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B. T. Stowell's Excavator.

Fig. 1.

PATENTED

DEC 17 1867

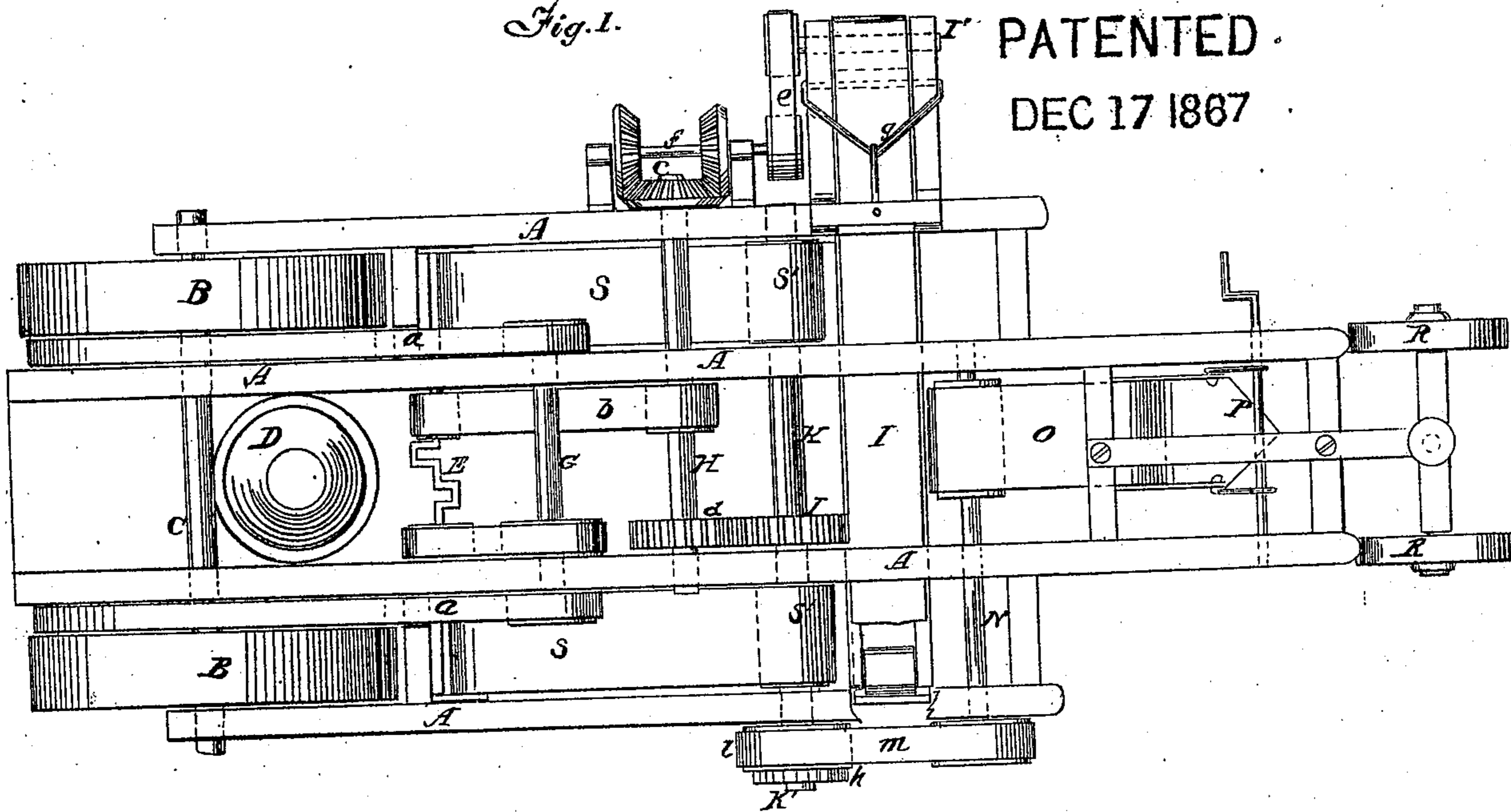
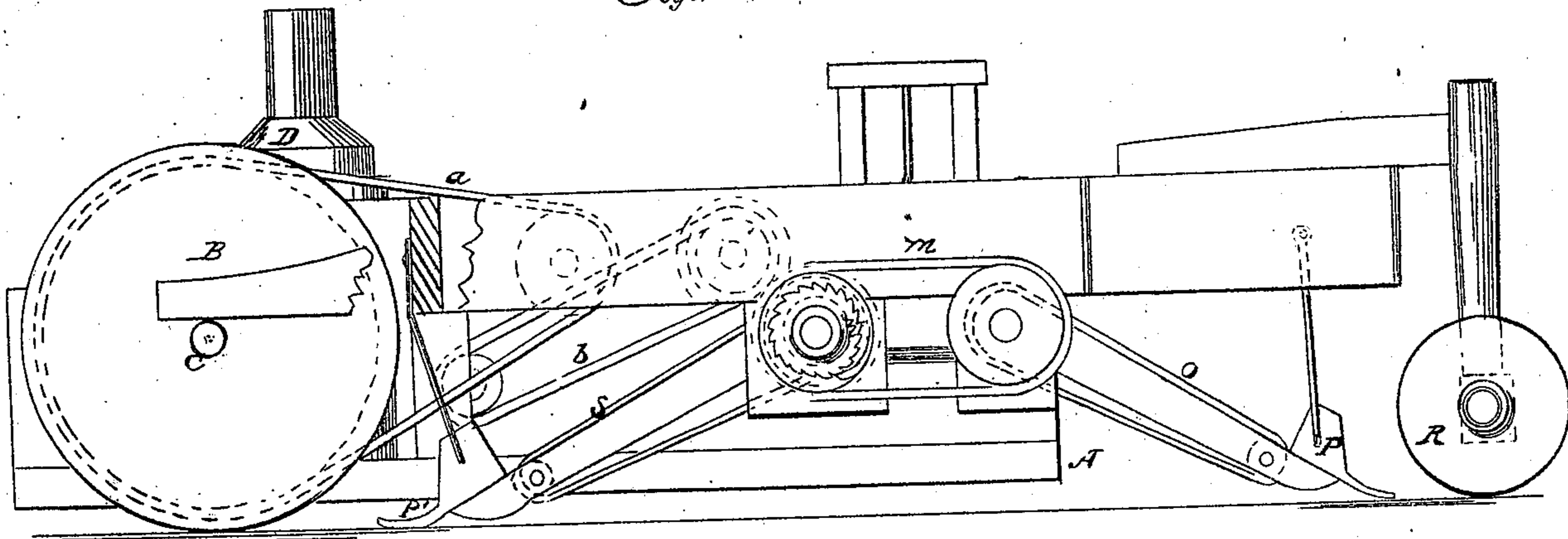


