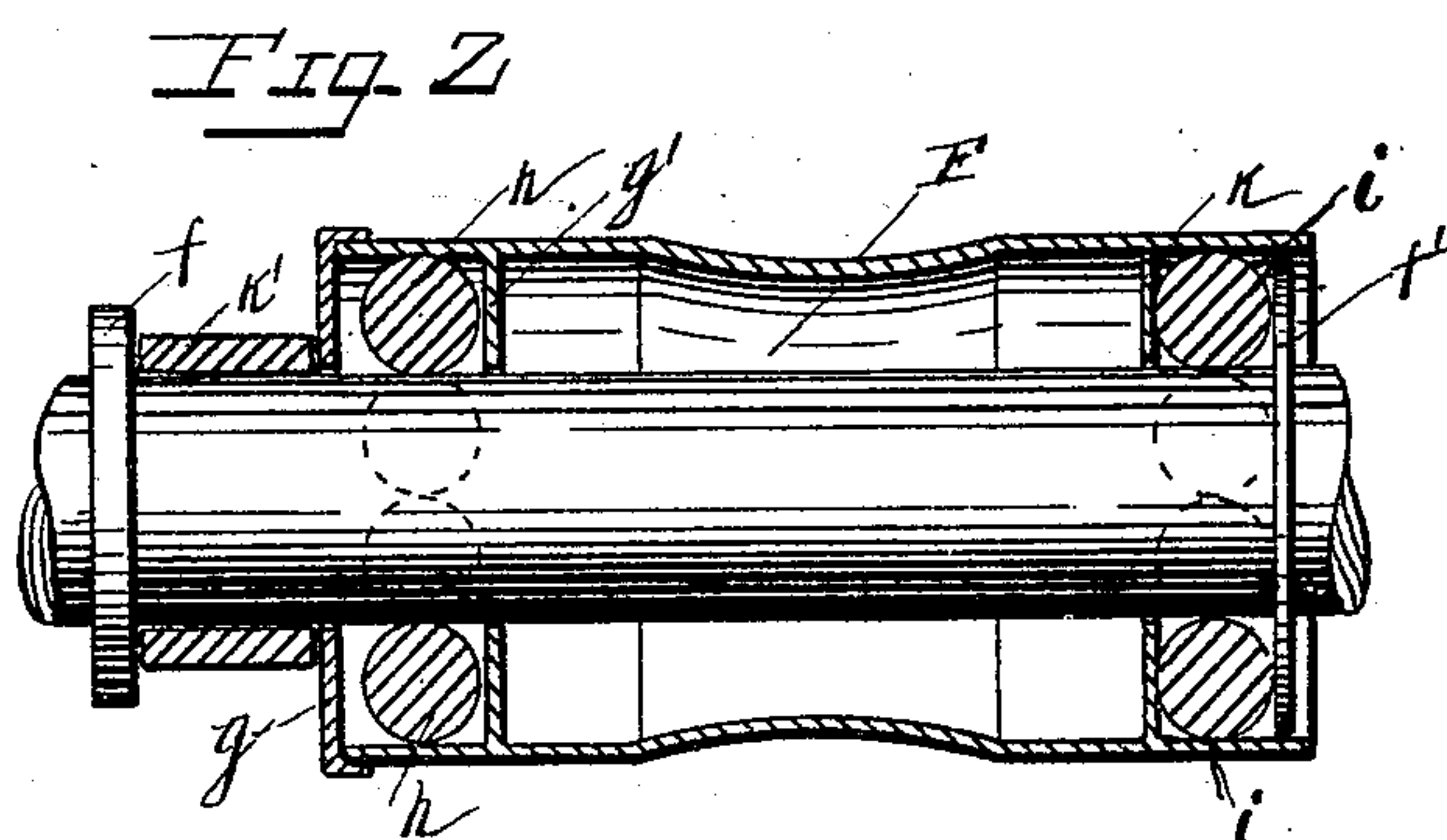
