W. SMITH.

Road-Scraper.

No. 161,288. Patented March 23, 1875.

FIG. I.

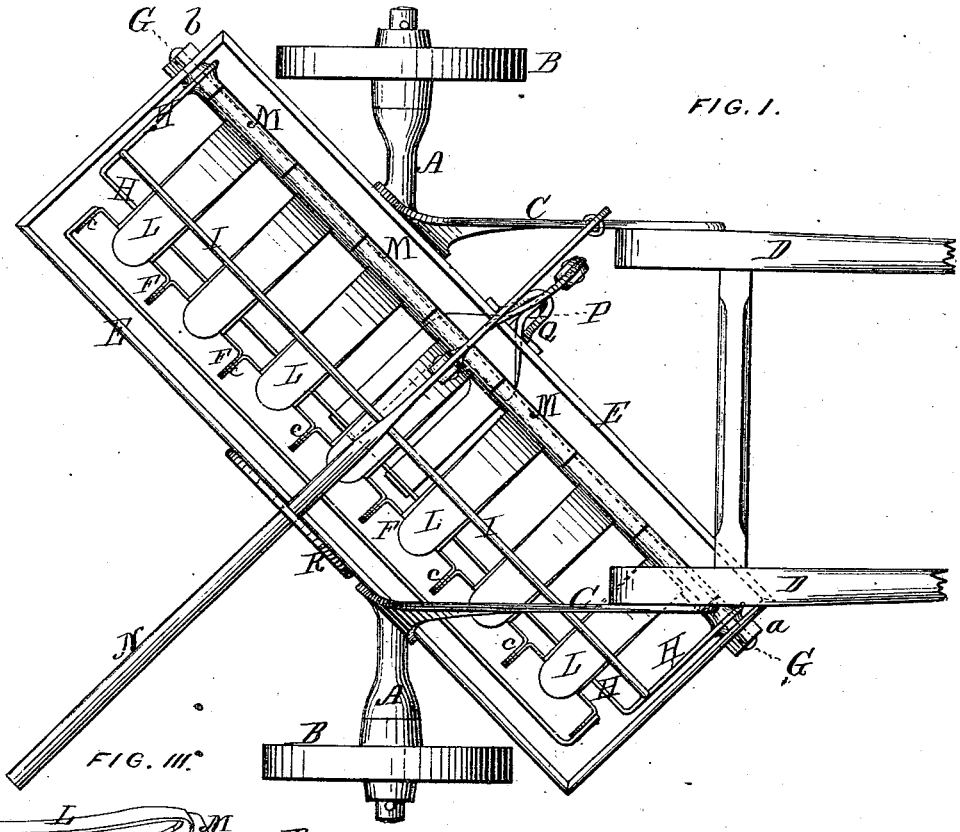
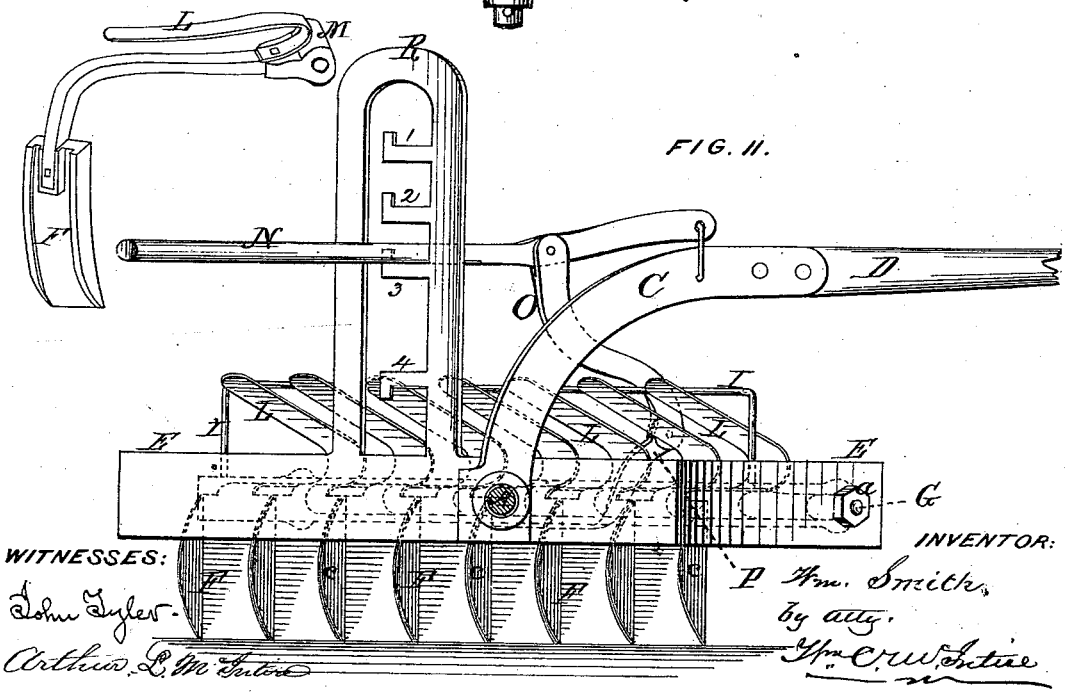


FIG. III.

