March 27, 1951 J. KAHLER 2,546,308

FLOOR MARKING DEVICE

Filed Dec. 29, 1948

FIG. 1

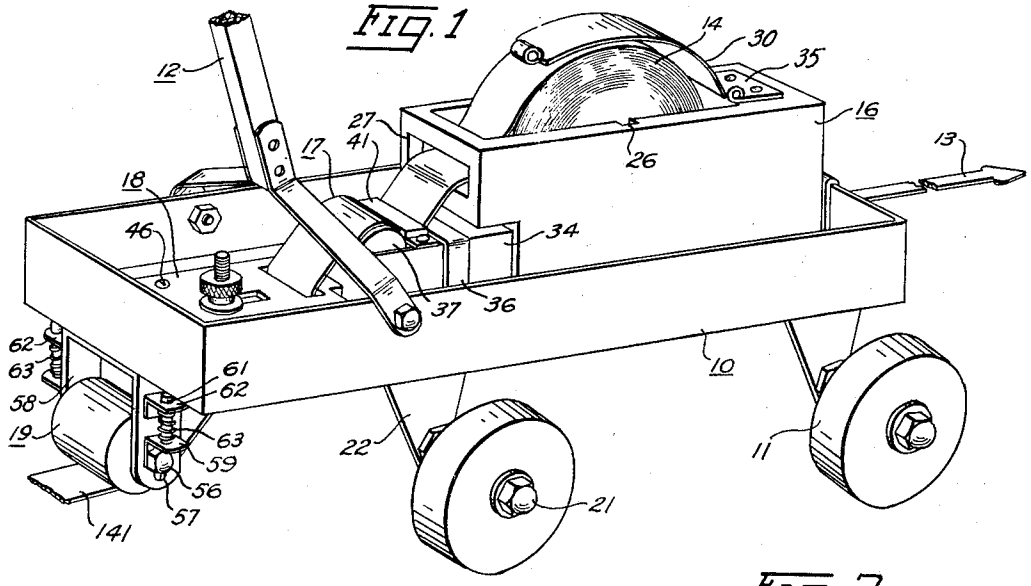


FIG. 2

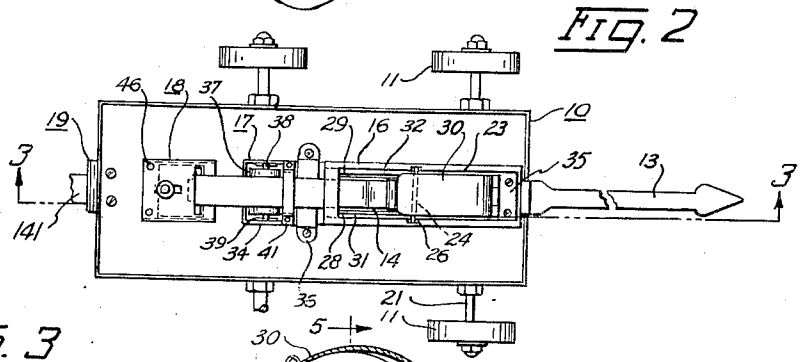


FIG. 3

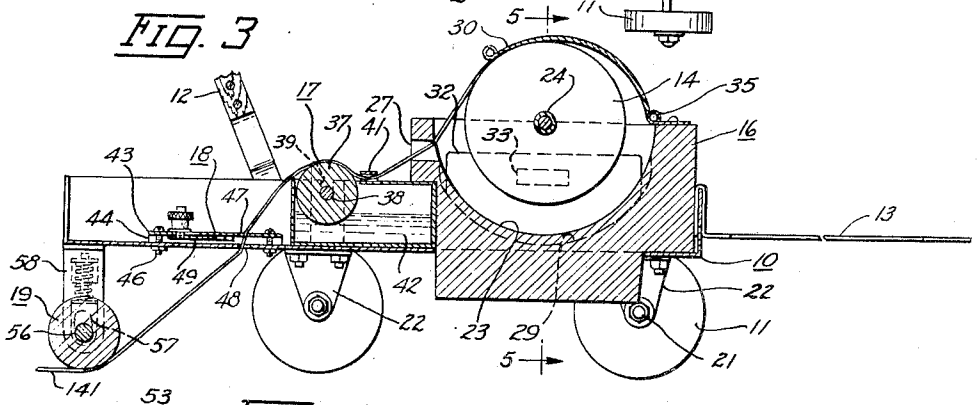


FIG. 4

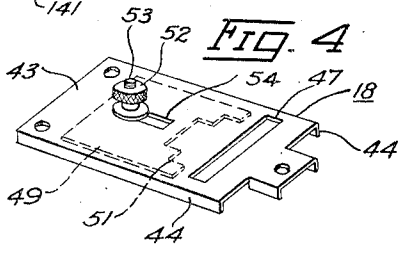
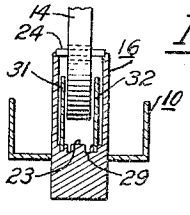


FIG. 5



INVENTOR.
JOHN KAHLER
BY
Flournoy Corey.
ATTORNEY.

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FLOOR MARKING DEVICE

John Kahler, Lincoln, Nebr.

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2 Claims. (Cl. 216—20)

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This invention relates generally to marking devices and particularly to a machine adapted for applying adhesive or gummed tape or the like to surfaces such as gymnasium floors where the tape may serve as boundary lines.

It is a primary object of my invention to provide a simple, efficient and relatively inexpensive device for applying tape to gymnasium floors or other flat surfaces for the purpose of quickly laying out game areas, limit lines and the like. Lines or markings outlining areas of play are commonly applied to gymnasium floors by painting. However, if durable paint is used, such lines are not readily removable and, if non-permanent material such as white-wash is used, the lines are quickly obliterated.

It is frequntly desirable to change such floor markings to better accommodate various games.

Devices for laying tape to provide or to lay out marking lines which are removable have also been proposed, but these devices of the prior art have numerous disadvantages, the elimination of which constitutes another main object of my invention.

A further and more specific object of my invention is the provision, in such a tape laying device, of an improved means for supporting rolls of tape of various widths and accurately centering and guiding the tape as it is applied to the floor.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specifications, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claims, without departing from the spirit of the invention.