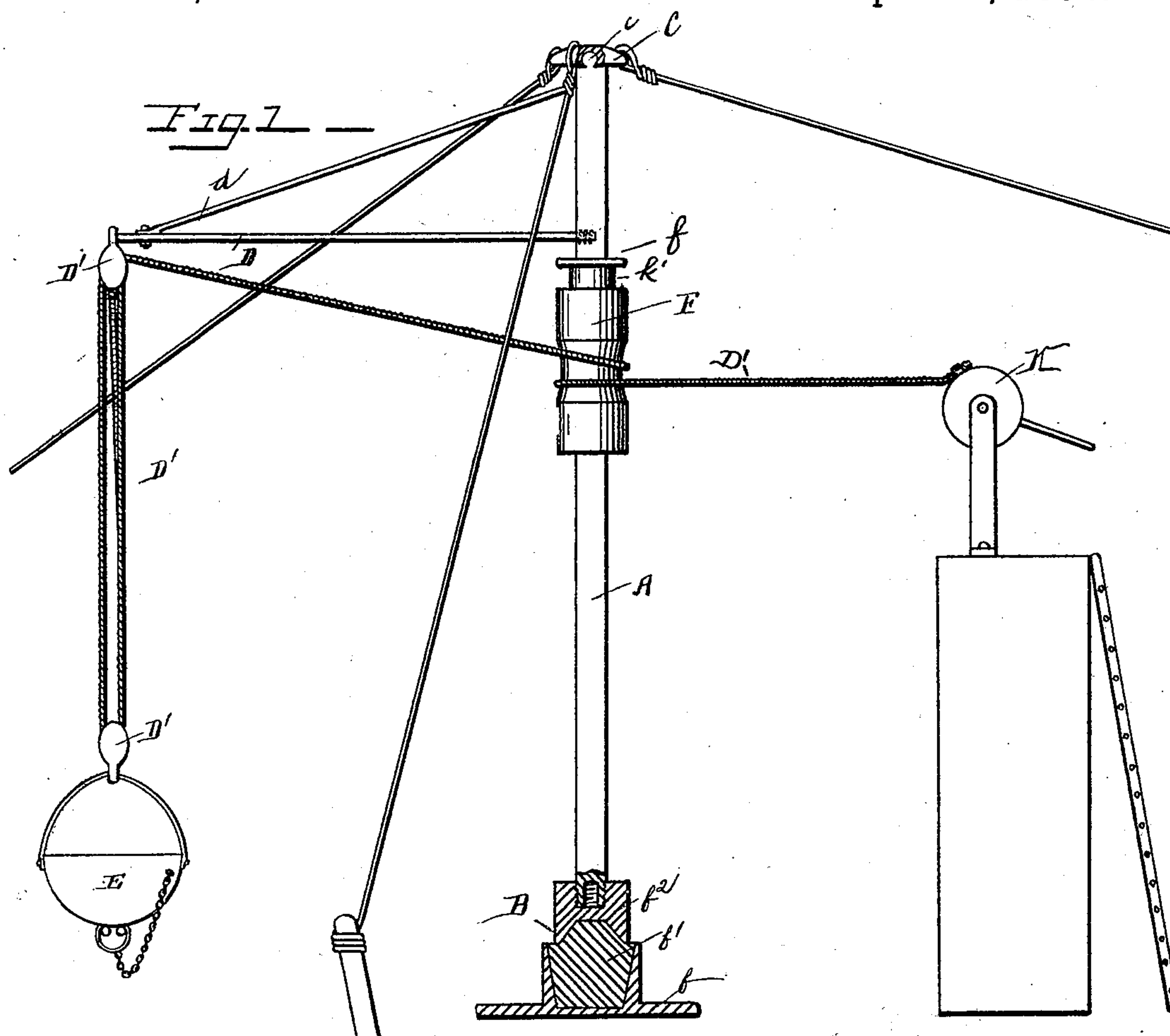


