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WEDGE FASTENER FOR SCRAPER BLADES

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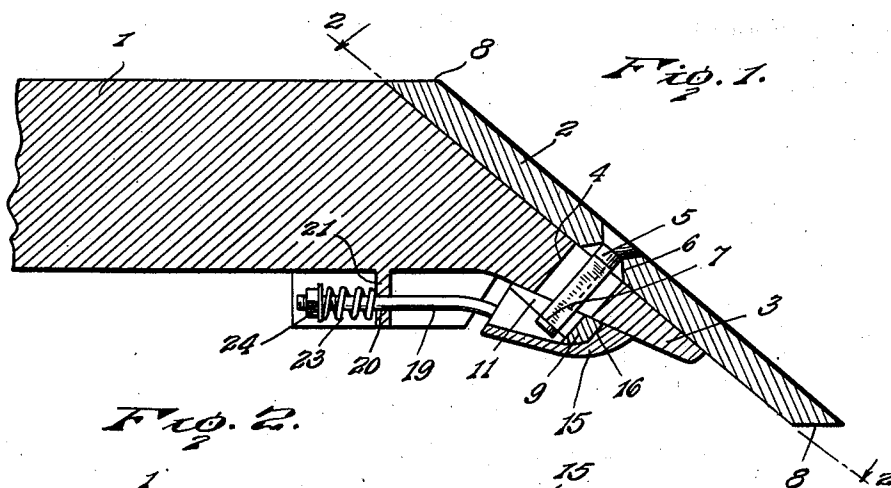


Fig. 2.

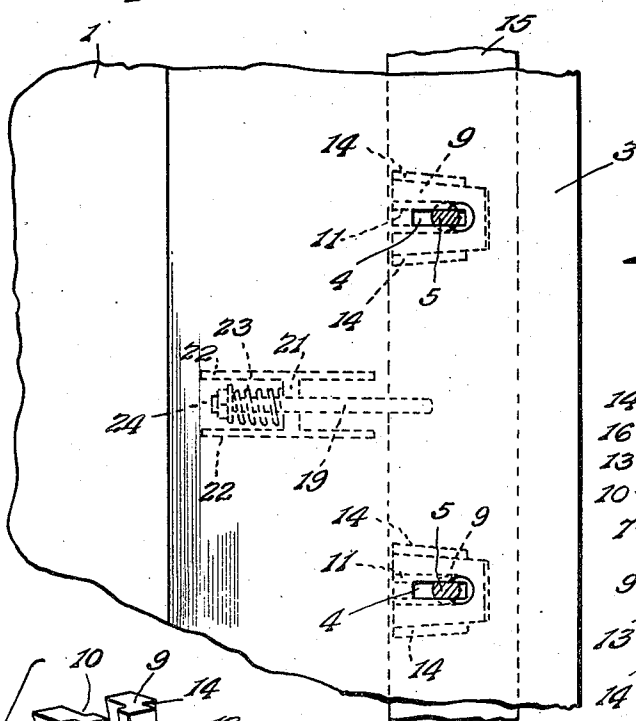


Fig. 4.

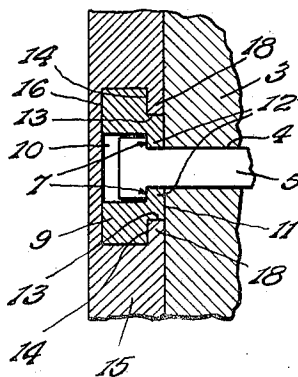
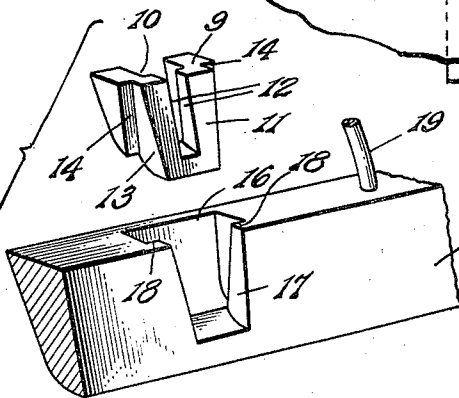


Fig. 6.



