

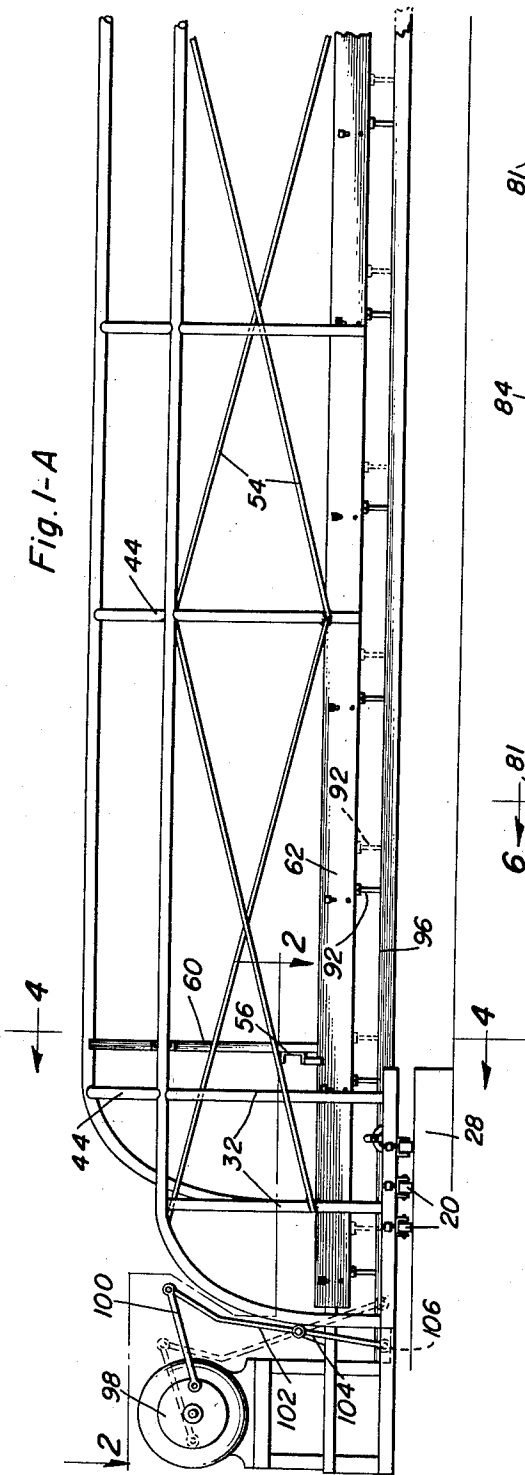
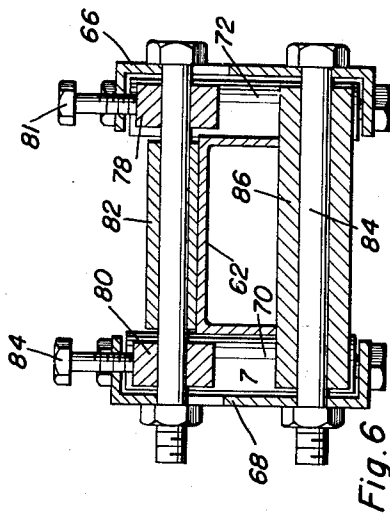
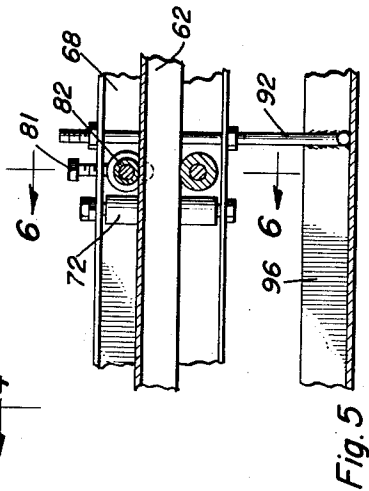
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3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 1-B