(No Model.)

W. R. CLOSE.
DERRICK.

No. 518,225.

Patented Apr. 17, 1894.



WITNESSES

G. M. Anderson
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INVENTOR

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UNITED STATES PATENT OFFICE.

WALTER R. CLOSE, OF BANGOR, MAINE.

DERRICK.

SPECIFICATION forming part of Letters Patent No. 518,225, dated April 17, 1894.

Application filed June 30, 1893. Serial No. 479,267. (No model.)

To all whom it may concern:

Be it known that I, WALTER R. CLOSE, a citizen of the United States, and a resident of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Derricks; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view partly in section. Fig. 2 is a sectional view in detail of cylinder and mast.

This invention has relation to certain new and useful improvements in derricks, and is designed to provide simple and effective means of this character, possessing greater facility of operation and improved features of construction not found in prior machines of this class, and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the rotary mast or post, which is stepped in a bearing B at its lower end, and is provided with a ball and socket bearing c at its upper end in a suitable stay C.

D is the boom, D' the blocks and tackle carried by the boom, and E is the hoist and dump.

F designates a rotary cylinder through which the intermediate portion of the post or mast passes, and which is supported on said mast or post between collars or flanges *f, f'*. At the upper portion of said cylinder between the removable cap *g*, and an interior flange *g'*, is a bearing chamber in which are placed anti-friction balls *h*; while at the lower portion of the cylinder between a second flange *h*, and the collar or flange *f'* on the post or mast, is a similar chamber in which are also anti-friction balls *i*. Between the cap *g*, and the flange or collar *f*, is a packing *k*.

The rope or tackle from the upper block is

given one or more turns around this cylinder, and from thence passes to the barrel of the windlass or winch K, which is situated at some distance to one side of the post or mast.

In raising the dump or hoist, the cylinder rotates on the post under the action of the rope or cable and acts as a pulley. When said dump is raised to the proper height, the boom may be swung in any direction, both mast and cylinder rotating together, which prevents the tackle from becoming twisted or entangled in any manner.

The boom D has a thread and socket connection with the mast, so that it may be readily separated therefrom for greater convenience in transportation, the brace *d* for said boom being also detachable.

The post or mast is designed to be of any suitable length according to the depth of the quarry, or circumstances of the place where it is used, and its length may be increased as the quarry settles, or as may become necessary, by inserting an additional length between the step and cylinder. To admit of this a socket is usually made in the lower end of the post or mast.

The step B preferably consists of a bed plate *b*, a block *b'* of granite supported thereon, and the bearing block *b²*, supported on the block *b'*. The block *b'* has a conical projection upon its upper face which engages a corresponding cavity in the block *b²*.

The bearing surfaces of the two blocks are polished, and the friction thereof is reduced to a minimum.

Having thus described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

1. In a derrick, the combination with a rotary post or mast, of a rotary cylinder journaled on the intermediate portion of said post or mast, its anti-friction bearings, the boom, the tackle, and the windlass, substantially as specified.

2. In a derrick, the combination of a rotary post or mast, its bearing step, the upper bearing and stay, the flanges or collars *f, f'* on said mast or post, the rotary cylinder F journaled on said mast or post between said flanges,

a series of anti-friction balls in each end portion of said cylinder and forming the bearings therefor, the boom, and hoisting tackle, substantially as specified.

- 5 3. In a derrick, the combination with the rotary mast or post, the boom carried thereby, and the hoisting devices carried by said boom, of the rotary cylinder journaled upon the intermediate portion of said post or mast
10 just below the point where the boom is con-

nected thereto, the rope from the upper block of the hoisting tackle having one or more turns around said cylinder as it passes to the windlass, substantially as specified.

In testimony whereof I affix my signature in 15 presence of two witnesses.

WALTER R. CLOSE.

Witnesses:

T. H. DRUMMOND,

F. H. REYNOLDS.