Aug. 29, 1933. W. M. SPRING 1,924,523

MACHINE FOR UNITING STRIPS OF FLOOR COVERING, OR THE LIKE, TO PRESENT A SEAMLESS UPPER SURFACE

Filed Oct. 15, 1932

Fig. 1.

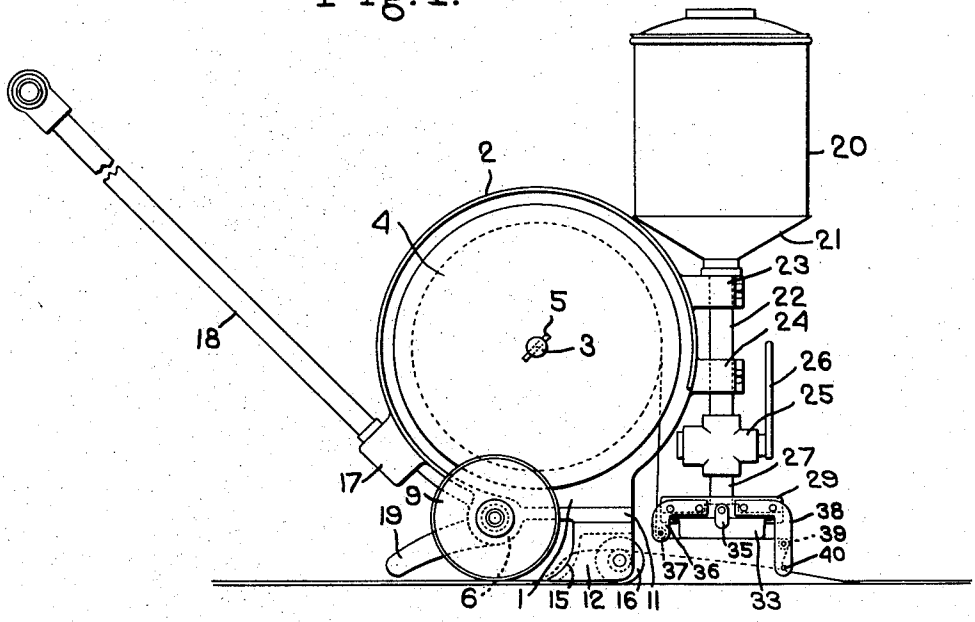


Fig. 2.

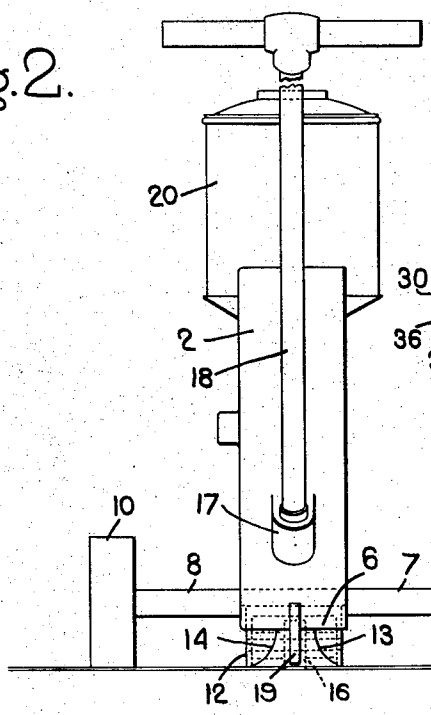
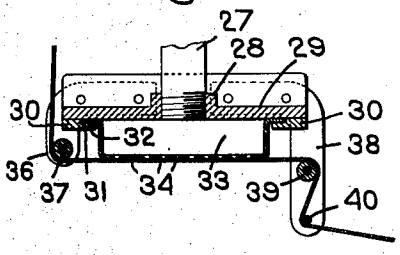


Fig. 3.



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MACHINE FOR UNITING STRIPS OF FLOOR COVERING, OR THE LIKE, TO PRESENT A SEAMLESS UPPER SURFACE

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9 Claims. (Cl. 154—42)

This invention relates to machines for uniting strips of floor covering or the like, lying upon a flat surface with adjacent edges in abutment, by applying a tape having an adhesive coated upper surface to the under faces of adjacent edge portions of the strip as the machine is moved along the abutting edges.

More particularly the invention relates to improvements in machines for uniting strips of floor covering disclosed in the application of Frank H. Higgins filed on the fifteenth day of October, 1932, Serial No. 638,035.

