July 19, 1960 J. C. GERK 2,945,427

WIPER BLADE ATTACHMENT FOR SCREED BOARDS

Filed Jan. 3, 1958 2 Sheets-Sheet 1

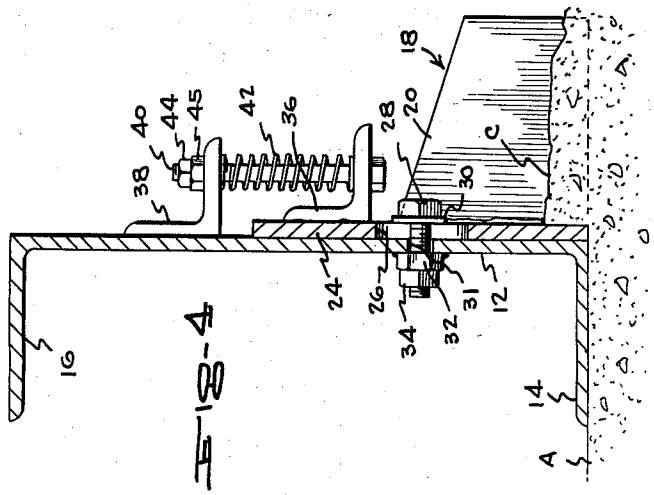


FIG-4

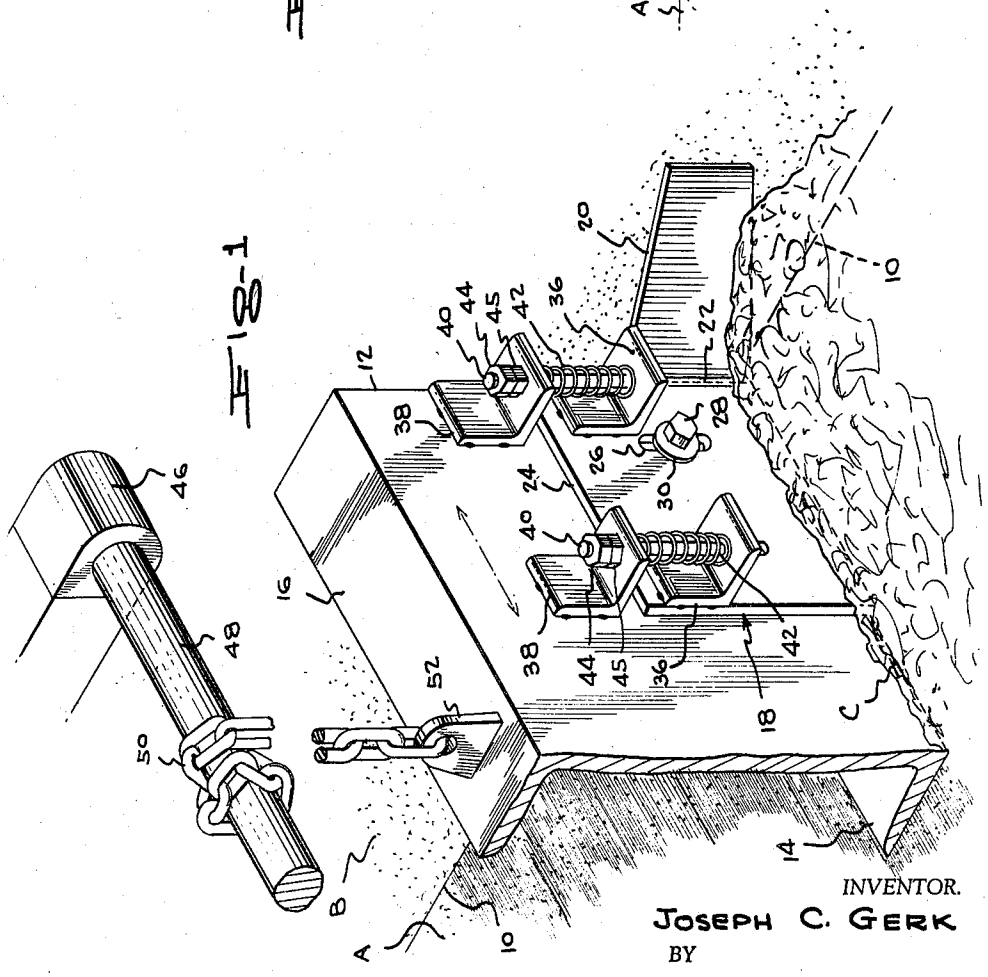


FIG-1

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WIPER BLADE ATTACHMENT FOR SCREED BOARDS

