May 25, 1926. 1,586,230

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ROAD SCRAPING AND MAINTAINING MACHINE

Filed Nov. 3, 1924 2 Sheets-Sheet 1

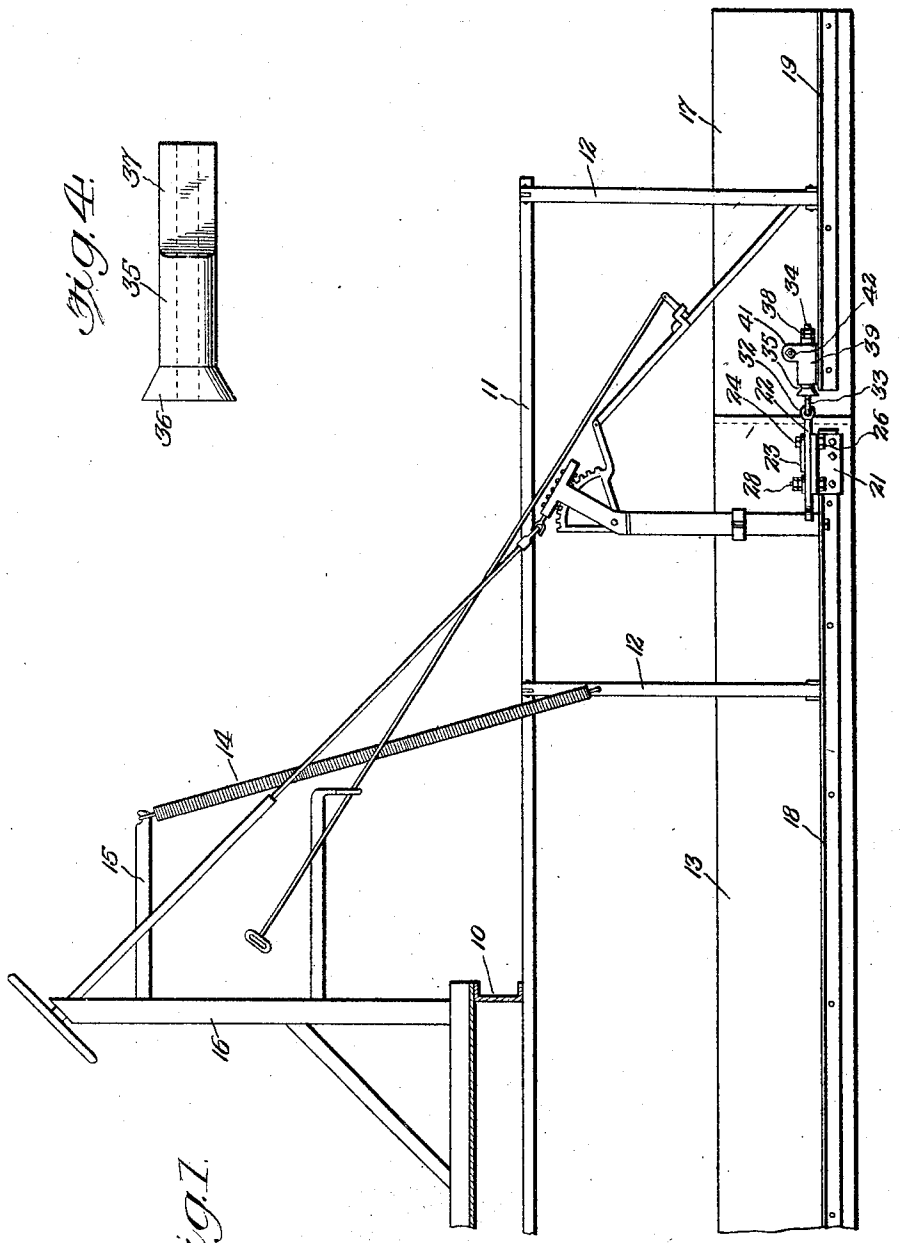


Fig. 4.

Fig. 1.

