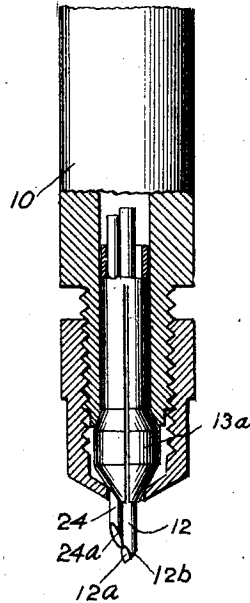


P. F. DUSHA AND A. FEYK.
COMBINED DRILL AND REAMER FOR PEARL BUTTONS.
APPLICATION FILED OCT. 17, 1919.

1,411,207.

Patented Mar. 28, 1922.

Fig. 1.



WITNESSES
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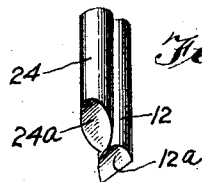


Fig. 2.

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PAUL F. DUSHA, OF NEW YORK, AND ANTON FEYK, OF BOHEMIA, NEW YORK.

COMBINED DRILL AND REAMER FOR PEARL BUTTONS.

1,411,207.

Specification of Letters Patent. Patented Mar. 28, 1922.

Application filed October 17, 1919. Serial No. 331,340.

To all whom it may concern:

Be it known that we, PAUL F. DUSHA and ANTON FEYK, citizens of the United States, and residents of the city of New York, borough of Manhattan, in the county and State of New York, and Bohemia, in the county of Suffolk and State of New York, respectively, have invented a new and Improved Combined Drill and Reamer for Pearl Buttons, of which the following is a full, clear, and exact description.

This invention relates to pearl button manufacturing machinery and constitutes an improvement on the devices described and claimed in the Letters Patent of the United States issued on our application to Holub-Dusha Co., of New York, on the 28th day of November 1916, No. 1,206,518.

Among the objects of the present improvement is to provide a combined drill and countersink for the making and finishing of a buttonhole and in a single or continuous operation of the drilling machine.

A further object of the invention is to provide a combined drill and countersink of such a character as to enable it to be maintained sharp automatically by any suitable means, such for instance as the sharpening means set forth in the aforesaid patent.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Fig. 1 is a vertical longitudinal section of a modified form of combined drill and countersink and holding means therefor; and

Fig. 2 is an enlarged perspective view of the combined drill and countersink of the character shown in Fig. 1.

Referring more specifically to the drawings, we show at 10 a spindle of any suitable construction and adapted to be rotated, in the usual practice of these machines, at high speed while being revolved around the axis of the entire machine in the operation thereof upon a succession of buttons. The drill 12 is shown secured in the specially

formed chuck 13^a. Combined with the drill 12 is a special countersink bit 24, the same being formed from a single bar or wire of high speed steel or the equivalent, the same as the drill 12. In order to combine the countersink bit 24 with the drill 12, we provide a specially formed chuck 13^a adapted to receive the drill 12 precisely in its axis as is necessary for the drilling of a hole in the button, and having a portion cut away in the side for the reception of the countersink bit 24 so that the latter will lie directly against the drill and be carried by means of the chuck and spindle around the axis of the drill.

When the drill is brought down in the operation of the machine to drill a hole in the button after the drill point passes through the button, the countersink bit 24 will be brought into action to smooth and countersink the upper edge of the hole to prevent thread cutting. Obviously the operation is completed by a single longitudinal movement of the drill and countersinking devices with practically no more loss of time than in the simple drilling of the hole under the old practice.

In the formation of the cutting end of the drill with cutting edges of bevel facets 12^a and 12^b kept sharpened automatically, as described in the above-mentioned patent, we find that the same automatic action of the sharpening wheels will at the same time keep the countersink bit sharpened with the formation of a facet 24^a which lies in the same plane as the main facet 12^a of the drill point. By virtue of the inclination of this plane with respect to the axis of the drill we find that the effective length of the drill below the cutting portion of the countersink bit is always ample for the formation of the main portion of the button-hole.

We would state in conclusion that while the illustrated example constitutes a practical embodiment of our invention, we do not limit ourselves strictly to the exact details herein illustrated since manifestly the same can be considerably varied without departing from the spirit of the invention as defined in the appended claims.

We claim:

1. In combination with a drill having a wedge-shaped cutting end, a countersink bar of convex shape, a face cut on the counter-

sink bar, the plane of which face intersects the line of contact between the drill and countersink bar and is at an acute angle with the axis of the bar, and means for holding the drill and countersink bar in proper relative positions.

2. In combination with a drill having a cutting edge formed by cutting on its lower end a plurality of facets the planes of which intersect, a countersink bar of convex shape, a face cut on the countersink bar, the plane of which face intersects the line of contact between the drill and countersink bar and is at an acute angle with the axis of the

bar, and means for holding the drill and countersink bar together.

3. In combination with a drill having a wedge-shaped cutting end, a countersink bar of convex shape, a face cut on the lower end of the countersink bar, the plane of which face intersects the line of contact between the drill and countersink bar and is at an acute angle with the axis of the bar, and clamping means for holding the countersink bar against the drill.

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