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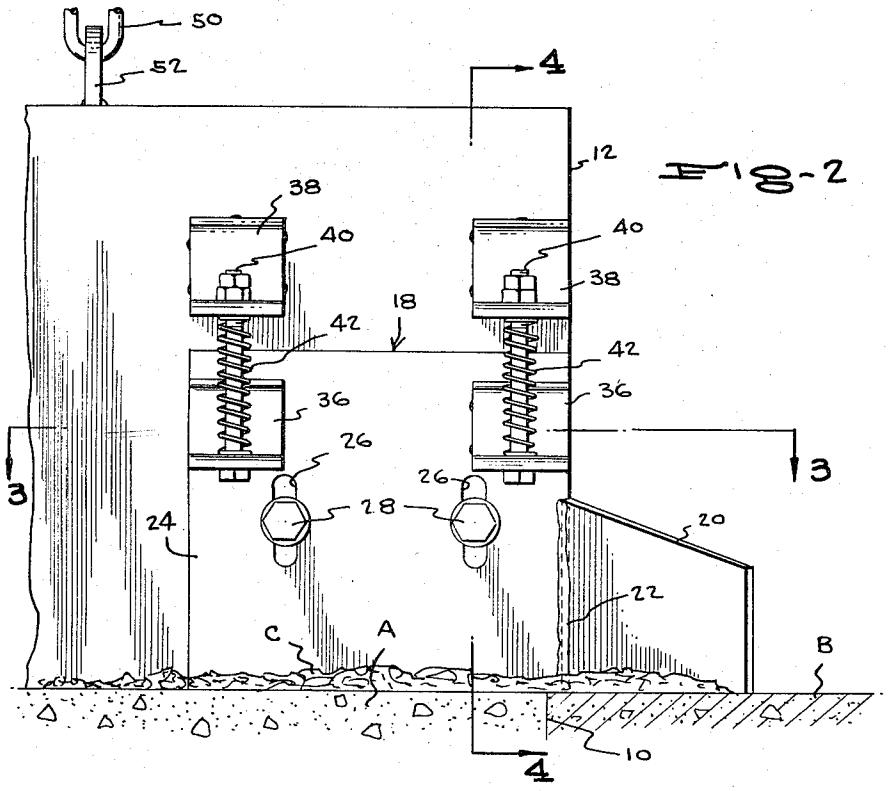


FIG-2

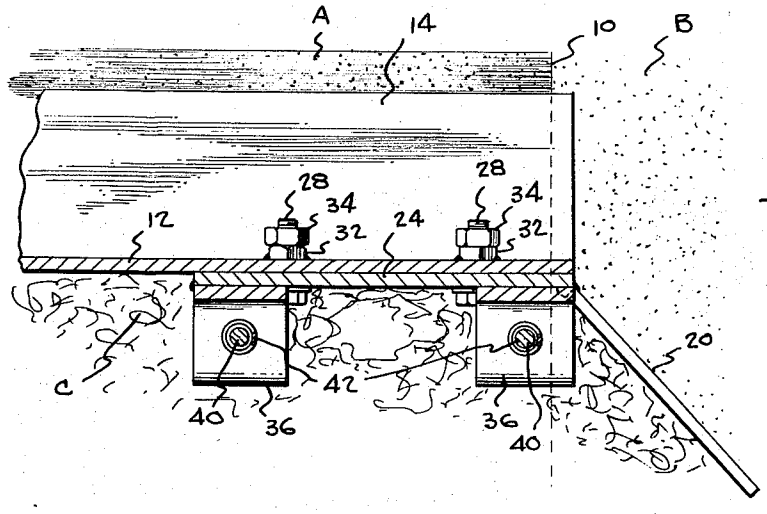


FIG-3

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WIPER BLADE ATTACHMENT FOR SCREED BOARDS

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3 Claims. (Cl. 94—45)

This invention relates generally to the art of finishing concrete paving. More particularly, the invention has reference to a wiper blade attachment, which is connectable to the existing screed board of a conventional concrete paving finishing machine, such as the apparatus used in paving concrete-surfaced roads.

When paving by means of a machine of the type stated, fresh concrete is poured alongside an existing, hardened, concrete grade slab. Thus, when the fresh concrete sets, said fresh concrete and the existing slab will define a continuous paved surface.

In this connection, when the conventional paving machines are "screeding," the excess fresh concrete falls upon the existing, hardened, concrete grade slab and works under the screed board. This causes the screed board to raise. As a result, the freshly poured concrete is off grade.