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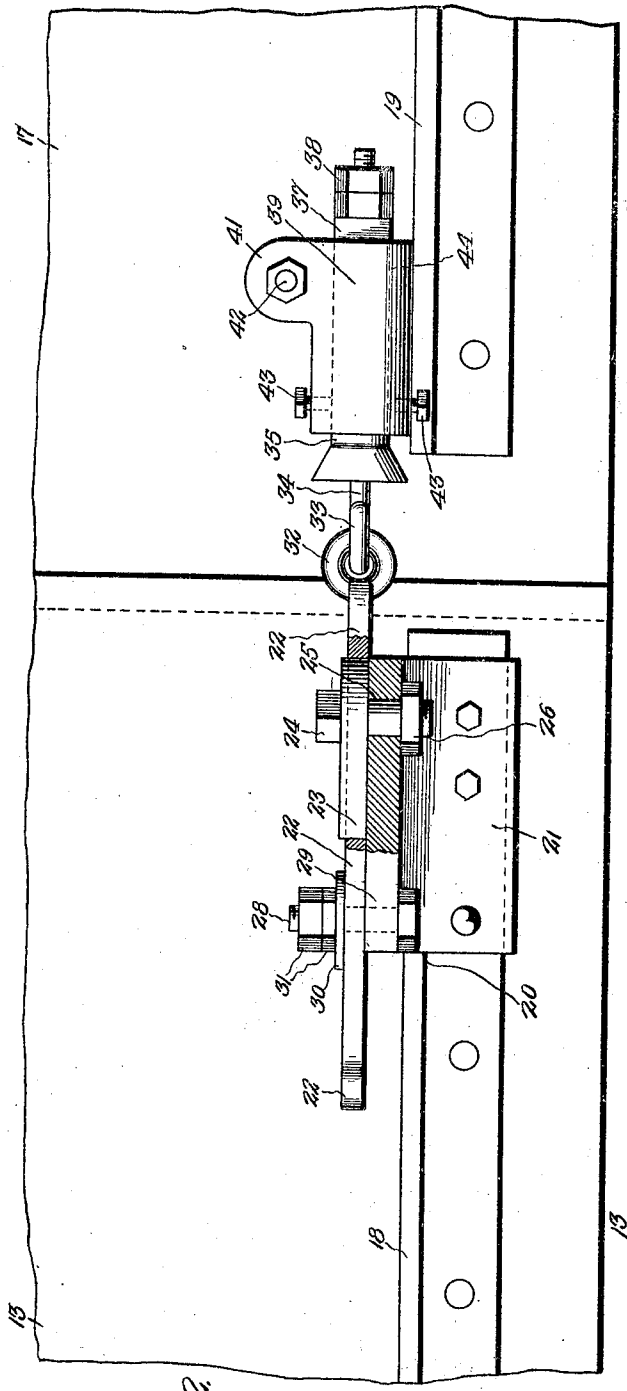


Fig. 2.

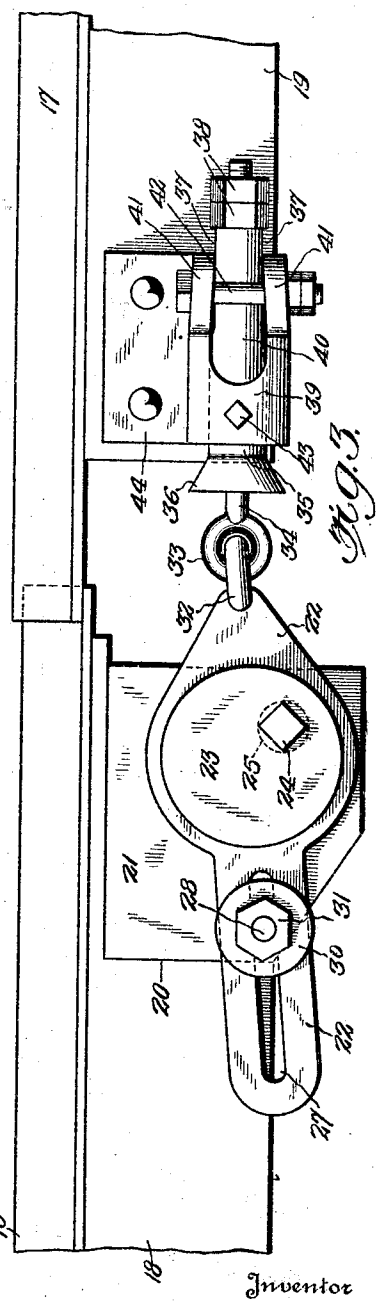


Fig. 3.

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UNITED STATES PATENT OFFICE.

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ROAD SCRAPING AND MAINTAINING MACHINE.

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The present invention relates to improvements for scraping and maintaining roads in proper condition, and has particular reference to an improved connection for use between the main blade and an auxiliary blade of the machine.

An object of the present invention is to provide a connection of this character by means of which the effective length of the main blade may be increased so as to reach laterally beyond the machine to various distances, and to also dispose the auxiliary or extension blades at different transverse and vertical angular relation with respect to the main blade.

A further object of the invention is to provide a relatively strong and rigid connection of this character which permits of the free swinging or hinging of the auxiliary blade on the end of the main blade and which provides substantially a universal connection between the blades whereby one may be twisted axially relatively to the other as well as being capable of being swung forwardly and rearwardly out of the plane of the other blade.

