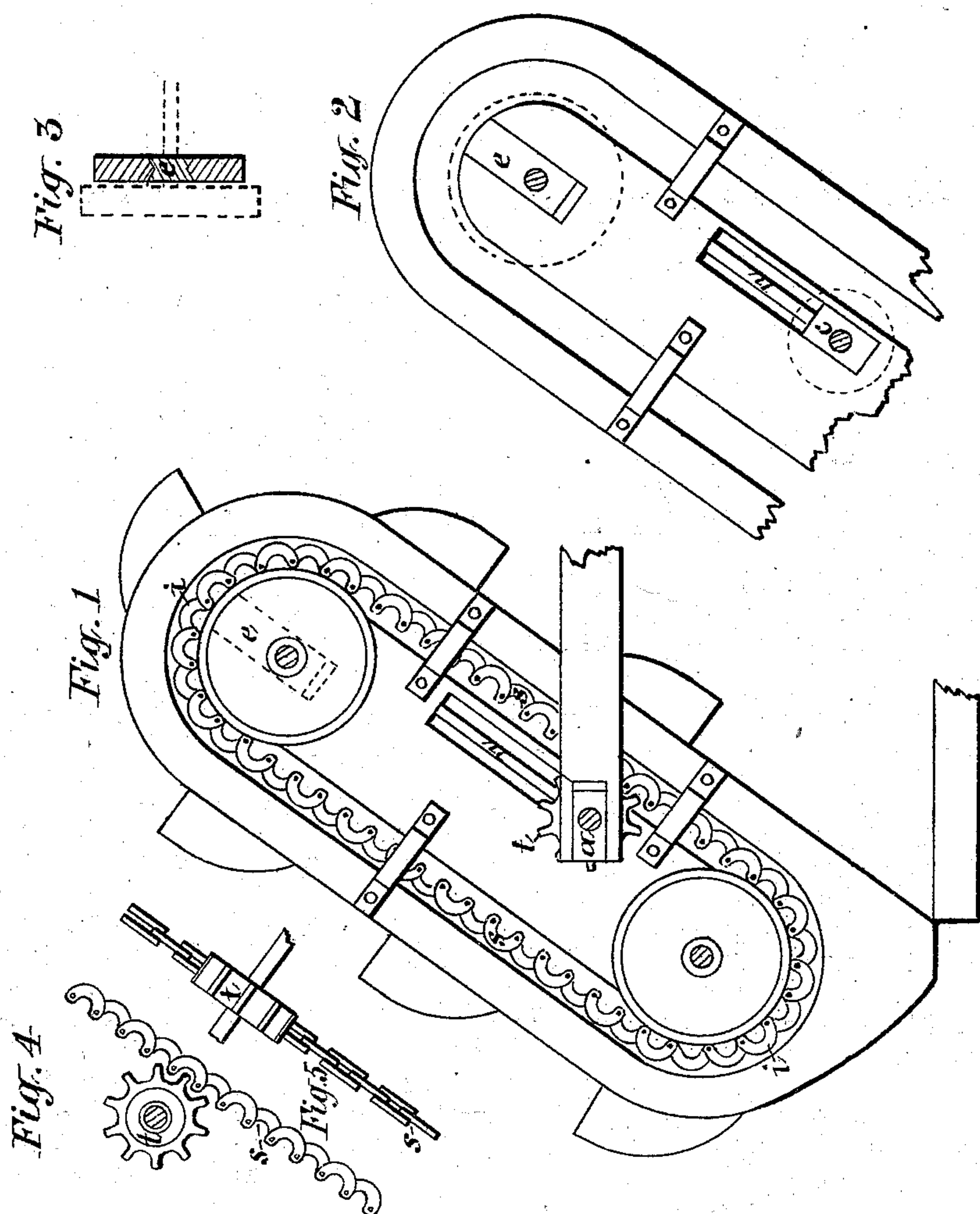


S. B. CASTLE.
Endless Chain Elevators.

No. 152,601.

Patented June 30, 1874.



WITNESSES:

E. Laass
J. C. Laass.

INVENTOR:

Simeon B. Castle

UNITED STATES PATENT OFFICE.

SIMEON B. CASTLE, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN ENDLESS-CHAIN ELEVATORS.

Specification forming part of Letters Patent No. **152,601**, dated June 30, 1874; application filed April 6, 1874.

To all whom it may concern:

Be it known that I, SIMEON B. CASTLE, of Syracuse, New York, have invented an Improved Surface-Elevator, of which the following is a specification:

My improvements relate to the construction and arrangement of parts by which I make an efficient and cheap elevator capable of being raised or lowered or turned to any angle relative to the receiver, and which may be affixed stationary or attached to a moving receiver, such as a wagon or other vehicle.

The description of my device is as follows:

Referring to the accompanying drawing, Figure 1 is a side elevation; Fig. 2, a side view of the upper portion of the frame. Fig. 3 is an end view of the pulleys and adjustable box at the upper end of the frame. Fig. 4 is a side view of the driving-pinion and a section of the endless chain gearing therewith. Fig. 5 is a reversed plan of the chain and pinion.

The same reference-letters are used to designate like parts in the several figures.

There are two endless chains, *s s*, formed of plate-links riveted together and so curved as to form toothed gear, as clearly seen in the drawing. These chains pass around proper pulleys *i i*, placed at each end of a suitable frame, and on either side thereof bars or axes extend from one of the chains to the other, and at right angles thereto, on which may be affixed rake-teeth, buckets, shovels, or other-formed apparatus adapted to the particular material to be elevated.

The endless chain is tightened properly by means of adjustable boxes at the upper end of the frame. The chains are worked by a pinion on the main driving-shaft, which has its bearings in sliding boxes *c*, which slide in grooves *n n* in the main frame made parallel with the straightened portion of the chain. By this arrangement the teeth of the pinion on the driving-shaft are kept in gear with those formed by the chain, in whatever position the boxes *a* are.

The whole apparatus is suspended and supported on the driving-axle, which is attached to the receptacle for the material to be elevated; and the elevator can be made to slide up or down on the boxes to raise or lower it, and can be turned to any angle from the vertical plane with the driving-axle for a center.

The driving-axle may be connected with any motor by means of an endless band or chain, which can be tightened by sliding box *a*, through which the driving-shaft passes.

The parts of the main frame are made and braced in a way well known to manufacturers.

Having thus fully described my improvement, I claim—

The adjustable pinion *t*, in combination with an endless chain of an elevator, as set forth.

SIMEON B. CASTLE.

Witnesses:

CHAS. E. IDE,
PETER B. MCLENNAN.