Nov. 25, 1969 H. D. SCHROPP 3,479,755

DETACHABLE WINDROW SIZER BOX
FOR MATERIAL MOVING SCRAPER

Filed June 13, 1967 2 Sheets-Sheet 1

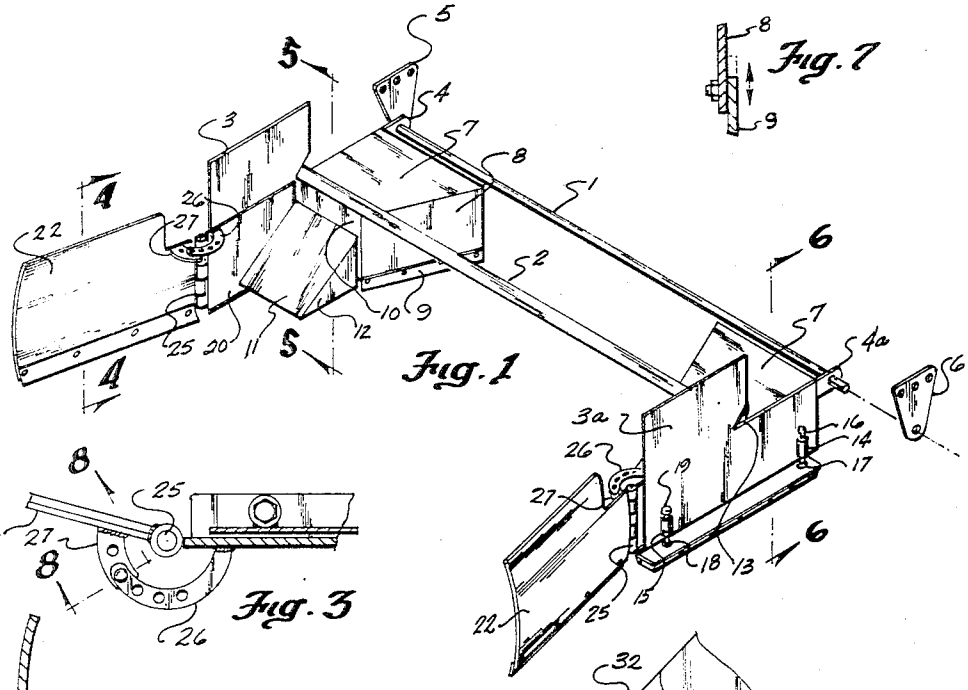


Fig. 1

Fig. 7

Fig. 3



Fig. 4

Fig. 2

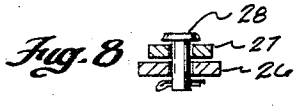


Fig. 8

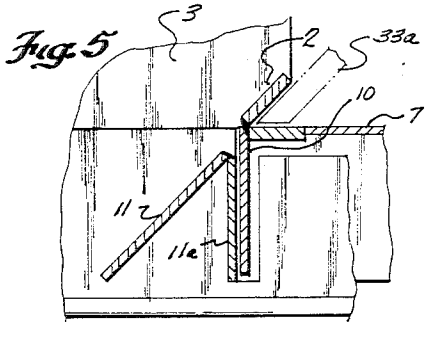


Fig. 5

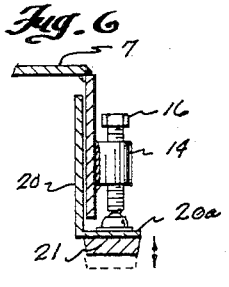


Fig. 6

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Nov. 25, 1969 H. D. SCHROPP 3,479,755

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Filed June 13, 1967 2 Sheets-Sheet 2

