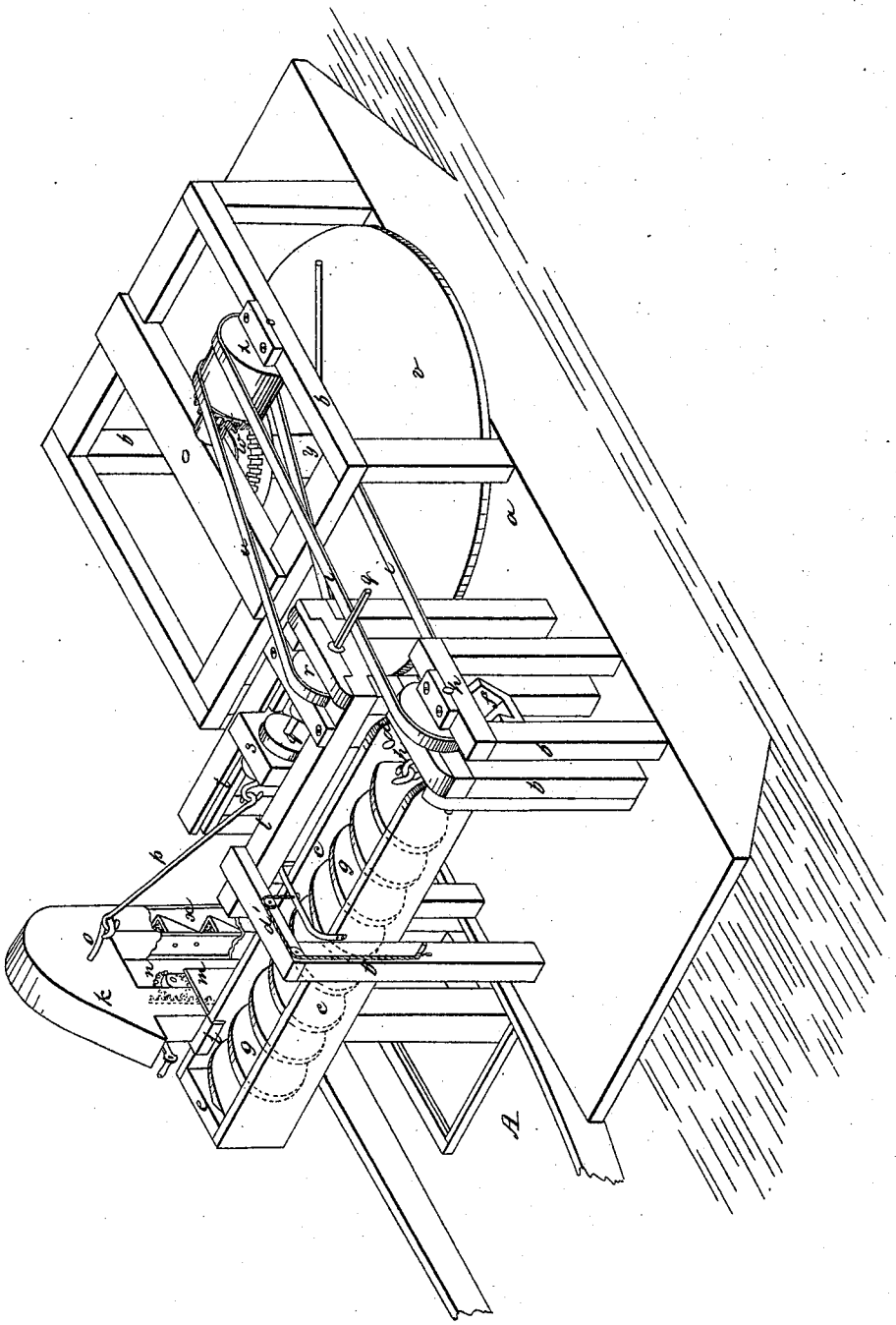
J. Pagin,

Grain Conveyer.

No. 5,101. Patented May 8, 1847.



UNITED STATES PATENT OFFICE.

JOHN PAGIN, OF BUFFALO, NEW YORK.

