April 29, 1952 O. A. BURGGREN 2,594,727

ACCESSORY SIDE SLOPE BLADE FOR BULLDOZERS

Filed Dec. 21, 1948

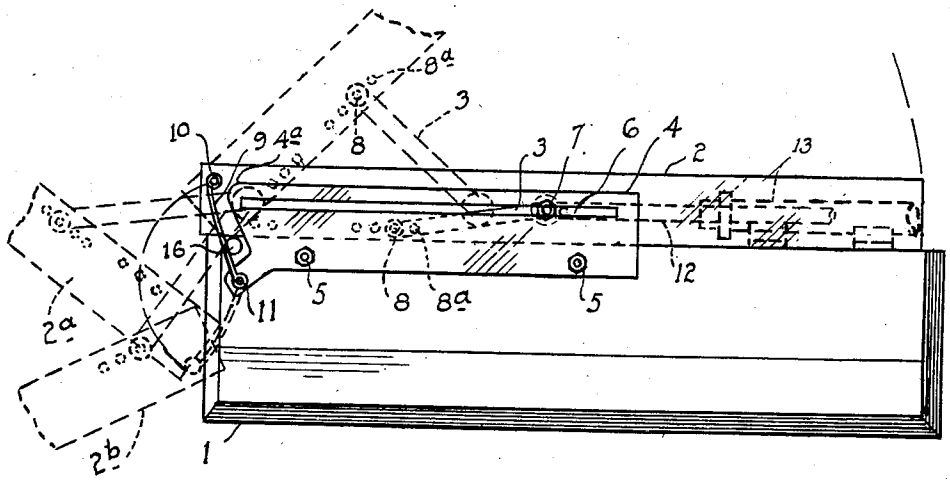


Fig. 1

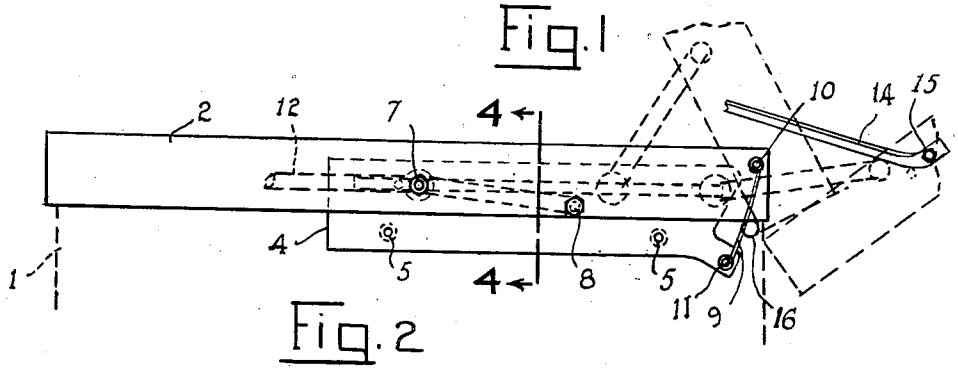


Fig. 2

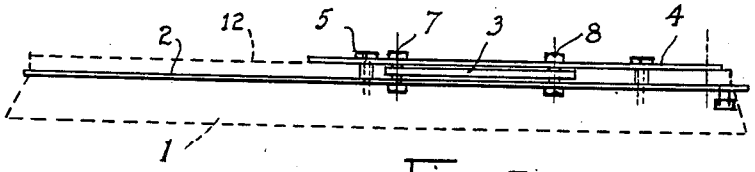


Fig. 3

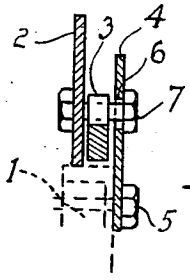


Fig. 4

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Patented Apr. 29, 1952

2,594,727

UNITED STATES PATENT OFFICE

2,594,727

ACCESSORY SIDE SLOPE BLADE FOR BULLDOZERS

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Application December 21, 1948, Serial No. 66,423
In Canada June 9, 1948

3 Claims. (Cl. 37—143)

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My invention relates to dirt moving apparatus of the road scraper type particularly applied to the formation of side slopes, and the object of my invention is to provide an accessory machine attachable to a bulldozer or an earth grading machine, so that the earth fill may be sloped at any desired angle upward from the road level, or a down bank may be graded to slope at any angular degree by altering the position of the scraper element, preferably by hydraulic means, to perform whichever kind of slope is required.

An advantage in my invented machine is primarily that it is in the form of an accessory machine to be readily affixed to most types of road scrapers or bulldozers, and that it is under the immediate control of the operator of the machine for varying the slope angle or for changing its up or down operational performance.

A further advantage consists in the fact that the device is of very simple construction consisting of comparatively few movable parts for setting up, inclusive of the hydraulic ram, and an adjustable brace rod, and it is only a matter of minutes to convert from up slope to down slope, hydraulically for preference, and the blade is readily adjusted into position by hand at whatever angle of slope necessary.

The use of this accessory device avoids the necessity of stepping up on a slope in a series of consecutive operations when dealing with cuts of considerable heights, and consequently greatly economizes in time and labor.

With these objects and advantages in view this invention consists in the novel features of construction hereinafter described and claimed, and in the drawings accompanying this specification it must be observed that similar numerals refer to similar parts throughout the different views.

Fig. 1 is a rear view in elevation of the accessory scraper blade mounted on the top of a dirt-moving machine blade, and indicating the operational positions thereof.