Fig. 2.



Witnesses,
Theo. Tische
W. T. T. T. T.

Inventor,
B. T. Stowell
 Per *Munro*
Attorneys

United States Patent Office.

B. T. STOWELL, OF QUINCY, ILLINOIS.

Letters Patent No. 72,336, dated December 17, 1867.

IMPROVEMENT IN EXCAVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, B. T. STOWELL, of Quincy, in the county of Adams, and State of Illinois, have invented a new and improved Excavator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved method of constructing excavators and ditching-machines; and the invention consists in the arrangement and combination of parts as hereinafter described.

Figure 1 is a top or plan view of the machine, showing the parts of which it is composed, and the manner in which they are arranged.

Figure 2 is a side elevation of the machine.

Similar letters of reference indicate corresponding parts.

A represents the frame, which is made of wood, or of wood and metal combined, as may be deemed best, or be found most convenient. B B represent two traction-wheels at the rear end of the machine. C is the axle, upon which these wheels revolve. D represents the position of the steam-boiler and engine by which the machinery is operated. E is the engine-shaft. There are two pulleys on the engine-shaft. F is one which drives the shaft G. The shaft G has two pulleys on it, from which belts, *a a*, pass over the wheels B B, for propelling the machine. H is another shaft, driven from the engine-crank shaft E by the belt *b*. There is a bevel-gear wheel, *c*, on one end of this shaft, and a spur-gear, *d*, on the other end. I represents a transverse apron or spout, from which carts are loaded by the earth which is discharged on to it from the cutter-aprons at each end of the machine, as the machine is moved one way or the other. The revolving belt I is driven by the belt *e*, from the shaft *f*. This shaft *f* has two bevel-gears upon it, as seen in the drawing, which are governed by a shifter, by which the shaft *f* is made to slide back and forth, so that the two bevel-gears engage alternately with the other driving bevel-gear, *c*, on the shaft H. By thus shifting these gears the apron I is made to revolve either way. This apron is attached to a frame separate from the main frame A, but is still connected with it by pivots at one end, and by a bevel, *g*, at the other, so that the end I' can be raised and lowered, as may be desired. The spur-gear wheel *d*, on the shaft H, engages with another wheel, J, on the shaft K. This shaft passes through to the outside of the frame A, with a pulley and a ratchet-wheel on its end, as seen at K'. *h* is the ratchet-wheel, which has a pawl which is attached to the pulley L. *m* is a belt on the pulley L, which drives another shaft, N. This shaft N operates the apron O, which receives the earth from the forward cutter, P, as the machine is propelled in a forward direction. Q is a windlass, from which the cutter P is suspended and made adjustable. R R are guide-wheels on the forward part of the machine, which may be controlled by a lever in the usual way, for the guidance of the machine. The earth raised by the apron O is discharged on to the transverse apron I, which delivers it into the carts. At or near the back end of the machine, just in front of the wheels B B, there are other cutters, each with an apron, marked in the drawing S S. The position of these cutters is plainly seen in fig. 2, at P'. These aprons, S S, are driven from the shaft K by pulleys, seen at S' S'. The arrangement is such, that when the machine is moving forward, these aprons and the pulleys or drums S' do not revolve, but the shaft K does revolve. The pulleys S' have internal ratchets, the pawls of which slip as the machine goes forward, but when the machine backs the pawls catch, and the aprons are revolved. In this case the apron O, at the front of the machine, may be prevented from revolving by the ratchet and pawl *h*, on the outside. The aprons S S discharge the earth raised, on to the belt I, from whence it is discharged into carts. The forward cutter and apron are arranged so as to slide on the shaft N, so that after one furrow is cut, the apron and cutter are moved to the other side, and cut another furrow while the machine is moving in the same track. In a full-sized machine, chains are used instead of belts, and also chains, with cross-slats for the aprons.

I do not confine myself to any particular materials, nor to any particular proportions, nor to any particular arrangement, as regards the minor details of the machine. All these may be varied without interfering with the main features of my invention.

The method of managing the machine so as to operate with it to the best advantage, will suggest itself to those who are acquainted with the subject, and requires no description here.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

An excavating or ditching-machine, constructed substantially as herein described, with cutters at each end, arranged to cut in either direction, as the machine moves backward or forward, and which delivers the earth on to a common carrier or revolving apron, substantially as described.

B. T. STOWELL.

Witnesses:

B. B. WENTWORTH,
C. W. HILBORN.