

No. 631,897.

Patented Aug. 29, 1899.

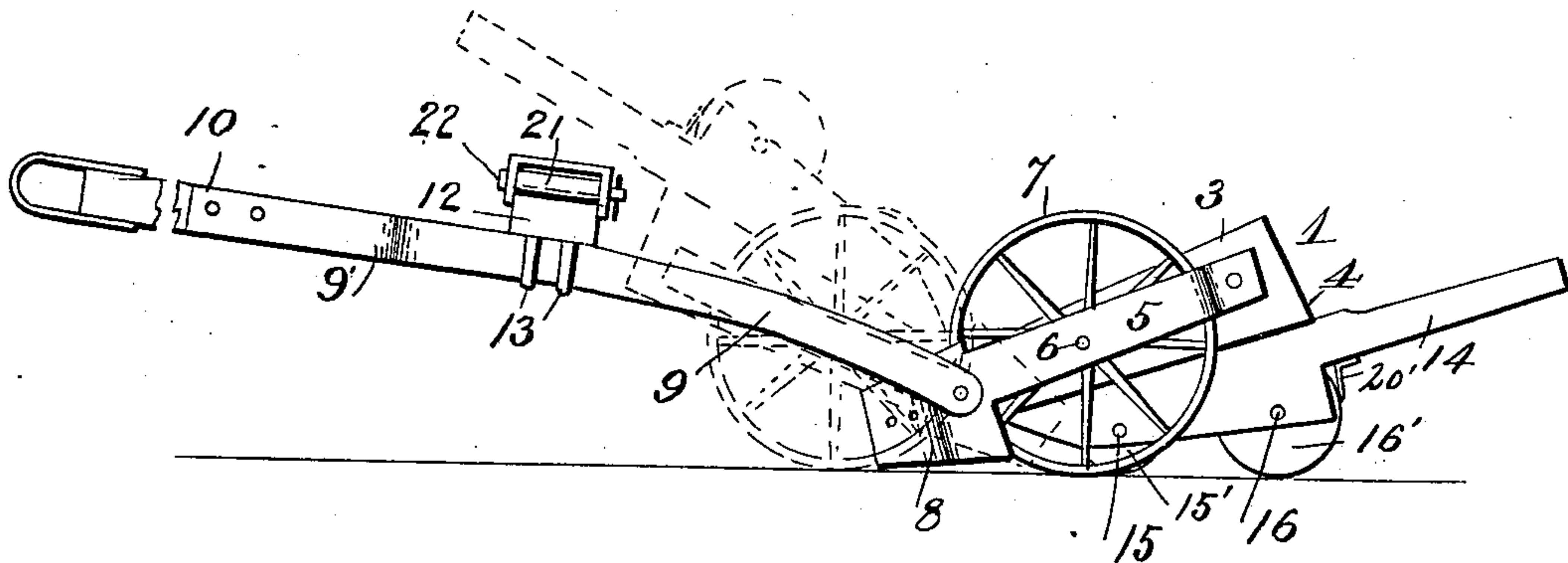
J. W. MACY.  
ROAD GRADER.

(Application filed June 1, 1899.)

