The present invention relates to a tapping knife for tapping and cementing the joints between panels of gypsum board or drywall and more particularly to a tapping knife where the blade is angularly adjustable relative to the handle so that a workman may adjust the blade to facilitate work on walls or ceilings.

Among the objects of the present invention is the provision of a relatively wide tapping knife having a handle and a knife blade which are angularly adjustable relative to each other. The blade adjusts to fit the personal needs of the user to make the job less tiring. The knife can be used both for walls and sides and for overhead ceilings with the blade being readily adjustable for each type of operation according to the personal requirements of the user and ease of manipulation.

Another object of the present invention is the provision of an adjustable tapping knife with the blade mounted on the handle through an elongated bolt extending longitudinally through the handle and terminating at one end in a threaded portion which cooperates with the blade and the opposite end terminates in a suitable enlarged head adapted to cooperate with a tool, such as a wrench, to loosen or tighten the bolt and thus retain the blade in an adjusted position.

The present invention further comprehends the provision of a relatively wide and flexible blade formed of a suitable material, such as stainless steel. The relatively wide blade provides greater and more effective coverage, fine feathering of the cement used on the tape and less work to obtain a satisfactory joint. The flexibility of the blade provides for better control of the knife to obtain the desired smooth finish. Also the blade provides longer wear and easier cleaning.

A further object of the present invention is the provision of a tapping knife having a flat flexible blade with a long straight edge and the opposite edge being curved or rolled to receive a solid rod therein. An elongated slot is formed centrally in the curved portion and aligned with a threaded opening extending diametrically through the rod. The handle is provided with a concaved end wall in the end adjacent the blade to receive the curved edge, and an elongated bolt extends longitudinally through the handle and slot in the curved edge of the blade and threadedly engages the rod within the curved edge to provide accurate and ready adjustment of the blade and retain the same in adjusted position.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawing:

FIG. 1 is a top plan view of the adjustable tapping knife.

FIG. 2 is a rear elevational view of the tapping knife of FIG. 1.

FIG. 3 is a vertical cross sectional view through the blade and handle taken on the line 3--3 of FIG. 1 and showing the handle in one position of adjustment in solid lines and two other positions of adjustment in dotted lines.

FIG. 4 is a fragmentary enlarged vertical cross sectional view like FIG. 3 but showing the inner end of the handle, the curved portion of the blade and the adjusting screw.

FIG. 5 is a fragmentary enlarged vertical cross sectional view taken on the line 5--5 of FIG. 4 and showing the curved edge of the blade and the elongated slot therein.

Referring more particularly to the drawing wherein is shown an illustrative embodiment of the present invention, FIG. 1 discloses an adjustable tapping knife 10 having a generally rectangular blade 11 and a handle 12 for a workman to manipulate the blade in tapping or cementing operations. The blade 11 is formed from a flat generally rectangular piece of flexible metal, preferably stainless steel, and has a long working edge 13, spaced parallel ends 14 which terminate in tapered or converging edges 15. The converging edges 15 at the rear merge into a rolled or arcuate edge 16 opposite to the straight working edge 13, which rolled edge terminates short of a cylinder in a flat portion 17 perpendicular to the plane of the blade.

Within the rolled edge 16 is conformably received a solid metal rod 18 having a transverse internally threaded opening 19 centrally located between its ends. Formed intermediate the edges 14 of the blade on the rolled edge 16 is an elongated arcuate slot 21 extending transversely to the longitudinal axis of the rolled edge 16 and aligned with the threaded opening 19 in the rod 18.

The handle 12 includes a tapering hand gripping portion 22 with a rounded outer end 23 and an enlarged inner end having a flat end surface 24. A cylindrical member or end cap 25 formed of a suitable metal has a flat surface abutting the inner end of the handle 12 and the opposite end has a diametrically extending dishe or concaved groove 26 to conformably receive and accommodate the rolled edge 16 of the blade. The member or cap 25 has a central axially extending opening 27 which is aligned with an axially extending bore 28 through the longitudinal axis of the handle. The member 25 also has a tapered surface 29 intersecting the side of the groove to accommodate a workman's hand which is normally gripping the handle adjacent the blade.

An elongated bolt 31 having an enlarged head 32 at one end and threaded as at 33 at the opposite end extends through the axial bore 28 in the handle 12 and the aligned opening 27 in the member 25, the slot 21 in the rolled edge 16 and the threaded end 33 received in the threaded opening 19 in the rod 18. A washer 34 is positioned between the threaded end and the end of the handle and the enlarged head 32 on the bolt 31. The enlarged head 32 may be of any suitable configuration such as hexagonal or square, to be engaged by a wrench or other suitable tool to loosen or tighten the bolt 31.

By loosening the bolt 31, the handle 12, bolt 31 and rod 18 may be rotated relative to the blade 11 with the rod 18 rotating within the rolled edge 16. Rotation is limited by the length of the arcuate slot 21 which extends over an arc of approximately 180°. Movement of the handle 12 relative to the blade 11 is limited to an arc of approximately 120°.

The blade is relatively wide and flexible so as to conform to the surface being worked on. Drywall or gypsum board generally has tapered adjacent or abutting edges so that a layer of cement is applied to provide a smooth and flat surface, after which a layer of tape and additional surfacing of cement may be applied to cover the joint and build up the surface to merge into the remaining surface of the drywall. The blade, being flexible, allows each layer or application of cement or sealing compound to be properly smoothed and feathered. Use of this tapping knife with the adjustable blade provides for ease of manipulation and usage for both walls and ceilings with less work and less sanding. The adjustment can be made to fit personal need of each workman to make the job less tiring.
Having disclosed the invention, I claim:

1. An adjustable taping knife consisting of a relatively wide, flat blade having a straight working edge and an opposite rolled edge, said working edge and rolled edge being the two parallel long edges of the wide blade, an elongated rod positioned within said rolled edge and having a centrally located threaded opening extending transversely and diametrically therethrough, said rolled edge of said blade having an elongated arcuate slot disposed perpendicular to the longitudinal axis of the rod in said rolled edge opposite said working edge and aligned with the opening in said rod, a handle with a gripping member at the forward end thereof, said member having a concave groove extending across one end to conformably receive the rolled edge of the blade, an elongated bolt extending axially through the handle and said arcuate slot in the rolled edge and threadingly engaging said rod to retain the handle and blade in a fixed position when tightened and, when loosened, allowing angular adjustment between the handle and the blade.

2. An adjustable taping knife as set forth in claim 1, in which the relatively wide flat blade is formed of flexible metal providing a flexible working edge so that the blade readily conforms to the contours of the work as it is moved thereover by the operator in its adjusted position.

References Cited by the Examiner

UNITED STATES PATENTS

1,171,738 2/16 Mallet.
1,297,541 3/19 Campbell .................. 15—235.4
1,654,449 12/27 Benzing .................. 15—235.7
2,425,215 8/47 West. ...................... 15—235.5
2,624,111 1/53 Weeks ...................... 30—171
2,912,851 11/59 Karnes ...................... 15—235.5

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