June 12, 1928.

1,672,982

W. A. JOHNSON

MARKER

Filed Sept. 25, 1923

2 Sheets-Sheet 1

Fig. 1.

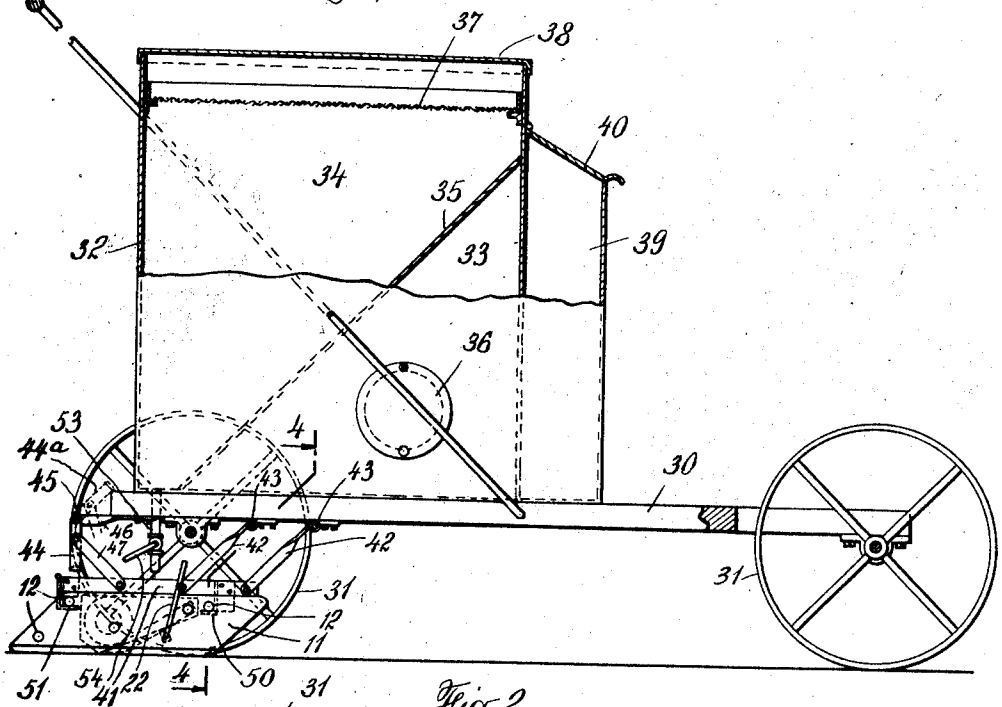



Fig. 2.

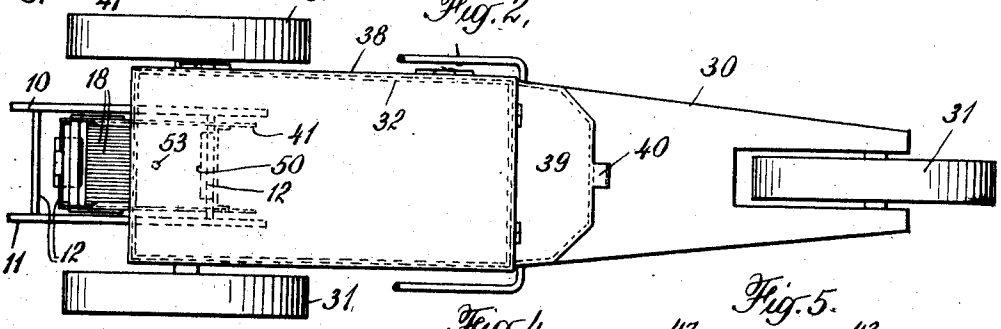



Fig. 4.

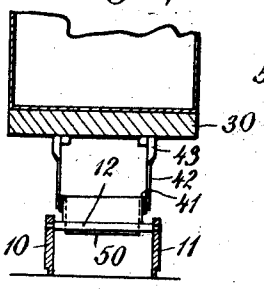
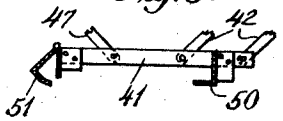



Fig. 5.



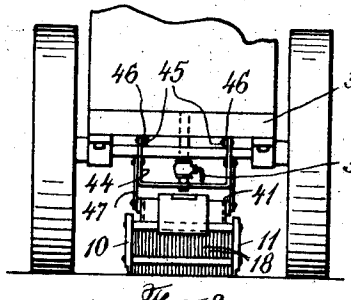




Fig. 3.

