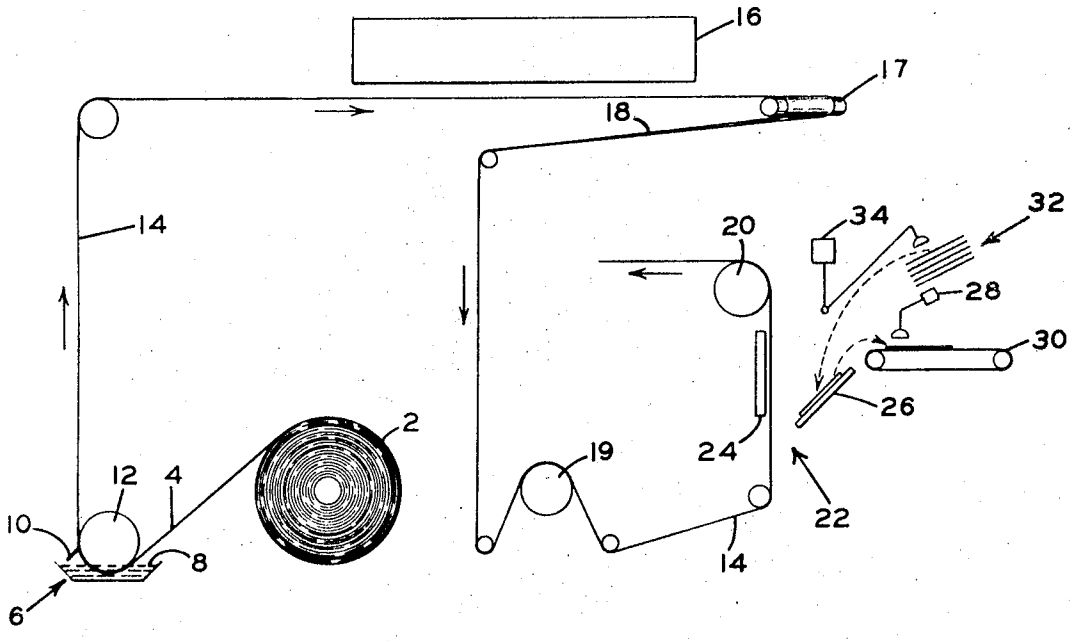
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METHOD AND APPARATUS FOR PRODUCING ADHESIVE-BACKED TILE

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METHOD AND APPARATUS FOR PRODUCING ADHESIVE-BACKED TILE

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ABSTRACT OF THE DISCLOSURE

The process involves the unwinding of a roll of paper and coating it with an adhesive which is subsequently dried. The paper is then passed through an open press and is joined to a tile which is held by one platen of the press in the center of a rule die on the platen. The press closes and permits the rule die to cut a blank of paper from the roll of paper and, at the same time, press the blank of paper against the tile. Subsequent removal of the paper will leave the adhesive coating on the tile and permit the tile to adhere to any desired surface. The apparatus herein carries out the above process.

BACKGROUND OF THE INVENTION

Field of the invention

The invention herein is a method and apparatus for placing an adhesive backing on an article and, more particularly, for placing an adhesive backing on a floor tile.

Description of the prior art

Place and press tile are becoming quite popular with the home handyman. This type of floor tile has an adhesive coating on the back side, and this adhesive coating is usually covered by paper. The paper is removed and the pressure-sensitive adhesive will then hold the tile in position on the floor. Consequently, the home handyman need not be concerned with the spreading of an adhesive coating before the tile is placed on the floor.

U.S. Pat. No. 2,638,430 discloses a tile structure with adhesive on the back side thereof. U.S. Pat. No. 2,946,370 discloses a structure wherein an adhesive is placed on a backing and then another article is placed against the adhesive-covered backing. At a later date, the removal of the backing sheet from the article will leave the adhesive on the back surface of the article.

Present apparatus for applying adhesive to floor tile requires the coating of the floor tile with an adhesive. The adhesive is dried and then a paper covering is placed over the adhesive to prevent a plurality of the tiles from sticking together when they are packed in a box. When the tile is used, the paper must be removed to expose the adhesive for its use.

SUMMARY OF THE INVENTION

Paper is unwound from a large roll and passed through an adhesive coater which places adhesive on the one surface of the paper. The paper then passes through a drying area to permit the adhesive to dry. The paper with the dry adhesive then passes through an open platen die in a conventional printing press type structure. On one platen there is positioned a rule die which is approximately the same size as the tile unit. Tile is fed from a magazine into the rule die. The two platens of the printing press structure close with the tile within the rule die and the paper also between the two contacting surfaces of the platens. The rule die cuts out a blank of paper which will be approximately the size of the tile. The two platens cause the rule die to cut out the blank of paper and at the same time applies the blank of paper to the back of the tile product. When the platen structure opens up, the paper-covered tile product is removed from the rule die and a new tile product is dropped into the rule die. The long sheet of paper is indexed, and a new piece of paper is now in position to be fastened to the back of the next tile unit. The adhesive being used on the paper has a greater affinity for the back of a tile than it does the paper. Consequently, the removal of the paper from the tile will leave the adhesive on the tile so that the tile may now be readily adhered in position.

