

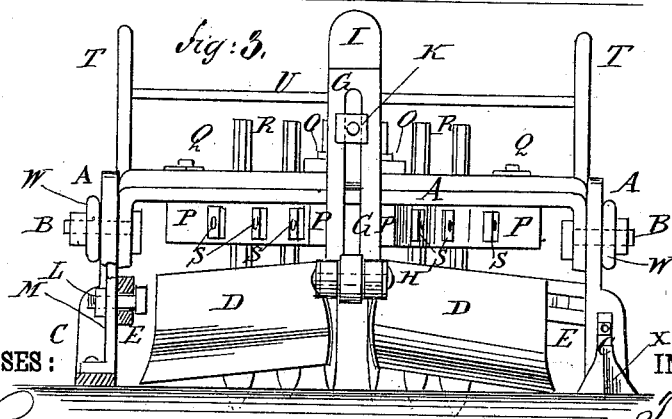
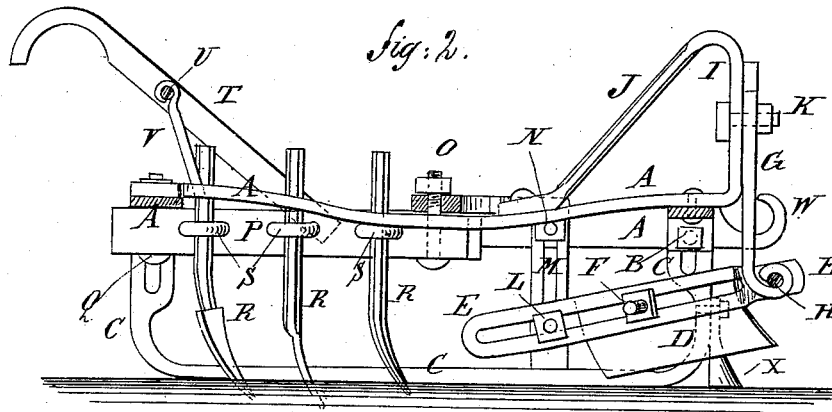
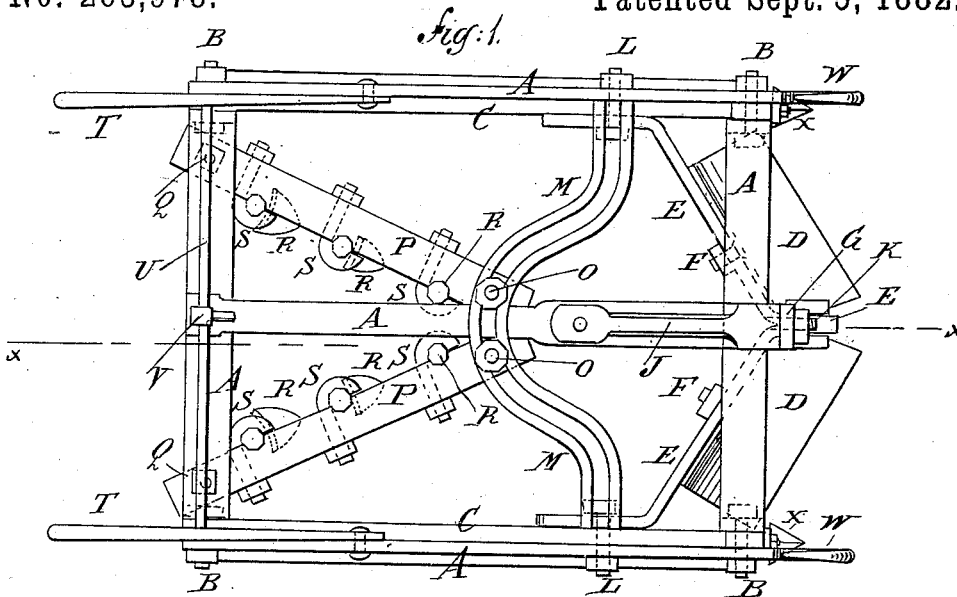
(Model.)

T. M. SMITH.

### COMBINED SCRAPER AND HARROW.

No. 263,978.

Patented Sept. 5, 1882.



**WITNESSES :**

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BY

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# UNITED STATES PATENT OFFICE.

THOMAS M. SMITH, OF BATESVILLE, ARKANSAS.

