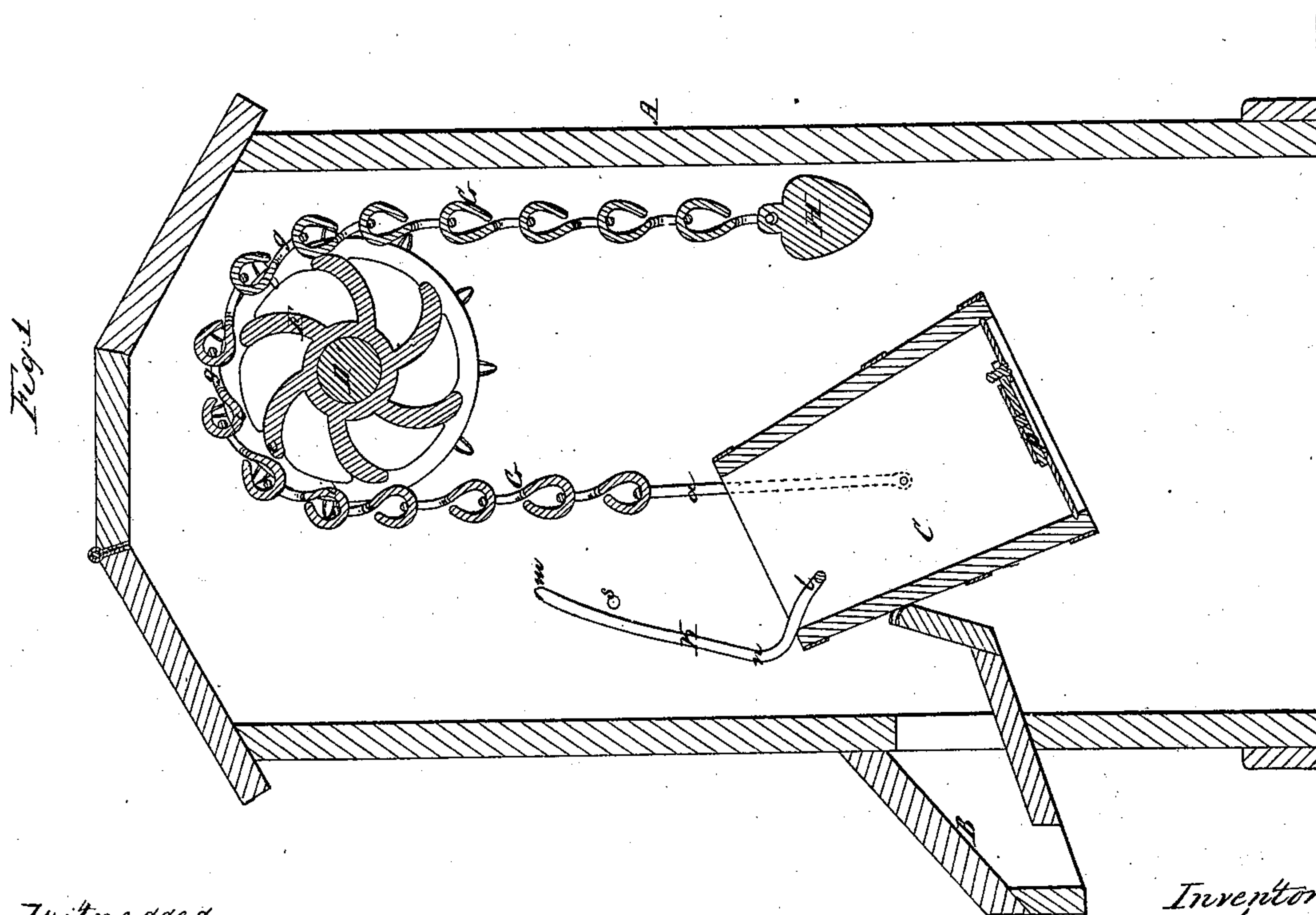
