(No Model.)

G. B. SHARP, Jr. & F. M. & S. PENNOCK.

ROAD GRADER.

No. 344,205. Patented June 22, 1886.

Fig. 1.

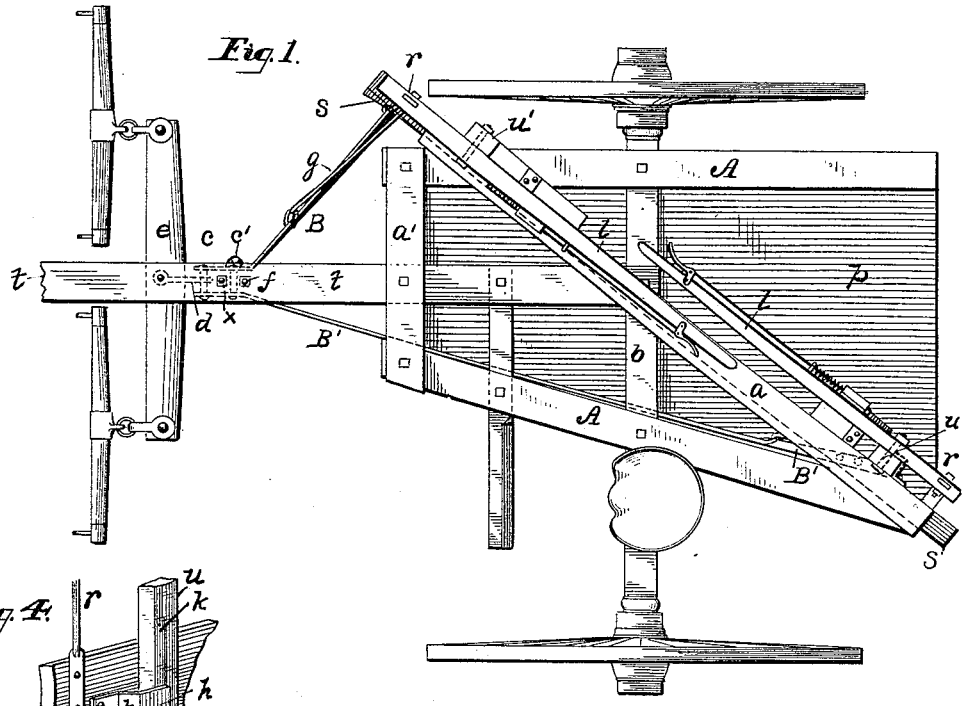


Fig. 4.

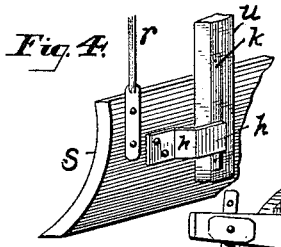


Fig. 2.

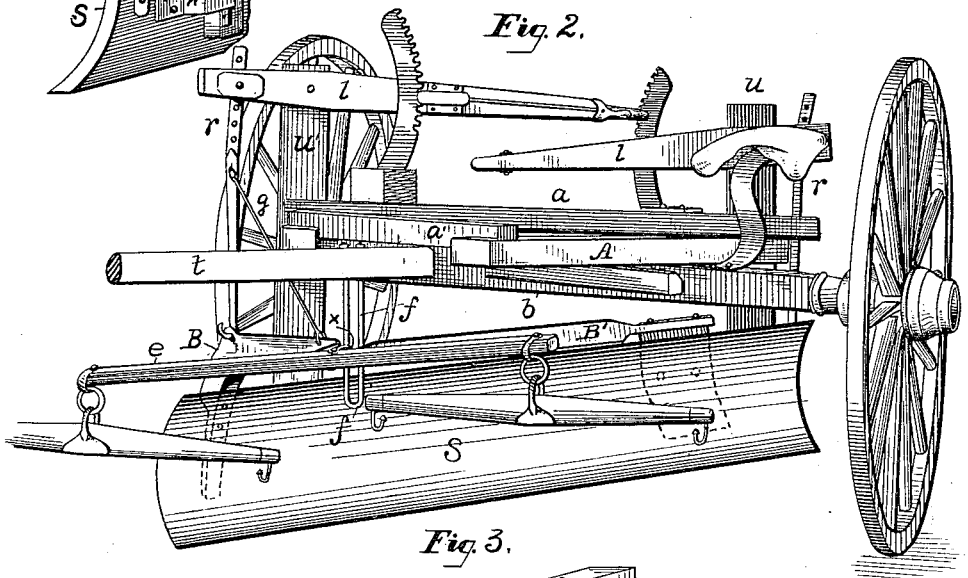
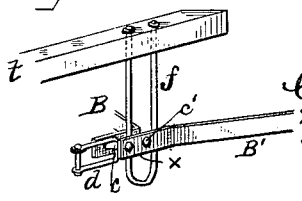


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ROAD-GRADER.