Fig. 2 is a front elevational view of the device.

Fig. 3 is a plan view.

Fig. 4 is a section to an enlarged degree on line 4—4 in Fig. 2.

In the drawings the numeral 1 refers to a standard type of road scraper blade, on the top of which rests an accessory scraper blade 2 pivotally associated with the said blade 1 in an indirect manner by means of a lever arm 3, and swingable with relation to the said blade. In order to accomplish this swinging action of blade 2 a plate 4 is mounted on the rear face of the blade 1 with bolts 5, and towards the same end thereof as

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the arm 3, and in an upright position. A slot 6 is apertured longitudinally in the plate 4 for the reception of a headed bolt 7 slidable therein. The lever arm 3 is pivotally attached to this bolt 7, and the other end of the arm is pivotally attached to the bottom edge of the blade 2 by means of a bolt 8. A plurality of holes 8a are drilled through the blade 2 for the reception of the bolt 8 in its varying positions in order to adjust the disposition of the arm 3 relative to the said blade.

The blade 2 is so swingable outboardly from the end of the blade 1 that up grade cut slopes and down grade bank slopes may be made either independently of or in conjunction with the blade. The up grade slope is indicated by the outline 2a in Fig. 1, and the down grade slope by 2b in the same figure. The swingable connection of the blade 2 relative to the blade 1 is by means of a link member 9 connected to a bolt 10 projecting rearwardly from the upper corner of the blade 2, and to a bolt 11 on the lower corner of the plate 4. This link member 9 is specially bowed in order to properly close with the top corner of the plate 4 as shown rounded at 4a for this purpose.

An applied pressure on the bolt 7 will slide same along the slot 6, which motion will push the bolt 8 by means of the arm 3, to project the scraper 2 along the top of the blade 1, and at the same time raise the scraper to pivot about the fixed bolt 11. Through the radial movement of the link 9 about the bolt 11 the blade 2 will swing outwardly in an extended relationship with the blade 1, and at any desired degree of angularity as determined by the comparative distances of the bolt 7 along its slot 6.

The mechanical movement of the bolt 7 slidably is best accomplished by means of a hydraulic ram 12 in a convenient double acting cylinder 13 as controlled in conventional manner by the operator of the vehicle.

A stay bar 14, as seen in Fig. 2, is braced between the scraper 2 and any convenient connection on the machine. This bar is connected to the scraper in an adjustable manner by a bolt 15 and a series of bolt holes in the scraper, and is readily removable from its connecting fittings.

It must be particularly realized that this accessory scraper blade may be designed and constructed for right side road operation in reverse to that here illustrated, without altering the intention and scope of the appended claims. The left side is generally preferred since it allows the operator in his cab to get a better view of

the base of the blade, and to align the machine more accurately from this side.

A roller 16 is affixed to the blade 1 to support the blade while swinging to its operable position.

I claim:

1. In a conventional road scraper machine, a conventional scraper blade, an accessory road scraper blade for forming side road slopes and to be mounted on the conventional blade, a lever arm pivotally connecting these two blades together, a plate mounted rigidly on the rear face of said conventional blade and slotted lengthwise to receive a slidable bolt of the said lever arm for reciprocal movement therealong, a pivot bolt on the other end of said arm connecting same pivotally with said accessory scraper blade, means to slide said slidable bolt with its arm along said slot to raise and lower said accessory blade thereby, and in a swingable manner relative to said conventional blade, a swingable link pivotally connecting together these two blades at their relatively coordinated ends so that the accessory blade will swing outwardly away from and reversely towards the conventional blade at one end as said bolt of the said slidable lever arm slides reciprocally within said plate slot, and an adjustable bar bracing the accessory blade to any convenient part of a road scraper machine carrying the conventional blade.

2. Dirt scraping apparatus associated with a conventional road scraping blade and for forming sloping fills and down sloping banks, comprising a conventional scraper blade, an accessory scraper blade associated at one end with the conventional blade, a lever arm pivotally connecting these two blades together, a pivot bolt at each end of this arm for relative adjustment of the two blades, a plate mounted longitudinally on the conventional blade, a slot longitudinally apertured in said plate to receive one of the said pivot bolts for the reciprocal guidance of said arm, powered means from an outer source to slidably reciprocate the pivot bolt and its attached arm relative to the said slot, a link pivotally anchored at one end on said conventional blade, and the other end of said link pivotally attached to the said accessory blade and radially swingable about its pivotal anchor on the conventional blade for swinging the accessory blade into its variable positions on application of the power to said slot-guided bolt, and means to brace the accessory blade when in its extended positions.

3. Dirt moving apparatus for use with a road scraper machine having a conventional blade, comprising a conventional scraper blade, an accessory blade pivotally mounted on and swingable with relation to and outwardly beyond one end of this conventional blade, for the construction and grading of angularly up and down slopes with relation to the road grade level, a longitudinally slotted plate attached to said conventional scraper blade, a pivot bolt slidable reciprocally within said slot, a lever arm pivotally connecting the swingable blade with said pivot bolt, powered means as supplied from the road scraper machine to reciprocally move said pivot bolt and attached lever arm, link means to loosely connect one end of said swingable blade with said conventional scraper blade to retain the swingable blade during its powered swinging action in its outboard position, a roller on said scraper blade to slidably support said accessory blade, and means to brace said accessory blade in its operational positions.

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