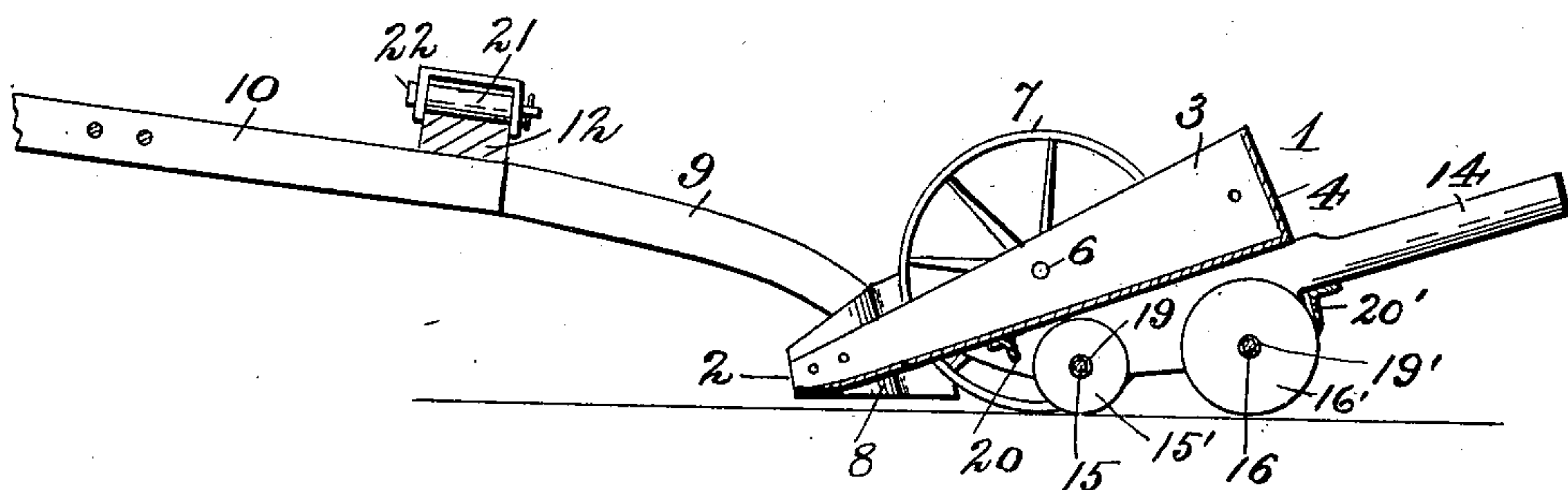
(No Model.)

