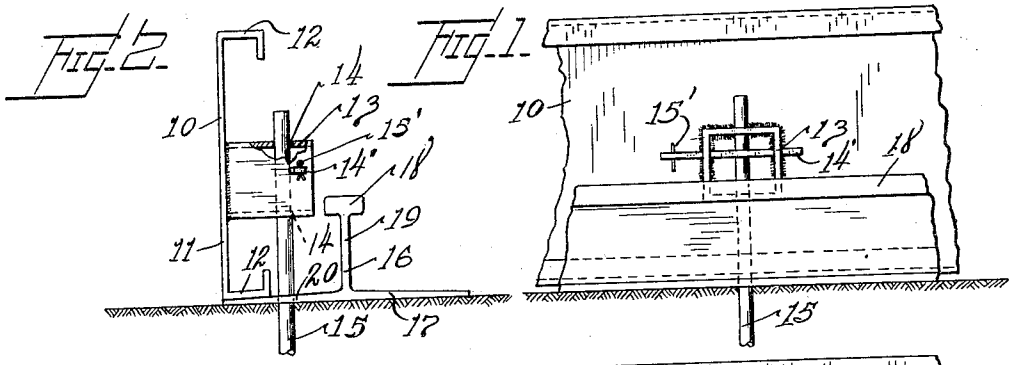
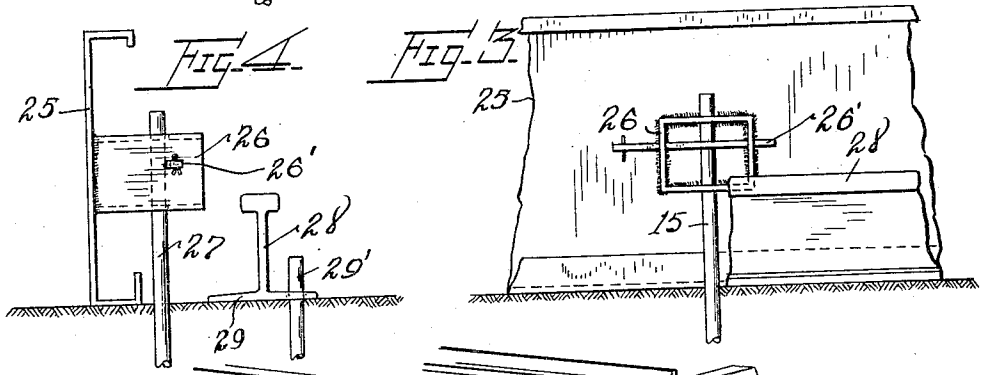
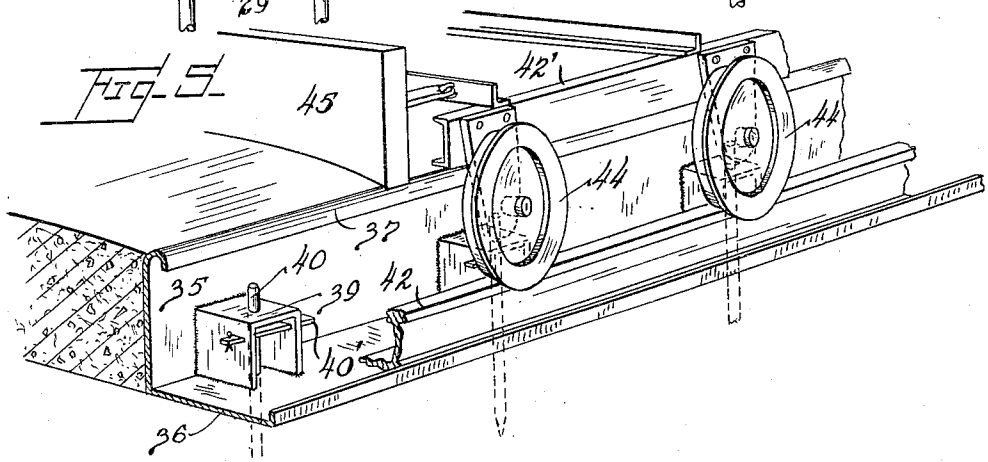
May 16, 1933. T. W. DIECKMANN 1,909,458