The principal object of the invention is to provide a simplified construction which can be economically manufactured having means operable when the carriage is moved along the abutting edges of the strips progressively to raise adjacent edge portions of the strip temporarily and means for progressively delivering a binding tape having an adhesive coated upper surface beneath the upraised edges of the strips, whereby, upon restoration of the edge portions of the strip to normal position, they will be permanently secured together.

Another object of the invention is to provide a visible guide to enable the operator to move the machine properly along said edges.

These and other objects and features of the invention will more fully appear from the following description and the accompanying drawing and will be particularly pointed out in the claims.

In the drawing:

Fig. 1 is a side elevation of a preferred embodiment of the invention;

Fig. 2 is a front elevation of the same; and,

Fig. 3 is an enlarged longitudinal detail sectional view of the liquid-adhesive container, the means for supporting the same, and the means for guiding the tape in contact with the perforated bottom thereof.

The machine illustrated herein comprises a carriage 1 having a preferably cylindrical casing 2 provided with a central stud 3 upon which a reel of tape 4 is rotatably mounted and held in place by suitable means, as by a cotter pin 5, extending transversely through the end portion of the stud 3.

The carriage is provided with a downwardly extending boss or bosses 6 located beneath the casing 2 and from which axles 7 and 8 extend laterally, and are provided with supporting wheels 9 and 10 located symmetrically with respect to the longitudinal axis of the carriage. The carriage is also provided with a boss 11 having a preferably flat under face to which is secured a plow 12 having curved faces 13 and 14 merging into a central edge 15 adapted to be drawn along the abutting edges of two strips of floor covering lying upon a flat supporting surface and acting as the carriage is moved along to turn up the edges of adjacent portions of the strips of floor covering. Desirably the plow is of hollow construction and a wheel 16 is mounted upon a suitable axis intermediate of the rear portions of the sides of the plow and acts, together with the front wheels 9 and 10, to form a three-point support for the carriage. The lower front portion of the casing desirably is provided with a downwardly extending boss 17 in which a tubular steering tongue 18 is rigidly mounted, the opposite end of which is provided with laterally extending handle members. The carriage desirably is provided with a pointer providing a visible guide to enable the operator to move the carriage properly along the abutting edges of the strips of floor covering to enable the plow symmetrically to turn up adjacent edge portions of the strips in the preferred construction. An arm 19 preferably integral with the boss 6 extends forwardly and downwardly centrally of the machine in proximity to the upper surface of the floor covering and during the movement of the machine is superposed over the edges of the strips, thereby forming a visible guide for directing the plow accurately along said edges. The arm 19 also serves to prevent such depression of the front end of the machine as will interfere with the proper operation of the plow and tape delivering mechanism.

Suitable means are provided for guiding the tape from the reel or other tape supporting means beneath the upraised edge portions of the adjacent strips of floor covering and producing an adhesive upper surface thereupon. If the tape is provided with an adhesive coated surface, suitable means may be provided for progressively rendering the adhesive tacky as by the application of the suitable solvent thereto or by the application of heat to the tape as it is progressively drawn from the supporting means beneath the upraised edges of the floor covering.

In the preferred construction, a cylindrical reservoir 20, containing an adhesive liquid or a solvent for the adhesive, where a coated tape is employed, and having a downwardly tapering bottom 21 with a central outlet, is fixedly mounted upon the upper end of a pipe 22 which is detachably mounted in bosses 23 and 24 extending rearwardly from the casing. A suit-

able valve casing 25 is secured to the lower end of the pipe 22 and is provided with a valve which may be adjustable by movement of a handle 26 connected to the valve stem. The lower end of the valve casing 25 is connected to a pipe 27 which has secured to its lower end means for supporting a container for a solvent for the adhesive or liquid adhesive and provided with means for applying adhesive to the upper face of the tape.

In the preferred construction the lower end of the pipe 27 is secured to a central boss 28 of a channel-shaped member 29 which has secured to its ends plates 30 having guideways 31 to receive the flanged edges 32 of a preferably rectangular-shaped pan 33 having a flat bottom provided with perforations 34. The container or pan 33 is adapted to be assembled upon a support by sliding the flanged edges 32 into the recess 31 and may be retained in position by depending keepers 35 pivotally mounted upon the side flanges of the member 29. By thus detachably securing the pan to its support, it can be readily removed and cleansed.

