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ATTACHMENT FOR ROAD SCRAPERS

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Fig. 1

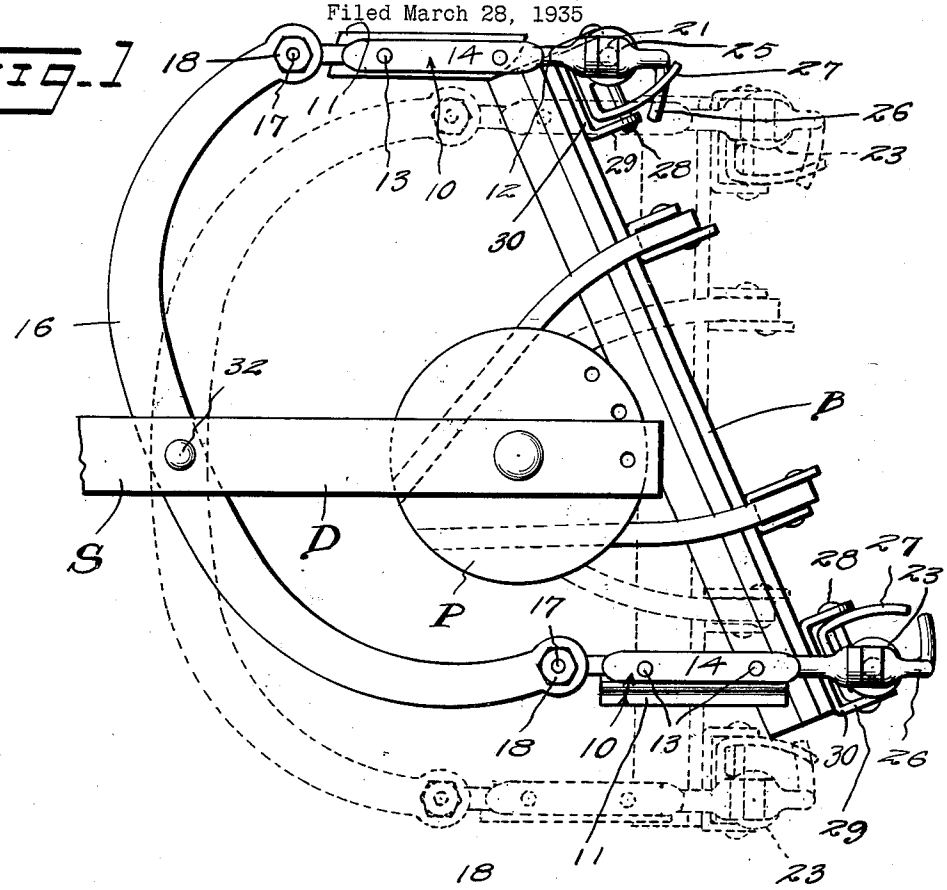


Fig. 2

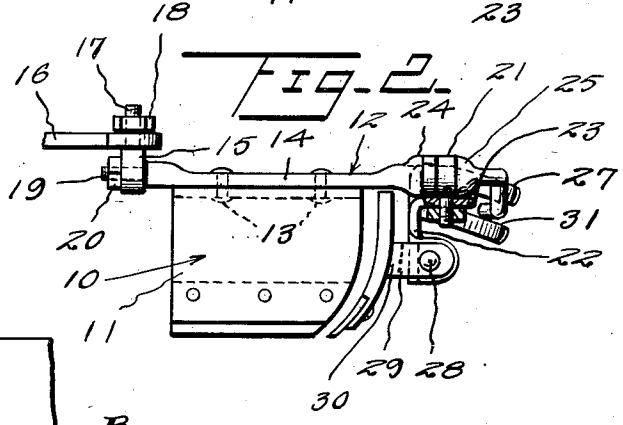
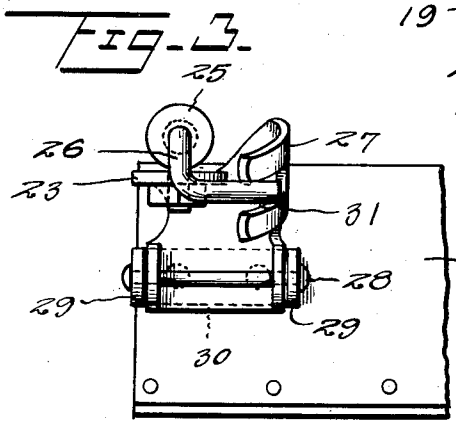