A still further object of the invention is to provide a coupling member or bushing and a novel mounting therefor to hold and secure the bushing in various positions lengthwise of the bushing as well as at different angles with respect to the axis of the bushing so that the coupling eye or member may be adjusted longitudinally as well as axially.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a fragmentary rear elevation of a road scraping machine having a main and auxiliary blade connected together by a coupling constructed according to this invention.

Figure 2 is a detail enlarged view of the coupling, looking toward the rear faces of the main and auxiliary blades.

Figure 3 is a top plan view of the same, and

Figure 4 is a detailed side elevation of the adjustable bushing forming a part of the coupling.

Referring to the drawings 10 designates the frame of a road scraping or surfacing machine equipped at its forward end with a laterally extending arm 11 pivotally supporting the forward end of a draft bar 12 arranged to trail beneath the frame 10 and to support a main scraper blade 13. The draft bar 12 is connected to the lower end of the spring 14 suspended at its upper end from a laterally projecting arm 15 mounted upon an upright 16 carried on the frame 10. The spring 14 is adapted to yieldingly support the draft bar 12 in correct position to maintain the main blade 13 in the desired contact with the surface of the roadway.

An auxiliary scraper blade 17 is provided which is substantially of the same height and thickness as that of the main blade 13 to form a continuation of the same, and is arranged to overlap the outer end of the main blade 13, either against the forward face of the blade 13 or against the rear face thereof according to the transverse inclination of the main blade 13. The auxiliary blade 17 is connected to the main blade 13 by a novel connection which forms the subject matter of this invention and which in the present embodiment is constructed as illustrated particularly in Figures 2, 3 and 4.

The main blade 13 has a rearwardly extending flange 18 while the auxiliary blade 17 is provided with a corresponding flange 19. These flanges are preferably the horizontal portions of angle irons or bars which are riveted or otherwise suitably secured longitudinally across the rear sides of the blades and near the lower edges thereof. These angle bars 18 serve the purpose of not only reinforcing the scraper blades against bending but also serve to connect and maintain the same rigidly when made up in sections, and also provide a suitable support for the members of the improved coupling.

The flange 18 of the main blade is cut away to provide a recess 20 at the outer end of the flange near the outer edge of the blade 13, and within this recess 20 is fitted a relatively heavy angle iron 21 secured by rivets or the like to the angle bar 18 and which preferably is offset upwardly a slight distance above the reinforcing flange 18. Slidably mounted on the upper face of the angle iron 21 is a flat link 22 in the form of a metal plate having an

intermediate enlargement which is apertured for the reception of an eccentric disc 23 provided with a pivot bolt 24 which passes downwardly through an opening 25 in the angle iron 21 and has a clamping nut 26 upon its lower end.

The nut 26 bears against the under side of the angle iron 21 while the angular faced head of the bolt 24 may be turned to tighten and loosen the bolt and thus clamp or release the eccentric disc 23 with respect to the upper surface of the angle iron 21. The disc 23 fits snugly in the link 22 so as to hold the latter against shifting in any direction upon the eccentric 23, and the latter may be swung about its bolt 24 so as to shift the link 22 not only longitudinally but in a lateral direction toward and from the rear face of the main blade 13. The rear end of the link 22 is elongated and may be of less width than the intermediate portions of the link, and such elongated portion is provided with a correspondingly elongated slot 27 through which is placed a clamping bolt 28 the head of which is seated against the under side of the angle iron 21 and its shank is positioned through the angle iron in a close fitting opening 29 which prevents the shifting of the bolt 28 lengthwise of the angle iron. The clamping washer 30 is placed about the upper end of the bolt 28 and is bound and located against the upper face of the link 22 by a pair of lock nuts 31 threaded upon the upper end of the bolt 28. The bolt 28 serves as a pivot for the link 22 when the latter is swung laterally by the swinging of the eccentric when it is shifting the link. The bolt 28, after adjustment is secured, serves to bind the link rigidly in adjusted position and assists the eccentric 23 to maintain the link from accidental shifting incident to jar or sudden stresses in the connection.

The outer end of the link 22 terminates in a preferably disposed eye piece 32 which interfits with the head 33 of an eye bolt which is preferably arranged in a normally horizontal position as shown in Figures 2 and 3 and which has a shank 34 adjustably connected to the auxiliary blade 17. The shank 34 is rotatably and longitudinally adjustable in a bushing 35, shown in detail in Figure 4. The forward end of the bushing 35 has a flaring head 36 providing a substantial bearing surface against which the head 33 of the eye bolt may work. The bushing 35 is of general cylindrical contour throughout its length but has near its rear or inner end flat faces 37 at opposite sides. The shank 34 of the eye bolt is maintained in the bushing 35 by a pair of lock nuts 38 which work against the inner end of the bushing 35 to hold the shank 34 in longitudinally adjusted position through the shank 35.