Means are provided for guiding the upper surface of the tape in contact with the lower face of the pan as it is drawn from the reel by the advancing movement of the carriage. In the preferred construction shown L-shaped brackets 36 are connected to the side flanges of the support 29 and a guide roller 37 is mounted upon suitable bearings at the lower end of the depending arms of the brackets. Other L-shaped brackets 38 are similarly secured to the flanges of the supporting member 29 and extend downwardly into proximity to the floor. A guide roller 39, which is journaled in the brackets 38, engages the under face of the tape and, in co-operation with the guide roller 37, serves to hold the tape in contact with the bottom of the container 33 as it is drawn from the reel during the movement of the machine. Desirably a bar or roller 40, mounted in the lower end of the brackets 38, engages the upper face of the tape to which the adhesive has been applied and serves to spread the same evenly, and also to guide the tape beneath the upturned edge portions of the adjacent strips of floor covering. The outer surfaces of the lower end portions of the brackets 38 also serve to engage the under faces of the upturned edge portions of the floor covering and retain them properly separated to permit the laying of the tape therebeneath.

In the operation of the device the tape is first drawn from the reel beneath the guide roller 37 and over the guide roller 39, thence beneath the spreader 40 and under the upturned edges of the floor covering. The reservoir 20 is filled with a suitable quick-setting adhesive and the valve handle 26 is moved in a direction to open the valve and permit adhesive to flow into the pan or container 33 until a predetermined level of liquid therein is reached. The valve is then adjusted to permit a delivery of liquid to the pan or container sufficient to maintain a predetermined level during the movement of the machine. The machine is then drawn along the flat surface which supports the floor covering, and the plow serves to turn up the adjacent edges of the floor covering progressively so that during the progress of the machine the upturned edges will be separated sufficiently to permit the tape to be drawn from the reel across the under surface of the perforated bottom of the pan, thence beneath the spreader 40 and beneath the upturned edges of the floor covering. As the machine advances, the resilience of the material of the floor covering will restore its upturned edge portions to horizontal position with the edges thereof in close abutment, and the edge portions of the floor covering, which overlap the tape, will be permanently secured thereto, so that the floor covering when thus laid will present a substantially seamless surface.

The removal of the liquid adhesive container or pan enables it to be readily cleansed after use so that the apertures therein will not become clogged with the adhesive thereby insuring proper operation of the machine during successive uses.

It will be understood that the particular embodiment of the invention disclosed herein is of an illustrative character and is not restrictive of the meaning and scope of the following claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A machine for uniting strips of floor covering or the like, lying on a flat supporting surface with adjacent edges in abutment, comprising a portable carriage having means to support a length of tape, a pair of front supporting wheels, a plow located rearwardly of said wheels and centrally of the paths thereof having means to engage said flat surface and acting with said wheels to provide a three-point support for said carriage and having means operable when the carriage is moved along said edges progressively to raise the adjacent edge portions of said strips temporarily, means on said carriage for guiding the tape beneath the upraised portions of said strip, and means for progressively producing an adhesive surface upon the upper face of said strip.

2. A machine for uniting strips of floor covering or the like, lying on a flat supporting surface with adjacent edges in abutment, comprising a portable carriage having means operable when the carriage is moved along said edges progressively to raise adjacent edge portions of the strips temporarily, means for progressively delivering a binding tape having an adhesive coated upper surface beneath the upraised edges of said strips and a pointer on said carriage extending into proximity to said floor covering operable when superposed over said abutting edges to provide a visible guide enabling the operator to move the carriage properly along said edges.

3. A machine for uniting strips of floor covering or the like, lying on a flat supporting surface with adjacent edges in abutment comprising a portable carriage having means to support a length of tape, a pair of front supporting wheels, a plow located rearwardly of said wheels and centrally of the paths thereof having means to engage said flat surface and acting with said wheels to provide a three-point support for said carriage and having means operable when the carriage is moved along said edges progressively to raise the adjacent edge portions of said strips temporarily, means mounted on said carriage for guiding the tape beneath the upraised portions of the strip, and means for progressively applying a liquid to the upper surface of the strip to produce a tacky adhesive upper surface thereupon.

