Oct. 29, 1968 G. M. RAPAPORT 3,407,499

TAPPING TOOL

Filed June 6, 1966

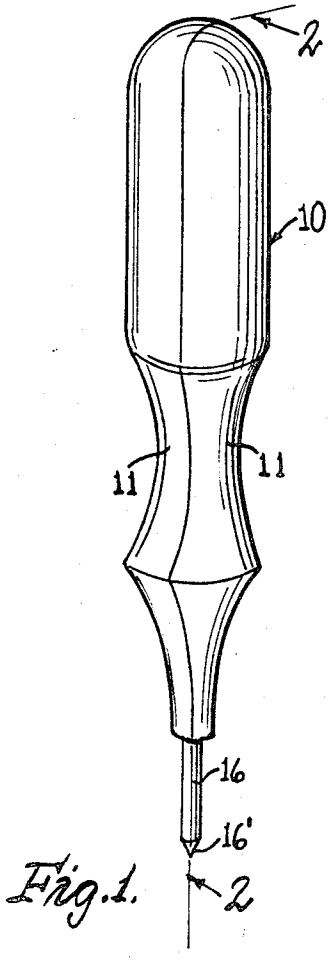


Fig. 1.

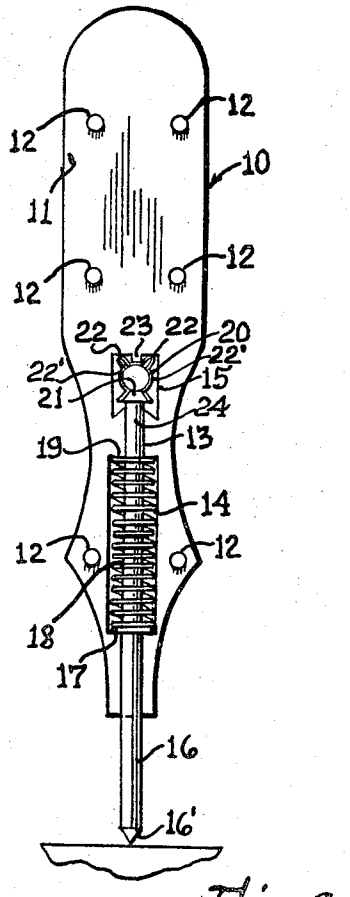


Fig. 2.

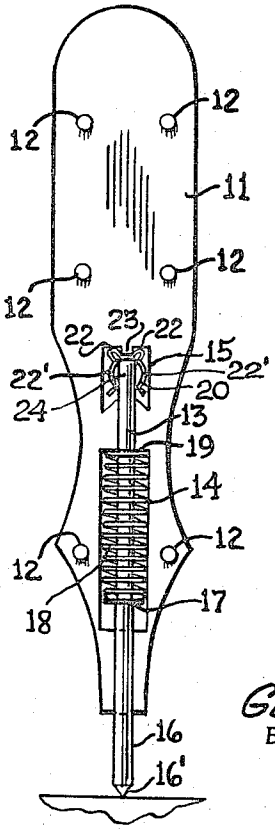


Fig. 3.

INVENTOR.
GERALD M. RAPAPORT
BY
Edward C. Threedy
HIS ATTORNEY.

United States Patent Office 3,407,499 Patented Oct. 29, 1968

3,407,499

TAPPING TOOL

Gerald M. Rapaport, Chicago, Ill., assignor to American Toy and Furniture Co., Inc., Chicago, Ill., a corporation of Illinois

Filed June 6, 1966, Ser. No. 555,555
1 Claim. (Cl. 30—367)

ABSTRACT OF THE DISCLOSURE

A tool punch having a punch-like member slidably associated within a hollow handle which provides therein spring and detent members normally resisting movement of the punch member in one direction within the handle until overcome by additional force of movement of the handle to cause a blow-like reaction onto the punch member, and with the spring member normally urging the punch-like member in an opposite direction outwardly of the handle.

Tapping tools, which are in use today for producing designs on the surface of metallic plates or the like, include a handle portion carrying a fixed pointed punch. The user will firmly grasp the handle in the palm of his hand and press the punch down upon the metal surface to produce a design thereon formed by making a series of indentations or depressions in the metal plate, or he may utilize a small hammer or other tool for applying the desired pressure. My improved tool has for its object the provision of a handle portion and punch. The handle portion is movable relative to the punch and is provided with means which, after a predetermined movement between the handle portion and the punch, will resist further movement of the handle, thus to require added pressure on the handle to effect further movement thereof relative to the punch. This added pressure will result in a hammerlike action of the handle against the punch so as to effectively tap or punch the metal plate to produce an indentation in the latter.