3 Sheets—Sheet 1.

*Fig. 1.*



*Fig. 2.*



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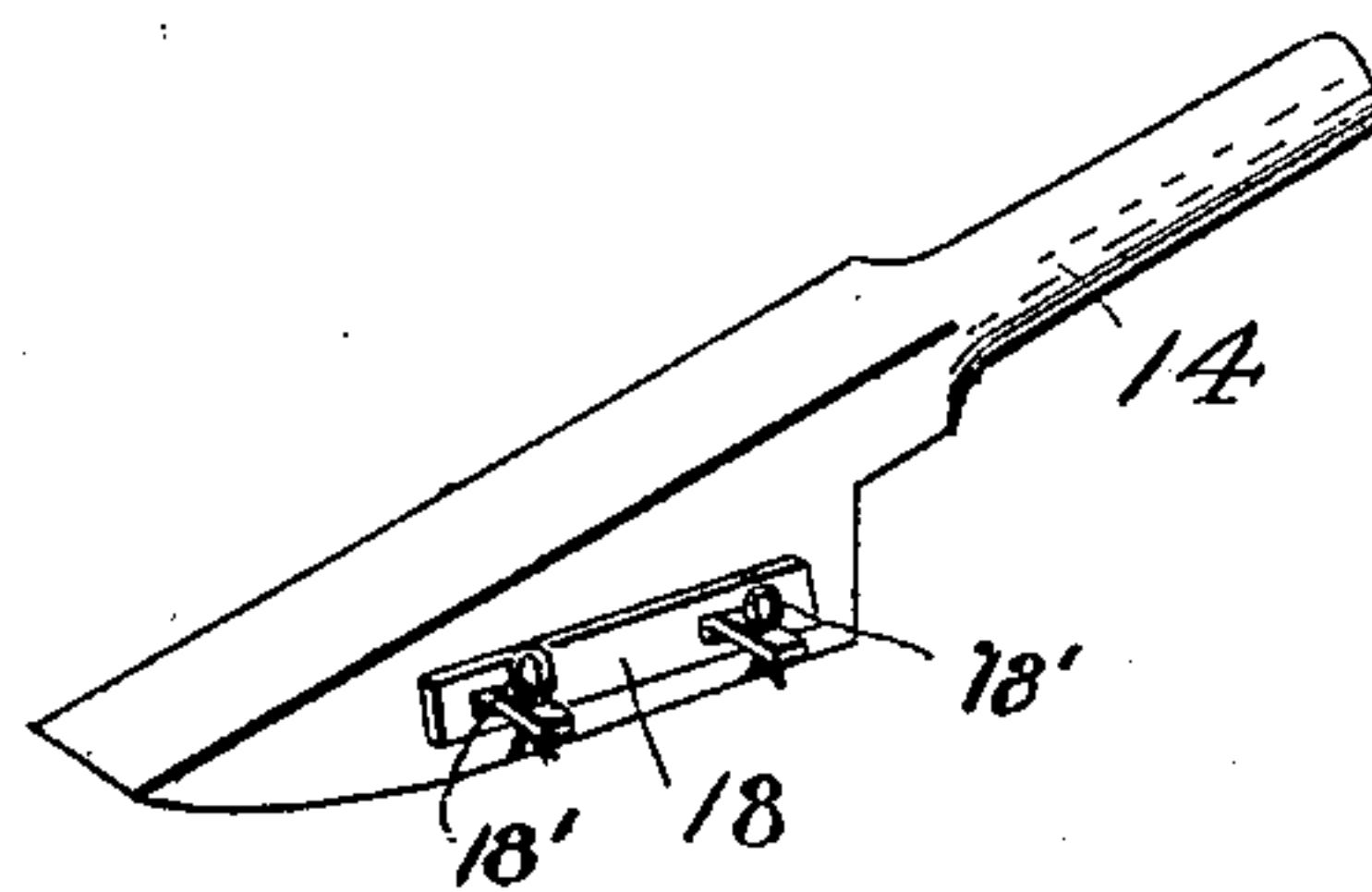
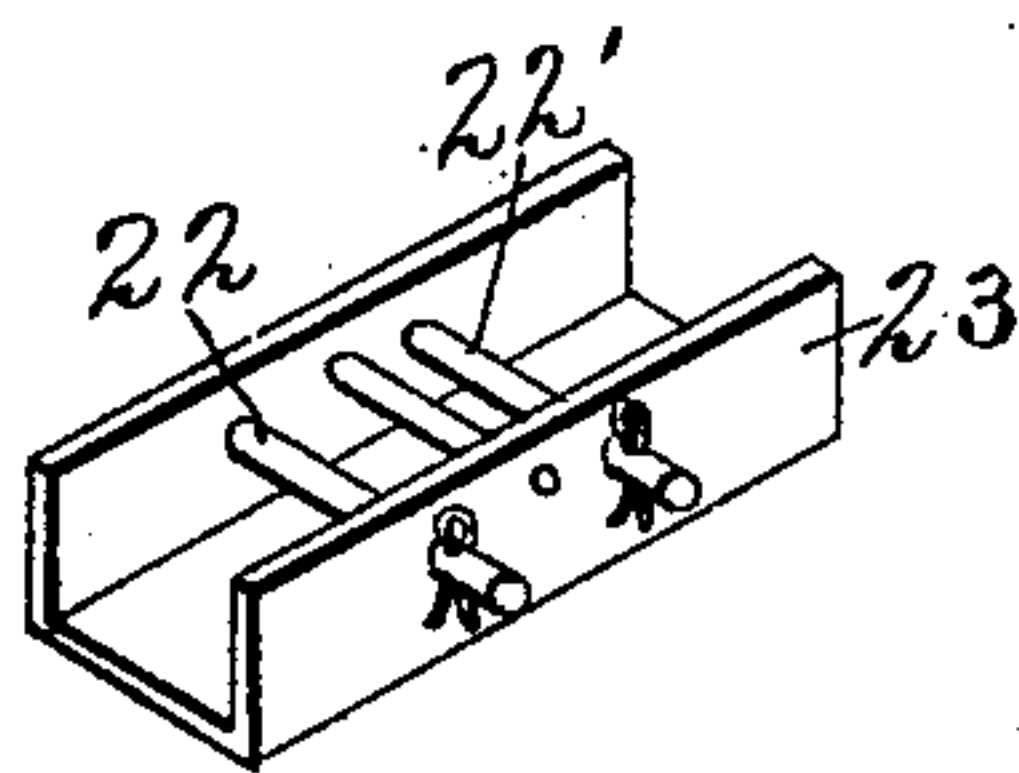
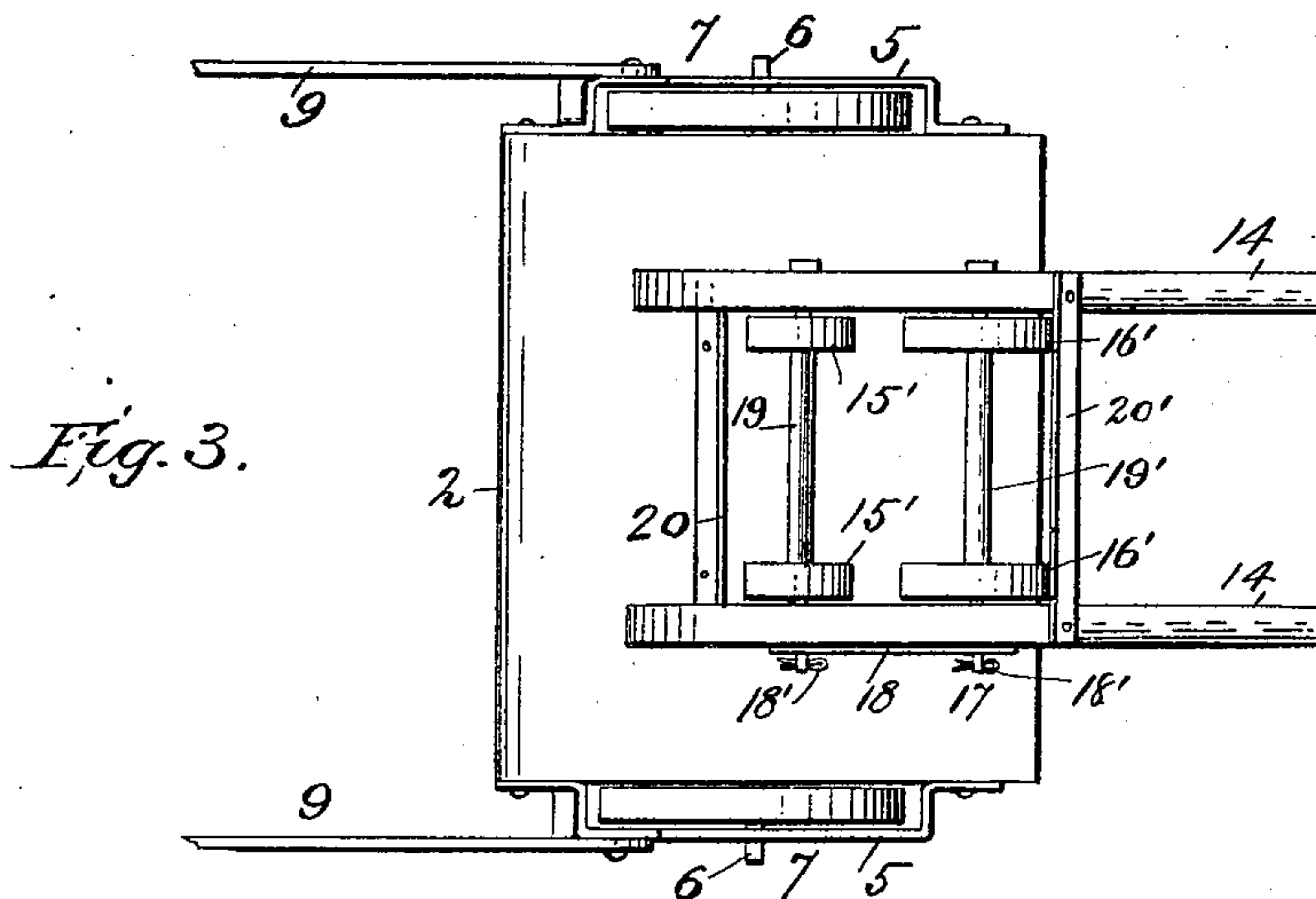
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3 Sheets—Sheet 2.