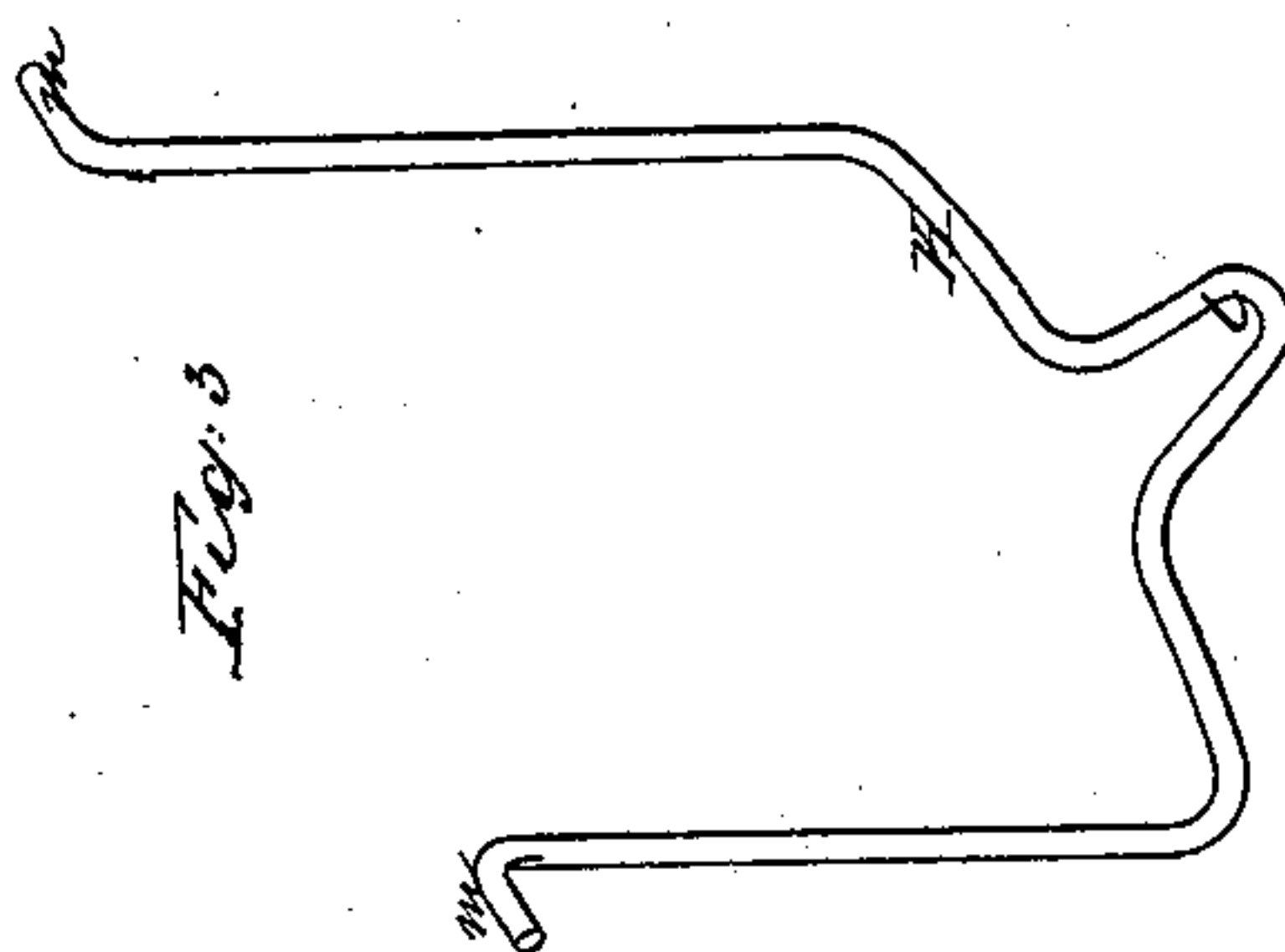
