

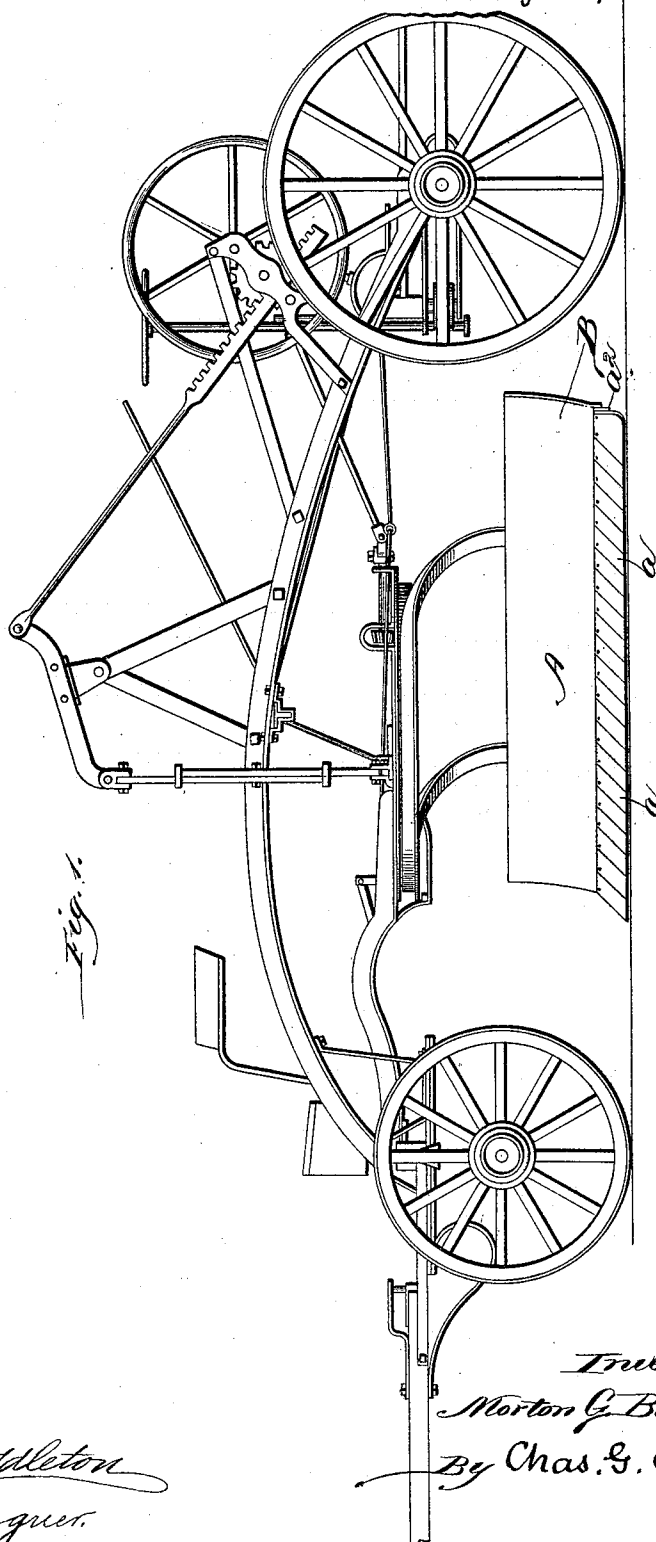
(No Model.)

3 Sheets—Sheet 1.

M. G. BUNNELL.
ROAD SCRAPER.

No. 520,480.

Patented May 29, 1894.



