Jan. 1, 1924

1,479,299

J. W. HELTZEL

ROAD TAMPER AND STRIKE OFF

Filed Feb. 10, 1920

2 Sheets-Sheet 1

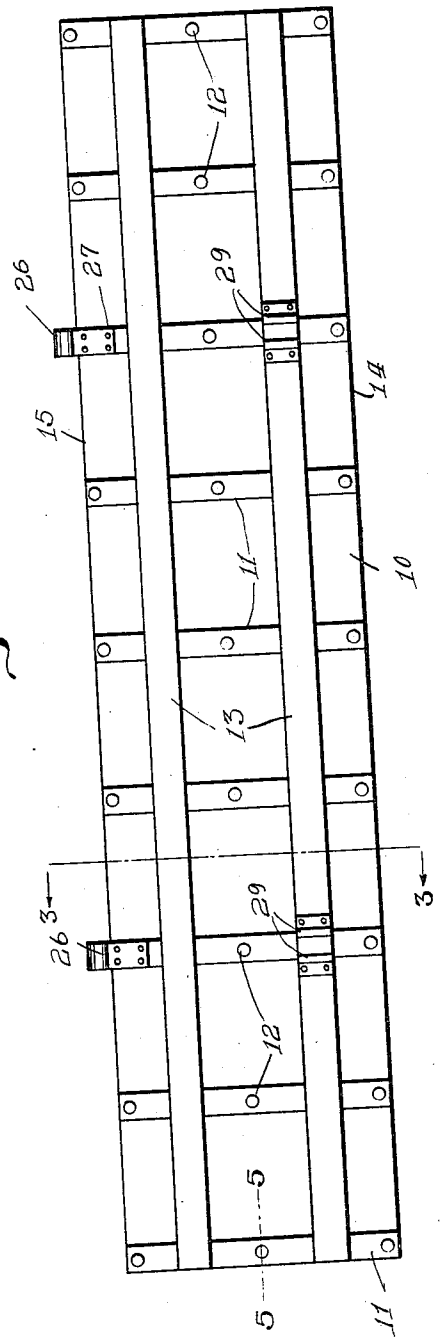

Fig. 1.

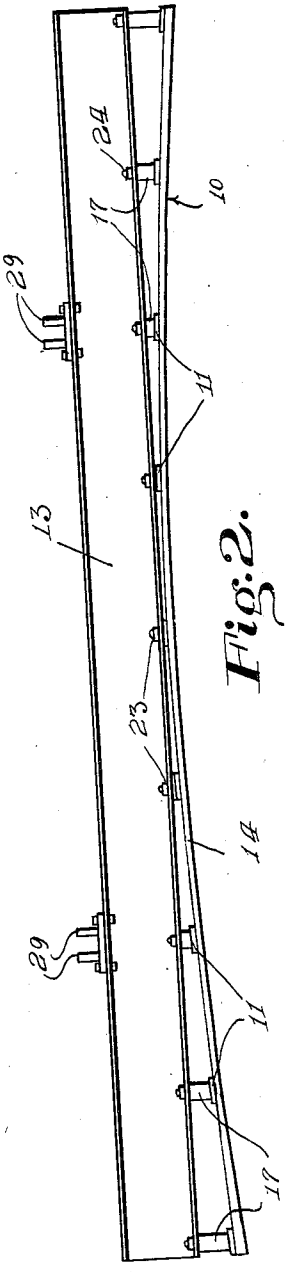

Fig. 2.

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Fig. 5.

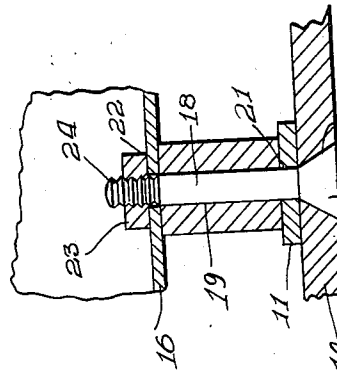
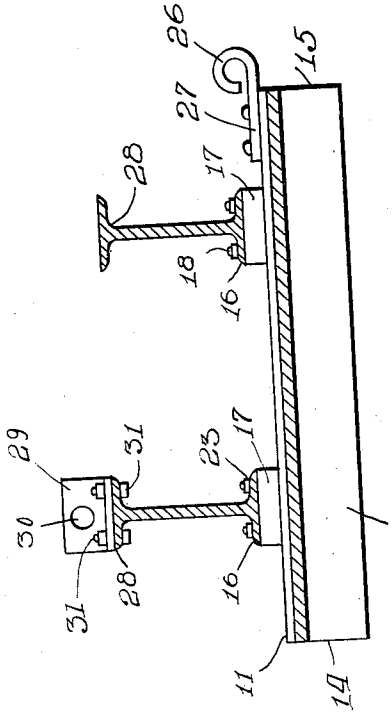


Fig. 4.