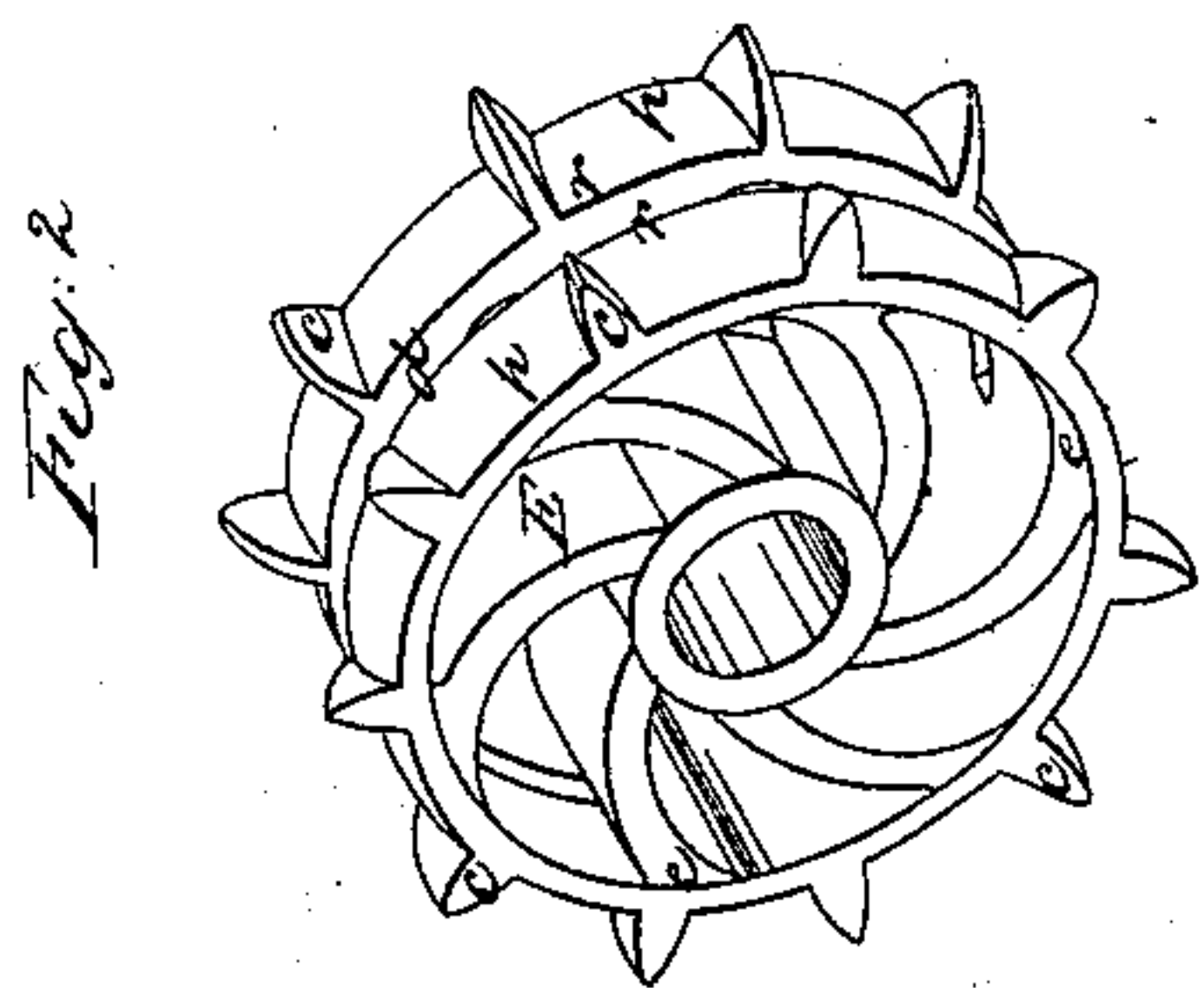


