

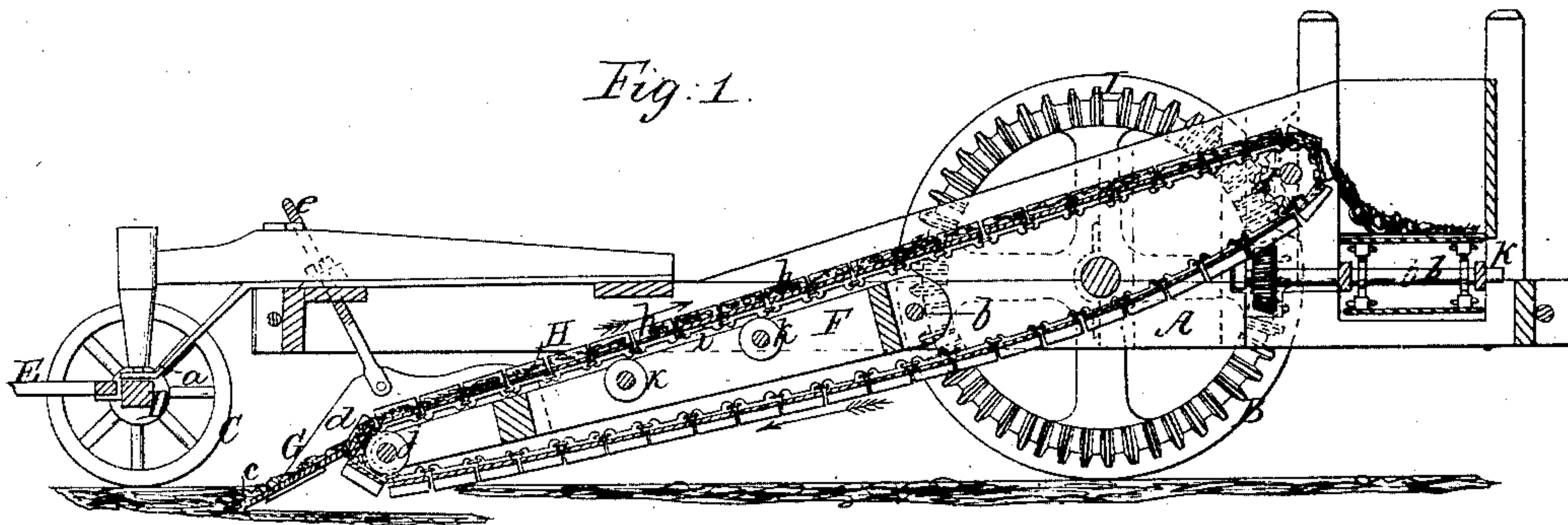
*B. F. Stowell*

*Excavator*

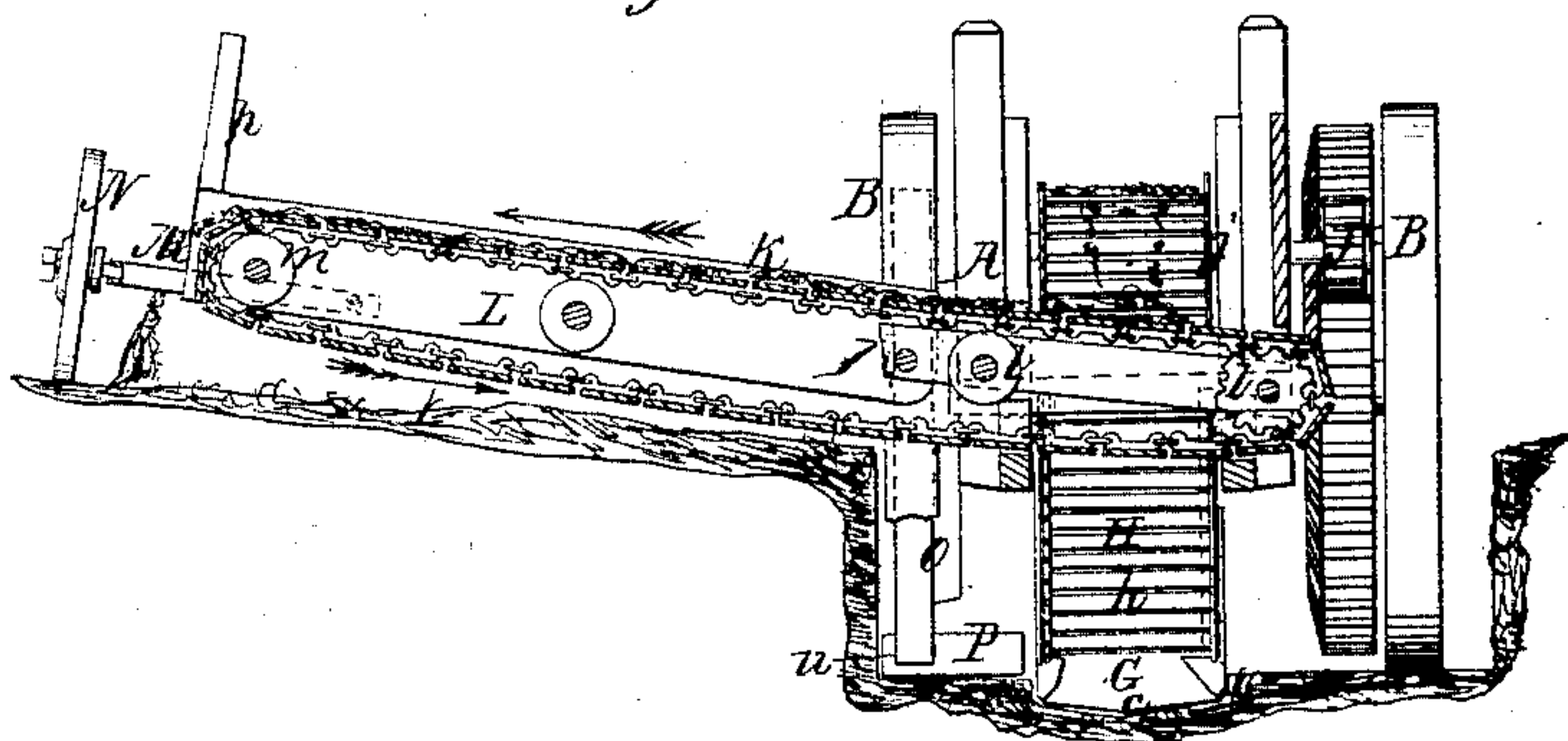
*N<sup>o</sup> 37,878.*

*Patented Mar. 10, 1863.*

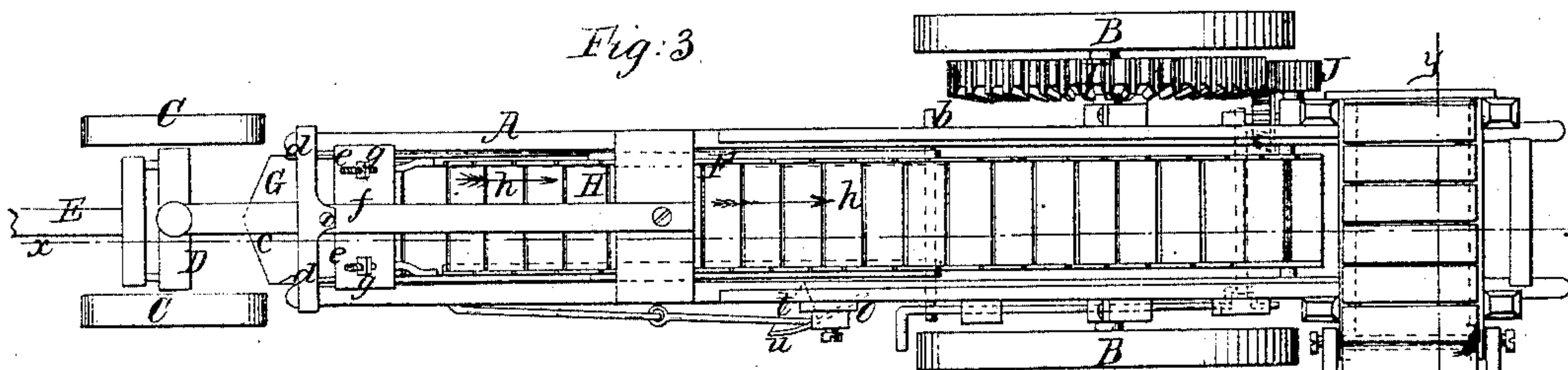
*Fig. 1.*



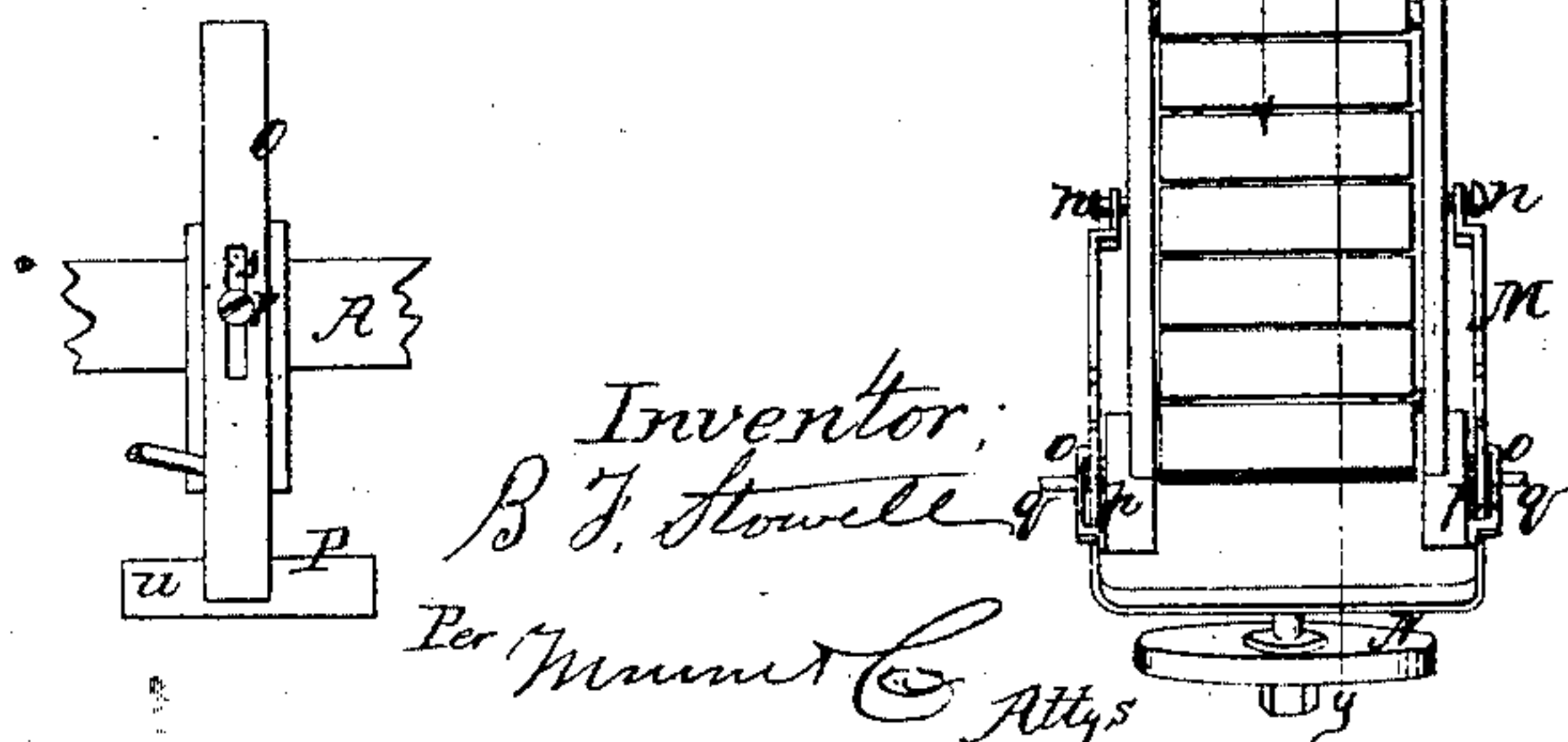
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

B. T. STOWELL, OF QUINCY, ILLINOIS.

## IMPROVEMENT IN EXCAVATING AND DITCHING MACHINES.

Specification forming part of Letters Patent No. 37,878, dated March 10, 1863.

*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 Excavating and Ditching Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention, taken in the line *x x*, Fig. 3. Fig. 2 is a transverse vertical section of same, taken in the line *y y*, Fig. 3. Fig. 3 is a plan or top view of same. Fig. 4 is a detached view of a side cutter pertaining to same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improved arrangement pertaining to the discharging-apron, whereby the same is allowed to adjust itself to suit the varying height of the embankment or deposit made by the machine.

The invention also relates to the employment or use of a side cutter applied to the machine and arranged to operate substantially as hereinafter described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a horizontal frame the back part of which is supported by a pair of wheels, B B, and the front part supported by a pair of small wheels, C C, the axle D of which turns on a king-bolt, *a*, and has a draft-pole, E, secured to it.