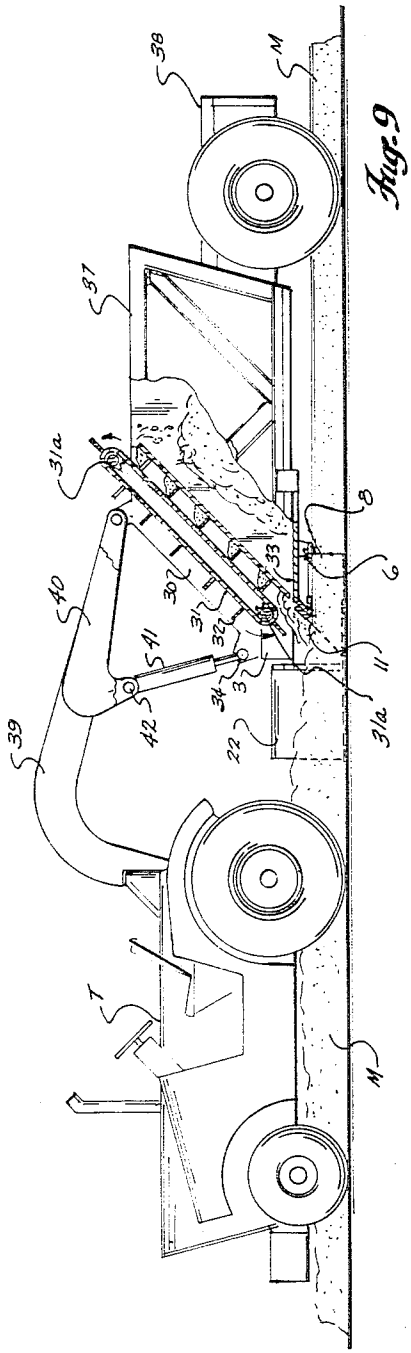


Fig. 9

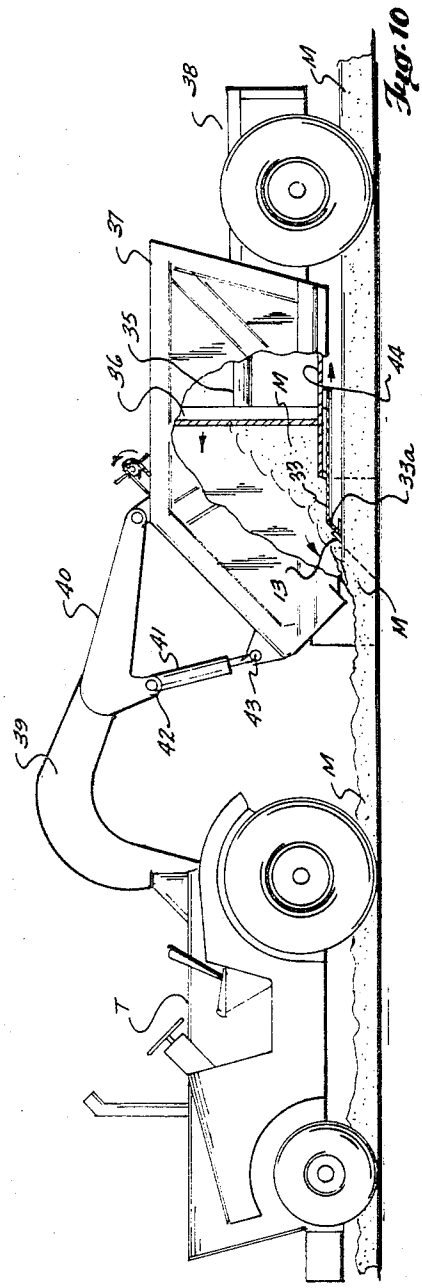


Fig. 10

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DETACHABLE WINDROW SIZER BOX FOR MATERIAL MOVING SCRAPER

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U.S. Cl. 37—8 2 Claims

ABSTRACT OF THE DISCLOSURE

The present device comprises a pair of vertically disposed plates, held rigidly in parallel spaced relation, having at one end of each of said pair of plates, a deflector member hingedly connected thereto; the other end having fasteners suitable for attachment to a material moving scraper; the said device being adapted to uniformly mix and spread windrows of material during the construction of highways.

The device of the present invention is intended to be used as an attachment for material moving scrapers in roadway construction.

It is the usual practice in connection with the paving operation in highway construction, to deposit the material in windrows which are formed by releasing the said material through openings in the lower section of the haulage vehicles. This, of course, results in an irregular surface which may be evened by means of the sizer box of the present invention.

This is accomplished by fastening the sizer box to the lower edge of the scraper, and then setting the wing-like members on the outer end of the sizer box in a position which is most suitable for the particular conditions or requirements of the paving operation. During such an operation it is customary to follow the material delivery vehicle, which deposits the said material in windrows. The scraper, which is used to even or level the surface of the delivered material; alternately moves forward or rearwardly. In the forward movement, the lower edge of the said scraper evens the windrows, with any surplus amount being scooped and lifted by a powered elevator. The load of material accumulated in the scraper may then be discharged from the bottom during either forward or rearward motion.

It is the function of the sizer box of the present invention to control the feed of the material into the hopper of the scraper, and by varying the setting of the hingedly connected wing members on the outer end of the sizer box, to even or level the surfaces of the windrow formations of material delivered by the haulage vehicles.

A particular feature of the adjustable wing members is that both lateral and vertical adjustment of the wings, relative to the fixed vertical side plates is provided for by means of angular shoe members at the lower edge of the said vertical side plates.