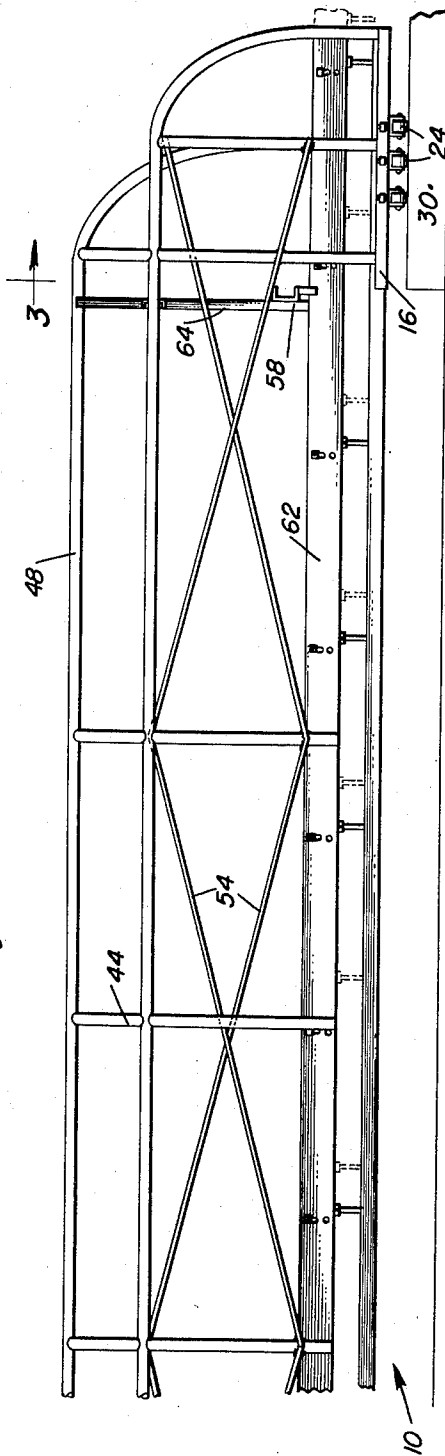
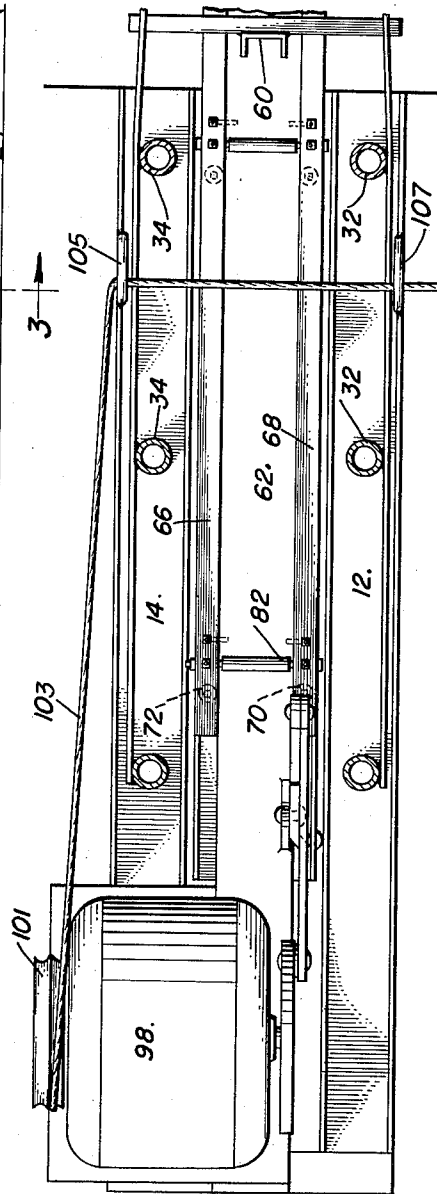