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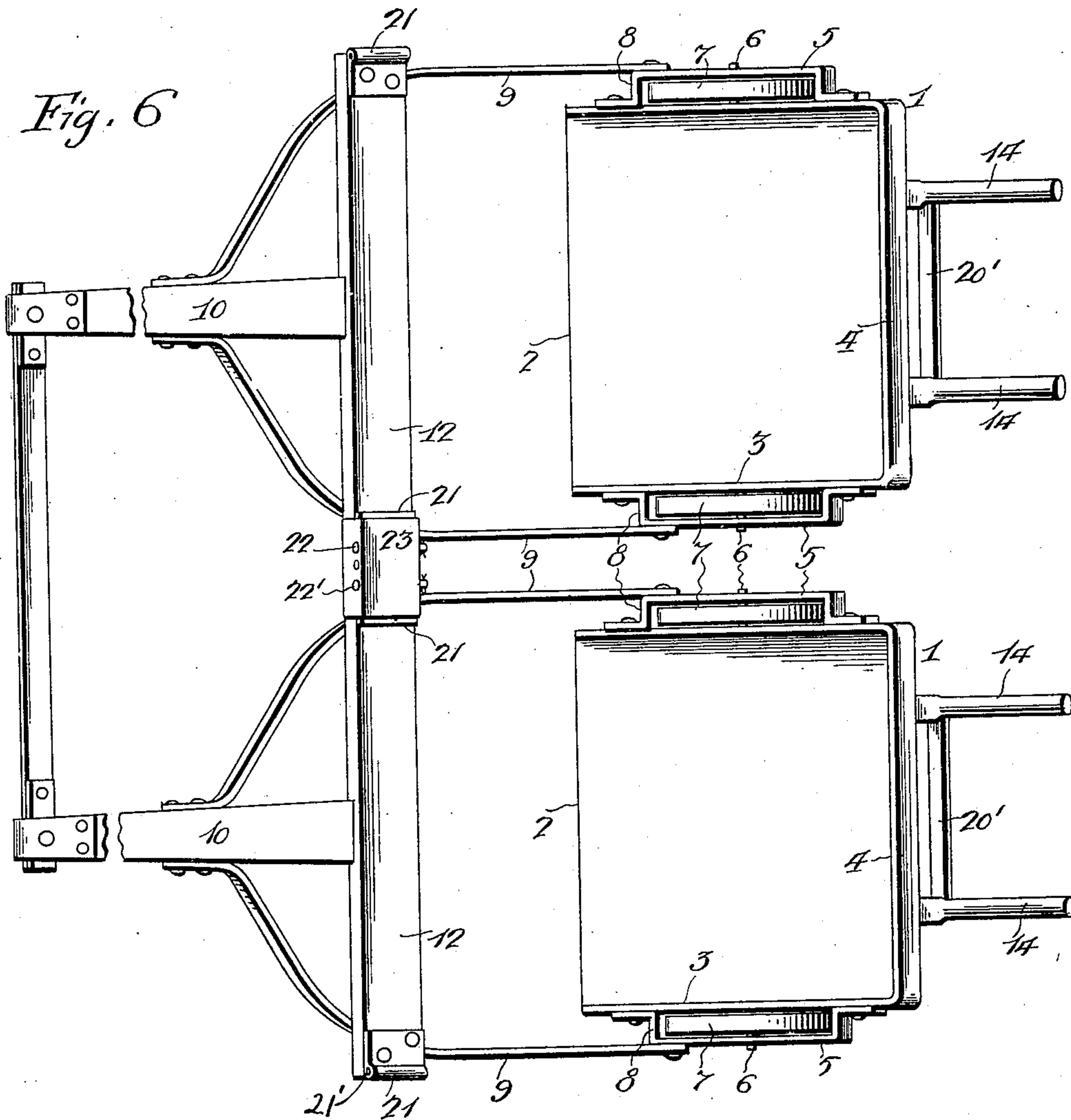
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3 Sheets—Sheet 3.

