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COMBINATION BOOM, BUCKET, AND SPOUT DISTRIBUTING APPARATUS

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Fig. 1.

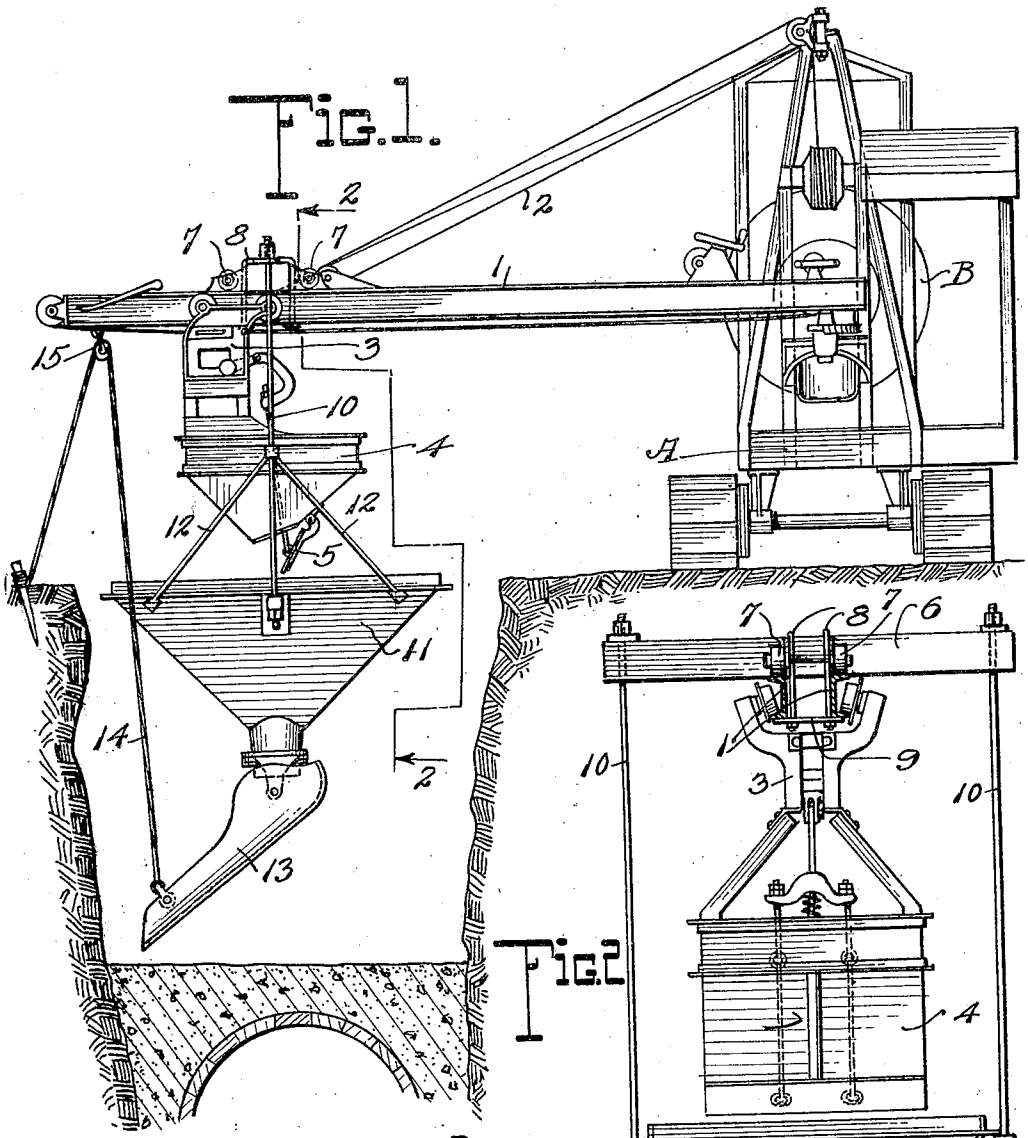
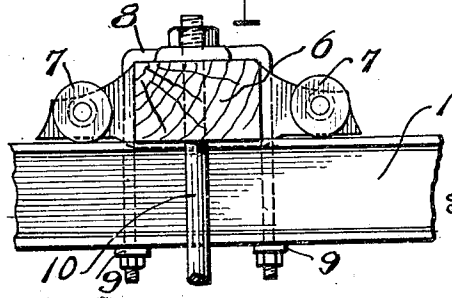


Fig. 2

Fig. 3.



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COMBINATION BOOM, BUCKET, AND SPOUT DISTRIBUTING APPARATUS.