Fig. 3



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ATTACHMENT FOR ROAD SCRAPERS

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8 Claims. (Cl. 37—143)

This invention relates to road scraping devices and has for an important object thereof an attachment for a conventional road scraper of such a construction that the conventional scraper may be used in either a straight or angular position relative to the travel of the scraper so as to either drag a quantity of dirt forwardly after the manner of a bucket or drag, or the scraper may be used in an angular position relative to the line of travel so as to smooth the surface of the road and force some of the loose material at either one side or to the center of the road, as may be desired.

An object of this invention is to provide an attachment for a conventional road scraper which is of such a construction that the opposite ends of the scraper may be closed when it is desired to use the scraper at right angles to the line of travel, the attachment being of such a construction that when the scraper is swung to an oblique angle to the line of travel, one of the ends of the scraper will be automatically opened so as to permit the loose material to flow off of said one end.

Another object of this invention is to provide a scraper attachment which is so constructed that when the scraper is disposed at an oblique angle to the line of travel, the scraper will be held from side slipping.

A still further object of this invention is to provide an attachment of this character of such a construction that one end of the scraper will be automatically opened to permit the loose material to pass away from said one end and the ends of the scraper will be automatically closed when the scraper is swung to a position at right angles to the line of travel, thereby providing means whereby loose material may be dragged forwardly for the desired distance without having any of the loose material flow off of the ends of the scraper.

The above and various other objects and advantages of this invention will in part be described and in part be understood from the following detailed description of the present prefered embodiment, the same being illustrated in the accompanying drawing wherein:—

Figure 1 is a top plan view of a scraper having an attachment constructed according to an embodiment of this invention mounted thereon;

Figure 2 is a detail end elevation of the scraper shown in Figure 1;

Figure 3 is a fragmentary rear elevation of the scraper showing the means for maintaining the blades or end members in either a locked or released position.

Referring to the drawing wherein like characters of reference designate coresponding parts throughout the views, the letter S designates generally a scraper of conventional construction which is provided with a scraping blade B which may be movable from a position at right angles to the drawbar D, as shown in dotted lines or to a position oblique to the line of travel, as shown in full lines in Figure 1.

In scrapers of this type, when the blade B is being pulled over the surface of the road, there is a tendency for the blade B to creep to one side due to the angular position of the blade and in addition thereto, when the blade B is swung to a right angular position relative to the drawbar D, the loose material may freely flow off of the ends of the blade B.

In order to provide a means whereby when the blade B is swung at a right angular position to the length of the drawbar B, the material moved forwardly by the blade B will be prevented from sliding off of the ends of the blade, we have provided a pair of swingable end blade members, generally designated as 10. These blade members 10 are of similar construction and the description of one of these members will apply equally well to the description of the other member.

The blade member 10 comprises a plate 11 secured at its upper end to a shaft 12 as by rivets 13 or the like, and preferably the shaft 12 is flattened, as at 14, so that the top of the plate or blade member 11 will lie flat against the shaft 12. The forward end of the shaft 12 is journaled in an eye member 15 secured to an arcuate drawbar 16 and the eye member 15 may be made removable by providing a threaded stem 17, which is fastened to the end of the drawbar 16 as by a nut 18. Preferably the forward end of the shaft 12 is threaded, as at 19, and a nut 20 engages the threads of the reduced end. The rear end of the shaft 12 is journaled in a bearing 21 carried by a plate 22 having a horizontal arm 23. In the present instance, the bearing 21 is formed as by an eye which is mounted in the horizontal arm 23, and this eye 21 is swingable relative to the arm 23. Preferably the shaft 12 has an enlargement or annular flange 24 at one side of the bearing or eye member 21, and a second enlargement 25 is disposed on the opposite or rear side of the bearing 21 so that the shaft 12 will be held against longitudinal movement relative to the eye 21 while having rotary movement therein.

