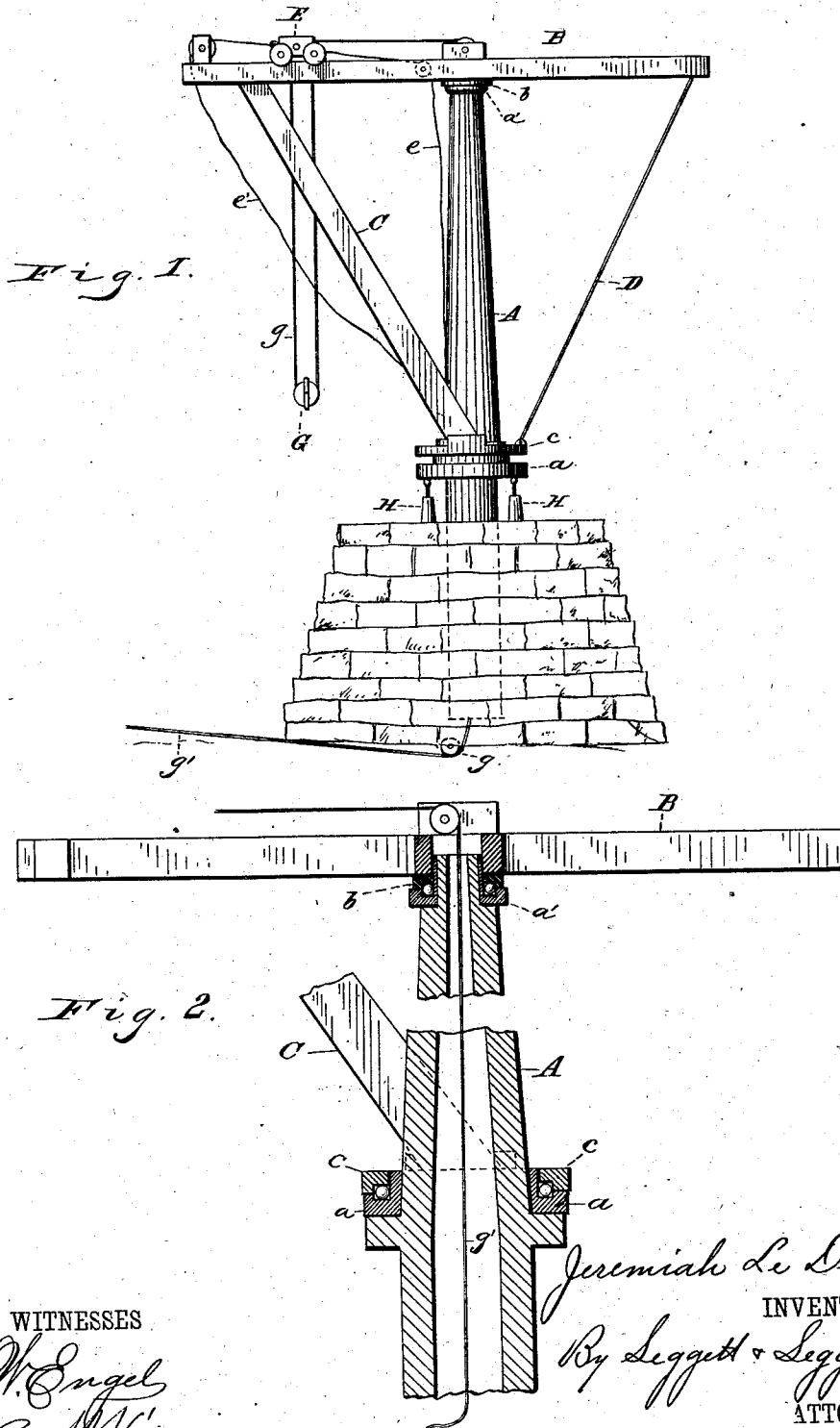


(No Model.)

J. LE DUKE.
HOISTING CRANE.

No. 290,074.

