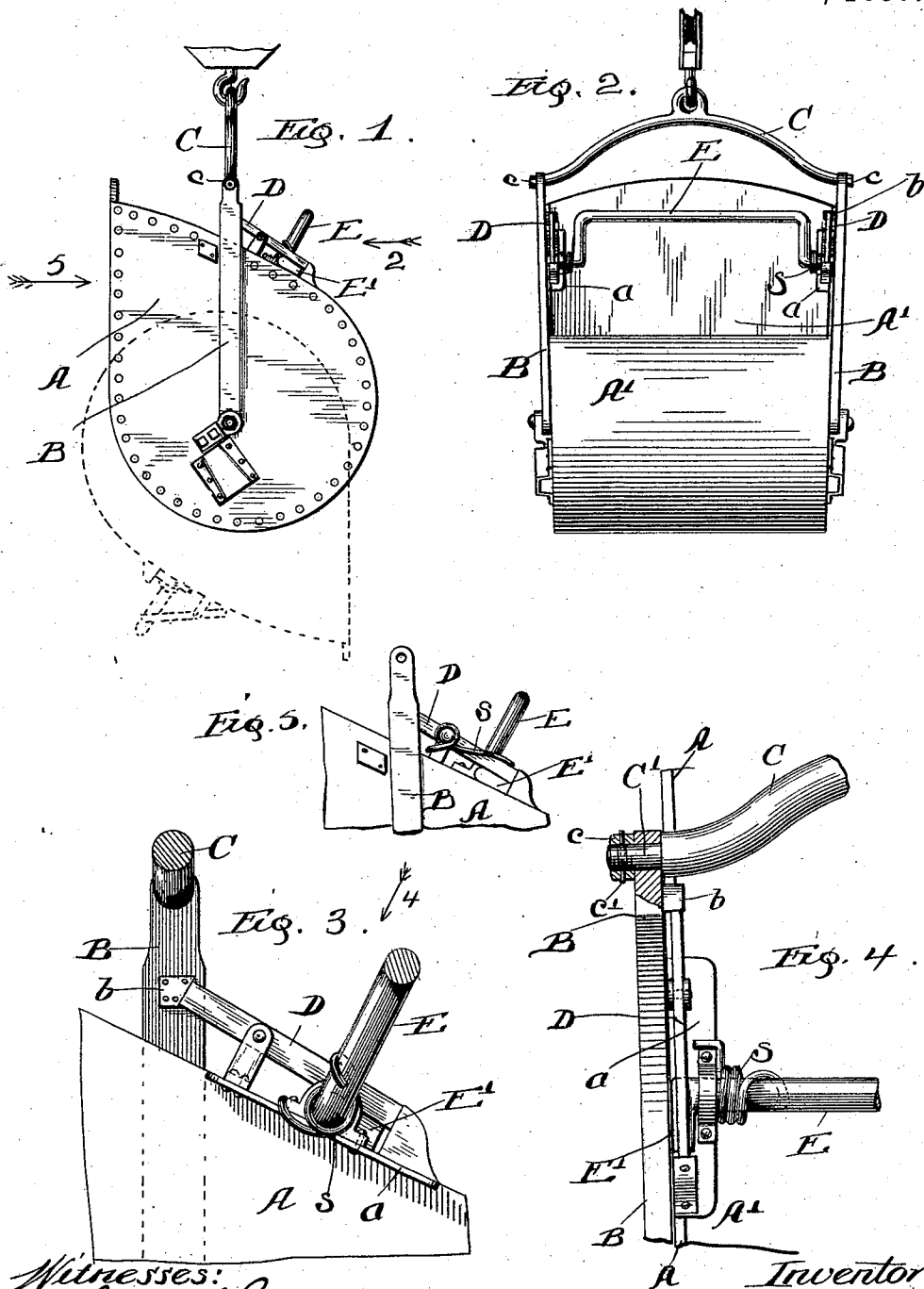


(No Model.)

D. I. CALHOUN.
EXCAVATING SCOOP.

No. 575,874.

Patented Jan. 26, 1897.



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UNITED STATES PATENT OFFICE.

DANIEL I. CALHOUN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CALHOUN
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EXCAVATING-SCOOP.

SPECIFICATION forming part of Letters Patent No. 575,874, dated January 26, 1897.

Application filed September 30, 1895. Serial No. 564,089. (No model.)

To all whom it may concern:

Be it known that I, DANIEL I. CALHOUN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Excavating-Scoops, of which the following is a specification.

My invention relates to improvements in excavating-scoops, and more particularly to improvements in means for regulating the position of the supporting bars and bails of such scoops, together with means for releasing the same to permit tilting of the scoops.

The invention is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a scoop embodying my improvements, the scoop being supported in its upright or filled position. Fig. 2 is a front elevation of the scoop shown in Fig. 1, the view being in the direction indicated by the arrow 2, Fig. 1. Fig. 3 is an internal side elevation of one of the side walls of the scoop, showing the relation of the supporting bars and bail, the locking mechanism, and the tripping crank-lever. Fig. 4 is an oblique plan of the parts shown in Fig. 3, the view being in the direction indicated by the arrow 4 in Fig. 3. Fig. 5 is a side elevation of the locking-lever and the parts connected therewith, showing a modified arrangement of spring for holding the cranked lever and locking-lever in place.

