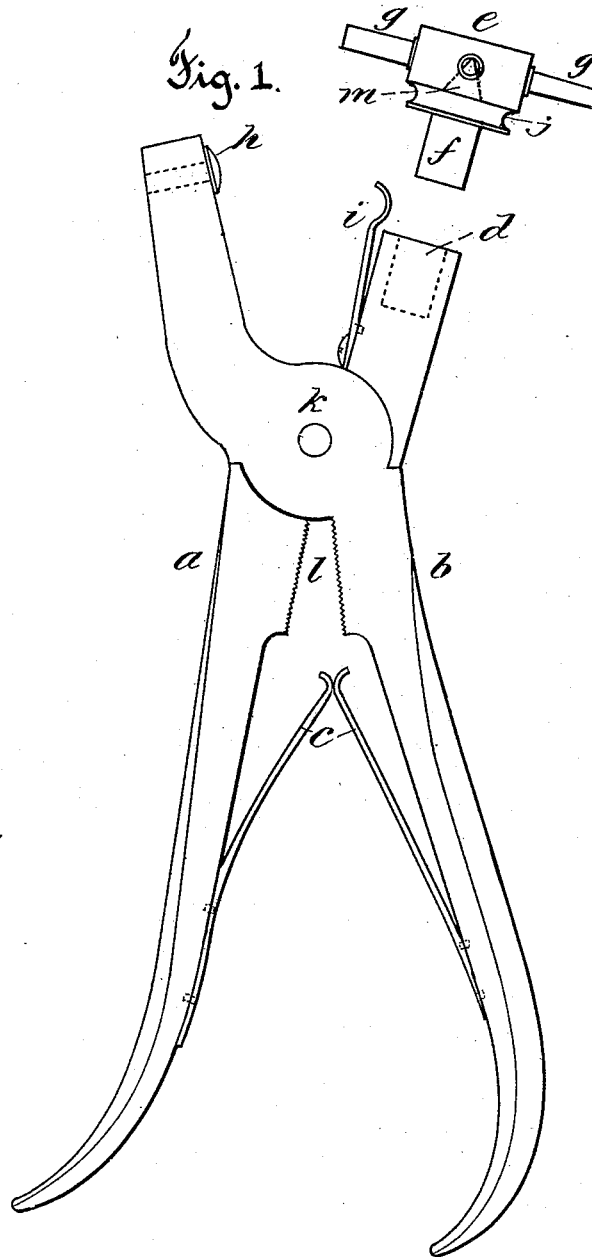(No Model.)

G. H. KAVANAUGH.
PUNCH.

No. 489,534.

Patented Jan. 10, 1893.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 1.
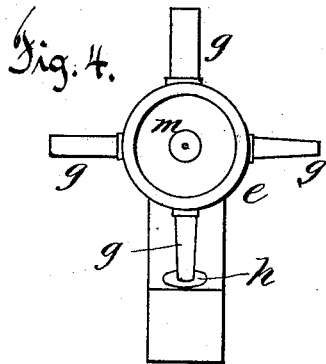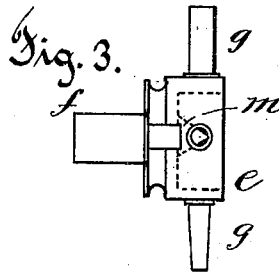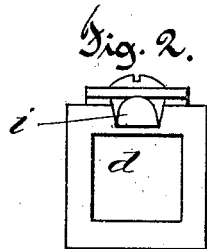
Witnesses

H. A. Gidding

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UNITED STATES PATENT OFFICE.

GEORGE H. KAVANAUGH, OF MIDDLETOWN, CONNECTICUT.

PUNCH.

To all whom it may concern:

Be it known that I, GEORGE H. KAVANAUGH, of Middletown, in the county of Middlesex and State of Connecticut, have invented cer-
5 tain new and useful Improvements in Belt-Punches, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

In the accompanying drawings:—Figure 1
10 is a view of a belt punch embodying my improvement, with the punch bearing turret shown detached therefrom. Fig. 2 is an end view of the punch bearing lever with the punch bearing turret detached. Fig. 3 is a
15 side view of the punch bearing turret. Fig. 4 is an end view of the punch.

The letter *a* denotes the punch-bearing lever of this belt punch, *b* denotes the other lever, and *c c* denote springs which tend to keep
20 the ends of the levers apart after the ordinary manner. The jaw of the punch-bearing lever is provided with a socket *d*, which is polygonal and by preference square in cross section. The punch-bearing turret *e* has a
25 pintle *f* which is polygonal in cross section and conforms in shape to the socket *d*. The punch-bearing turret bears a radially extending punch *g* for each one of the sides of the pintle, and by different rotary adjustments of
30 the punch-bearing turret either punch may be set in position for co-operation with the punch seat *h*. The rotary adjustability, just referred to, is in a plane substantially at right angles to the lever *a*.
35 The punch-bearing turret *e* is secured in different adjustments as to the jaw of the lever *a* by a spring *i*, co-operating at its upper end with the annular groove *j*. Below the pivot *k* there are two corrugated grip sur-
40 faces *l l*, one upon the inside of each of the levers, which are so fashioned as not quite to meet face to face when one of the punches is in contact with the punch seat; these grip surfaces may be used for grasping a belt lac-
45 ing and pulling it strongly.

The punch-bearing turret has an open center, within which is located a conical or cone shaped clearer *m*, the purpose of which is to facilitate the clearance of this open center of the little pieces of leather which are delivered 50 into this open center by the punches; although I speak of this clearer as conical; any tapered form thereof will answer the purpose.

I claim as my improvement:—

1. In combination in a belt punch, a punch 55 bearing lever having in its end a lengthwise polygonal socket, a removable turret bearing a plural number of punches projecting laterally therefrom and provided with a polygonal pintle fitting the socket in the lever, the an- 60 nular groove located in the turret, and the spring fastened to the lever and having an end engaging said groove, all substantially as described.

2. In combination in a belt punch, a punch 65 bearing lever having in its end a lengthwise polygonal socket, a removable turret bearing a plural number of punches projecting laterally therefrom and provided with a polygonal pintle fitting said socket in the lever, the tur- 70 ret retaining spring, and the conical clearer located in an opening in the end of the turret, all substantially as described.

3. In combination in a belt punch, a punch bearing lever having in its end a lengthwise 75 polygonal socket, a removable turret bearing a number of punches projecting laterally therefrom and provided with a polygonal pintle fitting said socket in the lever, the annular groove, located in the turret, the spring 80 fastened to the lever and having an end engaging said groove, and the conical clearer located in an opening in the turret, all substantially as described.

GEORGE H. KAVANAUGH.

Witnesses:
    GEORGE D. FOOTE,
    JOHN W. LADD.