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June 12, 1928.

1,672,982

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Fig. 6,

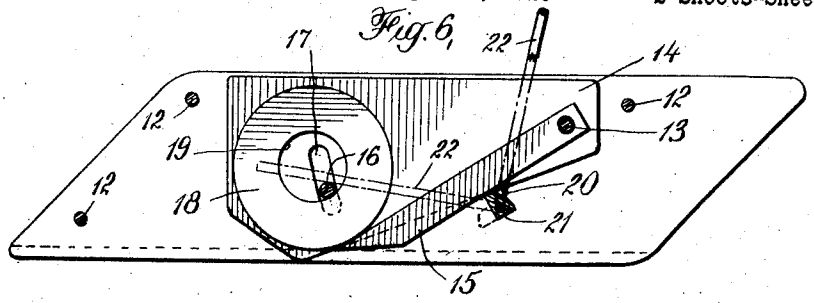



Fig. 7,

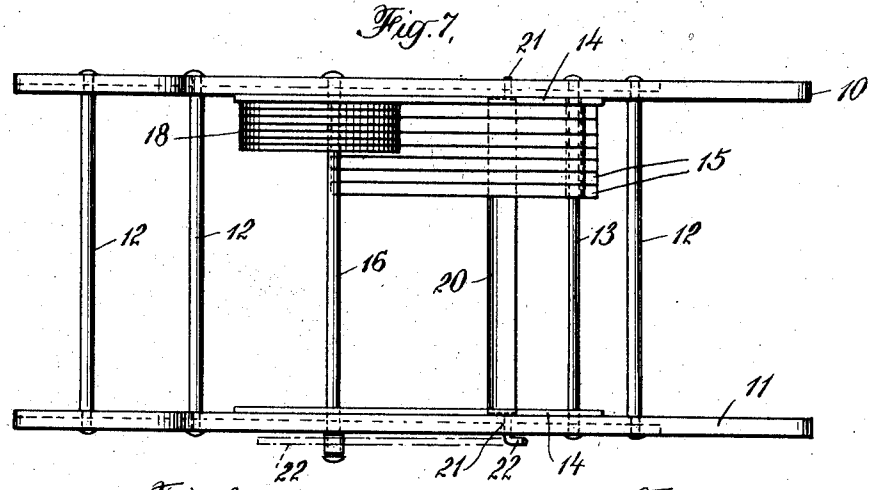



Fig. 8,

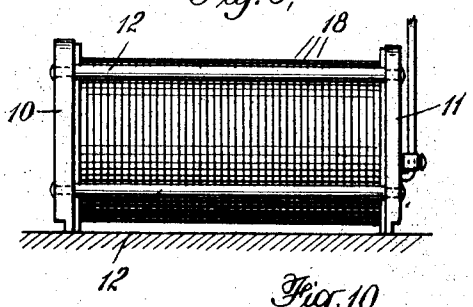



Fig. 9,

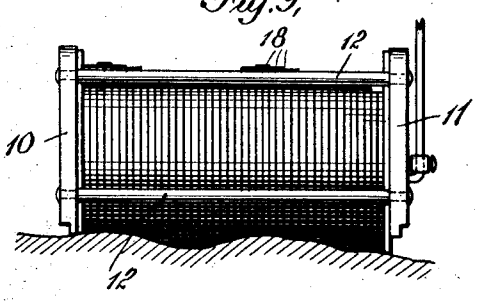
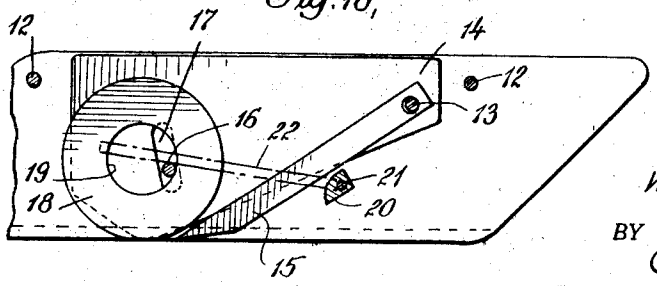



Fig. 10,




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Patented June 12, 1928. 1,672,982

# UNITED STATES PATENT OFFICE.

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## MARKER.