Morse & Perry, Windlass Water Elevator,

No. 34,641.

Patented Mar. 11, 1862.



Witnesses
Thos. R. Roach
P. C. Tschumacher

Inventor
Henry Morse
Saml Perry

UNITED STATES PATENT OFFICE.

HENRY MORSE, OF NATICK, AND DAN PERRY, OF ATTLEBOROUGH, MASSACHUSETTS.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 34,641, dated March 11, 1862.

To all whom it may concern:

Be it known that we, HENRY MORSE, of Natick, in the county of Middlesex, and DAN PERRY, of Attleborough, in the county of Bristol, and State of Massachusetts, have invented certain new and useful Improvements in Water-Hoisting Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section through the middle of the apparatus; Fig. 2, a view of the wheel detached, and Fig. 3 a view of the tilting-hook detached.

Our present invention relates to that class of water-hoisting apparatus in which the bucket is raised by a chain and windlass to the required height and is then tilted to empty it; and our invention consists in an improved form of the wheel which carries the chain and in an improvement in hanging the hook by which the bucket is tilted.

That others skilled in the art may understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A is the covering or well-curb, from one side of which projects the spout B, into which the water is emptied from the bucket C. A shaft D has its bearings in each side of the covering A and is turned by a crank in the usual manner. It has secured to it a wheel E, (shown detached in Fig. 2,) over which is passed the chain G, to one end of which is hung the bucket C by its bail *a*, and to the other end is attached a counterpoise H of iron. The wheel E is formed with projections or sprockets *c* at short intervals around its periphery to prevent the chain from slipping off laterally, and also to take hold of the links and prevent the chain from slipping round on the surface of the wheel. It also has a groove or slit *d* formed around it, which is cut through the rim of the wheel, the spokes being so formed at their outer ends at *e* as to hold the two sections of the rim together. This slit serves a double purpose: First, it receives one portion *i* of each link of the chain, while the other part *g* of the link rests on the face of the wheel between the sprockets, so that there is presented to the wheel as it revolves alter-

nately a vertical and a horizontal part of the chain. This prevents the chain from twisting round as it is drawn up and always brings up the same side of the bucket next to the trough B; otherwise the bail *a* would occasionally strike the tilting-hook, (to be presently described,) and the bucket would pass it without being tilted. Secondly, the slit *d* serves to permit the water which may be carried up by the wet chain to run down through the wheel, so that the ice will not collect on the periphery of the wheel to interfere with the working of the chain. As a still further means of preventing this collection of ice, the face of the wheel is beveled off, as shown in Fig. 2, from the middle toward its outer edges. This forms somewhat of an edge *r*, on which the chain rests, and the ice, if it should form, is broken off by the chain.

The tilting-hook K (shown detached in Fig. 3) is pivoted at *m* to each side of the covering A at a sufficient height above the trough B to prevent the water from splashing onto the pivots when the bucket is emptied into the trough. It is curved toward the line in which the bucket is raised, forming a nose *l*, which, when the hook is hanging in its normal position, intercepts the path of the bucket, and as the bucket ascends catches and tilts it up and empties its contents into the spout B. As the bucket catches under the nose *l*, the hook K is swung back until its bent portion *n* strikes the front side of the cover A, when it is firm to resist the ascent of the bucket and to tilt it. A stop *s* arrests the forward swing of the hook K. We find in practice that by hanging the hook K in this manner at a considerable height above the spout it acts with greater certainty upon the bucket, and is never frozen up in cold weather and rendered inoperative, as is liable to be the case when it is hung in the usual position—that is, pivoted close to the trough B.

The bucket C is furnished with a flap-valve *p* in its bottom; but we lay no claim to its construction.

We are aware that sprocket-wheels of various forms have been used to carry chains for hoisting apparatus; but when used for water-hoisting it is necessary that a means be provided for the escape of the water, which would otherwise collect between the sprockets on the

rim of the wheel and by freezing prevent its holding the chain.

Instead of the slit *d* extending entirely around the wheel E, the two halves of the wheel may be connected together at short intervals, thus leaving a series of openings through the rim, through which the water may escape. The links of the chain falling into these openings, the chain is carried without the use of the sprockets *c*.

What we claim as our invention, and desire to secure by Letters Patent as an improvement in water-hoisting apparatus, is—

1. The arrangement and combination of a hoisting-chain and a hoisting-wheel with openings through its rim for the escape of the water, substantially as described.

2. The construction and arrangement of the hook K when hung in the manner and for the purpose substantially as specified.

HENRY MORSE.
DAN PERRY.

Witnesses:

THOS. R. ROACH,
P. E. TESCHEMACHER.