In the views, A A are the side pieces, and A' is the curved bottom and rear wall of a scoop having the general form and construction shown in my prior patent, No. 506,667, the rear end or base of each side piece being approximately a segment of the circle and the two side pieces being firmly joined by the wall A'. To the side walls A A are pivoted, respectively, two supporting-bars B B, preferably of such length as to extend a short distance beyond the edges of the side pieces in every position of the scoop, as shown in Fig. 1, and in the free ends of the bars B B are pivoted the respective ends of a bail C, adapted to be hung upon a hook or otherwise connected with suitable means of draft for filling and lifting the scoop. The bars B B

correspond to similar bars shown and described in the prior patent above referred to, but as shown in that patent the outer ends of the two bars were connected by an integrally-formed transverse bar fixing their relation to each other. It has been found in practice that the integrally-formed transverse bar lying across the opening or throat of the scoop tends somewhat to impede or contract the throat and is for that reason objectionable, and in my pending application, Serial No. 560,192, I have shown and described a means of obviating this difficulty by offsetting the integral transverse bar, so as to throw it back to the rear or upper margin of the opening or throat of the scoop.

While the offset bar is perfectly practical and satisfactory in its operation, it adds considerably to the weight of the scoop designed for heavy work, and it is, furthermore, an expensive piece to forge, and one of the objects of this invention is to accomplish the purpose for which the transverse bar is designed without the extra weight of material and expense of labor involved in the use of the transverse bar. To that end the bail C has at each of its ends a reduced shank C', passing transversely through the end of the corresponding bar B, the end of the bail being likewise formed with a square shoulder lying in contact with the inner face of the bar. The outer end of the shank is provided with any means for holding the bar in place and preventing the longitudinal movement of the shank therein, as, for instance, with a nut or block c and a pin c' passing through the nut and shank, as shown in detail in Fig. 4. It is evident that the construction of the bail shown and described must hold the free ends of the bars B B at a constant distance from each other, the spreading of the bars or the pressure of the bars against the walls A A of the scoop being effectually prevented. This construction dispenses entirely with the transverse integral bar connecting the pivoted bars B B and leaves the throat of the scoop perfectly free and open throughout its entire extent.

In the operation of this scoop it is necessary to fill it, to lift and carry it, and finally to invert and dump it, and for this purpose

it is necessary to provide means for locking the bars B B in a certain relation to the scoop when the latter is filled and in its upright position. Such means are shown in the figures of the drawings, in which D is a lever pivoted at or near the upper edge of each of the side pieces A A and swinging in a vertical plane, and *b* is a block or lug fastened to the inner face of each of the bars B B, the forward end of each lever D being adapted when in one position to abut against the corresponding block *b*. A transverse cranked lever E is pivoted at its ends to extensions *a a* on the inner faces of the side pieces and has at each end a foot E', lying beneath the rear end of the corresponding lever D. The normal position of the crank-lever E is that shown in side elevation in Figs. 1 and 3, the cranked central part of the lever being approximately at right angles to the edges of the side pieces and the foot E' at each end of the lever being parallel to the edge of the corresponding side piece, and a spring S, of any suitable construction and arrangement, tends to hold the crank-lever in its normal position.

When the scoop is filled and is moving toward the point at which it is to be dumped, its motion is in the direction indicated by the arrow 5 in Fig. 1, and the track on which the scoop moves is provided with a suitable stop so placed that the central portion of the crank-lever may strike it and be swung in the direction indicated by the arrow 2 in Fig. 1, thereby swinging the foot E' at each end of the crank-lever upward, raising the rear end of the corresponding lever D and depressing the front end thereof, so as to free it from the lug or block *b*. As soon as this is accomplished the weight of the loaded scoop swings it forward and downward to the position shown in dotted lines in Fig. 1, thereby dumping the contents of the scoop. As soon as the cranked lever E is released from the pressure of the stop against which it strikes the spring S throws it back to its normal position, and the levers D D are so pivoted that the extra weight of the rear end of each lever carries it back to its normal position in contact with the corresponding foot E' of the crank-lever E. When the scoop has been refilled, the bail C and bars B B are swung again into the relation to the side

pieces A A shown in Fig. 1, whereupon the levers D D come again in locking relation to the blocks *b b*, and the bars B B are thereby again secured in position to lift and carry the scoop to the dumping-point.

In Fig. 5 the spring S, instead of being applied directly to the cranked lever E, is mounted upon the pivot of the locking-lever D, and one of its ends presses downward upon the rear end of the locking-lever which rests upon the foot E' of the cranked lever. The spring thus presses downward the end of the locking-lever and the foot of the cranked lever at the same time, and thus supplements the force of gravity which tends to hold the locking-lever in its normal position.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the scoop and the bars pivoted to its side pieces and provided with suitable means for draft, of a vertically-swinging lever pivoted to the side piece of the scoop and adapted to abut against the corresponding pivoted bar or an attachment thereof and a cranked lever supported by the side pieces of the scraper and provided with a foot impinging upon said vertically-swinging lever, the movement of the crank-lever in one direction being adapted to swing said vertically-moving lever out of engagement with said pivoted bar; substantially as and for the purpose set forth.

2. The combination with the scoop, of the bars, B, B, pivoted to the side pieces thereof and provided with means for draft, the levers, D, D, adapted to abut against said bars and the cranked lever, E, provided with feet, E', E', impinging upon the levers, D, D, and adapted in a certain movement of the crank-lever to disengage the levers, D, D, from the bars, B, B, and permit inversion of the scoop.

3. The combination with the scoop, of the bars, B, B, the locking-levers, D, D, adapted to abut against said bars, the cranked lever, E, provided with feet, E', E', impinging upon the levers, D, D, and springs, S, S, adapted to hold the locking-levers, D, D, and cranked levers, E, E, in their normal position.

DANIEL I. CALHOUN.

Witnesses:

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