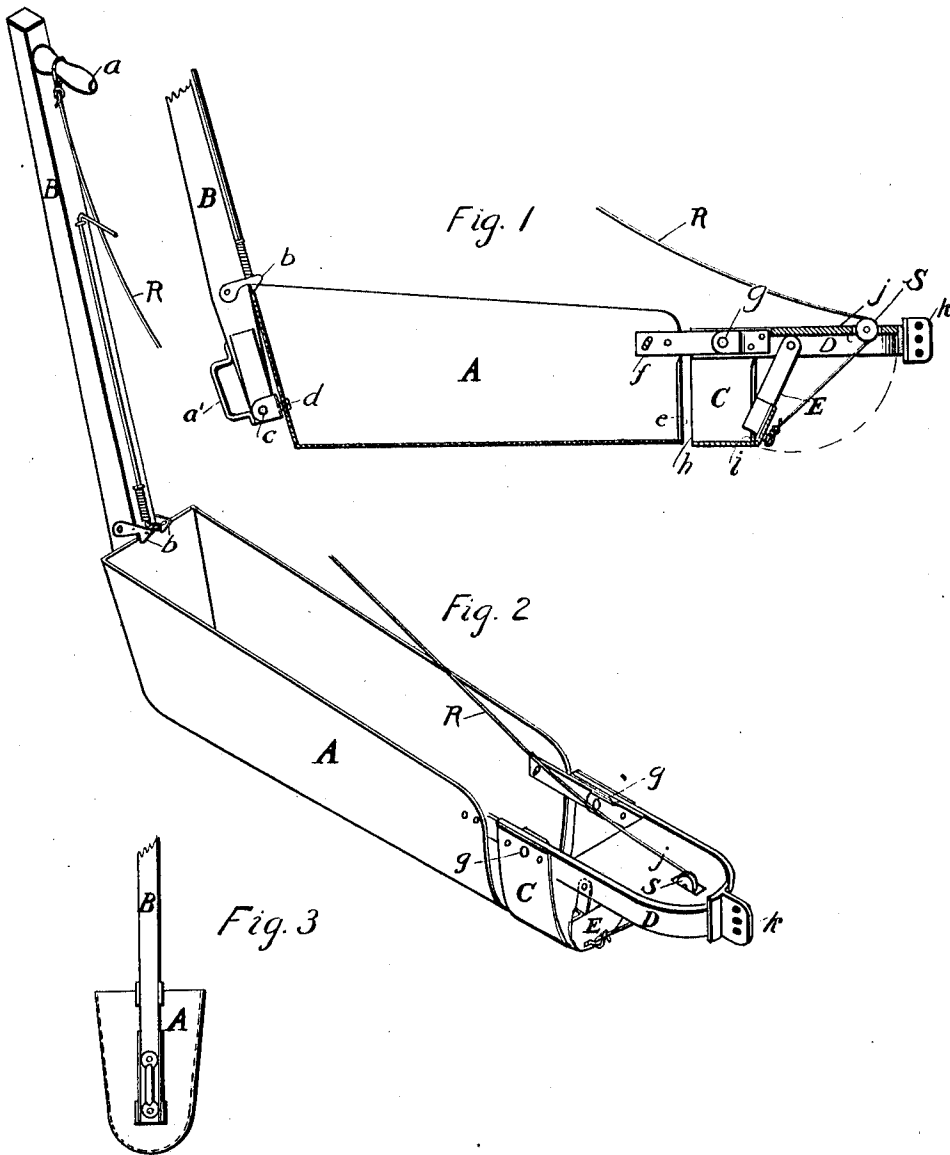


B. WERMUTH & W. M. BROWN.
TRENCHING IMPLEMENT.
APPLICATION FILED OCT. 29, 1910.

1,020,468.

Patented Mar. 19, 1912.



WITNESSES.

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TRENCHING IMPLEMENT.

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Specification of Letters Patent.

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Application filed October 29, 1910. Serial No. 589,768.

To all whom it may concern:

Be it known that we, BURT WERMUTH and WILLARD M. BROWN, both citizens of the United States, residing at Detroit, in the 5 county of Wayne and State of Michigan, have invented certain new and useful Improvements in Trenching Implements, of which the following is a specification.

Our invention relates to improvements in 10 trenching implements in which are employed a cutter and receiver or carrier, the cutter breaking the soil and forming the sides and the bottom of the trench, while the receiver catches the earth as it is loosened by the cutter, carries it up and out of the trench and 15 deposits it at the proper distance from the side of the said trench. Horses, steam, gasoline or any other motive power may be used for operating the trencher. We obtain 20 these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the implement. Fig. 2 is a perspective view of the entire implement and Fig. 3 is a 25 view of the rear end of the receiver.

Similar letters refer to similar parts throughout the several views of the implement.