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WEDGE FASTENER FOR SCRAPER BLADES

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Original application March 7, 1939, Serial No. 260,425. Divided and this application December 26, 1939, Serial No. 311,055

5 Claims. (Cl. 37-141)

This invention relates to scrapers and more particularly to a wedge fastener by means of which a removable blade is detachably secured to a scraper. The present application constitutes a division from my co-pending application filed March 7, 1939, Serial Number 260,425, issued as Patent No. 2,189,745.

One object of the invention is to provide securing means of such formation that when a blade is applied to a scraper it may be firmly secured but so secured that it can be easily released and removed when necessary.

Another object of the invention is to so form the fastener that when a blade is applied to a scraper and bolts passed through the blade and the scraper body, wedges which engage the bolts will be urged into tight gripping engagement with the bolts and the bolts held tightly in place.

Another object of the invention is to provide an improved fastener wherein wedges for a number of bolts are all operatively associated with a shoe or shield having a suitable number of stems extending therefrom and acted upon by springs to urge the shoe rearwardly and hold the wedges in wedging engagement with the bolts.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a sectional view taken through a scraper and showing the blade thereof secured by a wedge fastener of the improved construction.

Figure 2 is a view taken on the line 2-2 of Figure 1.

Figure 3 is a view showing companion elements of the wedge fastener in perspective.

Figure 4 is a fragmentary sectional view taken transversely of Figure 1 through one bolt and its securing means.

The scraper 1 to which the blade 2 is secured is of the "carryall" type and is formed along its front edge with a downwardly extending inclined lip 3 having its forward face flush with the front edge of the scraper so that a wide, flat surface will be provided for engagement by the blade. A suitable number of openings 4 are formed through the lip in spaced relation to each other longitudinally thereof to receive bolts 5 which have their heads countersunk in openings 6 formed in the blade and have their shanks recessed from opposite sides to form flat side faces and shoulders 7 spaced from their ends which project rearwardly from the lip. When the bolts are withdrawn, the blade can be removed, sharpened, or repaired, and easily and quickly replaced and secured. Since the openings 6 are reamed from opposite

faces of the blade, either sharpened edge 8 of the blade may be presented forwardly for use.

Each of the bolts is secured against outward movement by a wedge or block 9 formed with a longitudinally extending slot or pocket 10 leading from the rear end of the wedge and terminating in spaced relation to the front end of the wedge. A throat 11 of reduced width leads upwardly from the pocket 10 through the upper face of the wedge and along opposite sides of the throat the wedge is formed with lips 12 having sloping under faces for engaging the shoulders 7 of the bolt with which the block engages. The upper or front face of the block has flat contacting engagement with the under or rear face of the lip 3 and when the block is in the securing position shown in Figure 1, a wedging action takes place which firmly holds the bolt in place. The under face of the block extends diagonally with a longitudinal curvature and at its opposite sides the block is recessed longitudinally, as shown at 13, to form shoulders 14.

A strip serving as a shoe or shield 15 is employed to cover the wedging blocks and prevent them from being exposed under the lip and damaged or accidentally worked loose during use of the scraper. This shield is formed at points spaced from each other longitudinally thereof with pockets 16 corresponding in number to the openings 4 of the lip 3. The wedging blocks 9 are received in these pockets with upper portions of the blocks filling the throats 17 of the pockets and the shoulders 14 of each block engaging under the lips 18 of the pocket into which it fits. The under or inner faces of the lips 18 conform to the incline of the shoulders 14 and the bottom surfaces of the pockets conform to the curvature of the under faces of the blocks. Therefore, when the blocks are engaged in the pockets, a tight fit will be established between the shield and the blocks.