Application filed September 25, 1923. Serial No. 664,671.

This invention relates to markers such as are used for marking lines on athletic fields, tennis courts, and for marking safety and traffic zones on streets and highways, "locations" and aisles on factory and garage floors, etc.

This invention has for its salient object to quickly and effectively mark well-defined lines on the desired surface.

Another object of the invention is to spread the paint or other marking material uniformly on the surface to be marked and to accomplish this result effectively where the surface is even and level or rough and uneven.

Another object of the invention is to provide means in connection with a marking device of the character described for transporting a supply of marking material for manipulating the marker and for storing the marker when not in use.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which

Fig. 1 is an elevational view partly broken away and partly in section showing a marker constructed in accordance with the invention and mounted upon or suspended from a wheeled truck.

Fig. 2 is a top plan view of the construction shown in Fig. 1.

Fig. 3 is a rear elevation of the construction shown in Fig. 1.

Fig. 4 is a sectional elevation taken substantially on line 4—4 of Fig. 1.

Fig. 5 is a side elevational view partly in section showing the means for supporting the marking device on the framework carried by the truck.

Fig. 6 is a detail elevational view partly in section and on an enlarged scale showing the operative parts of the marking device in raised position.

Fig. 7 is a top plan view of the construction shown in Fig. 6.

Fig. 8 is a rear view which shows the parts in the position taken when the device is not in operation.

Fig. 9 is a similar view showing the parts in the positions when the device is operating on an uneven or rough surface.

Fig. 10 is a view similar to Fig. 6 but showing the parts in their operating position.

The invention briefly described consists of a marking device comprising side plates, a plurality of fingers arranged side by side and loosely pivoted on a rod extending between said side plates and a plurality of disks or washers loosely mounted on another rod also mounted between said side plates. The washers or disks cooperate with the fingers and means such as a cam is provided for engaging and lifting the fingers and at the same time lifting the washers. This action illustrated in Figs. 6 and 8 elevates the fingers out of contact with the ground and also stops the flow of the marking fluid. As shown in Fig. 9, the fingers by reason of their being loosely pivoted are adapted to follow depressions in and elevations on the surface on which the marker is being used. The marking device may also have pivoted between the side plates, runners adapted to follow the surface in a manner similar to the fingers.

The marking device just described may be suspended from any suitable vehicle or truck or may be propelled in any desired manner. In the particular embodiment of the invention shown, this marker is suspended below a truck having a supply receptacle for the marking fluid and a tank adapted to receive the marking device when the device is not in use. This tank preferably has kerosene or some other suitable liquid therein beneath which the device can be submerged to prevent rusting and to remove the paint or marking fluid thereby preventing the device from becoming gummed and inoperable. Further details of the invention will appear from the following description.

The marking device will first be described and attention is particularly directed to Figs. 6 to 10 inclusive. This device comprises a pair of side plates 10 and 11 rigidly connected by cross rods 12. In addition to the cross rods 12, a cross rod 13 is secured between the plates 10 and 11 and has pivoted thereon at its ends adjacent the inner surfaces of the plates 10 and 11, drop plates or runners 14, the adjacent sides of which contact with one another. These runners are loosely pivoted on the rod 13 and are adapted to follow the surface on which the device is being used.

A spindle or axle 16 is also secured to the plates 10 and 11 and extends through slots 17 formed in the plates or runners 14. A

plurality of disks or washers 18 is mounted on the axle 16 and these washers are freely movable vertically thereon by reason of the enlarged central openings 19 therein. As clearly illustrated in Fig. 6, the washers rest on the rear ends of the fingers 15 when the latter are raised and are supported thereon.

Means is provided for elevating or lifting the runners, fingers and washers when the device is not in use and this means comprises a cam 20 pivoted at 21 in the side plates 10 and 11 and having an arm 22 at the end thereof for manipulating the cam. As illustrated in Figs. 6 and 7, the cam 20 extends under the fingers and runners and when the cam is in the position shown in full lines in Fig. 6, the runners and fingers will be elevated, thereby lifting the washers and preventing the marking fluid from escaping from the receptacle formed by the fingers, washers and runners. When the cam is dropped, as shown in Fig. 10, however, the fingers are free to follow the undulations of the surface on which the device is being used and the marking fluid will flow downwardly between the fingers and washers and runners 14.

