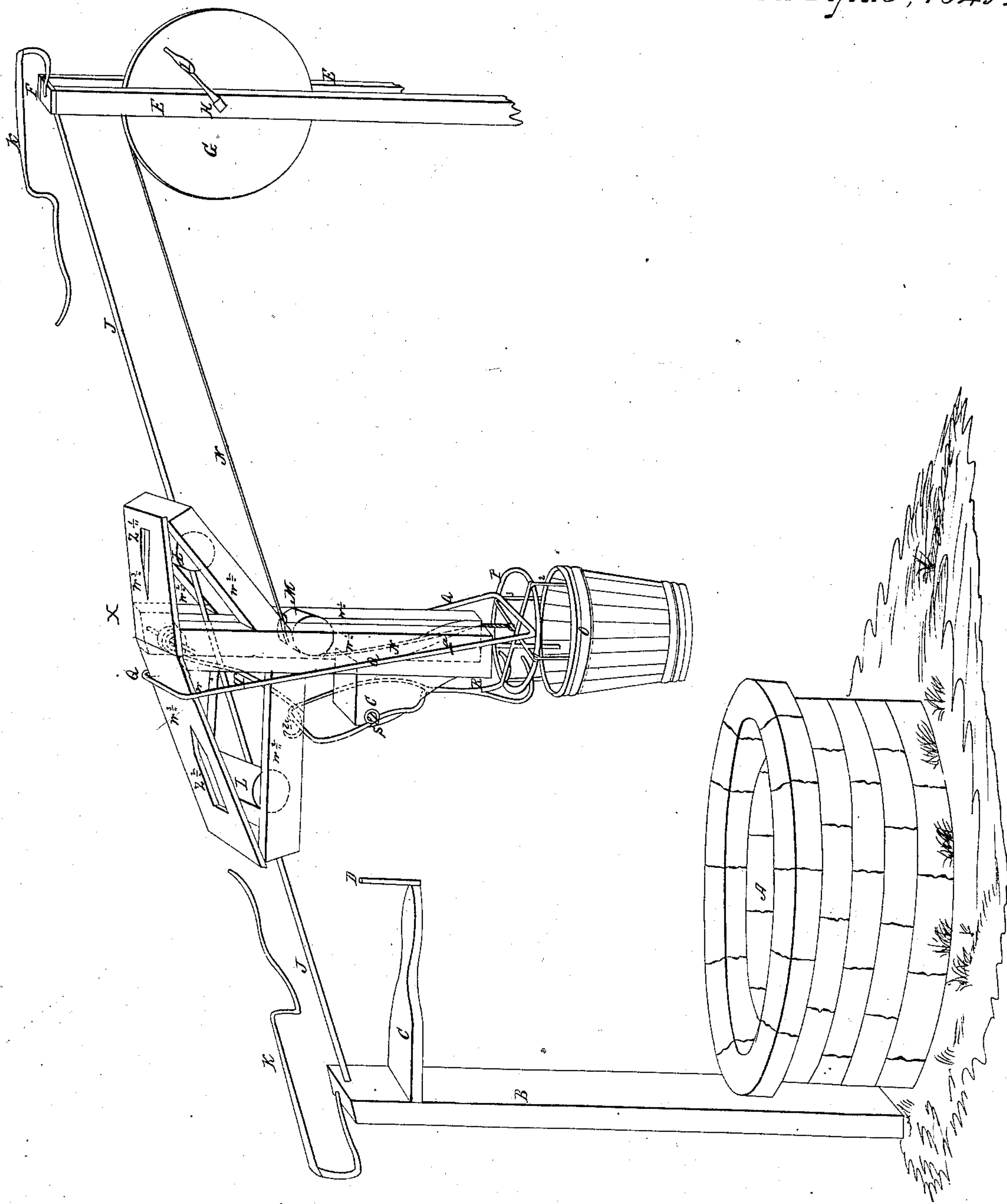


J. I. & S. P. Cox,

Windlass Water Elevator,

No. 6,257,

Patented Apr. 3, 1849.



UNITED STATES PATENT OFFICE.

J. I. COX AND S. P. COX, OF SHIPPENSBURG, PENNSYLVANIA.

RAISING AND CONVEYING WATER.

Specification of Letters Patent No. 6,257, dated April 3, 1849.

To all whom it may concern:

Be it known that we, J. I. Cox and S. P. Cox, of Shippensburg, in the county of Cumberland and State of Pennsylvania, have invented a new and useful improvement on an apparatus for conveying water from a well to a building, and which apparatus, we name "a Hydralator;" and we hereby do declare that the following is a full, clear, and exact description.

The nature and principle of this invention is to send a bucket from a house on an inclined rail made of wire or stout rope and to have the bucket drop into the well to be filled with water, then drawn up again and carried back to the house up the inclined rail—the whole movements being directed by the unwinding and winding of the cord to which the bucket is attached, over a drum or pulley operated by a handle.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation, reference being had to the accompanying perspective (linear) drawing, making a part of this specification. The red lines denote the interior, or back parts that are connected with the parts seen on the outside.

A, is the well.
B, is a post set at the back or behind the well.

C, is a horizontal arm on post B, and D, is an upright rod on the end of the said horizontal arm.

E E, is a frame in the building, either placed in the inside at the window, or on the piazza, either on the lower story or upper story as the case may be. This frame is composed of two upright square posts or stakes joined at the top by a cap or cross piece F, and secured together by any of the known ways.