## COMBINED SCRAPER AND HARROW.

SPECIFICATION forming part of Letters Patent No. 263,978, dated September 5, 1882.

Application filed May 10, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, THOMAS MARTIN SMITH, of Batesville, in the county of Independence and State of Arkansas, have invented a new and useful Improvement in Combined Scrapers and Harrows, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improvement. Fig. 2 is a sectional side elevation of the same, taken through the line *xx*, Fig. 1. Fig. 3 is a front elevation of the same, part being broken away.

The object of this invention is to produce a machine constructed in such a manner as to scrape and cultivate a row of cotton or other plants at one passage along the said row.

The invention consists in a combined scraper and harrow, constructed as will be hereinafter fully described.

A is the frame of the machine, which consists of three longitudinal bars, connected at their ends by two cross-bars. The ends of the cross-bars are bent downward to receive the bolts B, that fasten them to the ends of the side bars.

C are two runners or bearing-bars, which are designed to slide upon the ground at the opposite sides of the ridge or row. The front and rear ends of the runners C are curved upward into vertical positions, and are slotted vertically to receive the bolts B, that fasten them to the frame A, so that the said frame and its attachments can be raised and lowered, as the work to be done may require, by loosening the said bolts B.

D are the scrapers, which are secured to inclined bars E by bolts F. The bars E are slotted longitudinally to receive the clamping-bolts F, so that the scrapers D can be adjusted with their forward ends nearer to or farther from each other, as the work to be done may require. The forward ends of the bars E meet, are welded together or are fitted to each other, are passed through a slot in the standard G, and are secured to eyes formed upon the lower ends of the parts of the said standard by a bolt, H. The upper part of the standard

G rests against the forward side of an upright, I, formed upon or attached to the forward end of the center bar of the frame A, and which is strengthened in position by a brace, J, formed upon or attached to its upper end. The lower end of the brace J is secured by a bolt or rivet to the center bar of the frame A.

K is a bolt, which passes through the slot in the standard G and through a hole in the upright I, so that by loosening the said bolt the standard G, and with it the forward ends of the bars E and scrapers D, can be raised and lowered as the work to be done may require. The rear ends of the inclined slotted bars E are bent to the rearward, so as to be parallel with the side bars of the frame A, and are secured by bolts L to the slotted end parts of the cross-bar M, so that by loosening the said bolts L the rear ends of the bars E and scrapers D can be raised and lowered as may be required. The bar M is slotted longitudinally, crosses the top of the frame A, is bent downward at the side bars of the said frame, and is secured to the said side bars by bolts N. The lower ends of the slotted cross-bar M are secured to the runners C by rivets. The middle part of the cross-bar M is curved to the rearward, as shown in Fig. 1, to bring it into proper position to receive the bolts O, that secure to it the forward ends of the harrow or cultivator beams P, so that the said forward ends can be adjusted farther apart or closer together, as may be required. The rear ends of the beams P are secured by bolts Q to the end parts of the rear cross-bar of the frame A. R are the harrow or cultivator teeth, the shanks of which pass up at the sides of the beams P, and are clamped to the said beams by hook-bolts S, so that the said teeth can be adjusted to work deeper or shallower in the ground, as may be required.

To the side bars of the frame A, at a little distance from their rear ends, are bolted the forward ends of the handles T, the rear parts of which are connected by a round, U, and which are supported at the proper elevation by a standard, V, attached to the center of the round U and to the rear part of the center bar of the frame A.

With this construction the machine can be readily adjusted to cause the scrapers D and

the teeth R to work at any desired distance from the plants, and to work at any desired depth in the ground.

Upon the forward ends of the side bars of the frame A are formed, or to them are attached, draft-hooks W, so that the horses can walk in the spaces between the rows.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

10 1. A combined scraper and harrow constructed substantially as herein shown and described, and consisting of the frame A, the adjustable bearing-bars C, the adjustable bars and scrapers E D, and the adjustable beams  
15 and teeth P R, as set forth.

2. In a combined scraper and harrow, the combination, with the frame A, of the adjustable scrapers D, the slotted adjustable scraper-carrying bars E, the slotted adjustable standard G, and the slotted cross-bar M, substantially as herein shown and described, whereby the scrapers can be readily adjusted as the work to be done may require, as set forth.

THOMAS M. SMITH.

Witnesses:

A. G. ALBRIGHT,  
W. J. BLUE.