The receiver, scoop or carrier A with the 30 handle B and the cutter consisting of the blade C, beam or frame D and swinging plate E constitute the main features of the implement.

a and *a'* are upper and lower handholds 35 attached to the handle B, *b* is a catch for securing the handle to receiver A, *c* is a pivot where handle B is attached for swinging up and down, *d* is a pivot attachment for sidewise movement of the handle, *e* is the 40 front cutting edge of receiver A, *f* is a strap connecting the receiver with cutter C, *g* is a pivot where a strap *f* is hinged to cutter C, *h* is the rear edge of the cutter blade C, *i* is the front edge of the same, *j* is a plat- 45 form on the frame D, and *k* is a head or hitch for attaching the motive power. The cutter C is fixed to the frame D.

The handholds *a a'* serve in handling the implement when out of the ground. Handle 50 B is made to have considerable freedom by the joints *c* and *d*, for the reason that it interferes less when dumping and aids otherwise in handling when operating the implement. The catch *b* is needed when the 55 trencher is being drawn through the bottom

of the trench, as it secures the handle to the receiver and enables the operator to control same in cutting and directing the course of the trench. The blade C, in cross section, is made similar to a cross section of receiver 60 A, except that the former is larger, thus enabling it to cut a course through which receiver A can follow without binding.

The strap *f* is rigidly fixed to the receiver, and is hinged to the cutter at *g*. This arrangement throws the draft on the receiver far enough forward to permit vibration of the draft frame with respect to the receiver as the latter is being drawn forward in the trench. The attachment of strap *f* 70 at *g* has a further purpose: As the receiver takes the earth cut and loosened by the cutter it is necessary that the edge *e* come as close to the edge *h* as possible and not interfere with the movement of the 75 parts. In the manipulation of the beam of the cutter up and down the front and rear edges of the cutter are moved up and down in their relation to the edge *e*. By fastening the strap *f* to the cutter at a point between 80 the edges *h* and *i*, the dirt will readily pass from the blade C to the receiver A and yet in no position can the edge *e* get below the cutter blade to catch the unloosened earth 85 below.

The swinging plate E is arranged to run the cutter out of the ground at the operator's will. When the blade C is cutting the swinging plate E is swung up and held 90 underneath the platform *j*. As soon as the receiver is filled the operator releases plate E and it drops down hitting the ground and is forced back against the cutter blade by the forward movement of the machine. When the plate finally comes in contact with 95 blade C it forms a runner to slide the device over the top of the ground. The head *k*, where the motive power is attached, is arranged so that the hitch can be raised or lowered to suit the kind of soil being 100 worked.

The device is operated by placing the cutting edge *i* of the cutter where the trench is to be started and pulling it along the course of the trench until the receiver is filled. The 105 swinging plate is then released and the cutter forced from the trench, bringing the machine up to the surface. The handle is engaged to the rear end of carrier A by the catch *b* while the implement is digging. 110

When the device is landed on the surface after being filled, the catch is released, the handle dropped down, the carrier tipped to the right or left according to the side on which the dirt is to be deposited, and turned 5 bottom side up, allowing the dirt to fall out. It is then tipped back on its side and by the use of the loose handle B is pulled back to the place of starting the first cut and the 10 process repeated. The start is made at the same place until the trench is deepened to the grade wanted. Then each draw completes a portion of the grade, working from the bottom upward to the surface on an angle. 15 Should the cutter fail to enter the soil because of its texture, one of the operators can stand on the platform and force it in. The plate E is swung up by means of a rope R which extends from the handle over a pulley 20 S set in a slot in the platform *j* to connection with the plate E. By pulling the rope the plate may be swung up and by releasing the rope the plate drops.

Having thus described our invention, what 25 we claim as new and desire to secure by Letters Patent is:—

1. In a trenching implement, the combination of a carrier, a soil cutter located in advance of the carrier and pivotally connected thereto, the pivot being located at a 30 distance above and in advance of the front

edge of the carrier, and a draft device connected to the cutter.

2. In a trenching implement, the combination of a scoop, a draft frame connected 35 thereto, and a plate pivoted to and depending below the draft frame, and adapted to swing forwardly and upwardly to position under the draft frame, or downwardly and 40 backwardly to position in front of the scoop.

3. In a trenching implement, the combination of a scooped shaped carrier, a pivoted U-shaped draft frame connected at its opposite ends to the opposite sides of the carrier, and a cutter fixed to the draft frame 45 and adapted to swing therewith and depending in front of the carrier and shaped to deliver material thereto.

4. A trenching implement, having a scoop, and a handle pivoted to the rear wall of the 50 scoop to swing transversely with respect to the scoop, and a catch pivoted to the handle and adapted to engage the rear wall of the scoop and hold the handle in rigid relation thereto. 55

In testimony whereof, we affix our signatures in presence of two witnesses.

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WILLARD M. BROWN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."