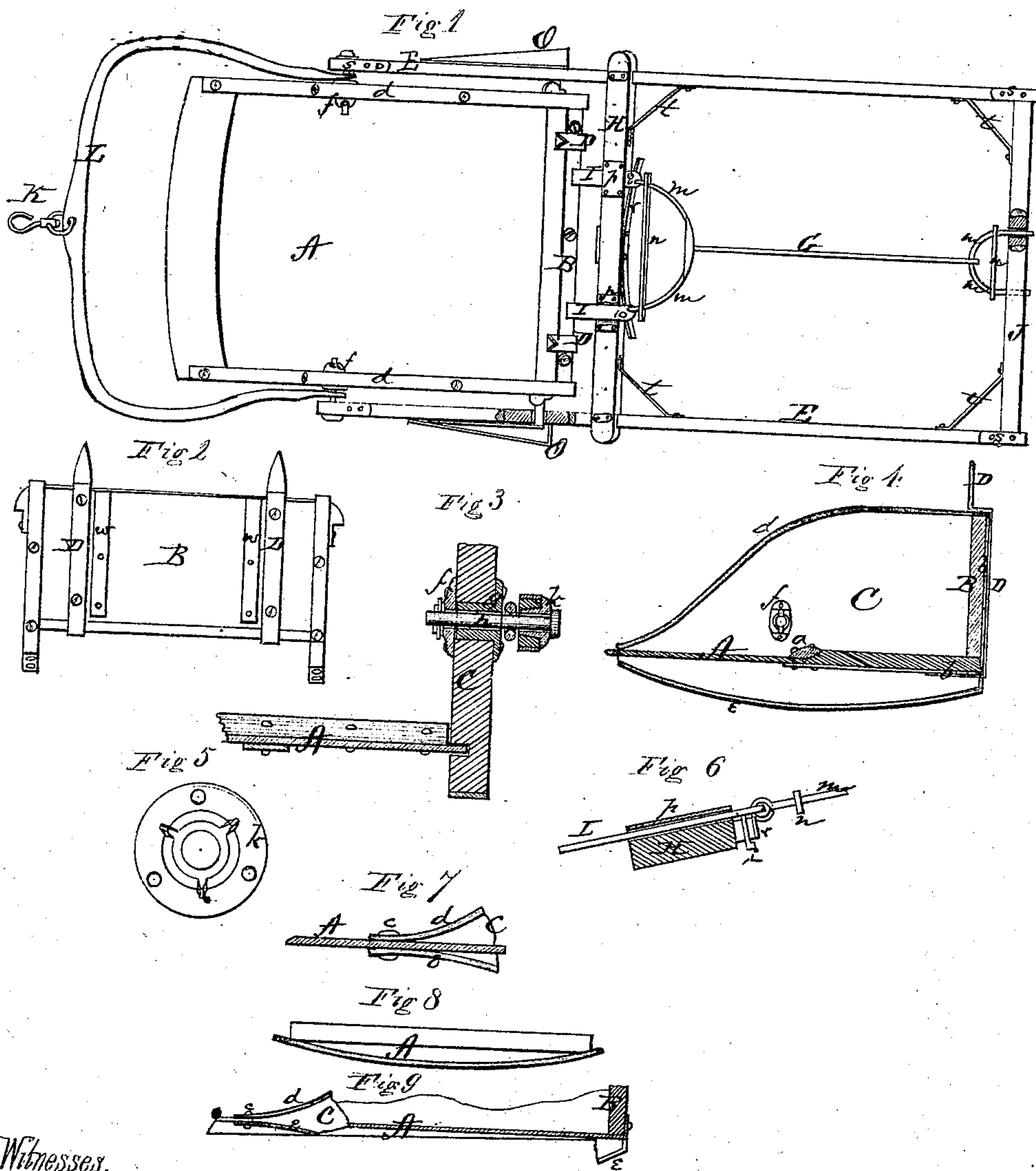


Doty, Little & Schindler,

Earth Scraper.

No. 106,674.

Patented Aug. 23. 1870.



Witnesses.

Harry King.  
C. L. Ever.

Inventor.

Edw. M. Doty  
J. L. Little  
Peter A. Schindler  
for  
Alexander & Mason  
Attys.



# UNITED STATES PATENT OFFICE.

EDWARD M. DOTY, JOEL L. LITTLE, AND PETER A. SCHINDLER, OF SPRINGFIELD, OHIO, ASSIGNORS TO EDWARD M. DOTY, OF SAME PLACE.

## IMPROVEMENT IN REVOLVING ROAD-SCRAPERS.

Specification forming part of Letters Patent No. **106,674**, dated August 23, 1870; antedated August 13, 1870.

*To all whom it may concern:*

Be it known that we, EDWARD M. DOTY, JOEL L. LITTLE, and PETER A. SCHINDLER, assignors to EDWARD M. DOTY, of Springfield, in the county of Clarke, and in the State of Ohio, have invented certain new and useful Improvements in Revolving Road-Scrapers; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the construction and general arrangement of a revolving road-scraper, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view of the entire scraper. Fig. 2 is a rear view of the tail board. Fig. 3 is an enlarged vertical section of one of the sides of the scraper, showing the manner of attaching the handles. Fig. 4 is a longitudinal vertical section of the scraper. Fig. 5 is a side view of a socket passed through the end of the handle, through which the bolt passes to pivot the scraper. Fig. 6 is an enlarged vertical section of one of the pawls or dogs which hold the scraper, preventing the same from revolving. Fig. 7 is an enlarged vertical section of the front portion of the scraper. Fig. 8 is a front view of the bottom of the scraper, and Fig. 9 is a longitudinal vertical section of the bottom of the scraper.