The shield is to be firmly held in place and urged rearwardly so that a good wedging action is maintained. In order to accomplish this there have been provided a number of stems 19 which project rearwardly from the rear edge of the shield in spaced relation to each other longitudinally thereof. Each of these stems passes through an opening 20 formed in a lug 21 depending from the scraper 1 between webs 22 which are also formed integral with the scraper. While it has been stated that the lugs 21 and webs 22 are formed integral with the scraper, it will be obvious that the companion lugs and webs may be formed separate from the scraper as a bracket

and secured against the under face of the scraper. After the stems 19 have been passed through the lugs 21, springs 23 are slipped into place about the stems and nuts 24 then applied to compress the springs and place them under sufficient tension to exert pull upon the stems and draw the shield rearwardly. The shield will thus be held in shielding engagement with the blocks and the blocks maintained in wedging engagement with the bolts. When it is desired to remove the blade, it is merely necessary to unscrew the bolts and the shield can then be shifted forwardly out of engagement with the blocks and the blocks shifted forwardly out of engagement with the lower ends of the bolts. The blade and bolts can then be drawn upwardly or forwardly out of engagement with the scraper.

Having thus described the invention, what is claimed is:

1. In combination with a scraper having a forwardly inclined lip along its front edge formed with slots spaced from each other longitudinally thereof, a blade disposed against said lip, bolts passed through said blade and through the slots in the lip and formed with side recesses having shoulders at their lower ends, a shield under said lip in covering relation to protruding lower portions of said bolts, means carried by said shield for receiving the lower portions of said bolts and engaging said shoulders to secure the bolts and firmly hold the blade in place, lugs depending from said scraper, stems extending rearwardly from said shield and through said lugs, nuts carried by said stems, and springs between the nuts and lugs urging the stems and the shield rearwardly to hold the shield in place.

2. In combination with a scraper having a forwardly inclined face along its front edge, and a blade disposed against said front edge face; bolts passed through the blade and the front edge portion of said scraper with their lower ends projecting from the under face of the scraper and formed with shoulders at opposite sides, a shield under said scraper in covering relation to protruding lower ends of said bolts, members carried by said shield and formed with slots receiving the protruding ends of the bolts and having portions engaging said shoulders to secure the bolts and firmly hold the blade in place, lugs depending from said scraper, stems extending from said shield and through said lugs, nuts

carried by said stems, and springs about said stems and confined between the lugs and said nuts and urging the shield rearwardly to hold the shield in place.

3. In combination with a scraper and a blade extending along the scraper with a portion projecting downwardly therefrom; bolts passed through said blade and said scraper with their lower ends protruding from the scraper, a shield under said scraper bearing against the under face thereof, wedges operatively associated with said shield and gripping the protruding lower ends of said bolts, and means for urging said shield rearwardly to hold the wedging members in firm engagement with the bolts.

4. In combination with a scraper and a blade extending along the scraper with a portion projecting downwardly therefrom; bolts passed through said blade and said scraper with their lower ends protruding from the scraper, said bolts being formed with opposed flat side faces and shoulders at lower ends thereof, wedges formed with slots receiving the lower portions of said bolts and having lips engaging the shoulders of the bolts, a shield formed with pockets receiving said wedges, and means urging said shield rearwardly to maintain said wedges in said pockets and hold the wedges in gripping engagement with said bolts.

5. In combination with a scraper and a blade extending along the scraper with a portion projecting downwardly therefrom; bolts passed through said blade and said scraper with their lower ends protruding from the scraper and formed with opposed flat side faces and shoulders at lower ends thereof, wedging blocks formed with slots receiving the protruding lower portions of said bolts, lips along the slots engaging the shoulders of the bolts, a shield extending along the under face of said scraper formed with pockets receiving said blocks, the blocks having side shoulders and the shield having lips along its pockets engaging the side shoulders of the blocks to provide tight fit between the blocks and the shield, stems extending from said shield, lugs depending from said scraper and slidably receiving said stems, nuts carried by said stems, and springs about said stems confined between the lugs and said nuts and urging the shield rearwardly to hold the shield in place.

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