4. A machine for uniting strips of floor cov-

ering or the like, lying on a flat supporting surface with adjacent edges in abutment, comprising a portable carriage having means to support a reel of tape, a pair of front supporting wheels, a plow located rearwardly of said wheels and centrally of the paths thereof having means to engage said flat surface and acting with said wheels to provide a three-point support for said carriage and having means operable when the carriage is moved along said edges progressively to raise the adjacent edge portions of said strips temporarily, a pointer on said carriage extending into proximity to said floor covering operable when superposed over said abutting edges to provide a visible guide enabling the operator to move the carriage properly along said edges, means on said carriage for guiding the tape from said reel beneath the upraised portions of said strip, and means for progressively applying an adhesive to the upper surface of said strip as it is drawn from said reel by the movement of the carriage.

5. A machine for uniting strips of floor covering or the like, lying on a flat supporting surface with adjacent edges in abutment, comprising a portable carriage having a casing provided with means for supporting a reel of tape, a pair of front supporting wheels located beneath said carriage, a steering tongue rigid with said casing and extending forwardly therefrom, a plow located rearwardly of said wheels and centrally of the paths thereof having an anti-friction wheel to engage said flat surface and acting with said front wheels to provide a three-point support for said carriage and provided with means operable when the carriage is moved along said abutting edges progressively to raise adjacent edge portions of said strips temporarily, means on said carriage for guiding the tape from said reel beneath the upraised portions of said strip, means for progressively applying a liquid adhesive to the upper surface of said strip as it is drawn from said reel by the movement of said carriage, and a rigid arm projecting forwardly from and centrally of said carriage into proximity to said floor covering providing a visible guide to enable the operator to move the carriage properly along said edges and also to prevent such depression of the tongue as would interfere with the proper operation of the edge-raising and tape-delivering mechanism.

6. A machine for uniting strips of floor covering or the like, lying on a flat surface with adjacent edges in abutment, comprising a portable carriage having means operable when the carriage is moved along said edges progressively to raise adjacent edge portions of said strips temporarily, means on said carriage for supporting a reel of tape, means for directing the tape from said reel beneath the upraised edges of said strip as the carriage is moved along said edges including guides spaced apart in a substantially horizontal plane, a liquid-adhesive container having a perforated bottom located intermediate of said guides to engage the tape passing over said guides and acting to deliver a coating of adhesive upon the upper surface of said tape.

7. A machine for uniting strips of floor covering or the like, lying on a flat surface with adjacent edges in abutment, comprising a portable carriage having means operable when the carriage is moved along said edges progressively to raise adjacent edge portions of said strips temporarily, means on said carriage for supporting a reel of tape, means for directing the tape from said reel beneath the upraised edges of said strip as the carriage is moved along said edges including guides spaced apart in a substantially horizontal plane, a liquid-adhesive container having a perforated bottom located intermediate of said guides to engage the tape passing over said guides and acting to deliver a coating of adhesive upon the upper surface of said tape, and means located rearwardly of said adhesive-applying means and in proximity to the flat surface which supports the strip operable to spread the adhesive uniformly over the tape and to guide the tape beneath the upraised edge portions of said strips.

8. A machine for uniting strips of floor covering or the like, lying on a flat surface with adjacent edges in abutment, comprising a portable carriage having means operable when the carriage is moved along said edges progressively to raise adjacent edge portions of said strips temporarily, means on said carriage for supporting a reel of tape, means for directing the tape from said reel beneath the upraised edges of said strip as the carriage is moved along said edges including guides spaced apart in a substantially horizontal plane, a liquid-adhesive container located intermediate of said guides and having a flat perforated bottom to engage the tape passing over said guides, a reservoir for adhesive mounted upon said carriage having means communicating with said adhesive-container, and regulating means operable to control the delivery of liquid-adhesive to said container to maintain a substantially uniform depth of liquid-adhesive therein.

9. A machine for uniting strips of floor covering or the like, lying on a flat surface with adjacent edges in abutment, comprising a portable carriage having a casing provided with means to support a reel of tape and having means operable when the carriage is moved along said edges progressively to raise adjacent edge portions of said tape temporarily, a reservoir mounted on said casing rearwardly of said edge-raising means having a vertical delivery pipe provided with a regulating valve, means carried by the lower end of said pipe for supporting a liquid-adhesive container having a flat perforated bottom removably mounted in said supporting means, means for guiding the tape across and in contact with the bottom of said container including rearward downwardly extending brackets positioned to engage the under face of the upturned edges of the strips and having upper guiding means for said tape and lower guiding means engaging the coated surface of the tape and acting to spread the adhesive thereon and to direct the same beneath the upturned edges of the tape.

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