Fig. 2

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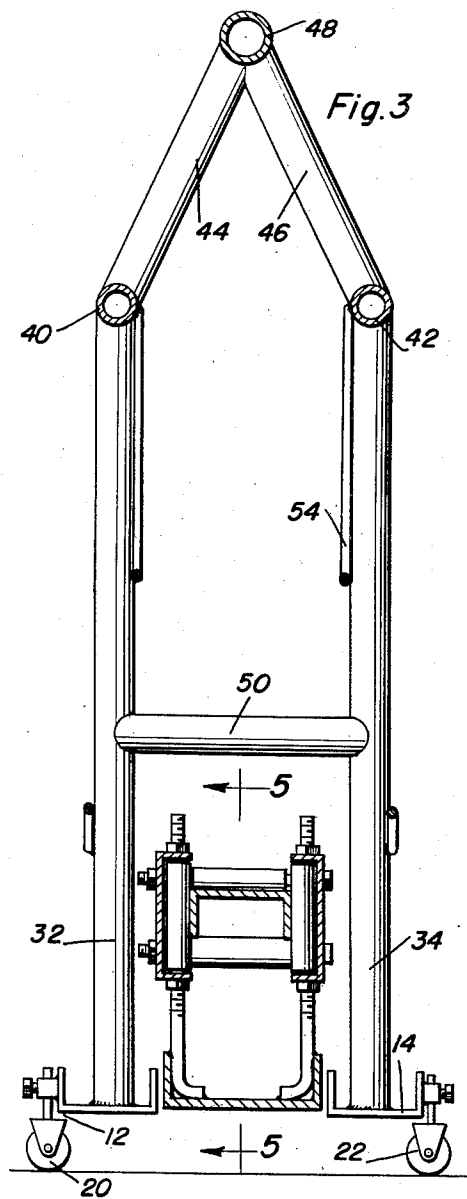
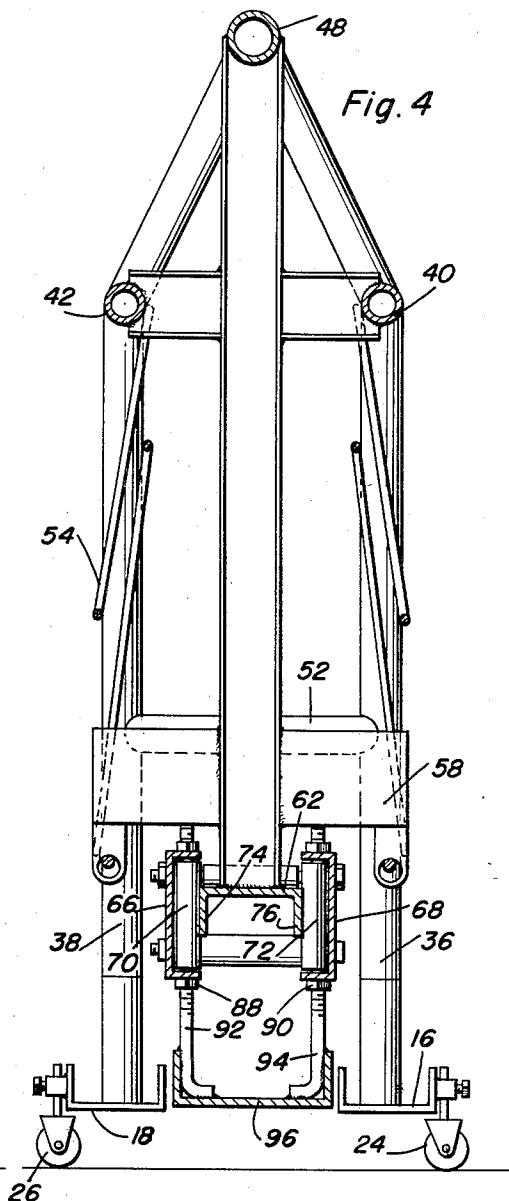
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1

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William O. Smith, Letohatchee, Ala.

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3 Claims. (Cl. 94—45)

This invention relates to road building apparatus, and more particularly to a novel concrete surface finishing machine.

The primary object of the present invention resides in the provision of a machine for eliminating the labor heretofore necessary to be performed manually in order to adequately finish the surfaces of concrete pavement such as are used in highways and the like.

A further object of the invention resides in the provision of a fully automatic machine for smoothing the surface of a concrete pavement which includes means for moving the machine transversely with respect to the reciprocating movement of the concrete screed.

One of the features of construction of the invention resides in the novel means for suspending a concrete screed below a truss structure in a manner whereby the screed may be supported throughout its length which may be of considerable magnitude and extend entirely across the width of a highway or the like.

An additional object of the invention resides in the provision of novel means for reciprocating a concrete screed while supporting the concrete screed against unwanted vertical or transverse movement.

Still further objects and features of this invention reside in the provision of a concrete pavement machine which is strong and durable, simple in construction and operation, highly efficient in use, and which is substantially self-propelled.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this concrete pavement finishing machine, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figures 1-A and 1-B form a side elevational view of the invention;

Figure 2 is a horizontal sectional detail view as taken along the plane of line 2—2 in Figure 1-A and being shown in an enlarged scale for clarity;

Figure 3 is an enlarged vertical sectional view as taken along the plane of line 3—3 in Figure 1-B;

Figure 4 is another vertical sectional view which is taken along the plane of line 4—4 in Figure 1-A;

Figure 5 is a sectional detail view as taken along the plane of line 5—5 in Figure 3, illustrating the construction of the roller means; and

Figure 6 is another sectional detail view further illustrating the construction of the roller means.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 is used to generally designate the concrete pavement finishing machine comprising the present invention which includes spaced and opposed pairs of channel-shaped supports 12, 14, 16 and 18 which, by means of sets of rollers 20, 22, 24 and 26 are movably mounted on curbs or other suitable guides, as at 28 and 30 and are adapted to be utilized in the finishing of a concrete pavement

2

extending between the curbs or guides. The rollers, as can be best seen in Figures 3 and 4, are vertically adjustable to suit any degree of skew or highway bridge or similar structure. Secured to the channel-shaped supports 12, 14, 16 and 18 and rising vertically therefrom are sets of vertically extending truss support standards 32, 34, 36 and 38 which carry side truss members 40 and 42 which are arranged to extend between the supports 12 and 16, and 14 and 18. Angularly upwardly extending members, as indicated at 44 and 46, are welded or otherwise secured to the side truss members 40 and 42 and carry a central truss member 48.