G, is a large pulley fixed between E, E, on an axle H, which axle has its bearings on the two posts. I, is an axle handle to turn the pulley G.

J, J, is an inclined rail made of strong wire, or rope, or any other suitable material. This rail is firmly secured at each end, to B, at the lower end and E at the upper end.

K, K, are two similar spring cams made of wire, or wood, (wood is better than wire). These spring cams are fixed, the one on the top of B, and the other on F, the cap piece of the stationary pulley frame. (The office

of these spring cams will be explained hereafter).

X, is what we call the carrier. It slides up and down upon the rail J, and is operated by the turning of the pulley G.

W¹ W¹, W² W², W³ W³, is the frame of the carrier.

W¹ W¹ are two upright pieces of wood or other material most suitable. These pieces may be made of any length or thickness most convenient, as a small and large apparatus will operate equally well according to the size of the bucket used.

W³ W³ are two cap or top pieces, or it may be made of one piece of wood only it must be sloped or tapered from about the middle where it or they W³ W³ are secured by nails or screws to the upright pieces W¹ W¹.

W² W² are four braces. They are attached to the upright pieces and to the two caps and where they are united above to the caps, between every two braces, there is inserted a cross block. The caps, cross blocks and braces are therefore all secured together and the space between the upright pieces and the braces is for pulleys, L, L, which have grooves around them at the middle to keep them from slipping off the rail J, J. These pulleys, or they be properly termed grooved rollers, sit upon the rail like the wheels of a railroad truck, but lapping the rail on each side.

M, is another pulley or roller with its axis passing through and between W¹ W¹ and the ends of its axis fixed in the inside of the said two upright pieces. This roller is the bucket rope pulley. Over it passes the bucket rope N, N. The bucket rope should be guided on the middle of M, by passing through an eye formed of wire, which can be connected to the two upright pieces W¹ W¹ extending across in front of the rope pulley.

O, is the bucket. It has secured to its lip four small upright stakes 1, 2, 3, 4, on the top of which is a ring P, and then there are two rods secured on the top of P horizontally crossing one another forming an X, and where they cross one another, the bucket rope is fastened to them in any of the known ways.

Q, is a cross head cam rod. It is made of wood or wire and straps over the top of the carrier and passes down on both sides of the

upright pieces W^1 W^1 , and crosses below above the ring P. This cross head cam rod is made to move up and down by the action of the cross pieces on the ring of the bucket, therefore if the rope is wound up tight on the pulley Q will be lifted up till the ring P touches the lower ends of W^1 W^1 . Q is kept from shifting laterally by a guide eye (a).

R is a spring fork. It is made of wire and secured to an axis S, which passes through a small shoulder (c) shaped like a bracket and fastened between W^1 W^1 .

T is a wire spring with a coil over an axis under the cap pieces W^3 W^3 and extending downward by a hook on its lower end catching into the bridal head of the fork R at (u). The tension of this spring is downward and outward, throwing out the bridal or top of R, and giving its prongs always an inward tension or direction, which can be increased by extending the length of R from the axis S, to the turn of the prongs or by the twisting of the eye of the spring fork, through which the axis S, passes. The spring fork holds up the bucket to and in the carrier. Were it not for this, the bucket O would drop down upon the ground before the carrier slides down upon the rail above the well.

Operation: When all the proper length of the bucket rope (which is necessary for that purpose) is wound up on the pulley so as to bring the carrier up to the top of the inclined rail, the spring cam K, on the top of the frame E, E, will catch into Z^1 an oblong slit or hole in the top of W^3 , which will hold the carrier fast at the upper end of the rail. When it is desired to send the carrier for water, a turn of the pulley will make the top of the bucket to drive up Q, and then K, will be pushed out of Z^1 when the carrier will descend rapidly on the rail J, J, and whenever the bucket reaches to the desired point above the well, D, will force back the top of the spring fork R, when the crooked prongs will be thrown out from the ring P, of the bucket which will then descend (by a proper weight on the bottom of the bucket)

down into the well and be filled with water. When the carrier has reached the bottom of the rail, the spring cam K, will catch into Z^2 and retain the carrier above the well. The object of this is to allow the bucket rope to be wound up on the pulley G, until the bucket is lifted up out of the well and until it reaches the lower end of Q. Was the carrier not retained above the well till the bucket was lifted up as described; by the weight of the bucket and the traction of the rope N, upon the pulley M, when the pulley G commences to take up the rope, the carrier would be moved up the rail before the bucket had reached the top of the well. But, as has been described, the carrier is retained above the well till the bucket pushes up Q, when K, is then thrust out of Z^2 and the carrier begins to ascend the inclined rail. The top of R, is then relieved from the pressure of D, when the prongs catch into the ring P, and secure the bucket to the carrier, and then both bucket and carrier ascend together to the upper end of the rail by winding the rope N, on the pulley G, when the spring cam K, catches into Z^1 and the carrier held fast until the water is taken out of the bucket, by releasing the bucket from the spring fork R.

Having thus described our invention, we claim—

1. The combination of the spring cams K, K, with the cap pieces of the carrier, the slide Q and the bucket top for holding and releasing the carrier, as set forth.

2. We also claim the spring fork R, in combination with the bucket ring P, and the upright rod or arm D, to hold and release the bucket, and to catch again into the ring of the bucket at proper times, substantially as herein described and for the purpose set forth.

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SAMUEL P. COX.

Witnesses:

JOSEPH P. NEVIN,
BENJAMIN DUKE.