

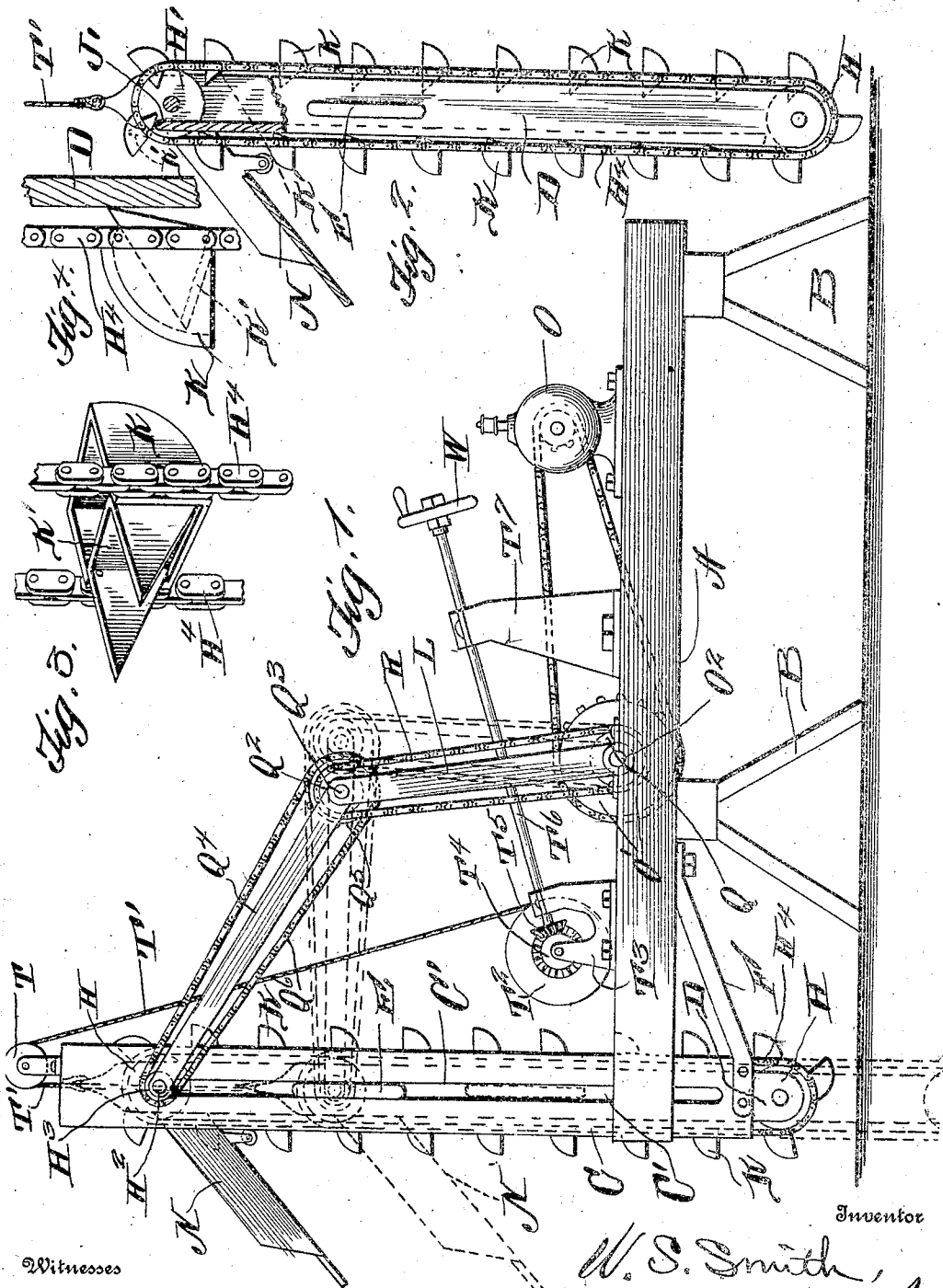
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EXCAVATOR.

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909,700.

Patented Jan. 12, 1909.



Witnesses

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EXCAVATOR.

No. 909,700.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WINFIELD SCOTT SMITH, a citizen of the United States, residing at Forest, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Excavators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in excavating apparatus, and consists essentially in the provision of an endless conveyer having buckets mounted thereon so arranged that the conveyer may be lowered in order to excavate at different depths, the soil being raised in the buckets and dumped in suitable chutes.

The invention comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a side elevation of the excavating apparatus. Fig. 2 is an enlarged detail view of the endless conveyer and frame removed from the apparatus. Fig. 3 is an enlarged detail perspective view of one of the buckets, and Fig. 4 is an enlarged detail in elevation of a bucket showing the position the false bottom assumes when the bucket is empty.

Reference now being had to the details of the drawings by letter, A designates a platform of the apparatus mounted upon suitable legs B. Rising from said platform are the standards C having longitudinal guideways C' therein, and D designates a conveyer frame having lateral projections E thereon which move in said guideways C' and serve to guide the frame D in its vertical movement. Suitable braces F are secured to the platform and are fastened to the lower portions of said standards, as shown clearly in Fig. 1 of the drawings. Mounted upon said conveyer frame are the sprocket wheels H and H' about which a conveyer chain J travels. A series of cups or buckets, designated by letter K, are fastened to the links of the conveyer chain and each cup is pro-

vided with a hinged bottom K' and so arranged that, when a projecting portion of said bottom comes in contact with a trip J' upon the conveyer frame, the false bottom 60 will swing upon its pivotal points and cause the material within the bucket to be discharged. Said trip is so positioned upon the conveyer frame that the contents of the bucket when emptied will fall into the chute 65 N and from which it may be discharged.