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The primary aim of this invention has been to provide means by which a concrete paver of the type commonly used for distributing concrete upon pavement subgrades, may be adapted for use for supplying concrete for distribution in trenches, upon forms located at elevations much below that on which the paver operates, as for instance, sewer forms, and in other ways where concrete has to be delivered to a grade much below that at which the paving machine is supported.

A typical paving machine of the type referred to above is shown in Erich H. Lichtenberg's Patent, #1,411,217, issued March 28th, 1922, and in order to enable such a machine to do the work just outlined, this invention provides a hopper and spout attachment adapted to be mounted upon the boom and bucket paving distributor, to be supplied by the bucket which carries the mixed concrete from the mixer to the attachment feature, the latter conveying the said concrete to the point of deposit at lower elevation, when the distributing bucket dumps its contents into the hopper and spout attachment.

The invention involves primarily an attachment construction comprising a support adapted to be secured to the boom of the paver, suspension means carried by said support or holding a receiving hopper into which the paver distributing bucket dumps, spouting provisions leading from said hopper, and means for supporting the spouting provisions connected with the boom and adapted for adjusting the spout device as required.

In the accompanying drawings:

Figure 1 is a view in elevation of a concrete paving machine equipped with a hopper and spout attachment embodying the invention, the attachment means being shown as when operating in the trench in which a sewer is being built, and the sewer forms being partly shown.

Figure 2 is a view in end elevation of the attachment apparatus of Figure 1, the boom supporting means being illustrated in section and the view being taken about on the line indicated by the arrows in Figure 1.

Figure 3 is a slightly enlarged detail view bringing out more clearly the roller mounting of the cross piece which is attached to the boom and carries the main parts of the attachment means.

The construction of the paving machine which is illustrated in the drawings is well known to those versed in the art and may therefore be briefly described merely as comprising a suitable traction support A upon which is mounted the mixer B, and equipped with what is known as the boom and bucket attachment for distributing purposes. Said boom and bucket attachment consists of the boom 1 supported by the raising and lowering cable means 2 and having the trolley 3 adapted to travel thereon and carrying the distributing bucket 4. The bucket 4 is adapted to be automatically dumped by the use of suitable means acting upon the door 5. The attachment means of the present invention includes a cross piece 6 mounted transversely of the boom 1 and preferably provided with small rollers 7 by which it is supported on the boom for a certain amount of traveling movement in order to adjust it to operate at a suitable point in the length of the boom.

In order to positively and firmly hold the cross piece 6 against movement after it has been properly positioned near the outer end portion of the boom 1, there will preferably be provided U-bolts 8 that span the cross piece and pass downwards between the channels which comprise the boom 1. Corresponding lower ends of these U-bolts 8 will be attached to plates 9 adapted to clamp against the bottom portion of the boom 1 under the action of the nuts secured to the lower ends of the said bolts 8.

Opposite end portions of the cross piece 6 support hanger bars 10, the lower ends of which are suitably attached to the receiving hopper 11. If desired, braces 12 may be provided between the bars 10 and outer portions of the hopper 11 so as to prevent undue swaying or tilting of the hopper upon the bars 10.

The hopper 11 is designed of fairly large capacity, preferably greater than the capacity of the bucket 4, and leading from the lower delivery end of the hopper 11 is a distributing spout designated 13 in Figure 1. Or, if desired, instead of the spout 13 of Figure 1, there may be provided the flexible spouting 13^a, shown in Figure 2, the latter type of

spouting being well known and possessing certain advantages in practical use. In order to support the spout 13, or any equivalent chuting or spouting arrangement, a cable 14 leads upwards from the lower portion of the spout, is passed about a suitable block 15 attached to the boom 1, and from the block 15 the cable may be led off to a stake or other anchorage means to which it may be tied. The elevation of the spout 13 may be readily varied by pulling upward on the cable 14, or paying out thereon, as desired.

The operation of my invention is obvious, as it will be readily seen that the boom distributing bucket 4 is adapted to traverse the boom 1 in the customary way and may be discharged into the hopper 11 at will, the mixed concrete being directed to a suitable point of deposit, as it passes from the hopper 11 through the chute or spout 13.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

In combination, a concrete paving machine, comprising, a portable support, a boom and bucket distributing attachment carried thereby, means for actuating the bucket to cause movement thereof along the boom, a cross piece movably mounted on the boom, suspension bars depending from the ends of the cross piece, a hopper carried by said suspension bars, a delivery spout suspended from said hopper, the hopper being located in a plane beneath that in which the distributing bucket of said distributor operates, and clamping means separate from the bucket actuating means engaging about the cross piece and boom for holding the former at different positions relative to the support.

In testimony whereof I affix my signature.

OSCAR FROHMAN.