The shank 35 is adjustably mounted in a support 39 which is in the form of a cylindrical socket split at its rear end or cut away as at 40 and provided with a pair of upstanding ears 43, one at each side of the opening 40 adapted to be drawn toward each other by a clamping bolt 42 placed through the ears 41 to contract the socket 39 at opposite sides against the flat faces 37 of the bushing 35. The ears 41 are therefore used for binding the bushing 35 against rotary as well as longitudinal movement. The bushing 35 is further held in adjusted position by one or more set screws 43 which are threaded through the forward end of the cylindrical socket 39 and which may be turned forwardly to bind against the bushing 35 when it is adjusted.

The cylindrical socket or support 39 is provided at one side and at its bottom with a base flange 44 adapted to seat upon the reinforcing flange 19 of the auxiliary blade and may be riveted or otherwise suitably secured to the flange 19.

It is apparent that the eyes 32 and 33 may be adjusted so as to not only maintain the auxiliary blade in suitably overlapped relation to the main blade 13, but the eye pieces may also be adjusted to dispose the auxiliary blade 17 at the front or rear sides of the main blade. The purpose of this adjustment is to prevent the presentation of a vertical shoulder or ridge to the roadway at the forward end of the scraper blade when the latter is adjusted into an inclined transverse angle beneath the frame 10 of the machine. The adjustment permits of the swinging forward of either end of the main blade and its adjacent auxiliary blade without the disadvantage of having the shoulder or abrupt ridge facing the work. The link 22 may be swung toward or from the rear face of the main blade 13 so as to properly position its eye piece 32 for holding the auxiliary blade 17 against the front or rear faces of the main blade. The bushing 35 and the shank 34 may also be longitudinally adjusted so as to compensate for wear and also for different conditions met with in the attachment of the auxiliary blade upon the main blade.

It is apparent that the shank 34 is free to turn within the bushing 35 without disturbing the longitudinal adjustment of the bushing and without dislodging the lock nuts 38 from the inner end of the shank 35. The lock nuts serve as a stop to limit the forward shifting of the shank through the bushing. The connection thus made between the main blade 13 and the auxiliary blade 17 permits of the swinging upwardly, in an edgewise direction, of the auxiliary blade 17 to adapt the lower edge of the same to the inclination or slope of the surface of the road and at the same time permits of the hinging of the auxiliary blade in a horizon-

tal plane so that it may be swung forwardly or rearwardly of the main blade 13. Besides these adjustments the shank 34 within the bushing 35 permits of the axial turning or canting of the auxiliary blade 17 when it is moved from one overlapping position into another and so as to accommodate for any inequalities or inaccuracies in the main or auxiliary blade formations, particularly where the overlapping occurs.

I do not wish to be restricted to the size, form and proportions of the various parts and obviously changes could be made in the construction herein described without departing from the spirit of the invention, it being only necessary that such changes fall within the scope of the appended claims.

What is claimed is:—

1. An auxiliary blade connection for road scrapers comprising a support adapted to be mounted on a main blade, a link slidable on the support and having an elongated slot in its rear end and an enlarged circular opening at its intermediate portion, an eccentric mounted on said support and seated in said circular opening adapted to be turned therein for shifting the link longitudinally and in an edgewise direction, a pivot bolt carried by the support and engaging in said slot, clamping means on the pivot bolt for binding the link in adjusted position, clamping means for the eccentric to bind the same upon the support when adjusted, said link having an eye piece on its outer end, an eye bolt interlocked with said eye piece and having a shank, a bushing receiving said shank, a stop on the inner end of the shank to limit the movement of the shank in the bushing, and a support adjustably embracing the shank for holding it in longitudinally adjusted position.

2. A connection for securing auxiliary scraper blades to the main blades of road scrapers, comprising a link provided on one end with an eye piece, an eye bolt interfitting the eye piece and provided with a shank, means for securing the link upon a main scraper blade, a supporting bracket adapted to be secured to the auxiliary blade, a bushing arranged for longitudinal adjustment in the support and held therein for movement toward and from said link, and means for adjustably securing the shank of the eye bolt in said bushing.

3. An auxiliary blade connection for road scraping machines comprising a link having an eye piece, means for adjustably mounting the link upon the back of a scraper blade, an eye bolt interlocking with said eye piece of the link and having an elongated shank, a bushing mounted on the shank, a pair of lock nuts carried by the shank for adjustably securing the same through the bushing, said bushing having flat faces at opposite sides, a support slidably receiving said bushing and having a split portion, means for contracting the split portion against the flat sides of the bushing for holding it in adjusted position, and said screws carried by the support arranged to bind against said bushing for maintaining the same against vibration.

In testimony whereof, I have affixed my signature.

ODIN B. WALTERS.