C. P. LOVELAND.

MARKING DEVICE FOR PLASTICS.

APPLICATION FILED OCT. 28, 1912.

1,099,185. **Patented June 9, 1914.**

2 SHEETS—SHEET 1.

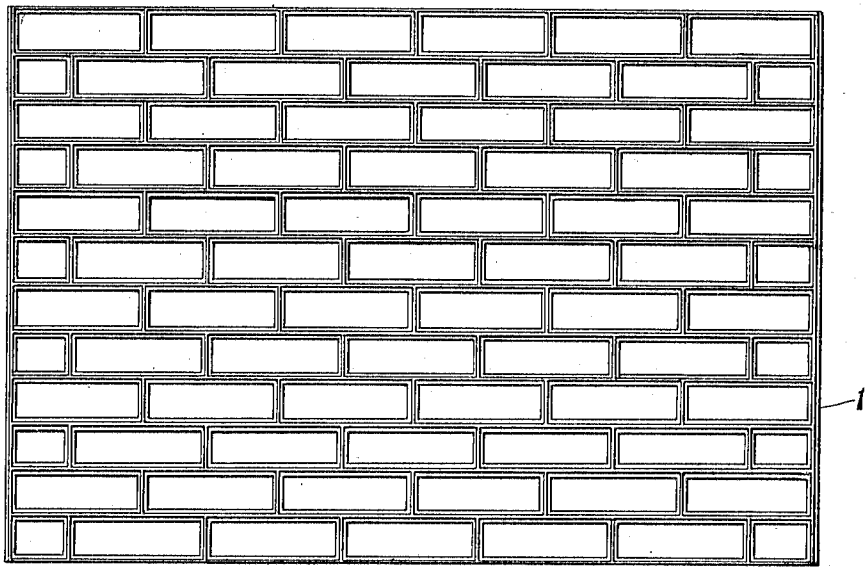
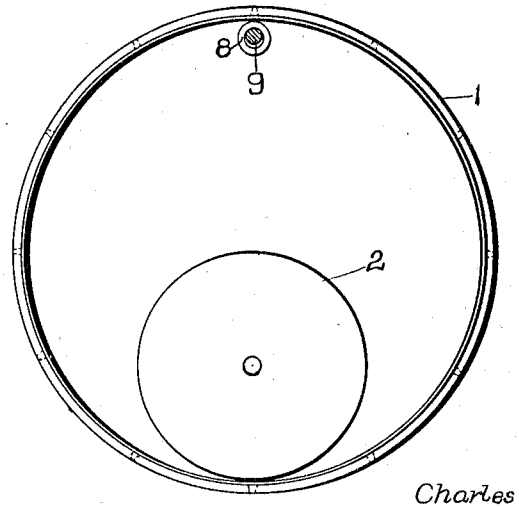


FIG. 1.

FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

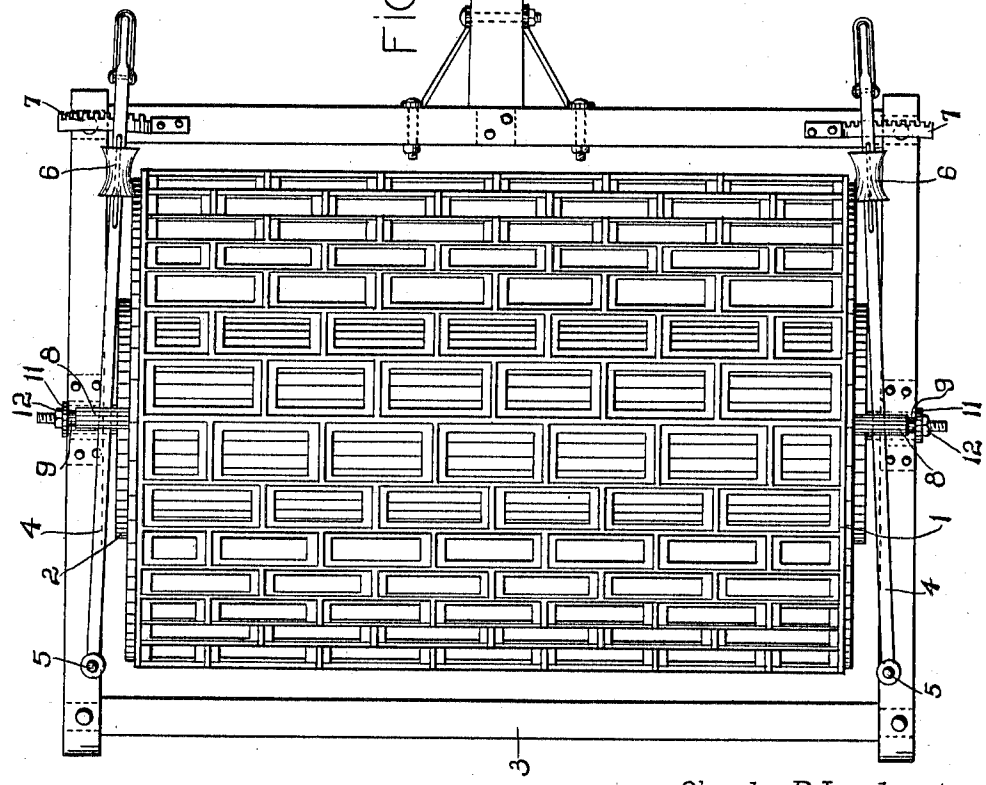
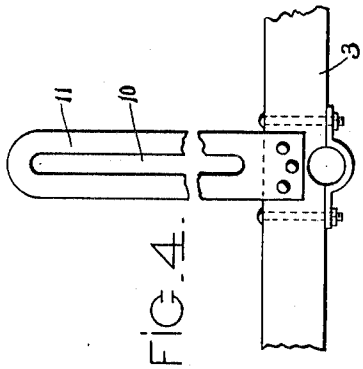


FIG. 4.



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MARKING DEVICE FOR PLASTICS.

1,099,185. Specification of Letters Patent. Patented June 9, 1914.

Application filed October 28, 1912. Serial No. 728,210.

To all whom it may concern:

Be it known that I, CHARLES P. LOVELAND, a citizen of the United States of America, residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Marking Devices for Plastics; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to a device for marking plastics.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a top plan view of the pattern, as first cast; Fig. 2 is an end view of the device as assembled, the roller frame being omitted; Fig. 3 is a top plan view of the device as in operation; and Fig. 4 is a detail view of one of the supports of the roller for the pattern.

The main objects of this invention are to provide an endless flexible pattern, in outline, which may be used on a number of different rollers of varying sizes and shapes; which will always work the material correctly; and which may be manufactured in quantities at small cost; and to provide means for limiting and compressing plastic or malleable materials while in a plastic or soft state, in the same operation.

The device consists of a flexible pattern 1 in outline, cast of copper or other flexible material to represent overlapping paving blocks, as in Fig. 1. The pattern is first cast flat as shown in Fig. 1, then bent into a cylinder as in Figs. 2 and 3, the edges of the pattern being secured together by welding, soldering, or other suitable means. A roller 2 of approximately half the diameter and a little longer than the cylindrical pattern is placed inside of the said pattern as in Figs. 2 and 3. This roller may be cylindrical, concave, or convex, in shape, according to the work to be done. That is to say; a cylindrical roller will be used for flat surfaces, as the street surface, a concave roller may be used for "crown" work, or paving between car tracks; or a convex roller may be used for guttering. The roller will conform in shape to the work to be done. The roller is mounted in a suitable frame 3 in the usual way. A cylindrical form of roller thus used is shown in Fig. 2. If its axis be located a little nearer to the flexible slightly elastic cylindrical pattern 1, the latter will necessarily fit or mold itself on the convex surface of this roller in passing over the same, the general shape of the pattern being slightly deformed by the convexity thus produced therein at the point of contact. The same will obviously be true if a concave surface or a flat surface be presented by the roller to the pattern. The elasticity of the pattern causes its curve to become circular again, or very nearly so, as soon as it passes beyond the roller. Such molding or fitting of the pattern on the roller would not be possible if the pattern were made to pass between two cylindrical rollers at this point or otherwise prevented from yielding there conformably to the surface of the roller 2.