Witnesses
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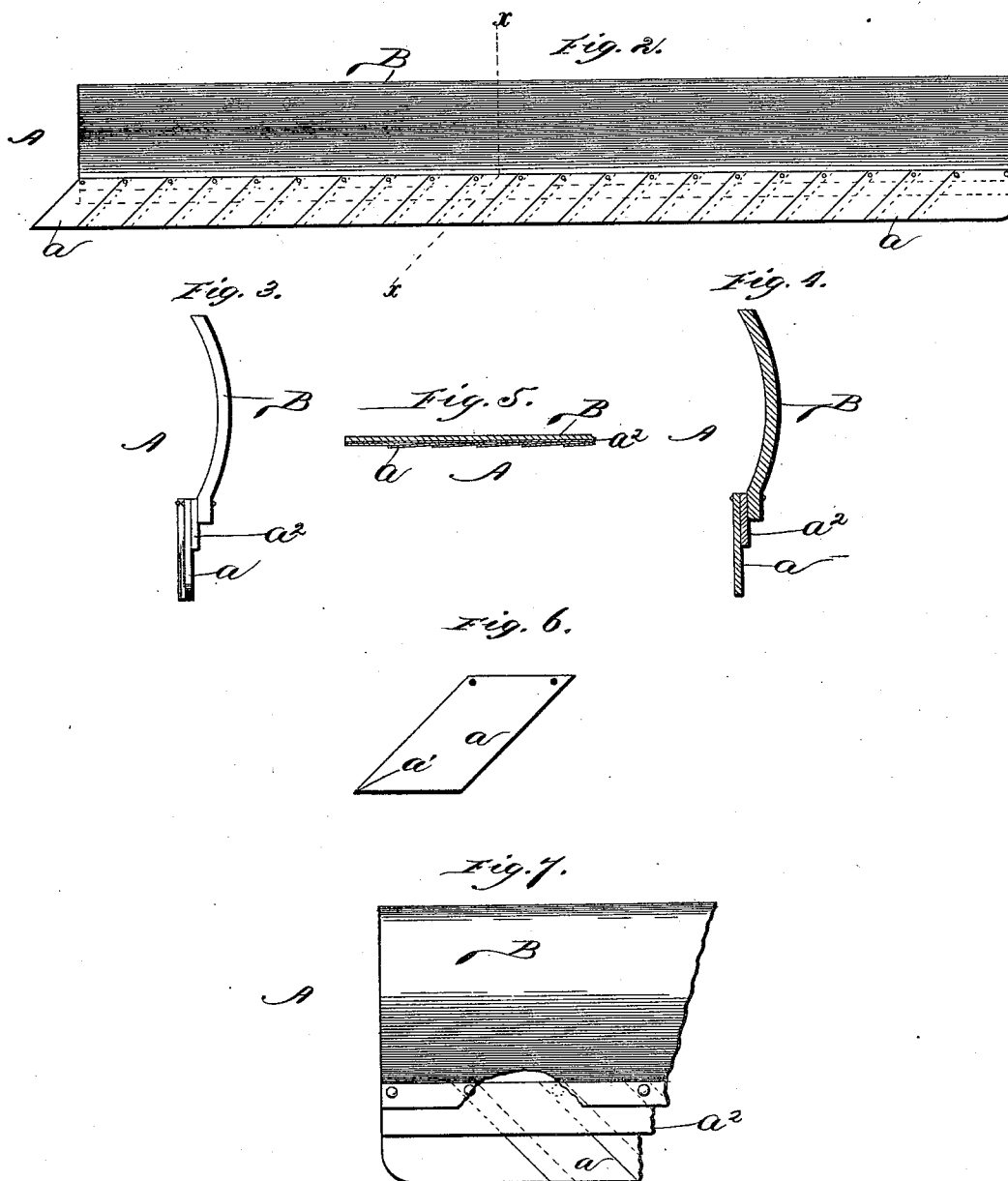
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Fig. 8.

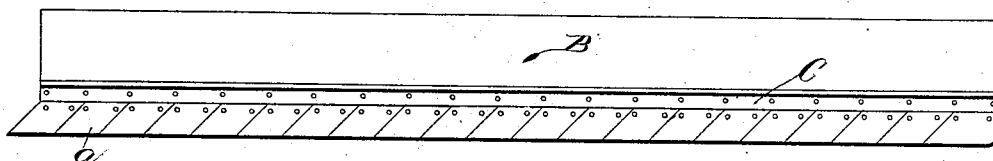


Fig. 9.



Fig. 10.

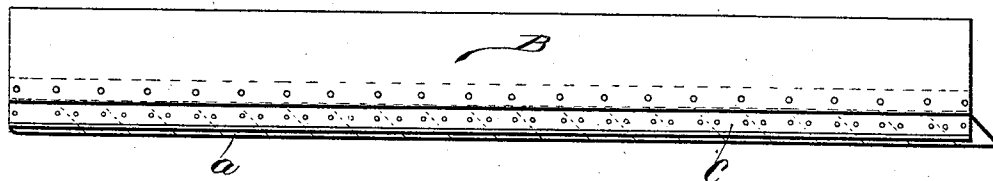


Fig. 11.



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UNITED STATES PATENT OFFICE

MORTON G. BUNNELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO FREDERICK C. AUSTIN, OF SAME PLACE.

ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 520,480, dated May 29, 1894.

Application filed January 31, 1893. Renewed December 26, 1893. Serial No. 494,761. (No model.)

To all whom it may concern:

Be it known that I, MORTON G. BUNNELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Road-Scrapers, of which the following is a specification.

My invention relates to road scrapers of the kind in which the machine is provided with a long blade which is usually set or adjusted diagonally with relation to the line of progression of the machine.

The principal object of my invention is to provide a continuous flexible or spring blade which will readily yield to obstructions and which will also adapt itself to the contour of the road or road bed. Further objects are to provide certain novel and improved details as hereinafter set forth.