Another object of the invention is the provision of spring means for returning the punch to its projected position with respect to the handle portion after each tapping operation.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

FIG. 1 is a perspective view of the invention;

FIG. 2 is a sectional detail view taken substantially on line 2—2 of FIG. 1;

FIG. 3 is a sectional detail view similar to FIG. 2, but showing the parts in a different position with respect to each other.

The several objects of this invention are accomplished by the preferred form of construction shown in the accompanying drawings. In this connection, an elongated handle is indicated at **10**. This handle comprises two complementary sections **11**, one of which is provided with laterally projecting dowel pins **12** which engage in openings formed in the other section. When the pins **12** are thus engaged in such openings in the other section, the sections are secured together by cement or the like.

Each handle section **11** is of substantially the same form and construction and includes an elongated bore **13** intermediate the ends of which is a recess **14**. The

inner end portion of the bore **13** terminates in a pocket **15**.

A punch **16** provided with a pointed end portion **16'** is slidably arranged in the bore. This punch carries a stop **17** engaging one end portion of a spring **18**, the opposite end portion of the spring **18** bearing against the end wall **19** of the recess **14**. The spring **18** normally projects the punch **16** in an outwardly extending direction with respect to the handle **10**.

In the pocket **15** is arranged a yieldable detent **20** which has an open end **21**. The detent has laterally extending portions **22** which engage upon opposite sides of a rib **23** formed in the upper end of the pocket **15** as shown, thus to allow the opposite sides **22'** of the detent **20** to yield, as hereinafter explained. The open end **21** of the detent **20** is defined by outwardly flaring edge portions as shown. The upper end portion **24** of the punch **16** is adapted to be yieldably projected in the detent **20** for reasons hereinafter set forth. When the sections **11** are placed in confronting relation to form the handle **10**, the detent **20** will be firmly held in the pocket **15**.

The handle may be of any approved shape such as suitable for holding firmly and comfortably in the palm of the hand.

In use the user places the punch **16** with its pointed end portion **16'** upon the metal plate in which the design is to be made. He will first move the handle **10** relative to the punch **16** and, as the punch **16** contacts the open end **21** of the detent **20**, its movement will be resisted, thereby requiring application of added pressure upon the handle by the user. In applying this added pressure, the punch **16** will be moved with snap-like action into the detent, bringing the handle **10** down upon the punch **16** in hammerlike action, thus to produce the desired effect of an indentation upon the metal surface by the tip **16'** of the punch **16**. When the added pressure is released from the handle, the spring **18** will be of sufficient strength to project the punch **16** in a direction to withdraw its end **24** from the detent **20**, thus placing the punch **16** in condition for another tapping or punching operation upon the metal plate.

My improved structure eliminates the use of a tapping hammer and also provides a punch which may be easily and comfortably operated by the use of but one hand of the user, and one which produces a desired uniformity of indentations.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A tapping tool for producing a design formed of a series of indentations comprising

(a) a body providing a handle having an internal pocket between its opposite end portions and an elongated bore extending from one end of the body and terminating into said pocket,

(b) said bore intermediate its opposite end portions providing an elongated enlarged recess,

(c) a punch slidably positioned in the bore and normally having an end portion projecting from said one end of said body,

(d) a spring arranged in the recess and encircling the punch,

(e) an integral stop carried by and movable with the punch and engageable with one end of said spring,

(f) a yieldable detent in said pocket adjacent the inner end of the punch,

(g) said detent being open at one end to yieldably receive said inner end of said punch when said body is initially moved a predetermined distance longitudinally of said punch,

(h) said detent acting to resist movement of the body relative to the punch to require increased applied force applied on the body to move the latter in hammerlike action against the punch,

(i) said spring acting on said stop to project the punch from yieldable contact with the detent and from the end of said punch.

References Cited

UNITED STATES PATENTS

947,391	1/1910	Michael	30—367
1,384,330	7/1921	Moshier	81—52.35
2,384,707	9/1945	Sweet	30—367
2,787,178	4/1957	Maxim	30—367
3,029,512	4/1962	Saxton	30—367

FOREIGN PATENTS

610,208	10/1948	Great Britain.

CHARLES W. LANHAM, *Primary Examiner.*

G. P. CROSBY, *Assistant Examiner.*