Mounted upon the platform is a motor O having belted connection with a pulley O' fixed to the shaft O² and a sprocket wheel Q is fixed to the shaft O², and a sprocket 70 chain R passes about the sprocket wheel Q and also a sprocket wheel Q² which is journaled upon a shaft Q³ supported by the bar L, the lower end of which is pivotally connected to the platform. A second bar, design- 75 ated by letter Q⁴, has pivotal connection with the shaft Q³ and also with the shaft H² upon which the uppermost of the two sprocket wheels H is mounted. A second sprocket wheel, designated by letter Q⁵, is 80 fixed to the shaft Q³ and a sprocket chain Q⁶ passes about the sprocket wheel Q⁵ and also a sprocket wheel H³ which is fixed to the shaft H², thereby affording means whereby motion may be transmitted from the motor 85 to the endless conveyer.

Mounted upon the upper end of said standard is a pulley T about which a cable T' passes and which cable is connected to the upper end of the conveyer frame. Said cable 90 passes about a reel or winding drum T² which is journaled in suitable bearings in the bracket T³ upon the platform. Fixed to the spindle of said reel or drum is a beveled gear T⁴, the teeth of which are in mesh 95 with a beveled pinion T⁵ fixed to the shaft T⁶ which latter is journaled in suitable bearings upon the brackets T³ and T⁷. An operating wheel W is fastened to the shaft, T⁶ whereby the latter may be rotated in one di- 100 rection or the other accordingly as it may be desired to raise or lower the conveyer frame.

The operation of the apparatus is as follows:—The parts being assembled as shown and described with the conveyer frame posi- 105 tioned vertically and motion being imparted to the endless conveyer through the medium of the motor, as the conveyer frame is lowered, the cups as they come in contact with the soil will scoop up and raise the same and, 110 as the trips come in contact with the false bottoms of the buckets, the contents thereof

will be dumped into the chutes N and make exit by gravity therefrom. The operator by turning the hand wheel W may cause the conveyer frame to lower by gravity, thereby
 5 regulating the depth to which it is desired to have the earth excavated.

From the foregoing, it will be observed that, by the provision of an apparatus as shown and described, a simple and efficient
 10 device is afforded whereby ditches, post holes, etc., may be excavated, the depth to which the excavation may be made depending upon the distance at which the conveyer frame may be lowered below the platform.

15 What I claim to be new is:--

1. An excavating apparatus comprising a platform, a standard rising therefrom, conveyer frames mounted in suitable guideways upon said standard, means for raising and
 20 lowering the frame, an endless conveyer chain upon said frame, buckets secured to said endless conveyer, a hinged bottom to each bucket, and trip mechanism for actuating the latter, as set forth.

25 2. An excavating apparatus comprising a platform, a slotted standard rising therefrom, a conveyer frame, an endless conveyer thereon, lateral projections upon said frame mounted in said slots, buckets secured to said
 30 endless conveyer, each bucket having a pivotal bottom, a trip adapted to actuate said bottom, pivotal bars connecting the platform and conveyer frame; a motor, gear connections between the same and the conveyer, and
 35 means for raising and lowering the conveyer frame, as set forth.

3. In combination with the platform of an excavating apparatus, a slotted standard rising therefrom, a conveyer frame, an end-
 40 less conveyer thereon, projections upon said frame engaging the slots of said standard, buckets fixed to said conveyer frame, a pulley mounted upon said standard, a cable passing about said pulley and connected to said
 45 conveyer frame, a reel upon which said cable winds, means for operating said reel, and means for driving the conveyer, as set forth.

4. In combination with the platform of an excavating apparatus, a slotted standard

rising therefrom, a conveyer frame, an end- 50
 less conveyer thereon, projections upon said frame engaging the slots of said standard, buckets fixed to said conveyer, a pulley mounted upon said standard, a cable passing
 55 about said pulley and connected to said conveyer, a reel upon which said cable winds, a rotatable shaft, gear connections between the same and said reel, and means for operating the conveyer, as set forth.

5. In combination with the platform of an 60
 excavating apparatus, a slotted standard rising therefrom, a conveyer, an endless conveyer thereon, projections upon said frame engaging the slots of said standard, buckets
 65 fixed to said conveyer, a pulley mounted upon said standard, a cable passing about said pulley and connected to said conveyer, a reel upon which said cable winds, a rotatable shaft, gear connections between the same
 70 and said reel, bars pivotally connected together, one of said bars being connected to said conveyer and the other to said platform, a motor, and gear connections between the same and said conveyer, as set forth.

6. In combination with the platform of an 75
 excavating apparatus, a slotted standard rising therefrom, a conveyer frame, an endless conveyer thereon, projections upon said frame engaging the slots of said standard, buckets fixed to said conveyer, a pulley
 80 mounted upon said standard, a cable passing about said pulley and connected to said conveyer, a reel upon which said cable winds, a rotatable shaft, gear connections between the same and said reel, bars pivotally connected
 85 together, one of said bars being connected to said conveyer frame and the other to said platform, sprocket wheels carried by said pivotal bars, a motor, connections between the same and said sprocket wheels and be-
 90 tween the latter and the endless conveyer, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WINFIELD SCOTT SMITH.

Witnesses:

G. W. SMITH,

C. C. SMITH.