The shaft 12 also has a substantially L-shaped

extension or blade controlling arm 26 at the rear end thereof, and this blade controlling member 26 is adapted to engage in a bifurcated or slotted member 27 secured to the blade 23 and extending rearwardly thereof. The plate 22, in the present instance, is pivotally secured to a shaft 28 journaled in a pair of ears 29 formed with a base plate 30 which is rigidly fastened to the rear side of the blade B. It will, of course, be understood that there are two of these plates 30, one adjacent each end of the blade B. The bifurcated arm or blade swinging member 27 has the slot 31 thereof disposed on an angle to the horizontal and preferably the slot 31 is also disposed on a slight curvature so that when the blade B is swung to an oblique angle relative to the line of travel, the forward end blade 10 will be disposed on a slight inclination to the vertical with the inclination extending downwardly and inwardly toward the blade B.

The drawbar 16 is secured as by a pivot 32 to the drawbar D at a point forwardly of the pivotal connection between the blade B and the drawbar D so that as the blade B is adjusted in its relation to the drawbar D, the wing members or end blades 10 will be automatically moved and will at all times be disposed with the shafts 12 in parallel relation to each other.

By mounting the wing or end members 10 as hereinbefore described, these wing members may have either a horizontal swinging movement or a vertical swinging movement and the scraper blade B may be freely adjusted to the desired angular relation relative to the drawbar D.

In the use and operation of this device, the plate 30 may be secured to an end of the scraper blade B, there being two plates 30 one adjacent each end. The drawbar 16 is pivotally mounted on the drawbar D and the ends of the drawbar 16 secured to the forward ends of the shafts 12. If it is desired to position the scraper blade B at right angles to the drawbar D, the blade B may be adjusted by swinging this blade relative to the drawbar D and locking the blade in its right angular position by pins or bolts extending through registering openings carried by the rear end of the drawbar D and the platform or plate P carried by the blade B.

As hereinbefore stated, the scraper herein disclosed is only one of a number of types of scrapers with which the wing members may be engaged, and we do not, therefore, desire to be limited to any particular type of scraper as the scraper is here disclosed as a conventional scraper.

When the blade B is in its right angular position, the wing members 10 will be disclosed at substantially right angles to the length of the blade B and will close the opposite ends of the blade B so that a considerable quantity of material will be moved forwardly which is loosened by the blade B. It will be apparent, therefore, that when the blade B is in its right angular position, the surface of the road may be scraped without leaving any ridges at the opposite ends of the scraped portion as is the case where a scraper is used which does not have wing members on the ends thereof.

Where it is desired to shift the material in the road, that is, from either the center toward the side or from the side toward the center, the blade B may be swung at an oblique angle to the line of travel, and when this is done, the forward wing member 10 will have the controlling member 26 disposed in the slot 31 of the bifurcated arm 27. The rearmost blade 10 on the opposite side of the blade B will have the controlling member 26 thereof disposed free of the guide member 27 so that this rearmost wing member 10 will gravitatingly hang in a substantially vertical position but may be freely swung away from the end of the blade by any loose material sliding off of the rear end of the blade B. In other words, the rearmost wing member 10 will in its free condition naturally assume a substantially vertical position, but as the controlling member 26 is not engaged with the guide member 27, any loose material sliding along the blade B will freely slide off of the rear end of the blade B, and in its movement will swing the rearmost wing member 10 outwardly. Due to the configuration of the guide member 27, the foremost wing member 10 will be disposed on a slight inward inclination relative to the blade B while at the same time this foremost blade 10 will be disposed with the lower edge thereof parallel with the line of travel, and as the lower edge of each wing member 10 is relatively sharp, the rigid wing member, and in the present instance, the forward wing member, will act to prevent side slipping of the blade B as it is being pulled along the road.

It will be apparent from the foregoing that the wing members hereinbefore described may be readily mounted on any conventional scraper and when so mounted, the conventional scraper will be of such a construction that no ridges will be formed at the leading edge of the blade when the blade is oblique to the line of travel and in addition thereto, no ridges will be formed at the opposite ends of the blade when the blade is at right angles to the line of travel.