Other objects and advantages of the invention will be found in the description, in the drawing, and in the claims; and for complete understanding of the invention, reference may be had to the following and in the accompanying drawing wherein:

FIG. 1 is a front perspective view of the sizer box of the invention, with parts removed for illustrative purposes;

FIG. 2 is a side elevational view thereof, and showing the sizer box as it appears when attached to the leading edge of a scraper; portions being broken away for convenience of illustration;

FIG. 3 is a slightly enlarged detail of the hinge fastening shown in the left side of FIG. 1, portions being broken away for convenience of illustration;

FIG. 4 is a slightly enlarged vertical sectional view taken on the line 4—4 of FIG. 1;

FIG. 5 is a vertical sectional view taken on the line 5—5 of FIG. 1; portions being broken away for convenience of illustration;

FIG. 6 is a vertical sectional view taken on the line 6—6 of FIG. 1;

FIG. 7 is a slightly enlarged sectional detail of the portions 8, 9 in FIG. 1 to illustrate the adjustable blade 9 therein;

FIG. 8 is a sectional detail, and taken on the line 8—8 of FIG. 3 showing the adjustable fastener therein;

FIG. 9 shows a side elevational view of a scraper of the type in connection with which the sizer box of the invention is used, parts being broken away to demonstrate the operation of the same;

FIG. 10 is a view similar to FIG. 9 but with the scraper and sizer box assembly in the position for discharging material from the scraper.

Referring to the drawing more in detail, FIG. 1 shows the complete sizer box, wherein the fixed side plates 3, 3*a* are held in spaced parallel relation by laterally disposed rods 1, 2, the said side plates being vertically secured to the deflector boxes 7, 8. To the leading edges of plates 3, 3*a* the wing scraper members 22 are hingedly attached by hingers 25, with provision for fastening the wing scraper blades 22 in an adjusted position relative to the plates 3, 3*a*. Overlapping arcuate member 26, 27 attached to the plates 3 and member 22 may be held in selected positions by bolts 28 being engaged with the openings in the members 26, 27, as best indicated by FIG. 3 and FIG. 8.

A shoe 21 is secured to the bottom of the angular flanges 20, 20*a*; on the side plates, with the shoes each being adjustably secured to the side plates 3*a* by means of threaded member 14 and screws 16, 17 and 18, 19.

It is to be noted that the material is directed into the scraper by contacting the inner surfaces of wing portions 22; then further being deflected or guided by the ramp like formation 11 and wall 8, as best illustrated by FIG. 1.

On the lower edges of the deflecting members 8, 20, and 22 there is provision for adjustment of the lower blades 23 and 9.

The reentrant angular formation 13 in plates 3, 3*a* provides a means of seating the leading edge 33, 33*a* of the scraper therein, and securing the same to the scraper frame by means of plates 5, 6 being fastened to the outer ends of rod 1.

The upper surface 7 of the box like formations in the sides of the sizer box also aids in guiding the passage of material into the hopper of the scraper.

For a better understanding of the manner in which the sizer box is used, reference may be had to FIGS. 9 and 10 wherein FIG. 9 indicates the manner in which the wing members of the sizer box may be adjusted to direct the material M into the hopper 37. The elevator 30, 31, 31*a*, 32 deposits the material in hopper 37, it being noted that the scraper 33, 33*a* may be adjusted to the position best suited for handling of material in the said elevator. Note that scraper 33 is slidably adjustable on the bed of the hopper 37.

It is important to direct the material during the forward motion of tractor T in such a manner that a uniform flow of material into the hopper is maintained.

This is attained by attaching the sizer box of the present invention to the scraper as indicated in the drawing. When the scraper hopper is loaded with material which is to be discharged, the member 33 is moved rearwardly and the material is hydraulically pushed forwardly by

the "crowd" member **36** which is joined at the rear thereof to hydraulic unit **35**.

This material is used to fill in the thin spots in the windrows deposited by the material supply trucks.

It has been customary to use the hydraulic lift unit **40, 41, 42** which is connected to gooseneck member **39**. This requires constant maneuvering of the lift assembly, and a constant changing of the elevation of the scraper blade.

By using the sizer box of the present invention, there is provided a substantially constant control of material passing in either direction therethrough, and without the necessity of frequent changes in the adjustment of the wing members of the sizer box.

What is claimed is:

1. In combination with a material moving scraper comprising a pair of vertically disposed spaced side plates formed on opposing ends of transversely extending rod means, and a pair of outwardly and angularly extending wing members hingedly and adjustably attached to the forward ends of said plates, deflecting means integrally formed on and projecting inwardly from each of said plates for directing material passing therethrough inwardly and upwardly, including a ramp-like formation having an upwardly and rearwardly inclined surface and a deflector box rearwardly of said ramp-like formation

and having a wall inclined inwardly and rearwardly, and said plates including recesses in the upper edges thereof for receiving and engaging the leading edge of said scraper.

2. In a device according to claim **1**, wherein adjustment of said wing members relative to said side plates includes overlapping apertured means on each of said members and plates, and bolt means received in the apertures thereof to retain said wing members in their angular adjusted positions.

References Cited

UNITED STATES PATENTS

851,713	4/1907	Trabue	172—784
1,987,398	1/1935	Gardiner	94—44
3,011,273	12/1961	Stumpf	37—8 XR
3,049,817	8/1962	MacDonald	37—8 XR
3,090,139	5/1963	Hancock	37—8
3,091,999	6/1963	MacDonald	94—44

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