BRIEF DESCRIPTION OF THE DRAWING

The single figure of the drawing is a schematic showing of the method and apparatus herein.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A roll of paper **2** is provided with the paper width being approximately that of the tile product. The paper strip **4** is unwound from the roll and passed through an adhesive coater assembly **6**. This assembly consists of a pool of adhesive **8**, a doctor blade **10** and a roller **12** around which the paper passes as it moves through the pool of adhesive. The doctor blade wipes off excess adhesive. The adhesive-coated paper **14** then passes through a drying area **16** which dries the adhesive. The paper passes around a dual bar structure **17** which has the bars set at 45° relative to paper direction of movement and this turns the papers so that surface **18** is the adhesive covered surface. The paper then passes around a drive roll structure **19** which is used to feed the paper from the roll through the coater and dryer. Another roll **20** is used to bring the paper through the platen die structure and to index the paper through the platen die structure as it is needed. The paper with the adhesive passes through the platen die structure so that the side of the paper with the adhesive faces the platen structure of the press which contains the rule die and tile.

The press assembly **22** is basically a printing press structure and is in reality nothing more than a conventional Kluge press which has been modified slightly. This press structure normally consists of a fixed platen **24** to which would be normally placed the inked printing master. A movable platen **26** would receive a piece of paper and would move up against the ink master. This would carry out a normal printing operation. The press herein will operate in the same manner with only the following slight modifications.

The fixed platen **24** has passing across its surface the strip of adhesive-coated paper **14**. The adhesive-coated surface faces away from the platen. A second platen contains a rule die. In the center of the rule die there is room for a floor tile to drop within the rule die. The movable platen moves up against the fixed platen and, as the two platens close, the rule die cuts a blank of paper out of the strip of paper **14**. Since the tile is within the rule die, the paper is pressed against the tile. The adhesive on the paper will cause the paper to stick to the tile. When the press platens are opened, appropriate vacuum fingers **28** grasp the paper-coated tile and remove it from the rule die and place it on a conveyer **30**. The finished tile then moves off for packing. A tile magazine **32** is maintained holding tile which has yet to have the adhesive-coated paper applied thereto. Another appropriate vacuum finger structure **34** removes tile from the tile magazine and places it upon the rule die structure. The dual platen structure then goes through its closing operation and paper is applied to that tile. When the platen structure of the press is opened, the paper-covered tile can now be removed from the rule die.

As was indicated, U.S. Pat. No. 2,946,370 discloses a structure wherein an adhesive is used which has a greater

affinity for one surface than another. The adhesive has the greater affinity for the finished product than it does for the adhesive carrier. The same type adhesive would be utilized in the above-described apparatus wherein the adhesive will have a greater affinity for the floor tile than it will have for the paper. Consequently, the removal of the paper will leave the adhesive still on the tile product. The tile product is now capable of being adhesively fastened to a floor surface.

What is claimed is:

1. An apparatus for providing an adhesive coating to a tile product comprising a paper unwinding structure which feeds out a strip of paper, a coating structure for providing an adhesive to one surface of the strip of paper, a dual platen structure having at least one movable platen, means passing the adhesive coated paper through the platen structure, one of the platen structures having thereon a rule die and a cavity for receiving a floor tile, means for closing the platen structure so that the rule die cuts out only a blank of paper from the adhesive-coated strip of paper and applies the blank of paper to the back of the floor tile in the rule die cavity.

2. The apparatus of claim 1 wherein means are provided to dry the adhesive.

3. The apparatus of claim 1 wherein apparatus is provided for feeding tile products to the rule die and for extracting the paper-covered tile products from the rule die.

4. The method of making a floor tile with an adhesive backing wherein the floor tile is provided with an adhesive coating covered by a paper covering wherein the adhesive has a greater affinity for the floor tile than it does for the paper, the steps of: applying the adhesive to a strip of paper, passing the strip of paper between a double surface press structure which has on one surface a rule die and a cavity for receiving a floor tile, closing the press structure so that the rule die cuts only a blank of paper out of the strip of paper and applies the blank of paper to the floor tile in the rule die cavity.

5. The method of claim 4 wherein there is provided means for placing the floor tile within the rule die and then removing the paper-covered floor tile from the rule die.

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