Fig. 3.



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Patented Jan. 1, 1924. 1,479,299

UNITED STATES PATENT OFFICE.

JOSEPH W. HELTZEL, OF WARREN, OHIO.

ROAD TAMPER AND STRIKE OFF.

Application filed February 10, 1920. Serial No. 357,552.

To all whom it may concern:

Be it known that I, JOSEPH W. HELTZEL, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented a new and useful Road Tamper and Strike Off, of which the following is a specification.

This invention relates to an improved tamping and strike off member adapted for use in connection with road building machines, as shown in the patent to Parrish No. 1,265,499 dated May 7, 1918 and my copending application on a road finishing machine, the device being adapted for use in building and leveling roads and side walks, so as to produce any desired crown and to generally facilitate the making of roads and side walks of the type mentioned.

A further object of the invention is to provide a road tamper and strike off especially adapted for making concrete and brick roads, the device being adapted to be pivoted at the rear end or back of a road machine and hingedly or pivotally supported, means being provided to raise and lower or lift and drop the device to secure the necessary tamping and smoothing action, thus securing a tamping action varying from a violent tamp or blow to a zero tamp in order to secure through packing of the concrete or other dry mix or the like, forming the road bed and to facilitate the strike-off action so as to secure the necessary curvature or crown, the device being adapted for use in connection with various road making or finishing machines as mounted and actuated in the manner described.

A further object of the invention is to provide an improved tamper and strike off device, which will obviate the necessity of employing arched I-beams or the like, as shown in the patent above alluded to, thus obviating the necessity of dismantling the whole machine, when it is necessary to alter the curvature of the beam, either to bend the one applied to the machine or to substitute a new one, in order to provide a proper curvature to conform to the crown of the road desired, or to which the machine is applied for use, the device embodying a novel structure employing a sheet metal bottom member preferably, though it may be made of wood or other material, and beams to which the same is connected, novel means being provided for regulating the curvature of the bottom plate or member, as desired, in connection with means carried by the device for hingedly or pivotally supporting the same at the front or rear end of the road machine and providing actuating means for lifting and dropping the device with force.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 is a plan view of my improved tamper and strike off;

Figure 2 is a front edge view thereof;

Figure 3 is an enlarged cross sectional view taken on the line 3—3 of Figure 1, and

Figure 4 is an enlarged vertical sectional view through a portion of the attaching means for securing the I-beams to the bottom plate or member of the tamper and for adjusting the curvature of the latter.

Figure 5 is a section on the line 5—5 of Figure 1.

Heretofore, as shown in the patent to Parrish, above noted, road producing or making machines have been constructed with strike off members in the form of solid I-beams adapted to engage the concrete or other dry mix for the purpose of producing the desired crown to insure the necessary drain of the road surface, but the employment of such curved I-beams as strike off members necessitated that the same be interchanged or re-bent, in order to produce the necessary curvature or crown for the road desired or being operated on and as this not only required the expensive operation of amending the I-beams to the required curvature, a difficult task, owing to the weight and size of the beams, but required the placing of new I-beams which could only be done by dismantling the machine. The present invention aims to overcome these difficulties and to provide a device which is relatively simple in construction, strong and durable, but light in weight, and which obviates the necessity of employing curved I-beams adapted to be employed as strike off members by engagement with the dry mix or concrete,

or other material forming the road bed which is packed by the tamping member and beveled off to the desired curvature, and employing said members in perfectly straight or rectilinear form, thus obtaining the advantage of the weight thereof without the necessity of dismantling the machine for varying the curvature desired, and providing a sheet member which forms the bottom of the tamper, the same being flexible or capable of being bent into the desired curvature according to the crown to be produced and means being interposed between the beams and the bottom member, so that various curvatures can be produced without employing extra parts, the same being adjustable in itself, while also being adapted for attachment to a road finishing or building machine, and capable of being raised and dropped, to give the required tamping effect which will result in an efficient road bed.

In carrying out the above objects and referring to the drawings in detail, in which like reference characters designate corresponding parts throughout the several views, my improved tamper and strike off, includes a flexible or bendable sheet 10, preferably of sheet or plate metal, such as steel, suitably treated if desired to prevent rusting and corrosion, or formed of wood or other desired material. This bottom plate or member, is preferably in the form of a rectangular parallelogram, oblong in outline, in plan and has arranged across the same longitudinally, as distinguished from the transverse dimension or width of the device, with reference to the relation thereof to the width of road acted on or to be produced, a series of strips 11, which are preferably arranged in equidistantly spaced parallel relation and at the ends or sides of the bottom member or plate, defining the side limits of the road bed. These strips are preferably relatively thin, but sufficiently stiff and rigid, to give the required stiffening action or rigidity to the bottom member or plate to resist the strain exerted thereon in use and said strips are riveted or bolted to the tamper bottom at a plurality of points of the longitudinal dimensions thereof, that is as indicated at 12.