(No Model.)



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# UNITED STATES PATENT OFFICE.

JASON W. MACY, OF SEARSBOROUGH, IOWA.

## ROAD-GRADER.

SPECIFICATION forming part of Letters Patent No. 631,897, dated August 29, 1899.

Application filed June 1, 1899. Serial No. 719,010. (No model.)

*To all whom it may concern:*

Be it known that I, JASON W. MACY, a citizen of the United States, residing at Searsborough, in the county of Poweshiek and State of Iowa, have invented certain new and useful Improvements in Road-Graders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention is intended as an improvement in road-graders, and more particularly to that class of which the road-grader forming the subject-matter of Letters Patent No. 618,010, granted to me on the 17th day of January, A. D. 1899, may be taken as a type.

The object of the present invention is to simplify the construction, reduce the weight, and improve the efficiency of the machine.

To this end the invention consists in the construction, combination, and arrangement of the several parts of the device, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved road-grader as it appears in use and with the inverted position of the scoop shown in dotted lines. Fig. 2 is a central longitudinal section. Fig. 3 is a bottom plan view of the scoop. Fig. 4 is a detail perspective view, partly in section, of one of the handles. Fig. 5 is a detail perspective view of one of the coupling-sockets which are employed when two or three of the graders are coupled together. Fig. 6 is a plan view showing the manner of coupling a pair of the scrapers together.