SPECIFICATION forming part of Letters Patent No. 344,205, dated June 22, 1886.

Application filed October 21, 1885. Serial No. 180,487. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. SHARP, Jr., of Des Moines, Iowa, and FREDERICK M. PENNOCK and SAMUEL PENNOCK, both of Kennett Square, in the county of Chester and State of Pennsylvania, all citizens of the United States, have invented certain new and useful Improvements in Road-Graders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a plan view; Fig. 2, a front perspective view; Fig. 3, a detail of draft-connection. Fig. 4 is a back view of the rear end of the scraper-bar, showing the brace-plate hereinafter referred to.

Our invention relates to that class of road grading or scraping machines in which a vertically-adjustable scraper is suspended diagonally from a two-wheel truck; and its object is to improve the construction and efficiency of such machines.

It consists in certain improvements in the scraper-bar draft attachment, whereby the draft comes directly upon the scraper-bar, and the weight and jar in a large measure taken off the horses when the machine is at work.

The invention also consists in certain improved minor details of construction, all as hereinafter described, and specifically set forth in the claims.

Referring to the annexed drawings, A marks the usual supporting-frame, mounted upon the axle *b* of the machine.

S is the diagonal scraper, which is suspended from the adjusting-levers *l* by straps or rods *r*. These levers are pivoted on uprights *u u'*, that are bolted to the diagonal frame-piece *a*, and are worked to elevate or depress the scraper at either or both ends by the operator, who stands upon the platform *p*. The uprights *u u'* are extended down back of the scraper-bar, so as to serve as a support or abutment for the latter. The end of the tongue *t* is bolted to the axle, and, usually, also to the bar *a'* of frame A, the point of attachment thereof to the axle being preferably in advance of the middle of the scraper. This is done in order to equalize the draft or strain, which comes mainly upon the leading end of the scraper when at work.

It has been usual in road-scrapers of the class referred to to attach the tongue directly to the scraper-bar. Instead of that construction, we attach the tongue to the axle or truck of the machine, and make the draft attachment with the scraper-bar in the following manner: B B' are two strong beams attached to the scraper near the ends thereof, respectively, and converging forward, their free extremities being bent or set parallel, but at some distance apart below the tongue, as shown. Through these two parallel extensions pass bolts *c c'*, between which a space, *x*, is left for the reception of the clevis *d* of the double-tree *e*, and for the reception also of the forward limb of a link or guide, *f*, that is bolted to the tongue. The front one of the rods *r*, pivoted to the vertically-adjusting lever, is connected to the beam B, as seen in Figs. 1 and 2.

In order to obviate the tendency of the scraper-bar to sag or draw down at the front, we connect the forward end of beam B with said rod by a bar, *g*, and as a means to prevent the twisting of the rear end of the scraper caused by the severe strain upon the leading end of the latter when doing work, we secure to the back of the scraper, near its rear end, a bent arm, *h*, whose free end extends over the back of the upright *u*, which, as previously stated, is firmly fastened to the framework of the machine.

In order to avoid the wearing away of the upright, which is usually of wood, we secure to the latter a strip, *k*, of iron or other metal. It will thus be seen that at the same time that the scraper is prevented from twisting around its vertical movement is not interfered with.

The operation of the machine will be readily understood from the construction shown and described. The draft is directly upon the scraper, and the latter is stayed both longitudinally and vertically by the link *f*, which allows the scraper to be raised and depressed, while the movement of the machine as a whole is stayed laterally by the tongue to which the team is connected in the usual manner.

Having thus described our invention, we

claim as new and desire to secure by Letters Patent—

1. In a road-grader of the class recited, the combination of the diagonal scraper, the converging draft-bars attached directly thereto and connected together at their free ends, the tongue secured to the truck or axle, and the link *f*, secured to the tongue and loosely connected with said draft-bars, in the manner shown, together with means for raising and lowering the scraper, all substantially as and for the purpose set forth.

2. In combination with the scraper, the converging draft-bars B B′, attached thereto, the rods *r* and levers *l*, and the supporting-bar *g*, connecting the forward end of bar B and the forward lifting-rod *r*, substantially as and for the purpose described.

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