During the screeding operation, it has been found that the raising of the screed board, and the resultant surfacing of the fresh concrete off grade, occurs over a distance of about every five to eight feet of forward movement of the machine. In order to get the screed board back on grade, it is necessary that the machine's forward motion be stopped. Then, the screed boards are lifted by means of the powered lift shaft used for this purpose, and the machine is backed to a point where the concrete is on grade. Thereafter, a worker cleans the fresh concrete off the old grade slab, and the machine is then brought forward another five to eight feet beyond its previous furthest point of advance, at which time the procedure must be repeated.

The present screed boards, being flexible, do not follow the irregularities of hardened concrete, whenever it is necessary, as indicated above, to use an existing, hardened concrete slab as a grade line.

In view of the difficulties which have been noted, the wiper blade attachment constituting the present invention is proposed, and has as its main purpose the clearing of the fresh concrete off the old grade slab ahead of the screed board. By using the wiper blade attachment, it is proposed that the exceedingly expensive and time-consuming procedure described above, necessary at the present time for the successful operation of present-day concrete finishing machines, will be completely eliminated.

In this way, it is proposed to eliminate the necessity of having a worker attend the machine to clean the old grade slab, and to further eliminate the necessity of stopping and reversing the machine to keep the surface on grade. It is estimated, as to this, that by achievement of this object the footage covered by a machine in any given period can be increased from 10 to 40 percent through the use of the wiper blade attachment. This increased footage, plus the elimination of the wages of a single worker, presently required to clean the fresh concrete from the old grade slab, readily indicates the savings and economies which may be effected through use of the wiper blade attachment.

Another important object is to provide a device as

stated which will be characterized by the swiftness and ease with which it may be attached to existing machines.

Still another object is to provide a device as stated which will be characterized by the simplicity of the operation thereof.

Yet another object is to so design the attachment as to permit its connection to a conventional screed board with minimum modification and redesign of said screed board.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a perspective view of a wiper blade attachment according to the present invention, showing a fragmentary portion of the screed board with the attachment secured thereto, the parts appearing in their operative position in respect to the surface of the paving;

Figure 2 is a front elevational view of the device, and of the adjacent end portion of the screed board to which it is connected, the scale being enlarged slightly above that of Figure 1;

Figure 3 is a horizontal sectional view, substantially on line 3—3 of Figure 2; and

Figure 4 is a vertical sectional view, substantially on line 4—4 of Figure 2.

Referring to the drawing in detail, designated at A is the freshly poured concrete, over which is moving the screed board or strike-off. At B there has been designated the old grade slab, and at **10** the line of division between the slabs, that is, the plane in which the slabs A, B abut one another.

The screed board **12**, comprising a conventional part of the concrete finishing machine, has reversely extending bottom and top flanges **14, 16** respectively, and moves over the freshly poured concrete A, so as to provide a finished surface thereon. It has been found, as previously described herein, that the freshly poured concrete C is moved onto the old slab B, which of course is fully hardened, and works under the screed board, causing the same to raise, as a result of which the finished surface of the fresh concrete becomes off grade. Further, the present screed board, being inflexible, will not follow the irregularities of hardened concrete whenever it is necessary, in the manner shown in the drawing, to use the existing slab as a grade line.

Accordingly, there is provided the wiper blade attachment **18** constituting the present invention. This includes a side wing **20** which is disposed in a vertical plane, is progressively reduced in height in a direction from its inner to its outer or distal end, and is wholly flat, the plane thereof being oblique to the path of forward movement of the concrete finishing machine.

The wing **20**, at its proximal end, is secured by a weld **22** to the outer side edge of a rectangular, vertically disposed, main plate **24** of the wiper blade attachment constituting the present invention. The main plate **24** is in face-to-face contact with the screed board **12**, at one end of the screed board, with said main plate and screed board having registering outer side edges, as clearly shown in Figure 3.

Formed in the main plate **24** are parallel, vertical slots **26**, through which extend headed bolts **28**, passing through washers **30** and through smooth-walled, circular openings **31** formed in the screed board (see Figure 4). Welded to the back surface of the screed board **12**, in registration with openings **31**, are nuts **32**, providing threaded bores or openings in the screed board receiving the bolts **28**. Nuts **34** are applied to the bolts, bearing against the nuts **32**, and of course jamb nuts, not shown, could be applied also to the bolts for the purpose of preventing accidental loosening of the nuts **34**. In a typical working arrangement, the nuts **28** would be left

sufficiently loose to permit up-and-down movement of the main plate **24**, for a purpose to be made presently apparent.