Arranged across the bottom plate or member of the tamper and strike off, are a plurality, preferably a pair of heavy I-beams or the like, 13, the same being preferably arranged at spaced distances from the front and rear edges 14 and 15 and parallel to said edges and to each other. These beams are the same length as the length or expanding area of the bottom plate or member, and are secured to said bottom plate, so as to cause the latter to assume a uniform curvature from a medial line to the extremities thereof in order to produce the necessary crown or curvature to the road.

As shown, there is interposed between the beams at the bottom flanges 16 thereof, and the bottom plate or strips 11 mounted thereon, a series of spacing members or blocks 17 of varying thickness, and having their top and bottom faces or edges beveled, toward the longitudinal center or intermediately of the transverse dimension of the plate and tamper. That is, the blocks are of less thickness toward the center, at which point, the blocks are relatively thin, or may be omitted, as found desirable, thus producing the necessary curvature to correspond to the crown of the road desired. The beams are connected through the flanges 16 thereof to the plate 10 through the medium of a series of bolts 18, which pass through apertures 19 in the spacing members or blocks 17 and through aligned apertures 20, 21 and 22 in the plate 10, the strips 11 and the flanges 16, respectively, nuts 23 being mounted on the threaded ends 24 of the bolts 18, in order to bind against the flanges 16, to secure the parts in adjusted and connected relation. The bolts 18 are preferably provided with tapered heads 25 seated in the tapered or counter-sunk recesses 20, in order to secure a proper binding and connecting action as well as to leave the bottom of the tamper or plate thereof, perfectly smooth, the purposes of which, it is believed will be readily understood by one acquainted with the art. It is also to be understood, that by varying the thicknesses of the block or spacing members 17 or the lengths thereof as regards their axial dimenson, the curvature of the plate and thus of the tamper as an entirety can be arranged to suit the crown which it is desired to produce. It is only necessary to displace the bolts and interposed different spacing members or blocks between the I-beams and the bottom plates in order to alter the cuvature as desired. When this is done, the bolts are reinserted and the parts connected up, as heretofore described and as clearly shown in the drawings, when the device will again be ready for use.

When the device is used in connection with a road finishing or building machine, for producing roads, sidewalks or the like, the device is adapted to be connected to the machine, and for this purpose, pivot or hinge ears 26, preferably two, are mounted on the device at spaced points from the ends thereof at the edge portion 15, as by securing the same to certain of the strips 11, preferably the second one from each end, the hinged member or ears 26 are preferably in the form of plates bolted or riveted to the strips 11 and the bottom plate as indicated at 27, the free ends projecting rearwardly at the edge portion 15 as particularly indicated in Figures 1 and 3 of the drawings, and then rebent to form the eyes or ears, of circular formation as shown. These ears are designed to receive one or two horizontal

pivots disposed in alignment, and suspended from the road machine with said edge portion disposed adjacent to the road surface to constitute a strike off member conforming to the curvature or crown of the road bed desired, said edge being therefore disposed a distance of the 30 degrees from said surface or in contact therewith and corresponding in curvature with respect thereto.

The device is also provided with means for connection with an operating mechanism to lift or raise and drop the tamper to produce the necessary tamping or packing effect, to insure a solid and efficient road bed, and for this purpose, there is preferably mounted thereon, in alignment with the strips 11 and the hinge or pivot connections 26, which are mounted thereon, at suitably equally distant spaced points from the ends of the plate, and directly secured to one of the beams 13 at the top flanges 28 thereof, angular brackets 29, which are of right angular cross-section, and which are disposed in opposed relation and provided with apertures 30 designed to receive a pivot member of a connecting or actuating part. The brackets forming the bearings of the connection, are bolted through the flanges 28 as indicated at 31, preferably at a plurality of points, in order to prevent the brackets from turning in their spaced parallel relation where secured to the beam. The bearing portions of the brackets oppose each other in spaced parallel relation longitudinally of the strips 11 and abreast of the direction of travel of the machine lineally, when in use.