In said drawings:

Figure 1 is a view in perspective of a tape laying machine constructed in accordance with a preferred embodiment of my invention.

Figure 2 is a view in top elevation of the device shown in Figure 1.

Figure 3 is a view in longitudinal, vertical section of the device taken generally along the line 3—3 of Figure 2,

Figure 4 is a view in perspective illustrating the structural details of the tape centering and guiding device employed in my tape laying machine, and

Figure 5 is a view in vertical transverse section taken along the line 5—5 of Figure 3.

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Referring now to the drawings, and particularly to Figure 1 thereof in which a main frame 10, supported by rigidly mounted, spaced wheels 11, is adapted to be pushed along a floor by means of the handle 12, guided by the operator with the help of a pointer 13 detachably mounted on the forward end of the frame 10.

A roll 14 of adhesive or gummed tape or the like is supported in the tape container 16, the tape 141 being passed downwardly over the tape moistening device 17, then through a guiding and centering device 18 and beneath the pressure roller 19 which member serves to apply the moistened, glued tape, or adhesive tape, as the case may be, to the floor surface.

The wheels 11 are mounted on stub shafts 21 secured, by means of brackets 22, to the underside of the reinforced, plate-like main frame 10. The wheels are thus held in fixed alignment.

Removably mounted in the forward end of the frame 10 is the box-like tape container 16. The top of the tape container is provided with a semi-cylindrical recess 23 for reception of the roll of tape 14, the roll being mounted on the pin 24 supported in slots 26 in the side walls of the container. The tape 141 passes from the roll, adhesive side down, through a slot 27 in the rear wall of the container.