Referring now to Figs. 1 to 5 inclusive, the truck device for supporting and manipulating the marker will be described. It should be understood, however, that any other suitable truck or vehicle can be utilized, if desired.

The vehicle illustrated comprises a truck having a platform 30 supported on wheels 31. A receptacle 32 is mounted on the platform and has a storage space 33 for marking material and an active supply space 34 separated from the storage space by an inclined wall 35. Access to the storage space may be had through the pivoted closure or door 36. A screen 37 is mounted above the supply space 34 and the receptacle is covered by a lid or cover 38. The receptacle also has another compartment 39 adapted to contain kerosene or some other suitable liquid and in which the marking device is submerged when not in use. This will prevent the marking device from rusting and will also prevent it becoming gummed up and, therefore, inoperable. The lid 40 covers the compartment 39.

The marking device is preferably supported below the rear central portion of the platform and, in the particular form of the invention illustrated, a frame 41 is suspended below the platform on parallel links 42 pivoted at 43 to the lower surface of the platform. For raising the frame to inoperative position, a handle 44 is pivoted at 45 to a bracket 46 secured to the bottom of the platform and this handle is connected to the frame 41 by a link 47. When the marking device is not to be used the operator will swing the handle 44 in a clockwise direction to the position indicated by dotted lines at $44^a$, thereby raising the frame 41. The links 42 permit the marking device to move up and down with relation to the truck with a parallel movement.

The marking device is preferably detachably secured to the frame 41. As shown in Fig. 5, the frame 41 has an angle bracket 50 secured to and extending below the frame. This bracket is adapted to engage the upper forward cross rod 12 shown in Fig. 6. The upper rear cross rod 12 is adapted to be engaged beneath the pivoted latch 51, thereby detachably retaining the marking device in position on the frame 41. When, however, the device is not to be used, it can be readily detached by lifting latch 51 and the marking device can then be stored in the compartment 39.

As above stated, the marking fluid is contained in the supply receptacle 34 and a discharge pipe 53 extends from the bottom of this receptacle down through the platform and is located directly above the marking device. A control valve 54 is provided in this discharge pipe for regulating the flow of the fluid or liquid into the marking device.

In the operation of the device, the valve 54 is open a sufficient degree to permit the desired flow of the marking fluid onto the fingers 15. The fluid runs down the fingers and out between them and the disks 18 when the fingers are lowered as shown in Fig. 6. As the fingers and disks follow the contour of the surface to be marked, the space between each finger and its respective disk will not vary, which results in an even distribution of the fluid. The side plates or runners 14 prevent the lateral flow of the fluid so that a sharp clear edge is formed. Raising the fingers and disks into the positions shown in Fig. 6 results in arresting the flow of the marking fluid to the surface, so that the marking operation may be interrupted whenever desired.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification, and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:—

1. A marker comprising side plates, vertically movable inclined fingers arranged between said plates and vertically movable washers between said plates and cooperating with said fingers.

2. A marker comprising side plates, vertically movable fingers arranged between said plates and vertically movable washers

between said plates and cooperating with said fingers, said fingers and washers being freely movable, and means for elevating said fingers and washers and retaining the fingers and washers against movement.

3. A marker comprising side plates, vertically movable fingers arranged between said plates and vertically movable washers between said plates cooperating with said fingers and arranged to be lifted by the fingers.

4. A marker comprising side plates, vertically movable fingers arranged between said plates and vertically movable washers between said plates and cooperating with said fingers, said fingers and washers being freely movable, and means including a cam for elevating said fingers and washers, and retaining the fingers and washers against movement.

5. A marker comprising side plates, vertically movable inclined pivoted fingers arranged between said plates and vertically movable washers loosely mounted on a cross rod carried by said plates and cooperating with said fingers.

6. A marker comprising side plates, runners pivotally mounted adjacent said plates, a plurality of fingers arranged side by side and loosely pivoted intermediate said runners, a cross rod carried by said plates and a plurality of washers loosely mounted on said rod and disposed side by side between said runners and cooperating with said fingers.

7. A marker comprising side plates, runners pivotally mounted adjacent said plates, a plurality of fingers arranged side by side and loosely pivoted intermediate said runners, a cross rod carried by said plates, a plurality of washers loosely mounted on said rod and disposed side by side between said runners and cooperating with said fingers, and means for raising said fingers and washers to prevent the flow of liquid from the marker.

