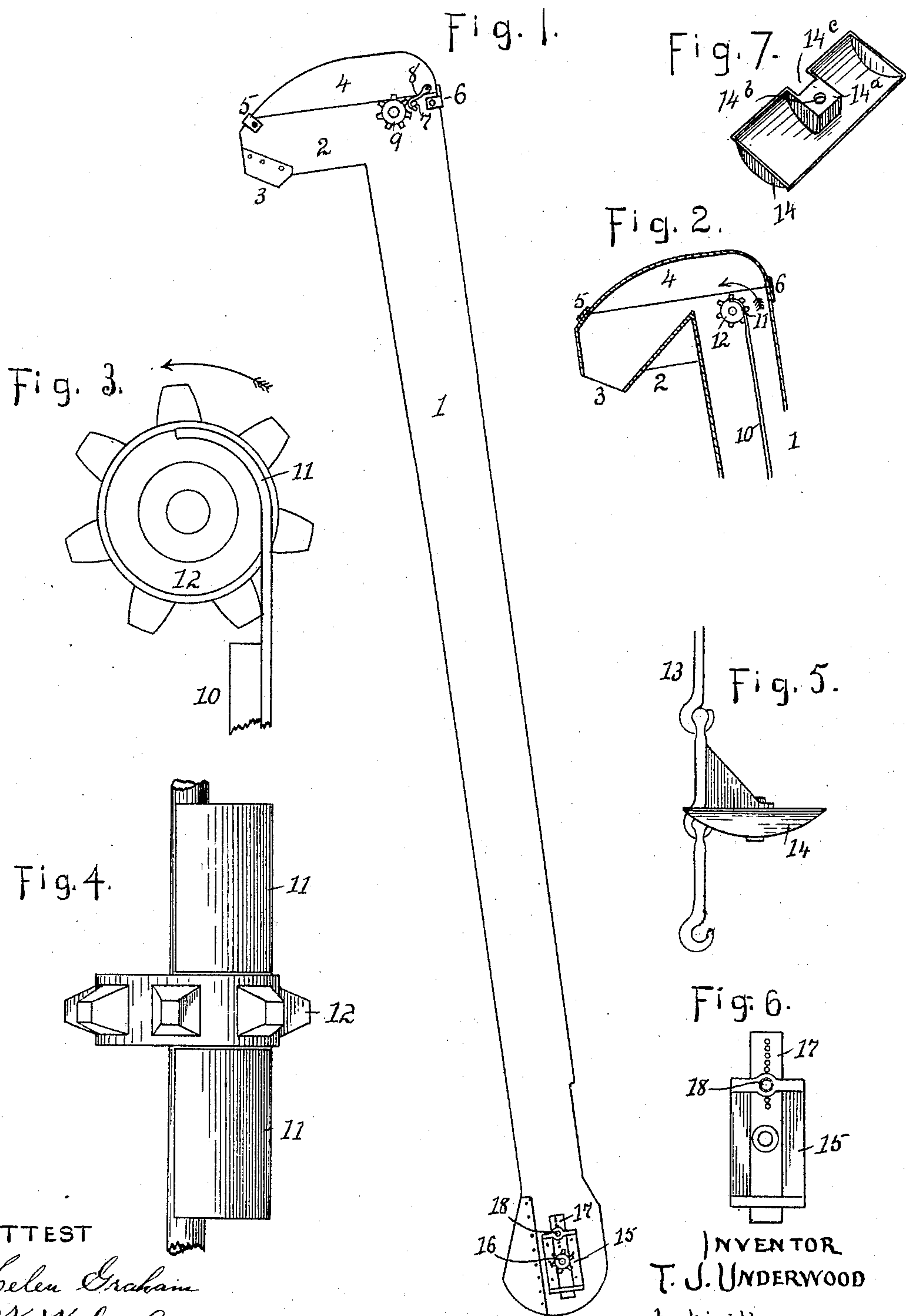


(No Model.)

T. J. UNDERWOOD.
ELEVATOR.

No. 448,699.

Patented Mar. 24, 1891.



ATTEST

Helen Graham

W. H. Graham

INVENTOR
T. J. UNDERWOOD

by his attorney

L. P. Graham

UNITED STATES PATENT OFFICE.

THOMAS J. UNDERWOOD, OF DECATUR, ILLINOIS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 448,699, dated March 24, 1891.

Application filed September 15, 1890. Serial No. 364,965. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. UNDERWOOD, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

This invention consists in the details of construction and combinations of parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side view of an elevator embodying my invention. Fig. 2 is a vertical section through the head of the elevator. Fig. 3 is a side view, enlarged, of the upper and inner sprocket-wheel and the arched plate that coacts with the sprocket-wheel and with the drag buckets. Fig. 4 is a plan or top view of the mechanism shown in Fig. 3. Fig. 5 is a side view of a drag-bucket and section of chain. Fig. 6 is an enlarged view of the chain-adjuster, seen also in Fig. 1. Fig. 7 is a perspective representation of the bucket.

The elevator-casing 1 has the head 2 and the discharge-opening 3. Strap 5 extends across the upper edge of head 2, forming an acute angle therewith. Strap 6 extends across the upper end of the elevator, forming a right angle therewith. The cap 4 has an acute angle adapted to strap 5, a right angle adapted to strap 6, and it is further secured to the top of the elevator by a hook 8, which engages pin 7. Power is imparted to the elevating mechanism through sprocket-wheel 9, which is keyed on the shaft of the inner wheel 12. The partition 10 has the upward extension 11, which curves to conform to the periphery of wheel 12, is slotted centrally to receive such wheel, and extends to a point above and in line with the vertical center thereof. The chain 13 has shallow drag-buckets 14 at suitable intervals, and it runs over wheel 12 and around another wheel at the foot of the elevator. The buckets 14 are each in line with the lower pivot of the link to which they are secured. They have an overshot action, and they are designed to be run at considerable speed. They each have a plane-surfaced part 14^a raised above the concavity, and in such part is recess 14^c to admit the chain, and hole 14^b to receive the

securing-bolt, which passes through the bracket of the link and through the bucket and secures them together. The frame 15 is secured to the lower end of the elevator, and it provides sliding bearings for bar 17. The bar 17 provides a bearing for the shaft of the lower sprocket-wheel, and it has a number of holes in its upper end, through one of which pin 18 passes. When the pin 18 is withdrawn from a hole in the bar, the lower sprocket-wheel automatically adapts itself to the length of the chain, after which the new position may be made permanent by inserting the pin through the hole in the cross-bar of frame 15 and through the hole of the bar that coincides therewith. The position of the buckets with relation to the lower pivots of their respective links causes the buckets to swing away from the side of the elevator whenever they come in contact therewith, thus giving good clearance and avoiding the possibility of a block and consequent breakage. As the buckets pass over the upper wheel the plate 11 aids in retaining the grain until it is thrown forward and to some extent upward by centrifugal force. The cap 4 is raised from the elevator by disengaging the hook, raising the rear end from contact with strap 6, and withdrawing the front end from under strap 5.

I claim—

1. In combination with sprocket-wheel 12, chain 13, and overshot buckets 14, the curved plate 11, slotted to receive the wheel and following the periphery thereof to a point in vertical alignment with its center, as set forth.

2. In combination with a sprocket-chain, a drag-bucket rigidly secured to a side of a link of the chain in line with the lower pivot thereof, as set forth.

3. In combination with chain 13, the concavo-convex bucket 14, having the central elevation 14^a, hole 14^b, and recess 14^c, as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

THOMAS J. UNDERWOOD.

Attest:

I. D. WALKER,
L. P. GRAHAM.