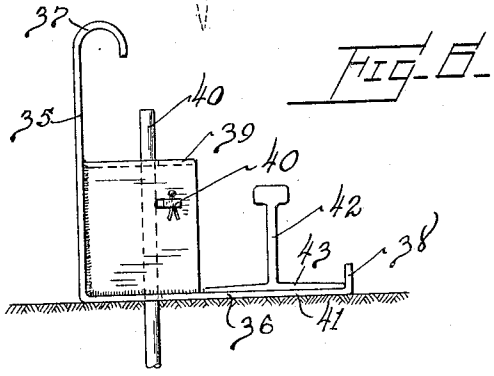
ROAD PAVING FORM

Filed March 8, 1929









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UNITED STATES PATENT OFFICE

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ROAD PAVING FORM

Application filed March 8, 1929. Serial No. 345,317.

This invention relates to road paving apparatus, and more particularly to road paving forms of the type used in conjunction with traveling road paving machinery.

In the early days of concrete road construction paving forms were commonly used for retaining the paving material in place to form a slab, and also as guides for finishing off the surface of the paving material. The finishing and surfacing of the paving material was done by hand and the apparatus which was supported and guided upon the paving forms was light in weight and imposed no great burden upon these forms. When paving machines came into general use they were, likewise, commonly supported upon the paving forms. These machines were so heavy that frequently the forms settled under the weight imposed upon them by this machinery. To lessen this difficulty the width of the base of the paving forms was increased, but merely increasing the width of the base of the paving forms was not a satisfactory solution for this difficulty, because the weight of the paving machinery supported was largely concentrated along the inner edge of the base of the forms. With the load thus concentrated along one edge of the base, the forms frequently settled unevenly and tilted out of alignment.

It is an object of this invention to provide road paving forms, in which the load of the paving machinery used therewith will be distributed so as to avoid uneven settling of the forms.

Another object of this invention is to provide improved road paving forms.

The invention may be further briefly summarized as consisting in certain novel combinations and arrangements of parts herein described and set forth in the appended claims.

In the accompanying sheet of drawing forming a part of this application, Fig. 1 is a side elevational view of one type of road paving form embodying my invention.

Fig. 2 is an end elevational view of the same;

Fig. 3 is a side elevational view of another type of road paving form embodying my invention;

Fig. 4 is an end elevational view of the same;

Fig. 5 is a perspective view of still another type of my road paving form showing the manner of supporting road paving machinery used in conjunction therewith; and

Fig. 6 is an end view of the type of form shown in Fig. 5.

Referring now in detail to the drawing, I show in Figs. 1 and 2 one type of my road paving form in which an even distribution of the weight of the road paving machinery is achieved. This type comprises a side mold 10, which in cross section resembles a channel having an upright web 11 and parallel flanges 12 integral therewith. For holding this side mold in proper position I provide stake-boxes 13 which are arranged at spaced intervals and connected to the web 11 by welding, or in any other desired manner. These stake-boxes are preferably formed in the shape of a hollow rectangular box, and are provided with aligned perforations 14 through the top and bottom walls thereof. A stake 15 passes through these aligned perforations and is driven into the ground so as to hold the side mold against any lateral movement or displacement. In addition to holding the side mold against lateral displacement, it is also held against movement in the vertical plane by the stake-boxes being clamped to their respective stakes by tapered pins 14′. These tapered pins are driven through aligned perforations in the walls of the stake-boxes so as to wedge the stakes over against one side of the perforations 14 and thus frictionally hold each stake box and its stake against relative movement. Each tapered pin is preferably provided with a pin 15′ which prevents the tapered pin from moving out of the aligned perforations when the stake is disengaged.

For supporting the weight of the paving machinery I provide a rail 16 having a broad flange 17 and a load carrying head 18 connected to this flange by the web 19. The side

mold 10 is positioned so as to extend parallel with the rail 16 and to rest upon one edge of the flange 17. Perforations 20 are provided in the flange 17 at spaced points so as to align with the perforations 14 of the stake-boxes and the stakes 15 thus pass through the perforations 20 of the flange 17 and in addition to holding the side mold against displacement will also hold the rail 16 against lateral movement but will permit the latter to move downwardly independently of the side mold.