8. A marker comprising a row of independently vertically movable rotatable elements, and a substantially parallel row of independently vertically movable pivoted elements, with their free ends extending under said rotatable elements.

9. A marker comprising a plurality of metallic washers disposed side by side, a transverse rod of smaller diameter than the openings in the washers passing through said washers, and a plurality of pivoted fingers with their free ends extending under the washers.

10. A marker comprising a plurality of metallic washers disposed side by side, a transverse rod of smaller diameter than the openings in the washers passing through said washers, and a plurality of fingers with their free ends extending under the washers each pivoted near one of its ends on a pin substantially parallel with said transverse rod.

11. A marker comprising a pair of parallel plates, a transverse row of independently vertically movable rotatable elements between said plates a row of independently vertically movable pivoted elements substantially parallel with the row of rotatable elements and a pair of independently movable runners at the ends of said rows.

12. A marker comprising a pair of parallel plates, a plurality of metallic washers disposed side by side between said plates, a transverse rod of smaller diameter than the openings in the washers passing through said washers, a plurality of fingers between said plates, each pivoted near one of its ends on a pin substantially parallel with said transverse rod and a pair of runners at the ends of said rows pivoted for independent movement on said pin.

13. A vehicle, a marker and parallel link mechanism connecting the vehicle and the marker, said marker comprising a pair of parallel plates, a plurality of metallic washers disposed side by side between said plates, a transverse rod of smaller diameter than the openings in the washers passing through said washers, and a plurality of fingers between said plates, each pivoted near one of its ends on a pin substantially parallel with said transverse rod.

14. A vehicle, a marker and mechanism connecting the vehicle and the marker arranged to provide free vertical relative movement but to restrain lateral movement between the vehicle and the marker, said marker comprising a row of independently vertically movable rotatable elements, a substantially parallel row of independently vertically movable pivoted elements, and means for supplying marking fluid from the vehicle to the marker.

15. A vehicle, a marker and pivoted links connecting the vehicle and the marker, said marker comprising a plurality of metallic washers disposed side by side, a transverse rod of smaller diameter than the openings in the washers passing through said washers, and a plurality of pivoted fingers with their free ends extending under the washers, a supply device on the vehicle and means for leading marking fluid from the receptacle to the marker.

16. A vehicle, a marker and parallel link mechanism connecting the vehicle and the marker, said marker comprising a row of independently vertically movable rotatable elements, and a substantially parallel row of independently vertically movable pivoted elements with their free ends extending under said rotatable elements, said vehicle

being constructed to form a supply receptacle for marking fluid, a conduit leading from said receptacle to the marker.

17. A vehicle, a marker and mechanism connecting the vehicle and the marker arranged to provide free vertical relative movement but to restrain lateral movement between the vehicle and the marker, said marker comprising a pair of parallel plates, a transverse row of independently vertically movable rotatable elements between said plates and a row of independently vertically movable pivoted elements substantially parallel with the row of rotatable elements with their ends extending under the rotatable elements, a supply device on the vehicle, and means for leading marking fluid from the receptacle to the marker.

18. A vehicle, a marker and parallel link mechanism connecting the vehicle and the marker, said marker comprising a pair of parallel plates, a plurality of metallic washers disposed side by side between said plates, a transverse rod of smaller diameter than the openings in the washers passing through said washers, and a plurality of fingers between said plates, each pivoted near one of its ends on a pin substantially parallel with said transverse rod, said vehicle being constructed to form a supply receptacle for marking fluid, and a conduit leading from said receptacle to the marker.

19. A vehicle, a marker and parallel link mechanism connecting the vehicle and the marker, said marker comprising a pair of parallel plates, a plurality of metallic washers disposed side by side between said plates, a transverse rod of smaller diameter than the openings in the washers passing through said washers, a plurality of fingers between said plates, each pivoted near one of its ends on a pin substantially parallel with said transverse rod, and a pair of runners outside of said washers and fingers, pivoted for independent movement on said pin, said vehicle being constructed to form a supply receptacle for marking fluid, and a conduit leading from said receptacle to the marker.

In witness whereof, I have hereunto set my hand this 20th day of September, 1923.

WILLIAM A. JOHNSON.