The first part of our invention consists in constructing the bottom A of a revolving road-scraper, both wholly and in part, of steel plate, the front or cutting part of the same being slightly curved downward, as shown particularly in Fig. 8, so as to aid it in scooping up the dirt. In constructing the bottom in part of steel plate and in part of wood we use an iron cleat, *a*, to unite the two parts, as shown in Fig. 4. This cleat *a* is riveted to both, uniting them firmly at the joining-point. To strengthen the scraper still more we rivet an angular strap, *b*, of iron, to the back of the tail-

board B, extending it under the bottom and lapping it upon the metal part of the bottom, and securing it thereto by a rivet or rivets passing down through the iron cleat *a*, the steel plate and the angular strap fastening the whole together. The steel bottom is further secured in place by bolts and rivets *c* through the forward part of the runners C C, which bolts or rivets unite the upper metal strap, *d*, with the steel bottom and the steel shoe *e*, as particularly shown in Fig. 7. A groove is made in the side board or runner, C, to receive the bottom plate when made either wholly or in part of metal.

The grabs D D are made with an angular shoulder, to rest on the top edge of the tail-board B, and are extended under the bottom, so as to increase the strength of this part of the scraper.

The sides or runners C C of our scraper are extended down below the bottom, so as to make it of a rocker form, the middle part being about two inches wide, and sloping back to about one inch at the heel. We construct the runners with steel shoes *e e*, which lighten the draft and protect the runners.

The second part of our invention consists in improvements on the parts connected with the rotating mechanism of a revolving road-scraper and the handles of the same. We construct a washer, *f*, of an oblong shape, with a slot in the same to receive a key which passes through the inner end of the pivot-bolt *h*. This washer is bolted to the inner part of the sides, as shown in Figs. 3 and 4. The slot in the washer *f* holds the key firmly and prevents the turning of the pivot-bolt. On the outer part of the sides a combined box and washer, *g*, is also fastened, through which the pivot-bolt passes, as seen in Fig. 3.

In the pivot end of the handles E E is fitted a combined box and washer, *k*, provided with flanges or lugs, to keep from turning. This is countersunk to receive the head of the pivot or axle-bolt *h*.

The pull-rod G has arched ends *m m* and cross-braces *n n*, to give it strength, with two bearings in the handle end of frame for the same, and two slots in cross-bar H, for receiving the sliding stops I I, to which the lower ends



of the pull-rod are flexibly attached. These stops rest on the top of the tail-board B when the scraper is in position for scooping the dirt. Guide-plates *p p* are bolted upon the top of the cross-bar H, under which the stops I slide, and which hold the stops in their places. A spring, *r*, throws the stops and pull-rod forward when drawn back. This spring is made in one piece, and is bolted through the middle to the rear edge of the cross-bar H, its end pressing upon hooked or shouldered pins, *i* which project from the under side of the sliding stops, near where they are flexibly attached to the pull-rod. The handle ends of our scraper-frame are strengthened by bands *s s* riveted to the same. The round piece J, which, in fact, constitutes the handle at the rear end of the frame, has the tenons upon its ends cut conical, instead of with a square shoulder, so as to leave as much wood as possible in the tenon and give strength and lightness to this part of the frame. We also brace the frame at the angles with metal braces *t t*.

Friction plates or straps *w w*, of metal, are riveted to the rear side of the tail-board B, to prevent the ends of the stops I from wearing away the wood in sliding up the tail-board into their fixed position after dumping the scraper.

We also construct a swiveled hook, K, or link, on the draft-bail L of our scraper, to prevent any twisting of the hitching-chain attached to it, and to keep the double-trees at all times parallel with the surface of the ground.

The usual springs on the sides of the frame are provided with covers or protectors O O, of sheet metal, to keep the dirt from obstructing the action of the springs.

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

1. The combination of the bottom A, made of wood and metal, the angular metal strap or plate *b*, and metal cleat *a*, constructed and united substantially as shown and described, and for the purposes herein set forth.

2. The combination of the pull-rod G, arched ends *m m*, cross-braces *n n*, sliding stops I I, and shouldered or bent pins *i i*, with the cross-bar H, plates *p p*, and spring *r*, substantially as and for the purposes herein set forth.

3. The sheet-metal covers or protectors O O, substantially as and for the purposes herein set forth.

4. In combination with the sides C and bail L, the oblong washer *f*, box *g*, bolt *h*, and combined box and washer *k*, all constructed substantially as set forth.

5. The combination of the metal and wood bottom A, with its cutting end curved downward, grooved sides C, metal-bound, and with rocker-bottom, and tail-board B, of a road-scraper, when all are constructed substantially as set forth.

6. The combination and arrangement of the bottom A, sides C C, tail-board B, with grabs D, and friction-plates *w*, bail L, and swivel K, washer *f*, box *g*, box and washer *k*, rails E E, cross-bars H J, slides I I, and rod G, with their various parts, all constructed and operated substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 20th day of December, 1869.

EDWARD M. DOTY.  
JOEL L. LITTLE.  
PETER A. SCHINDLER.

Witnesses:

GEO. ARTHUR,  
B. C. CONVERSE.