The upper flange 12, of the side mold 10, serves as a support and a guide or template for the finishing member of the paving machinery. The load which this finishing member imposes on the side mold is relatively small in comparison with the bulk of the weight of the paving machinery which is supported upon the rail 16. The broad flange 17 of the rail forms a base upon which the side mold and the paving machinery is supported. The head 18 extends longitudinally above the approximate center line of the base 17, so that the weight of the machinery supported on the rail will be uniformly distributed over the area of the base. Such a distribution of the weight of this machinery will utilize the area of the base to best advantage and eliminate the tendency of the form to tilt as a result of uneven settling. Furthermore, if the rail 16 settles under the weight of the paving machinery, such movement will be independent of side form 10, since the latter is held against movement in the vertical plane by being clamped to the stakes 15. Thus it will be seen that the aligned side molds 10, which form a template for the pavement being laid, will not be affected by settling of the load-carrying rails 16.

In Figs. 3 and 4 of the drawing I show another type of road form in which an upright channel forms the side mold 25. This side mold is provided with spaced stake-boxes 26 secured thereto. For holding this side mold in proper position I use stakes 27 which pass through aligned perforations in the walls of the stake-boxes and are driven into the ground. Tapered pins 26′ are provided for clamping the stake-boxes to the stakes 27 to hold the side mold against movement in the vertical plane. For supporting the road paving machinery I provide a rail 28, which extends parallel with the side mold 25, but is preferably not connected to the side mold. This rail may be held in place by means of stakes 29′ driven through flange 29 into the ground. The side mold, which is supported by one of its flanges bearing directly upon the ground and by the stake-boxes being clamped to the stakes, serves also as a guide and a support for the finishing member, and as this member is comparatively light in weight there is little danger of the side mold settling. Since the rail 28 carries substantially the whole weight of the paving machinery the flange 29 of this rail is made of such width as is necessary to properly support the paving machinery with the minimum amount of settling. The rail 28 is preferably symmetrical in shape and the weight of the paving machinery supported thereon will be uniformly distributed over the area of the base 29, so that the rail will always remain in an upright position without any tendency to tilt. Furthermore, since there is no direct connection between the rail 28 and the side mold 25, any settling of the rail under the load of the machinery carried thereby will not affect the alignment of the side molds 25, the upper edges of which serve as a template or guide for the finishing member.

Still another type of my road paving form is shown in Figs. 5 and 6 of the drawing, in which a substantially L-shaped body member is placed with one leg in an upright position to form the side mold 35 and the other leg in a horizontal position to form the base 36. The upper edge of the side mold 35 is flanged or rolled over to provide a rounded portion 37 which serves as a means for guiding and supporting the finishing member of a paving machine which travels along upon my paving forms. The free edge of the base 36 is flanged upwardly to form the toe 38. Stake-boxes 39 are spaced at intervals and securely attached to the side mold 35 and the base 36 as by welding, or in any other convenient manner. For holding the form in place stakes 40 may be driven into the ground through aligned openings provided in the walls of the stake-boxes and the flange 36. Tapered pins 40′ may be provided for clamping the stake-boxes to the stakes 40 to hold the form against movement in the vertical plane. The base 36 is extended for some distance beyond the stake-boxes so as to provide a longitudinally extending flat bearing portion 41 between the stake-boxes and the toe 38. For supporting the road paving machinery I provide a rail 42, which extends parallel with the side mold 35, and is supported upon this flat portion of the base 36. The flange 43 of the rail is received between the stake-boxes and the toe 38 and lateral movement of the rail is prevented by these portions. Heretofore, in using L-shaped forms the paving machinery has generally been supported upon the upper edge of the side mold, that is to say, upon the flanged portions 12 and 37 shown in Figs. 2 and 6, respectively. When this heavy machinery is supported in this manner its weight is concentrated largely along the portion or edge of the base lying directly below the side mold. In my arrangement, by providing a separate rail 42 for supporting this machinery, I have trans-

ferred this load from the extreme edge of the form to a location where it will be distributed over a large area of the base and thus make the bearing surface of this portion more effective in preventing uneven settlements with the consequent tilting and misalignment of the forms.