In carrying out my invention I provide a continuous scraper blade comprising a series of spring blade sections which yield upon encountering an obstruction in or on the road. As a preferred arrangement these blade sections lap one another for purposes hereinafter described, although I may attain certain results incident to such arrangement in other ways, as for example, by providing in connection with a series of blade sections a flexible or elastic backing strip.

In the accompanying drawings,—Figure 1 represents in side elevation, a road scraper having a scraper blade embodying the principle of my invention. Fig. 2 is a front elevation of the scraper blade. Fig. 3 is an end elevation of the scraper blade, and Fig. 4 is a section of the same on line $x-x$ in Fig. 2. Fig. 5 is a section taken horizontally through a few of the lapping blade-sections. Fig. 6 shows one of the blade sections. Fig. 7 is a rear elevation of a portion of the blade with a part of the back or mold board broken away for convenience of illustration. Fig. 8 is a front elevation of the scraper blade having its blade sections secured to a yielding backing strip. Fig. 9 is a section taken horizontally through a few of the blade sections of Fig. 8. Fig. 10 is a rear elevation of said scraper blade. Fig. 11 is a vertical section through the same on a larger scale.

The road scraping machine illustrated in

Fig. 1 may be of any suitable construction, and is understood to mainly comprise a wheeled body-frame which carries a scraper-blade and which is preferably provided with means for adjusting the scraper-blade with reference to the work to be performed. Road scrapers of such general character are well known and are of so many different constructions, that it is deemed unnecessary to herein particularly describe the details of any one machine.

The scraper-blade A illustrated by the first seven figures comprises a series of blade-sections a which are secured along their upper edge portions and arranged to lap one another so as to form a continuous flexible blade composed of a series of independent sections capable of a certain individuality of action but co-operating with one another to form a flexible blade considered as a whole. These blade sections are desirably made of steel plates and are capable of spring action, so that when opposed by considerable resistance either in or upon the road or road bed, they will yield to a suitable extent. The blade sections are secured along their upper edge portions to the long back or mold board B or to a metal strip a^2 thereon, and as a preferred arrangement are formed so that their side edges, that is to say the edge of their lapping portions, shall incline as illustrated, a simple and convenient way of attaining such end being to make each blade section substantially in the form of the parallelogram illustrated in Fig. 6, it being however unnecessary to make the blade section at one end of the series of such shape, since it can have one vertical edge shown. Broadly considered, the lapping blade sections can have vertical side edges, but as a matter of further improvement, I incline the same. By forming and arranging the blade sections with inclined edges, each blade section somewhat resembles a plow since by adjusting the blade relative to the line of progression of the machine as in Fig. 1, each blade section will have its forward edge arranged to incline upwardly and rearwardly from the point a' of the blade section. Upon encountering an obstruction, the blade will yield to the same, the greatest yield being at the point where

the blade encounters the obstruction. As a further illustration in scraping along the crown of a crowning road, the blade as a whole will bend or bow in conformity with the same. By lapping the blade sections, the disposition of one section to bend backwardly will be communicated to the adjacent sections, and further, the integrity of the blade as a continuous scraper will be preserved, whereby the blade will not, upon yielding to an obstruction, open at points between its sections and permit dirt to pass through the blade.

In Figs. 8, 9, 10 and 11, the mold board is provided along its bottom edge with a flexible or elastic strip C of rubber or other suitable material which forms a continuous flexible or elastic backing for the blade-sections *a* which can be attached either to the mold board or to the yielding backing. In said figures the blade sections are shown attached to the yielding backing, but it will be obvious that they can be arranged so that their allotted fastening bolts will pass through both the yielding backing and the mold board, or that the blade sections could be secured directly to one side of the mold board and that in such case the yielding backing C could be secured to the opposite side of the mold board or to its bottom edge in such way as to back the blade sections. By thus employing a yielding backing which is preferably elastic, the blade sections need not lap one another since the yielding backing strip will in effect

render the blade continuous, and by arranging the backing strip near the ground the blade will scrape without allowing dirt to pass between its blade-sections. Where however the blade is used to both plow up the soil and scrape the same toward the center of the road bed, the construction shown in the first seven figures is preferable.

What I claim as my invention is—

1. A continuous flexible spring scraper blade comprising a series of blade sections formed by spring metal plates rigidly held along their upper portions, substantially as described.

2. A continuous flexible spring scraper blade comprising a series of lapping blade sections formed by spring metal plates rigidly held along their upper portions, substantially as described.

3. A continuous flexible spring scraper blade comprising a series of blade-sections formed by spring metal plates rigidly secured to the lower edge portion of a long mold-board, substantially as described.

4. A continuous flexible spring scraper blade comprising a series of lapping blade sections formed by spring metal plates rigidly secured to the lower edge portion of a mold-board, substantially as described.

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