 secured to the bar, have stems 30 extending through the slotted heads 28 and into the cranes, and downwardly-facing convex shoulders 31 engaging said concave heads, the arrangement being such that the bar is firmly supported should any slight inequality exist in the angular positions of the cranes from any cause. To facilitate the ascent and descent of the derrick, one of the corner posts may be equipped with steps 32, clamped or otherwise firmly secured in place.

From the above description it will be apparent that I have produced a structure embodying the features of advantage set forth in the statement of the objects of the invention and other desirable features, and it is to be understood that the invention is susceptible of modification in various particulars within the principle of construction and mode of operation involved without departure from the scope of the appended claims.

I claim:

1. The combination with a post composed of a plurality of superposed post sections, and sleeves coupling adjacent ends of adjacent sections and provided with alined lugs, of a rod having a pair of arms resting on and interlocked with said lugs, and means carried by the rod for lifting and lowering objects.

2. The combination with a post composed of a plurality of superposed post sections, sleeves coupling adjacent ends of adjacent sections and provided with external lugs and spaced internal lugs and longitudinal slits, and pilot pins fitting in the adjacent ends of the adjacent posts and provided with spaced lugs fitting between the spaced lugs of the coupling, and guide pins engaging the slits of the couplings, to aline the lugs of the latter, a rod for lifting and lowering purposes, and means interlocking the rod with said external lugs for the retention and support of said rod in proximity to the post.

3. The combination with a derrick having a corner post equipped with alined perforated lugs at different heights, of a rod for raising and lowering purposes, and alined arms projecting from the rod to rest upon corresponding perforated lugs and provided with depending pins to extend through the perforations of such lugs.

4. The combination with a derrick provided with opposite sets of alined lugs, of a gin pole for raising and lowering purposes comprising rods respectively retained in

position and supported by different sets of said lugs, a bar connected to the rods, and block and tackle mechanism carried by said bar.

5. The combination with a pair of corner posts of a derrick, each provided with alined perforated lugs, of a pair of rods having arms to rest on the lugs of the posts respectively and pins depending from each arm through the underlying lug, a cross bar bridging the space between and detachably connected to the rods, and block and tackle mechanism carried by said bar.

6. A raising and lowering device, comprising a rod having a plurality of laterally-projecting arms provided with longitudinally-alined pins, and means carried at the upper end of the rod for raising and lowering purposes.

7. A raising and lowering device comprising a pair of rods, a cross bar, and connections between the ends of the bar and the respective rods, for retaining the former in place; and for accommodating a relative self rocking adjustment between the bar and rods.

8. A raising and lowering device comprising a pair of rods, a cross bar, and connections between the ends of the bar and the respective rods, for retaining the former in place; the connections comprising arms depending from the bar into loose interlocking engagement with the rods against separation through endwise, sidewise or downward movement of the bar, and superposed concaved and convex portions for providing for a relative rocking adjustment between the bar and rods in a direction endwise of the former.

9. A raising and lowering device comprising a pair of rods, a cross bar, and connections between the ends of the bar and the respective rods, for retaining the former in place; the connections comprising arms depending from the bar into loose interlocking engagement with the rods against separation through endwise, sidewise or downward movement of the bar, and superposed concaved and convex portions for providing for a relative rocking adjustment between the bar and rods in a direction endwise of the former; one of each set of parts providing for the rocking adjustment having a slot receiving the corresponding depending arm.

In witness whereof I hereunto affix my signature.

FOKKO BRANDT.