The recess 23 is slotted out longitudinally along its bottom curved surface, as indicated at 28 and 29, for the reception of a pair of semi-circular spacer plates or tape positioners 31 and 32. It should be understood that a plurality of these slots are provided to permit various spacings between the plates 31 and 32 so as to accommodate and center rolls of tape of various widths therebetween. The plates 31 and 32 are apertured as at 33 to facilitate their removal from the tape container. A weighted strap 30, hingedly attached to the tape container 16, as at 35, serves to prevent the tape on the roll 14 from loosening.

The tape moistening device 17 comprises a generally rectangular container 34 secured to the frame 10 by means of the strap 36, a roller 37 being rotatably mounted on a pin 38 which member is received within slotted supports 39 in the side walls of the container. The tape 141 passes under the transverse guide strap 41 and then over the roller 37, rotation of which serves to apply to the adhesive side of the tape, water or other wetting agent 42 picked up from the container.

The tape centering device 18 includes the guide 43 supported at a spaced distance above the main frame 10 by the downwardly turned edges 44,

bolts 46 securing the guide to the floor of the frame. Transverse slots 47 and 48 in the guide 43 and frame 10 respectively permit the passage downwardly therethrough of the tape 141, the tape being centered laterally therein by the centering plate 49, best shown in Figure 4. This member is slidable longitudinally between the downwardly turned edges of the guide 43, and the forward edge of the centering plate is notched out or stepped to provide slots of various widths, as indicated at 51. The slot 47, when unobstructed by the centering plate, will of course accommodate the maximum width of tape. Narrower tapes may be centered in the slot by moving the centering plate forward in the guide 43, the plate being locked in the desired position by means of the thumb nut 52. The thumb nut is received on the stud 53, which member is secured to the guide plate and extends upwardly through the longitudinal slot 54 in the guide 43.

The pressure roller 19, under which the tape next passes, is of cylindrical shape and preferably molded of soft rubber or the like. The shaft 56, upon which the roller 19 is mounted, is rotatably and slidably mounted in vertical slots 57 in each leg of the bracket 58. Affixed to the shaft 56 are the angle members 59, each of which has an upwardly extending rod 61 vertically slidable in the fixed guides 62. Springs 63 received on the guides bias the pressure roller 19 downwardly to force the adhesive tape into intimate contact with the floor surface.

The pointer 13 extends forward from the frame 10 a distance preferably equal to or greater than the longitudinal distance between the wheels whereby the device may be easily guided, by the operator, along a chalk line or the like, and whereby any tendency to depart from the guide line will be apparent to the operator.

Due to the rigid mountings of the wheels, the device will normally follow a straight course, when once started in the right direction. The device will lay tape quickly and accurately along a straight line.

Although I have described a specific embodiment of my invention, it is apparent that modifications thereof may be made by those skilled in the art. Such modifications may be made without departing from the spirit and scope of my invention as set forth in the appended claims.

I claim as my invention:

1. In a device of the character described, a frame, supporting wheels mounted thereon in fixed relation, a tape container mounted on the frame, a tape moistener, a tape centering device and a pressure member all arranged in longitudinal alignment with the tape container, the said tape container having a recess therein generally semi-cylindrical in shape for reception of a roll of tape, a pair of spacer plates, the said recess having a plurality of laterally spaced, longitudinally extending slots therein for reception of the spacer plates, the tape centering device comprising a longitudinal guide having a transversely extending slot therein, a centering plate longitudinally slidable in the guide and having a plurality of transverse portions thereof notched out, and means for sliding and securing the said centering plate in the guide with said notched-out portions thereof in selective alignment with the said transversely extending slot in the guide.

2. In a device of the character described, having a roll of tape for application to a floor surface, a tape receptacle, means for laterally positioning the roll of tape in the receptacle, and a tape guide spaced from the tape receptacle and in alignment therewith, said tape guide comprising a guide plate having a guide slot extending transversely thereof, a centering plate having a plurality of openings of different widths, the centering plate being mounted for sliding movement longitudinally of the guide plate to permit selective alignment of the said openings with the said guide slot, and means for locking the centering plate.

JOHN KAHLER.

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