What is claimed is:—

1. In combination, a road scraper including a drawbar and a scraper blade secured to the drawbar and adjustable relative thereto, a pair of wing members disposed one adjacent each end of the blade in parallel relation to the drawbar and to each other, and mounting means for said wing members, said mounting means including means to release one of the wing members when the scraper blade is disposed at an angle oblique to the line of travel.

2. In combination with a road scraper having a drawbar and a scraper blade secured to the drawbar and adjustable relative thereto, a pair of wing members disposed one adjacent each end of the blade in parallel relation to the drawbar and to each other, mounting means for said wing members, and means for automatically releasing one of said wing members when the blade is swung to a position oblique to the line of travel of the scraper.

3. A means for retaining the dirt loosened by a scraper blade, comprising a pair of wing members adapted to be mounted one adjacent each end of the blade of the scraper, and means for mounting said wing members in parallel relation to each other and in forwardly extended position relative to the scraper blade, said mounting means including means to release one of the wing members when the scraper blade is disposed at an angle oblique to the line of travel.

4. A means for preventing the dirt loosened by the blade of a scraper from passing off of the ends of the blade of the scraper, comprising a pair of wing members disposed in forwardly projecting position one adjacent each end of the scraper blade, and means for swingably mounting said wing members forwardly of the scraper blade, said mounting means including means to

release one of said wing members for free swinging movement when the scraper blade is disposed at an oblique angle to the line of travel of the scraper.

5. In a road scraper having a drawbar and a scraper blade secured to the drawbar and adjustable relative thereto, a pair of wing members extending forwardly of the scraper blade and disposed one adjacent each end of the blade, a pair of shafts secured one to each wing member, mounting means carried by the drawbar and engaging the forward ends of the shafts, and mounting means disposed adjacent each end of the scraper blade and engaging the opposite ends of the shafts whereby said wing members may have vertical swinging movement.

6. In a road scraper including a drawbar and a scraper blade secured to the drawbar and adjustable relative thereto, a pair of wing members disposed one adjacent each end of the blade and projecting forwardly thereof, a pair of shafts secured one to each wing member, a horizontally swingable drawbar secured to said first drawbar, means engaging the ends of the second drawbar and the forward ends of the shafts to secure said shafts to the ends of the second drawbar while permitting rotation of the shafts, means engaging the opposite ends of the shafts and the ends of the scraper blade to secure the opposite ends of the shafts to the scraper blade for rotation relative thereto, said means including a horizontally swingable bearing whereby said scraper blade may be adjusted to a selected angular position relative to said first drawbar.

7. In a road scraper including a drawbar and a scraper blade secured to the drawbar and adjustable relative thereto and a pair of vertically disposed wing members positioned one adjacent each end of the scraper blade, a pair of shafts secured one to each wing member, a transversely disposed drawbar, means for pivotally securing said second drawbar to said first drawbar, an eye rotatably carried by each end of said second drawbar, each of said shafts being rotatably disposed in an eye, a second pair of eyes engaging the opposite ends of the shafts, means for mounting the second pair of eyes on the blade for horizontal swinging movement relative thereto, and coacting means carried by each shaft and said latter mounting means for holding said wing members in vertical position, said mounting means including means whereby one of said wing members may be released for free swinging movement when the scraper blade is disposed at an oblique angle to the line of travel.

8. An attachment for a road scraper including a drawbar and a scraper blade adjustable relative to the drawbar, comprising a pair of wing members adapted to be positioned one adjacent each end of the scraper blade, each wing member comprising a blade, a shaft secured to the upper edge of the blade, a transversely disposed drawbar, coacting means carried by the wing members and the second drawbar for permitting vertical and horizontal swinging movement of the wing members, swivelled means engaging the rear ends of the wing members, mounting means for said swivelled means for attaching said swivelled means to the scraper blade, a bifurcated member carried by said mounting means and an arm carried by each wing member and engaging said bifurcated member to lock the wing members against vertical swinging movement when the scraper blade is at right angles to the first drawbar, said mounting means being so disposed as to release one of said wing members for free vertical swinging movement when the scraper blade is disposed at an oblique angle to the line of travel.

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