U.S. Pat. No. 4,309,238, to Hauk, discloses a drywall taping device which has a control for adjusting the tensioning force applied to toothed traction wheels thereof.

U.S. Pat. No. 4,358,337, to Johnson et al., discloses a tape applicator which utilizes a replaceable joint compound cartridge system.

U.S. Pat. No. 4,452,663, discloses a wallboard joint taping apparatus including an elongated frame having a tape press wheel mounted on the forward end with a compound reservoir mounted on the frame, intermediate the ends, with aligned slots through the lower edge of the wall with a source of tape mounted on the other end of the frame with the tape passing through the slots in the compound container for picking up taping compound on the surface thereof and passing over the roller for application and pressing by the press wheel into a joint between adjacent wallboard panels.

U.S. Pat. No. 4,516,868, to Molnar, discloses a device designed to apply a layer of joint compound over an already installed length of tape.

U.S. Pat. No. 4,592,797, to Carlson, discloses a tube including a cylindrical roller for applying pressure to embed a tape in adhesive, the roller being designed to allow the mud which is on (he underside of the tape to flow over the top of the tape and coat that surface as well.

U.S. Pat. No. 4,608,116, to Braselton, discloses a baseboard edge taping tool which includes a severing knife and which is specifically designed to enable cutting operations at a corner.

Other references relating to tape dispensing and mastic dispensing include U.S. Pat. No. 2,972,428, to Dubbs, which discloses a tape applicator including microswitch controls for advancing, severing and applying a pressure sensitive tape. Movements of the tape are controlled incrementally on a cyclicable basis.

U.S. Pat. No. 3,785,535, to Ames, discloses a mastic supply pump outlet for filling different types of mastic-applying tools.

U.S. Pat. No. 4,406,247, to Baughman et al., discloses control of the flow of adhesive in an adhesive dispensing system wherein a logic control unit receives signals indicative of various process conditions and in response thereto controls. adhesive dispensing.

U.S. Pat. No. 4,477,304, to Westermann, discloses a tool designed to apply a predetermined quantity of adhesive on a workpiece.

U.S. Pat. No. 4,584,047, to Vanderpool et al., discloses a hand-held labeling device which senses the position of the web of labels and controls other operation in response to this sensed condition.

Despite the great efforts which have been applied to reduce the labor and time involved in wallboard finishing, there is still a marked need for an efficient and useful tool which is easy to operate and which will allow a one-step finishing of wallboard.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a process for wallboard finishing which requires only a single step.

It is a further object of the present invention to provide an apparatus for effecting such a single step process.

As will become readily apparent hereinafter, the above objects of the invention are achieved by the provision of a method for taping joints between pieces of wallboard comprising the substantially simultaneous steps of: (a) applying a first layer of a joint compound to a joint between pieces of wallboard, the first layer of the joint compound having a first predetermined width, the first layer of the joint compound being substantially centered, widthwise, on the joint; (b) embedding a wallboard tape in the first layer of the joint compound, the wallboard tape having a width substantially equal to the first predetermined width, the wallboard tape being substantially. centered, widthwise, on the joint; (c) overcoating the embedded wallboard tape with at least one additional layer of the joint compound, the at least one additional layer of the joint compound having a width greater than the first predetermined width, the at least one additional layer of the joint compound being substantially centered, widthwise, on the joint.

In a preferred embodiment of the method of the present invention, the step (c) comprises the substantially simultaneous sub-steps of: (c-1) overcoating the embedded wallboard tape with a second layer of the joint compound, the second layer of the joint compound having a second predetermined width, the second predetermined width being greater than the first predetermined width, the second layer of the joint compound being substantially centered, widthwise, on the joint; and (c-2) overcoating the second layer if the joint compound with a third layer of the joint compound, the third layer of the joint compound having a third predetermined width, the third predetermined width being greater than the second predetermined width, the third layer of the joint compound being substantially centered, widthwise, on the joint.

In a particularly preferred embodiment of the present method, the method comprises the further step (d) of imprinting a surface pattern on the third layer of the joint compound, preferably, the surface pattern matches a surface pattern on the wallboard.

The present invention also provides a novel joint compound, which is quick-setting, so as to allow for substantially simultaneous application of multiple layers of joint compound to a given joint. The joint compound comprises about 45% by weight of calcium sulfate, about 35% by weight of a room temperature evaporable alcohol, about 10% by weight of polyvinyl alcohol, about 5% by weight of polyvinyl acetate, about 3% by weight talc and about 2% by weight mica.

The present invention also provides an apparatus for taping joints between pieces of wallboard, comprising a taping head, slidingly contactable with a wall, for substantially simultaneously applying a first layer of a joint compound to a joint between pieces of wallboard, embedding a wallboard tape in the first layer of the joint compound and overcoating the embedded wallboard tape with at least one additional layer of the joint compound; a handle, connected to the taping head, for supporting the taping head, the handle being manually graspable by an operator, the handle having a fluid conduit formed therein for passing joint compound to the taping head; a tape supply mounted on the handle for supplying wallboard tape to the taping head; a backpack, wearable by the operator, for supporting a supply of the joint compound and for producing a pressurized stream of the joint compound; a flexible connection for fluidically interconnecting the backpack and the fluid conduit to pass the pressurized stream of the joint compound from the backpack to the fluid conduit.

In a preferred embodiment of the apparatus according to the present invention, the taping head comprises