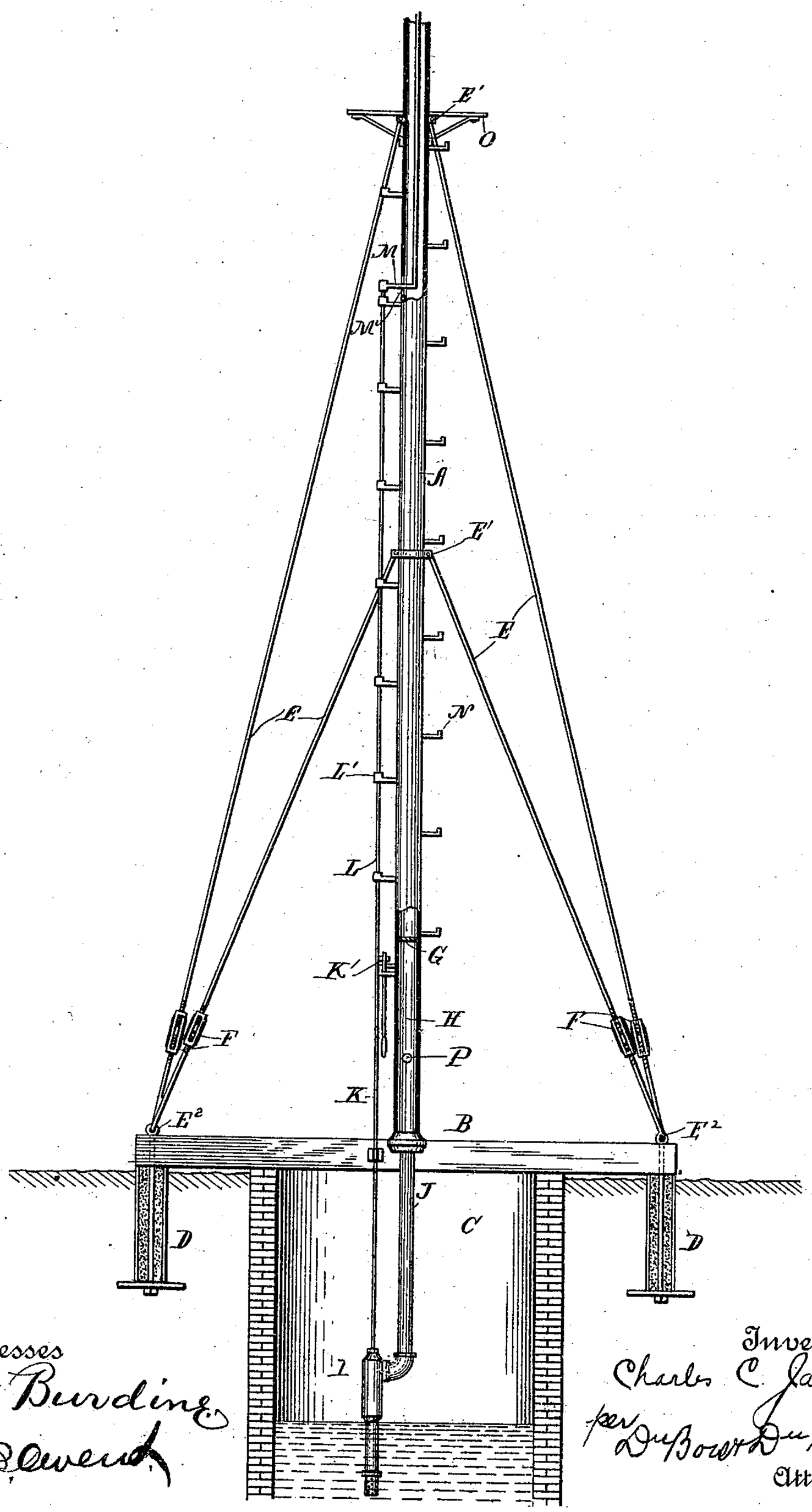
(No Model.)

C. C. JACOBS.

WINDMILL TOWER.

No. 503,048. Patented Aug. 8, 1893.