APPARATUS FOR DISCHARGING GRAIN, &c., FROM VESSELS.

Specification of Letters Patent No. 5,101, dated May 8, 1847.

To all whom it may concern:

Be it known that I, JOHN PAGIN, of Buffalo, in the county of Erie and State of New York, have invented a new and useful Apparatus for Discharging Grain, &c., in Bulk from Boats, &c., and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an isometrical view of the machine and a portion of a boat beside it from which it is discharging the load.

The nature of my invention consists in so combining and arranging a conveyer and elevator with a boat and the driving power as to elevate the grain from the hold of one vessel and conveying it and delivering it into another, the elevator being connected with one end of the frame of the conveyer by a vertical slide that it may descend as the quantity of grain in the hold of the vessel is reduced, and to admit of its being adapted to the various heights of vessels, the connection with the driving power being made by means of an universal joint and sliding shaft, or their mechanical equivalents—the other end of the conveyer being jointed to the framing so as to render the whole apparatus self adapting to the motions of the vessel and boat or scow produced by swells or other causes.

The machinery is supported on a float or boat (*a*) on the deck of which there is elevated a proper frame work (*b*) to sustain the parts; I attach a trough (*c*) at one of its ends to the frame work by a pivot (*d*) so that the opposite end can be raised or lowered at pleasure by a cord (*d'*). The movable end of the trough is closed by a partition (*e*). The opposite end is open and has a short spout (*f*) appended to it inclining downward. In this trough there is a spiral conveyer (*g*) such as is used in mills, the end of this conveyer is coupled with a short shaft (*h*) by an universal joint, said shaft and conveyer are turned by a band (*i*) that passes over a pulley on the shaft, and over a driving drum (*z*) hereafter named.

An elevator (*k*) composed of an endless chain of buckets, the construction of which is well known to mill wrights is attached by a hook (*l*) to the side of the trough (*c*) near the movable end (*e*) which projects out over the side of the float (*a*) to which it is affixed and said elevator is so connected with the trough that it can be made to slide out or in as required; the hook (*l*) is attached to the case of the elevator by a clamp (*m*) which bears on its inside a pinion (*n*) that gears into a rack on the case (shown by dotted lines in the drawing) so that by turning the pinion it is obvious the elevator can be raised or lowered independent of the trough which latter may be also moved up and down as before remarked at the end to which the elevator is attached. A portion of the case of the elevator is broken at (*x*) to show the endless chain of buckets which pass over pulleys in the case above and below within the case. The shaft (*o*) of the upper pulley of the endless elevator is connected by two universal joints and a link (*p*) with a square shaft (*q*) that passes through the axis of a pulley (*r*) and has an end chase therein so that it can slide back and forth as the elevator is raised or lowered. A sliding journal block (*s*) is added to this shaft that slides back and forth with it in ways (*t*), in this the shaft turns and is steadied. The pulley (*r*) is turned by a band (*u*) that passes over the driving drum (*z*) above named. This drum connects with an upright shaft (*y*) by bevel gearing (*w*) said shaft (*y*) being turned by horse or other power; (*v*) is a platform for the horse to walk on; (A) is the boat to be unloaded—the elevator has its lower end in the hold of the boat, and when put in motion raises the grain which is stored there in bulk up into the trough (*c*), whence the conveyer carries it across the machine float and discharges at the spout (*f*); as the load is discharged the elevator and carrying trough can by their joints accommodate their relative position to the surface of grain to be elevated and thus discharge the same without any interruption caused by the change of position of the floating bodies or their loads.

What I claim as my invention and desire to secure by Letters Patent is—

So combining a conveyer and elevator with a boat or scow and the driving power

so that the elevator and the end of the conveyer to which it is attached can be moved up or down so as to be adjusted to the relative height of the vessel from which the grain is to be elevated and the boat to which they are attached, and also to the varying height of the grain in the hold of the vessel from which it is to be raised, in the manner substantially as herein described.

JOHN PAGIN.

Witnesses:
J. J. GREENOUGH,
A. P. BROWNE.