In the drawings the same reference characters indicate the same parts of the invention.

1 denotes the scoop, which is stamped up of a single piece of sheet-steel. Its forward edge is turned upwardly to form the lip 2, and its sides are formed of the parallel walls 3 3, which are integral with the rear wall 4.

5 5 denote lateral brackets fixed to the walls 3 3, and 6 6 the stud-axles mounted in the brackets and their contiguous side walls to receive the carrying-wheels 7 7. The forward ends of these brackets 5 5 are enlarged and extend downward nearly to the ground

and immediately in front of the wheels, so as to form the fenders 8 8, which clear the path for the wheels 7 7.

9 9 denote the tongue-braces, the rear ends of which are pivoted to the forward ends of the brackets 5 5, and they are curved upwardly and converge forwardly and terminate in parallel ears 9' 9', which are secured to the tongue 10 by the usual transverse bolts, as shown.

12 denotes a transverse bar centrally bolted to the rear end of the tongue, and its outer ends are rigidly fixed to the braces 9 9 by the clip-bolts 13.

14 14 denote the parallel handles, which are suitably fixed to the bottom face of the scoop, and 15 16 denote parallel shafts mounted in said handles, one end of each shaft being provided with an enlarged head, and the other end 17 is formed square to receive the plate 18, which is secured in place by the split keys 18' 18', which extend through the projecting ends of the shafts.

15' 15' denote a pair of small bearing-rollers loosely journaled on the shaft 15 and held apart by a sleeve 19, encompassing the shaft, and 20 denotes a transverse angle-iron scraper-blade fixed to the handles and contiguous to the rollers to remove any adhering earth.

16' 16' denote a pair of larger rollers loosely journaled on the shaft 16 and held apart by a sleeve 19', loosely encompassing the shaft 16, and 20' denotes a transverse scraper-blade secured to the handles to remove the adhering matter from the rollers when the machine is in operation.

21 21 denote hinge-clips fixed to the outer ends of the transverse bar 12, and each is provided with a longitudinal socket or sleeve 21' to receive the retaining-bolt 22, carried by the shoe 23, which is similarly pivoted by the bolt 22' to the clip on the contiguous end of the corresponding bar of the adjoining grader when two or more machines are coupled together.

Among the advantages attained by the present construction is the reduced weight of the machine, the rollers being mounted on shafts supported by the handles instead of employing brackets, as heretofore; in which to support the shafts. Another feature is that the



scoop can be made of a light grade of sheet-steel, whereby the crimping to form the lip and walls is much more easily and cheaply accomplished, and the metal stiffened at the proper point by the angle-scraper 20, which extends transversely across the bottom face of the scoop near its forward edge, and thereby prevents the bottom buckling when in the position shown in dotted lines in Fig. 1 and being drawn over a grade to smooth or level it, the lip 2 extending parallel with the surface of the road and planing off any inequalities or lumps. Another advantage is that much smaller, and consequently lighter, shafts can be used for the bearing-rollers, as the intervening sleeves, in addition to holding the rollers apart, also serve to stiffen the shafts and prevent their bucking under a heavy strain.

It will of course be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a road grader or scraper; the combination with the scoop, and the parallel handles fixed thereto, of the shafts mounted in said handles, the rollers journaled on said shafts, and the sleeves encompassing said

shafts between said rollers, substantially as and for the purpose set forth.

2. In a road grader or scraper, the combination with the scoop and the parallel handles fixed thereto, of the shafts formed with a square end and mounted in said handles, the bearing-rollers journaled on said shafts, and a plate encompassing the squared ends of said shafts, and means for securing said plate in place, substantially as and for the purpose set forth.

3. In a road grader or scraper, the combination with the scoop, the handles, a shaft mounted therein, and the bearing-rollers journaled on said shaft, of the roller-scraper fixed transversely to the bottom face of said scoop contiguous to said rollers, substantially as and for the purpose set forth.

4. In a road grader or scraper, the transverse bar 12, the hinge-clips 21 fixed to the outer ends of said bar and formed with the longitudinal socket or sleeve 21', in combination with the shoe 23 provided with the bolts 22' 22', substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JASON W. MACY.

Witnesses:

GEO. W. HAYS,  
FRANK WHITE.