Spot-welded or otherwise fixedly secured to the front surface of, and projecting forwardly from, main plate **24** are transversely spaced, identical angle brackets **36**, disposed below corresponding angle brackets **38** spot-welded to screed board **12** above main plate **24**. Registering openings of the horizontal, forwardly projecting legs of the respective brackets **36**, **38** receive bolts or pins **40**, the heads of which bear against the undersides of brackets **36**, and the shanks of which extend through compression, coil springs **42** held under compression between each bracket **36** and the bracket **38** above the same. Nuts **44** are threaded upon the upper ends of the bolts, bearing against nuts **45** that are in contact with the top surfaces of the horizontal legs of brackets **38**, and that are also threadedly engaged with the bolts **40**.

By reason of this arrangement, it will be seen that the main plate **24** is resiliently biased in a downward direction upon the screed board by springs **42**, and is guided in its upward and downward movement through the provision of the guide means including slots **26** and bolts **28**.

Designated at **46** is the arm of the concrete finishing machine that carries the power lift shaft **48**, also a conventional part of said machine. The power lift shaft **48** has wound thereabout the lift chain **50** connected to apertured ear **52** extending upwardly from flange **16**.

As previously mentioned herein, ordinarily the screeding operation must be halted every five to eight feet, more or less, since the excess concrete moves to and beyond the side edge of the screed board, onto the hardened slab B, and working under the screed board lifts the same enough to make the new slab A off grade, rather than completely flush with the level of the old slab B.

By reason of the invention, the wing **20** is positioned upon the old slab, in direct contact therewith, being held in contact with the old slab B by means of the downward pressure exerted through the medium of the spring **42**. Therefore, the main plate **24**, the bottom edge of which is flush with the bottom edge of the wing **20**, is in direct registration with the bottom edge of the screed board, all as clearly shown in Figures 2 and 4. It follows that as long as the wing **20** remains in contact with the old slab B, the bottom edge of the main plate **24** will be on grade with the slab, and this will be true also of the bottom edge of the screed board, assuming that no fresh concrete works under the screed board proper.

The invention prevents the fresh concrete from working under the screed board. As will be noted, wing **20** projects forwardly, at an angle of 45°, approximately, to the parallel planes of the screed board and of the main plate **24** (see Figure 3). Therefore, the fresh concrete C, as it tends to move beyond the registering side edges of the main plate and screed board, moves into the path of the wing **20**. Wing **20**, preceding the main plate and screed board, continuously pushes this excess concrete back in front of the screed board, and completely prevents excess concrete from moving onto the old slab in an area in which it would work under the screed board.

In this way, the fresh concrete is continuously cleaned off the old slab, and is returned into a position where it can be worked into the new pouring. This feature eliminates completely the necessity of having a worker attend the machine to clean the old grade slab, and further eliminates the necessity of stopping and reversing the machine for the purpose of putting it back on grade.

In this way, it is proposed and is estimated that the footage covered by the machine in any given period can be increased to the extent of about ten to forty percent through the use of the attachment, while at the same time the wages of a worker can be eliminated. Still further, the device can be attached to an existing machine with maximum ease and speed, as will be readily apparent from the description and illustration hereinbefore provided.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. The combination, with the screed board of a concrete paving finishing machine, of a wiper blade assembly for cleaning excess concrete from an adjacent, previously paved surface in advance of the screed board, comprising a wing projecting forwardly laterally from the screed board; and means connecting the wing to said screed board, including a main plate mounted on the screed board for up-and-down movement in face-to-face contact with the screed board, said main plate being connected at one side to the wing, and resilient, yielding means interposed between the main plate and the screed board and tensioned to bias the main plate in a downward direction.

2. The combination, with the screed board of a concrete paving finishing machine, of a wiper blade assembly for cleaning excess concrete from an adjacent, previously paved surface in advance of the screed board, comprising a wing projecting forwardly laterally from the screed board; and means connecting the wing to said screed board, including a main plate mounted on the screed board for up-and-down movement in face-to-face contact with the screed board, said main plate being connected at one side to the wing, and resilient, yielding means interposed between the main plate and the screed board and tensioned to bias the main plate in a downward direction, the main plate and wing having registered bottom edges.

3. The combination, with the screed board of a concrete paving finishing machine, of a wiper blade assembly for cleaning excess concrete from an adjacent, previously paved surface in advance of the screed board, comprising a wing projecting forwardly laterally from the screed board; and means connecting the wing to said screed board, including a main plate mounted on the screed board for up-and-down movement in face-to-face contact with the screed board, said main plate being connected at one side to the wing, and resilient, yielding means interposed between the main plate and the screed board and tensioned to bias the main plate in a downward direction, the main plate and wing having registered bottom edges, and means for limiting the up-and-down movement of said main plate comprising the provision in said main plate of a plurality of normally vertically extending elongated slots, and a bolt for each of said slots, said bolts being secured to said screed board and extending through said slots.

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