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UNITED STATES PATENT OFFICE.

CHARLES C. JACOBS, OF AMBOY, ILLINOIS.

WINDMILL-TOWER.

SPECIFICATION forming part of Letters Patent No. 503,048, dated August 8, 1893.

Application filed October 3, 1892. Serial No. 447,700. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. JACOBS, a citizen of the United States, residing at Amboy, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Windmill-Towers; 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 drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in that class of towers known as skeleton towers and it is designed particularly for use in connection with wind mills.

The objects sought to be accomplished are to lighten the weight of the tower, to decrease the surface exposed to the wind and thereby lessen its resistance thereto, to reduce the cost of construction, and to combine with the tower simple and inexpensive pump mechanism.

To these ends my invention consists of certain novel features and combinations of parts more fully described hereinafter and pointed out in the claims.

Referring to the accompanying drawing which represents an arrangement embodying the essential features of my invention, the reference letter A indicates a vertical column. This may be constructed of wood, metal, or a combination of both, either solid or hollow. This column is preferably hollow throughout its length and is seated at its lower end on the base timbers or iron girders B, which extend across the well or cistern C, and have their ends secured to the sunken piers or anchors D. The column is further held by means of the guys E, E, which are connected to the top and middle thereof by means of the collars E′, E′, and to the ends of the girders B, by means of the rings or eyes E^2, E^2, turn buckles, or swivels F, F, being employed by which the tension of the guys may be regulated.

Located within the column A a short distance above its lower end is a bulkhead or partition G, which forms an air-chamber H, in the column to be used in connection with the pump I. This pump is by preference a combined lift and force and has its discharge orifice connected to the pipe J which in turn communicates with the air-chamber H.

The piston rod K, passes up out of the well and is connected by any suitable rod coupling, shown at K′ to the pumping rod L. This rod extends up parallel with the column and is held incapable of lateral movement by means of the guides or recessed arms L′ secured rigidly to the sides of the column.

The rod L bends at M where it enters the column A through the elongated opening M′ and passes the remainder of its length inside the same. The opening M′ is elongated to admit of the free reciprocation of the bend M. The upper end of the rod L is as usual connected to the pumping rod from whence the power for operating the pump is obtained.

Rigidly secured to the column A on the side opposite that upon which the arms L′ are affixed, and in such juxtaposition to said arms that they will form, or become the remaining steps of a ladder, is a second series of arms N. Thus by means of the arms L′ and N, a ladder is formed by which the usual platform O may be reached.

When in operation the pump I forces the water up into the air-chamber H, and as in all other force pumps, the water after sufficiently compressing the air, is driven out of the outlet orifice or spout P, by the reaction or expansion of the compressed air in the receiver or chamber H.

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

1. The combination of a vertical column, hollow in whole or in part, an air compression chamber formed therein, a pump co-operating with the air chamber, and means for actuating the pump, all substantially as described.

2. The combination of a hollow column, a portion of which is partitioned from the remaining part, thereby forming an air compression chamber, a pump co-operating therewith, and means for actuating said pump, substantially as described.

3. The combination of a vertical column, guys for steadying the same, an air compression chamber formed in the column, a pump co-operating with the said chamber, a pump-

ing rod extending parallel with the column, and designed to actuate the pump, and a rod coupling for attaching or detaching the rod and pump piston, all substantially as described.

4. The combination of a series of sunken piers or standards, girders mounted thereon and securely fastened thereto, a vertical column mounted on the girders, guys for steadying said column, an air chamber formed in the column, a pump and means for operating the same, substantially as described.

5. The combination of a vertical standard, a pump operating therewith, a pumping rod extending parallel with the said column, a series of recessed arms or girders for holding the rod, and a second series of arms on the opposite side of the rod in such juxtaposition to the first that they will form or complete a ladder extending up the column.

6. The combination with a vertical column, of a pipe connected thereto and extending below the same into a well or cistern, a pumping rod extending parallel with the column, and a pump connected to an offset of the pipe whereby the said rod and pump are brought in vertical alignment, substantially as described.

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

CHARLES C. JACOBS.

Witnesses:

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