FIG. II.



WITNESSES:

John Tyler.

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UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF BARNARD CASTLE, ENGLAND.

IMPROVEMENT IN ROAD-SCRAPERS.

Specification forming part of Letters Patent No. **161,288**, dated March 23, 1875; application filed January 2, 1874.

To all whom it may concern:

Be it known that I, WM. SMITH, of Barnard Castle, in the county of Durham and Kingdom of England, have invented certain new and useful Improvements in Road-Scrapers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this application.

My invention relates to a novel construction of road-scraper. It has for its object the combined or independent action of a series of scrapers, all being thrown in or out of action simultaneously, and subjected independently or collectively to spring-pressure; and my invention consists in arranging a series of scrapers with suitable spring-pressure within a frame, and adapted to be thrown in and out of action, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand the construction and operation of my improved road-scraper, I will proceed to describe the same, referring by letters to the accompanying drawing, in which—

Figure 1 is a top view of a machine embracing my invention. Fig. 2 is a side view of the same with the wheel removed, and Fig. 3 an enlarged view of a scraper and its spring.

Similar letters indicate like parts in all the figures.

A is the axle, and B the wheels. C C are suitable curved rods securing the shafts or pole D to the axle; and E is the frame, mounted upon the axle A, and in which is hung the series of scrapers F. G is a rod running parallel with the front of the frame E, and secured in the ends thereof by a head and nut, *a b*, or in any other suitable manner. Swung upon this round rod is a right-angled frame, H, having an upwardly-projecting bail, I, for the purpose presently to be explained. The scrapers F, as more clearly seen at Fig. 3, are formed with sides *c*, in order that, in their close contact with each other, they may the more readily move by one another in changing their relative relations to conform to the character of the surface to be scraped. The shank F′ of the scrapers is bent at right angles, and returned at K, forming a spring-bar, L. At the point K is furnished a thimble-joint, M, which surrounds the rod G, and secures the scrapers movably thereto, hinge-like—also serving to aid in maintaining the longitudinal relation of all the scrapers. The shanks F′ of the scrapers rest upon the top edge of the frame H, while the spring-ends L are confined underneath the bail I of the frame H. N is a hand-lever, pivoted at its forward end to the curved bar C, to which is hung a link, O, which is pivoted at its lower end to a rod or lever, P, hinged to the front of the frame E in a bearing, Q, the lower end of the lever P being extended in a curved line, so as to be rigidly secured to the under side of the swinging frame H, so that, by raising the hand-lever N, the link O swings the rod or lever P upon its pivotal connection at Q, thus lowering its curved extremity, attached to the frame H, and, obviously, draws downwardly the said frame.

As the bail-bar I of the frame H rests upon the top of the spring ends L of the scrapers, the scrapers are necessarily forced down upon the ground with more or less force, according to the extent of movement of the hand-lever N, the springs yielding and permitting any one or more of the scrapers to adapt themselves to the irregular surface of the ground being scraped.

As the bail I serves to depress the scrapers, or throw them into action, in a like manner the frame H (resting or lying underneath the shank F′) will, by a reverse movement of the lever N, elevate the series of scrapers, or lift them entirely from contact with the road, this being essential in transporting the machine.

R is an upright frame or rack, secured to the rear side of the frame E, provided with suitable notches 1 2 3 4, more or less, the first three designed to hold the lever N at three different altitudes, and consequently secure the contact of the scrapers with the road with three degrees of power, while the fourth notch is intended to secure the lever N in a depressed position, and thus hold the frame H and the scrapers F in an elevated position, for transportation of the machine.

It will be readily seen that, by means of the hinge-joint of the scrapers with the rod G, their upturned sides *c*, and springs L, they may readily and independently adjust them-

selves to any inequalities in the surface of the road being scraped.

What I claim as new, and desire to secure by Letters Patent, is—

1. The swinging frame H I, in combination with the rod G and scrapers F, with spring-arms L, substantially as and for the purposes described.

2. In combination with the swinging frame H I, the lever P, link Q, and lever N, with or without the rack or frame R, substantially as and for the purpose set forth.

3. The scrapers F, constructed, as shown, with spring-arms L and thimble-connections M, substantially as and for the purposes described.

Witness my hand and seal this 10th day of December, 1874.

WILLIAM SMITH. [L. S.]

Witnesses:

THOS. THORNTON, Jr.,

JOHN JAMES WALKER,

Clerks to Messrs. Watsons,

Solicitors, Barnard Castle.