In Fig. 5 I have shown in a general way how road paving machinery 42′ may be supported upon my paving forms with load carrying wheels 44 running upon rail 42 and a paving material surfacing member 45 guided and supported upon the rounded edge 37 of the side form. It will be readily understood that the load imposed upon the side form in supporting and guiding the finishing member 45 is small in comparison with the load represented by the apparatus supported upon the rail 42.

The apparatus which I have shown supported upon the rail 42 is for the purpose of illustration only since various kinds of apparatus may be supported in this manner. It will be understood, of course, that in using my road paving forms members are arranged end to end to provide a continuous form for each side of the pavement to be laid, and that these continuous forms are arranged parallel and spaced apart a distance equal to the width of the pavement which is to be laid. It will be readily seen that in each of the several types of paving forms which I have illustrated provision is made for supporting the weight of paving machinery on a rail extending parallel with and spaced from the side mold, as shown by way of example in Fig. 5 of the drawing, so that the weight of this machinery will be effectively distributed over a large area of the base of the forms.

While I have shown and described the preferred types of my road paving forms, it will be understood that I do not limit my invention to the precise details illustrated and described, nor to any particular type of road paving apparatus or material used in conjunction with these forms, since various changes, alterations and substitutions may be made without departing from the spirit of the invention and the scope of the appended claims.

Having thus described my invention, what I claim is:

1. In apparatus of the character described the combination of a load carrying member having a supporting base, and a side mold supported on said base and extending parallel with said member.

2. In apparatus of the character described the combination of a load carrying member having a supporting base, a side mold supported on said base and extending parallel with said member, and means for preventing displacement of said member and said side mold.

3. In apparatus of the character described the combination of upright members forming side molds, load carrying members extending parallel with said side molds, for supporting road building apparatus, said side molds being normally supported on said load carrying members, stake-boxes attached to said side molds, stakes extending through said stake-boxes, and means for clamping said stake-boxes to said stakes to thereby support said side molds in proper position upon settling of said load carrying members.

4. In apparatus of the character described the combination of upright means forming a side mold for paving material, a load carrying member extending in parallel relation with said side mold for supporting road building machinery, said upright means being normally supported on said load carrying member, and means for retaining said side mold in the desired position so that displacement of said load carrying member by the load imposed thereon does not alter the position of said side mold.

5. In apparatus of the character described the combination of upright means forming a side mold for paving material, said side mold having means thereon forming a guide for finishing the surface of said material, a load carrying member extending in parallel relation with said side mold for supporting road building machinery, and means for retaining said side mold in the desired position so that displacement of said load carrying member by the load imposed thereon does not alter the position of said side mold.

6. In apparatus of the character described the combination of upright means forming a side mold for paving material, a load carrying member extending in parallel relation with said side mold for supporting road building machinery, said upright means being normally supported on said load carrying member, and means for retaining said side mold in a desired position including stake means to which said side mold is secured whereby displacement of said load carrying member by the load imposed thereon does not alter the position of said side mold.

7. In apparatus of the character described the combination of upright means forming a side mold for paving material, said side mold having means thereon forming a guide for finishing the surface of said material, a member extending in parallel relation with said guide for supporting road building machinery, and means for retaining said side mold in desired position including stake means to which said side mold is secured whereby displacement of said member by the load imposed thereon does not alter the position of said side mold.

8. In apparatus of the character described the combination of upright means forming a side mold for paving material, a load carrying member extending in parallel relation with said side mold for supporting road building machinery, said upright means being normally supported on said load carrying member, and stake means to which said upright means is connected, said load carrying member having an opening through which said stake means extends and in which said stake means is relatively movable whereby displacement of said load carrying member does not alter the position of said side mold.

In testimony whereof, I hereunto affix my signature.

THOMAS W. DIECKMANN.