In the frame A there is placed a supplemental frame, F, which is hung at its inner end on a shaft, *b*, and is allowed to work freely thereon. The lower end of the frame F, has a shave or cutter, G, attached, said shave or cutter being formed of an inclined bottom cutter, *c*, and two side cutters, *d d*. The cutter G has two screw-rods, *e e*, attached, one at each side, and these rods pass through a cross-piece, *f*, at the front end of the frame A, said rods each having a nut, *g*, on them.

H is an endless apron, which is constructed of metal-plates *h* attached to chains *i*, which chains pass over drums *j j*, fitted, respectively, in the lower part of frame F at the upper part of frame A, as shown clearly in Fig. 1. The frame F is supplied with a number of drums or rollers, *k*, which serve as a support

for the apron H. The drum *j*, at the lower part of the frame F, is directly back of the cutter G, and the apron H is inclined, as shown clearly in Fig. 1.

To the right-hand wheel B of the frame A there is attached concentrically a toothed wheel, I, into which a pinion J gears, said pinion being on the drum *j* at the back part of the frame A, and communicating motion to the apron H as the machine moves along.

At the back part of the frame A there are placed two drums, *l l*, around which an endless apron, K, passes. The drums *l l* are in a horizontal plane below the back end of apron H, and to the left side of frame A, in line with the drums *l l*, there is attached, by a joint or hinge, a frame, L, which is precisely like the frame F, and has a drum, *m*, at its lower end, around which the apron K passes.

To the lower end of the frame L there is attached a yoke, M. This yoke may be constructed of a metal bar bent in bow or bail form, and having its ends attached by pivots *n n* to the lower part of frame L.

To the outer part of the yoke M there is secured a wheel, N, which serves as a support for the end of frame L. The yoke M works in guides *o o* at the sides of uprights *p p* at the end of frame L, and the yoke may be adjusted at any desired inclination by means of pins *q q*, which pass through perforations in the guides *o o*. (See Fig. 3.)

To the left-hand side of the frame A there is secured an upright or standard, O. This upright or standard is secured to the frame A by means of a set-screw, *r*, which passes through an oblong slot, *s*, in the upright or standard and into the side of frame A.

To the lower end of the upright or standard O there is attached a cutter, P, which is formed of a horizontal plate, *t*, and a vertical plate, *u*, the latter being at right angles to the former. This cutter P, is a side cutter, and is directly in front of one of the left-hand wheels, B.

The operation of the machine is as follows: As the machine is drawn along, the cutter G penetrates the earth and takes up a slice, which is conveyed upward by the endless apron H, the latter moving in the direction indicated by the arrows. The thickness of the slice of earth or the depth of the cut of the cutter G may be regulated as desired



by turning the nuts *g*. The apron *H* discharges the earth upon the apron *K*, which discharges the earth at the outer end of frame *L*. The apron *K* is operated by a pinion, *Q*, which gears into the side of the wheel *I*, said pinion being the outer drum, *l*, of the apron *K*. This outer drum, *l*, of the apron *K* has its front bearing in a bar or rod, *R*, which is in the frame *A*, and is connected to a crank, *u*, to a shaft, *S*, at the left side of the frame *A*. By turning the shaft *S* the bar or rod *R*, may be shifted and the pinion *Q* shoved in and out of gear with the wheel *I* and the apron *K* rendered operative or inoperative, as desired. The wheel *N* enables the frame *L* to travel over the embankment formed by the discharge of earth from the apron *H* at any elevation—say within a height of from ten to twelve feet. This wheel, arranged in the yoke *M*, therefore, is an important feature of the invention, the yoke *M* admitting of the end of the frame *L* being brought nearer to or farther from the surface of the ground, as may be desired. The side cutter, *P*, is a necessary

appendage in cutting ditches, and serves to form a way or path for the wheels *B B*, the cutter *P* acting on one side of the ditch while moving in one direction and acting at the opposite side while moving in the opposite direction.

I do not claim, broadly, the employment or use of endless aprons and a scoop arranged in a mounted frame for excavating purposes; but

I do claim as new and desire to secure by Letters Patent—

The employment or use of an adjustable yoke, *M*, applied to the end of the swinging or adjustable frame *L*, and provided with a wheel, *N*, in combination with the side cutter, *P*, cutter *G*, and endless aprons *H K*, the latter being placed in the swinging or adjustable frames *F L*, and all arranged substantially as and for the purpose set forth.

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Witnesses:

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