Patented Dec. 11, 1883.



UNITED STATES PATENT OFFICE.

JEREMIAH LE DUKE, OF BEREHA, OHIO.

HOISTING-CRANE.

SPECIFICATION forming part of Letters Patent No. 290,074, dated December 11, 1883.

Application filed July 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH LE DUKE, of Berea, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Hoisting-Cranes; 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 pertains to make and use the same.

10 My invention relates to improvements in hoisting-cranes; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

15 In many places where, in building piers and other mason-work, it is necessary to use cranes or derricks for hoisting stones and other heavy material it is very difficult to support the derrick or crane with guys. Familiar instances are piers in navigable rivers
20 and towers built to a great height. My new hoisting-crane is especially adapted to this difficult kind of work, although it may be used to advantage in ordinary work.

25 In the drawings, Figure 1 is a side elevation of my improved crane. Fig. 2 is a vertical section of the same.

A represents a vertical hollow post built in the mason-work and extending some distance below the surface, as shown in the dotted lines, Fig. 1. A horizontal arm, B, the brace C, and the brace-rod D, and the carriage E are all parts that are common to such devices. The post A is provided with the flanges *a*
30 and *a'*, each provided with an annular groove or chamber, in which operate anti-friction balls. Above these flanges are the flanges *c* and *b*, each provided with annular chambers that register with the chambers in the contiguous flanges, respectively, below them. The
40 relation of parts is such that the upper flanges *b* and *c* rest upon and are guided by the rollers beneath them, and do not come in contact with their respective supporting-flanges *a'* and *a*. Hence the parts B and C, resting on the flanges *b* and *c*, may, with the attachments and loads, revolve almost frictionless. Hence it is not necessary to have what is known as a "tag-line" to revolve the crane, but
50 the crane may be easily revolved by one man

operating on the braces, whereas it would be impracticable to operate the said tag-line either in a stream or when the crane was at a great height. The foot of the brace C having no attachment to hold it rigidly to a given
55 distance from the flange *b*, the parts readily adjust themselves so that each set of balls receive its proper proportion of the work. The carriage E may be moved along the arm by the ropes *e* and *e'*, and held in any desired
60 position, so as to deposit the load near or remote from the post A.

The operation of the device is as follows: The crane is set in the desired place and held vertically by any means available until the
65 stone-work or other material of the structure is built around the post, as shown in Fig. 1. Meantime a guiding-pulley, *g*, has been set below the bottom of the post, and a hole left around the running end of the rope *g'*, that
70 leads up through the center of the post and to the tackles. In the position shown the crane is sufficiently supported without guys.

When the structure is built nearly to the flange *a* by means of the jack-screws H H, or
75 other means, the post is raised far enough for another layer of stone or other material, and thus the crane is carried up with the pier or other structure to any desired height. If the structure is surrounded by water, a boat
80 carrying the hoisting-power may be moored to the pier in such position as to receive the rope *g'*, and the crane operated thereby successfully.

I do not claim, broadly, the use of anti-fric-
85 tion balls on cranes; but I am not aware that they have heretofore been used in the manner and for the purpose herein shown.

What I claim is—

1. In a hoisting-crane, a hollow post or
90 column provided at a point intermediate between its ends with a permanently fixed flange for supporting said column without guys upon a surrounding structure, said flange being adapted to be engaged by jacks or other means
95 for raising and supporting the column while another course is being added to the structure surrounding the column, substantially as specified.

2. In a hoisting-crane, the combination, with 100

a hollow supporting-column held without
guys in the structure being built, of the wheel
7, adapted to guide the running rope properly
to its position on the arm above regardless
5 of the height of the crane, substantially as de-
scribed, and for the purpose set forth.
In testimony whereof I sign this specifica-

tion, in the presence of two witnesses, this 1st
day of July, 1883.

JEREMIAH LE DUKE.

Witnesses:

ALBERT E. LYNCH,
CHAS. H. DORER.