Arms 4 pivotally mounted on the rear part of the frame 3 as at 5 are provided with spools 6 loosely mounted near their forward ends and engaging the outer edges of the pattern 1, as in Fig. 3. The said arms 4 are further provided with the usual spring catch adapted to engage racks 7 for the purpose of locking the arms in any desired position so as to allow the pattern to be shifted as may become necessary.

In order to take up any sagging of the pattern 1, a roller support is provided above the center of the roller 2 and supports the longitudinal center of the upper side of the pattern. The said support consists of a ring sleeve 8 turning on a round bar 9. The said bar has its ends reduced and screw threaded. The ends of the said bar 9 pass through grooves 10 in vertical supports 11 and are secured therethrough by nuts 12, which are screwed on to the ends of the rods 9. It will be obvious that the binding of the nut 12 against the outer face of the support 11 and the binding of the shoulder, caused by the slight reduction of the end of the rod, against its inner face, will combine to hold the rod 9 in any desired vertical position in the slots 10, thus permitting the roller support of the pattern to be adjusted so as to take up any slack in the pattern.

The operation of this device need not be explained in detail. It is only necessary to say that the pattern being flexible it bends

to conform to the shape of the roller as it passes beneath it, and assumes its original or cylindrical shape as it comes from under the roller because of its slight "spring". The roller compresses the material by its weight, and at the same time marks it by forcing the pattern into it, as it passes over the pattern. This device is a distinct improvement over the old marking device consisting of a pattern cast on a roller. In this device first the pattern is cast flat, and this insures the marking from the pattern being "true". In a concave or convex roller it is next to impossible to cast a "true" pattern on the roller, and even if "true" there is a tendency for the marking to "drag" at the apex of the concavity, thus marring the stamped pattern. This fault is eliminated by the pattern being separate from the roller, as it operates by its "spring" to pull vertically upward out of the material being marked, thus making any tendency to "drag" impossible. Also in my device one pattern can be used with a number of rollers of varying sizes and shapes. In addition the markings from my device are bound to be "true" as the pattern is first cast flat, thus insuring absolute correctness. Also my device is simple in construction and can be easily and cheaply manufactured. The pattern in outline is the usual "rib" type, having the thin broad backing to limit the entrance of the "rib" into the material impressed common to this type of construction. Also the pattern may be of any flexible type; either jointed so as to be flexible or of flexible material.

It is thought that the construction, operation, and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a marking device for plastics, in combination with a supporting frame, an approximately cylindrical flexible pattern mounted thereon and a roller arranged within said pattern and resting and running thereon to deform the same by its pressure, the said pattern being free to yield to such pressure, thereby imprinting the plastic surface below it.

2. In a marking device for plastics, in combination with a supporting frame, an approximately cylindrical flexible pattern mounted thereon, and a pressure-applying element resting thereon to deform the same by the action of gravity, the said pattern being free to yield to such pressure, thereby imprinting the plastic surface below it.

3. In a marking device for plastics, in combination with a supporting frame, an approximately cylindrical flexible pattern mounted thereon, a roller support for the upper part of said pattern and a roller within said pattern resting thereon to deform the same by gravity, said pattern being free to yield to such deformation, thereby imprinting the plastic surface below it.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES P. LOVELAND.

Witnesses:

T. MYNARD,

E. J. GANVIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."