From the foregoing, it will be seen that by employing a sheet member for the bottom of the tamper and strike off member as described, that the device may be made to act on a sixteen foot, eighteen foot on other width road, and again have a two inch or three inch crown or any other desired curvature, with an adjustment that can be quickly altered. In the patent to Parrish, and others employing I-beams which are curved and particularly in the Parrish patent three heavy I-beams are employed the front one constituting the strike off, and being bent to conform to the crown of road so that it is necessary to employ a different beam for each road of a different crown, from one to three inches, thus necessitating the dismantling of the machine in order to permit it to be used for a road of a different curvature or crown. Also, the beams can be perfectly straight, without depriving the device of the necessary weight to give a dry mix the required heavy blow at the front portion, which through the medium of suitable actuating means, is lifted at the proper height by a pick-up member arranged on the machine and dropped to give the desired tamping effect, while the rear end works on the hinges 26, and merely drags on the concrete, producing a smooth finish. The road finishing machine and pick-up device or cam, is shown in a separate application covering the subject matter of the road finishing or building machine and therefore the specific construction thereof has been omitted in reference to this application, especially as the tamper and strike off device herein disclosed and described, is a separate device which can be used in connection with any machine or hand tamper or strike off within the limits of the construction and operation, as defined by the device as set forth and claimed hereinafter.

When the device is used in connection with a road building machine or the like for use as a tamper or strike off the edge portion 15 is pivoted back of the road machine at one end of the cross rail thereof with said edge portion serving as a strike off and with a zero tamping effect, so that as the device is moved lineally along the surface of the road, a smooth finished road of concrete or other material is produced. The front end of the tamper at the edge portion 14 is raised to a desired height by suitable means, as by a cam eccentric mechanism connected to the bearings formed by the brackets 29 and dropped on the concrete or other material, thereby tamping and leveling the same. The device has a very violent tamping action at the edge portion 14, diminishing toward the edge portion 15, where there is no drop, and a zero tamping action is recorded. This facilitates the proper packing of the material and the crowning of the surface thereof.

When the device is used with a machine such as the Parrish patent above referred to, it may be placed under the front beam which of course need not be crowned when using my device. It is understood of course that in this case the device will necessarily be much less in width than shown in the drawings a width corresponding to the beam being preferred.

In case a road is required to have a straight surface with or without one side being tamped all that is necessary to do is to put in place spacers at the proper thickness.

In using the device in connection with a narrow beam, the strike off should only be as wide as the beam itself or just a narrow bolt over the beam with the necessary spacing brackets to give the desired crown. The locks of brackets are unnecessary when the device is used as a strike off, and either the tamper or strike off can be of any adapted width from two inches to two feet as desired or demanded.

Having thus described my invention, what I claim is:

1. The combination with a road finishing and making machine; of a tamper and

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strike off supported in an inclined position for oscillation at one end thereof, said device being pivoted at one edge and the other edge portion of the device being movable in a limited arcuate path so as to produce a tamping action from a maximum to a minimum elevation conforming to the surface of the road bed to be produced, and varying from a violent action to zero, at the other end.

2. The combination with a road building machine; of a tamper and strike off of arcuate formation pivotally suspended at its rear edge to the back of the machine, the front edge being disposed to form a strike off adapted to engage the material of the road to form the necessary curvature or crown therefor, means connected to the forward edge to lift and drop the same with violent force.

3. The combination with a tamper having an arched formation; of pivot members at one edge thereof, bracket members carried thereby forwardly of said pivot members, said pivot members being adapted to support said tamper for oscillating movement and means connected with said brackets to actuate said tamper, said hinged edge serving as a strike off.

4. A tamper and strike off for road building machines comprising a bottom member, rectilinear beams extending across said bottom member, and spacing means between said beams and said bottom member to retain the latter in arched form, said spacing means permitting adjustment of said parts.

5. A tamper of the class described, comprising an elongated rectangular plate adapted to span a road, stiffening members secured to the plate to prevent bending thereof in the direction of its breadth, means for curving said plate according to the crown of the road to be produced, in the direction of its length, and supporting means for the plate.

6. A tamper of the class described, comprising an elongated rectangular plate adapted to span a road, stiffening members secured to the plate to prevent bending thereof in the direction of its breadth, said plate being adapted to be curved according to the crown of the road to be produced, in the direction of its length, and supporting means for the plate, said supporting means including means to hold the plate at a desired curvature.

7. A tamper of the class described, comprising an elongated rectangular plate adapted to span a road, stiffening members secured to the plate to prevent bending thereof in the direction of its breadth, said plate being adapted to be curved according to the crown of the road to be produced, in the direction of its length, and supporting means for the plate, a plurality of rectilinear I-beams arranged across the plate, spacing blocks of outwardly increasing thickness, between the beams and plate, connections between the plate and I-beams holding the plate in fixed curved relation and permitting adjustment of the curvature thereof, and means whereby the said parts may be pivotally supported and actuated for tamping and strike off purposes.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH W. HELTZEL.

Witnesses:
WM. J. HYDE,
ALTHA JONES.