Extending between the standards 32 and 34 are transverse braces 50, while transverse braces 52 extend between the standards 36 and 38. Suitable diagonally extending braces generally indicated at 54 are utilized to reinforce the structure, as may be necessary.

Secured to and extending between the standards 32 and 34 is a transversely extending channel member 56, while a transverse channel member 58 is welded or otherwise secured to a pair of standards 36 and 38. A vertically extending channel-shaped member 60 is welded to the channel-shaped member 56 and to the central truss member 48 and has welded thereto at its bottom edge a channel-shaped lower chord member 62. Likewise, a vertically extending channel-shaped member 64 is terminally welded to the chord 62 and to the central truss member 48 and is also welded to the transverse channel member 58. In this manner, the lower chord member 62 is suitably suspended from the central truss 48 and centrally disposed between the side truss members 40 and 42.

Referring now to Figures 3 and 4, it will be seen that a pair of side channel-shaped members 66 and 68 are provided and have spaced side rollers 70 and 72 arranged in sets and mounted for rotation on a vertical axis in engagement with the side flanges 74 and 76, respectively, of the lower chord member 62.

Carried by the channel-shaped members 66 and 68, see Figure 6, are blocks 78 and 80 adjustably mounted by means of bolts 82 and 84 in the channel-shaped members 66 and 68. The blocks form bearing supports for upper rollers 82 which are arranged in spaced relationship. The rollers 82 are adjustably mounted to engage the upper surface of the lower chord member 62. Also suitably mounted for rotation on horizontal axes by means of bolts 84 are rollers 86 which engage the lower edges of the lower chord member 62.

Threadedly held by means of sets of nuts 88 and 90 to the channel members 66 and 68 are substantially J-shaped securing members 92 and 94 which have welded thereto the generally channel-shaped concrete smoothing screed 96 which is adapted to engage and smooth the surface to be finished. In order to provide a reciprocating movement to the screed 96 as is necessary, there is carried by the lower chord member a suitable motor 98 having an eccentrically mounted crank arm 100 adapted to actuate a connecting rod 102 which is pivotally mounted by means of brackets 104 to the lower chord member 62 and is pivotally mounted as at 106 to the screed 96. Hence, upon rotation of the crank arm 100, there will be a reciprocating motion imparted to the screed 96.

The motor 98 also drives a pulley 101 and a cable 103 is led through loops 105 and 107 and may be suitably connected to a fixed element (not shown) somewhat remote from the machine so that upon rotation of the pulley 101, the machine may drag itself transverse to the direction of reciprocating motion of the screed 96.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since

3

numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A concrete pavement machine comprising spaced pairs of supports, a truss secured to said supports, a lower chord member depending from said truss and centrally disposed between said pairs of supports, said lower chord member extending parallel to said supports, a pavement smoothing screed movably carried by said lower chord member and depending therefrom, and means for reciprocating said screed, said screed including a spaced pair of channel members, a channel-shaped smoothing member vertically adjustably depending from said channel members and roller means mounted on said pair of channel members engaging said lower chord member, said roller means comprising side rollers engaging the sides of said chord member, and upper rollers and lower rollers engaging the top and bottom surfaces respectively of said chord member.

2. A concrete pavement machine comprising spaced pairs of supports, a truss secured to said supports, a lower chord member depending from said truss and centrally disposed between said pairs of supports, said lower chord member extending parallel to said supports, a pavement smoothing screed movably carried by said lower chord member and depending therefrom, and means for reciprocating said screed, said screed including a spaced pair of channel members, a channel-shaped smoothing member vertically adjustably depending from said channel members and roller means mounted on said pair of

4

channel members engaging said lower chord member, said roller means comprising side rollers engaging the sides of said chord member, and upper rollers and lower rollers engaging the top and bottom surfaces respectively of said chord member, said upper rollers being vertically adjustable.

3. A concrete pavement machine comprising spaced pairs of supports, a truss secured to said supports, a lower chord member depending from said truss and centrally disposed between said pairs of supports, said lower chord member extending parallel to said supports, a pavement smoothing screed movably carried by said lower chord member and depending therefrom, and means for reciprocating said screed, and means associated with said first recited means for moving said machine transversely relative to said screed, said screed including a spaced pair of channel members, a channel-shaped smoothing member vertically adjustably depending from said channel members and roller means mounted on said pair of channel members engaging said lower chord member, said roller means comprising side rollers engaging the sides of said chord member, and upper rollers and lower rollers engaging the top and bottom surfaces respectively of said chord member.

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