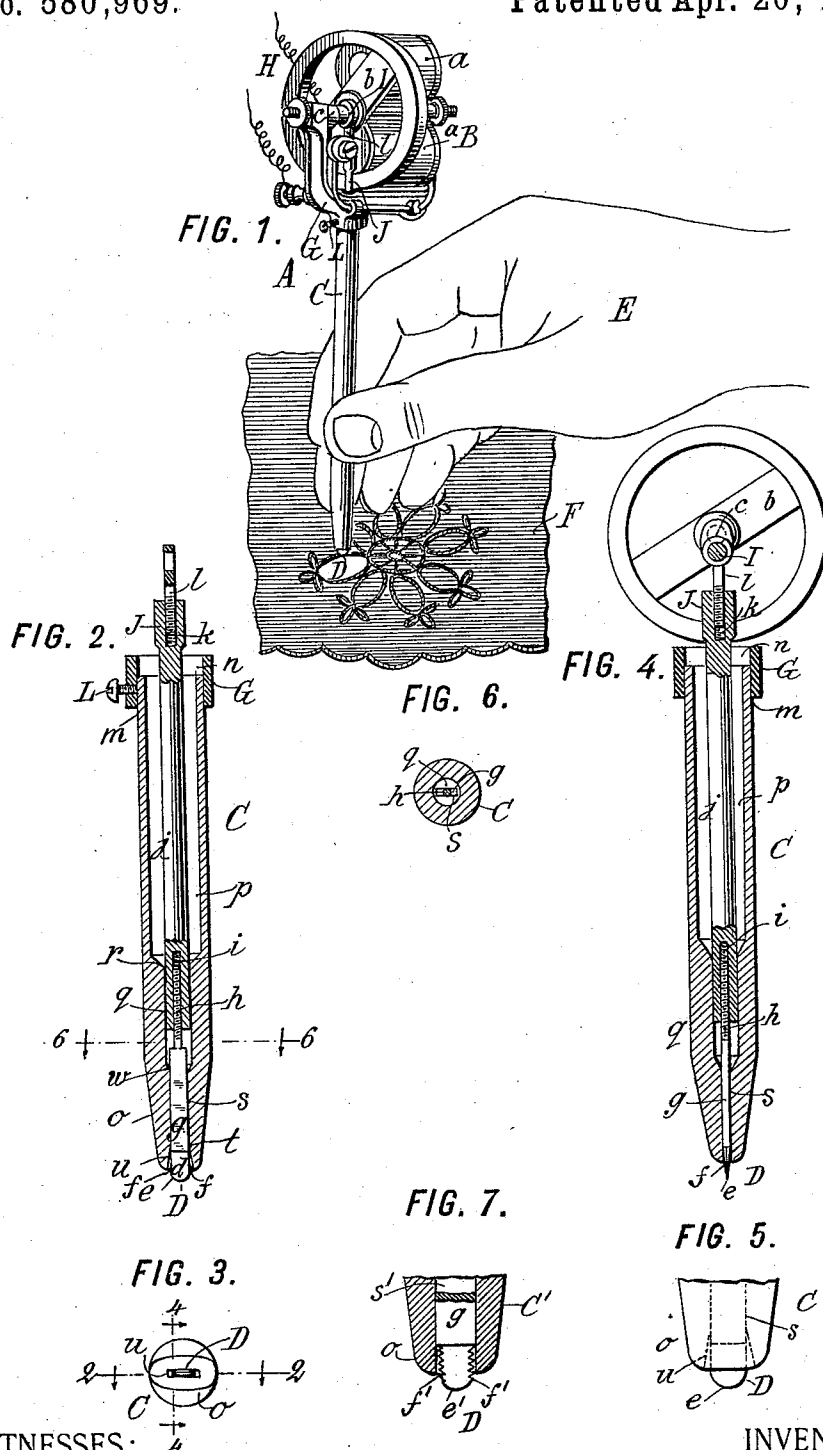


(No Model.)

C. W. COHN.
CLOTH CUTTING TOOL.

No. 580,969.

Patented Apr. 20, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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CLOTH-CUTTING TOOL.

SPECIFICATION forming part of Letters Patent No. 580,969, dated April 20, 1897.

Application filed December 7, 1896. Serial No. 614,694. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. COHN, a citizen of the United States, residing in the city, county, and State of New York, have
5 invented certain new and useful Improvements in Tools for Cutting Holes in Fabrics and for other Purposes, of which the following is a specification.

This invention relates to cutting-tools, and
10 is especially applicable to tools for cutting holes in fabrics or other articles in the form of thin sheets.

In manufacturing ornamental articles—such as doilies, table-covers, and other articles—it is common to employ a ground fabric, as an imperforate linen sheet, for example, to sew or form upon this a fanciful design in braid, thread, or cord, in loops and scrollwork, and then to cut out portions of
20 the foundation-sheet which are inclosed within certain of these ornamental figures to produce an open-work or lace-like effect. The portions to be cut out have heretofore been removed by means of scissors, the operator endeavoring to follow as closely as possible
25 the irregular lines of the scrollwork without cutting into or injuring the latter. It has been necessary to first insert the point of the shears in the part to be cut to make a starting-hole and then trim around the edges with great care. Much time and skill are required to so cut such articles, making them very expensive of manufacture, and the resulting
30 holes are necessarily so irregular and imperfect in their tracing of the outline of the scrollwork that the imperfections of cutting are readily noticeable.

My invention aims to provide means applicable for cutting such articles, as well as
40 for analogous uses, by means of which mechanical power can be employed for effecting the cutting, and the holes can be readily, smoothly, and accurately cut by the operator, who will merely have to guide the cutter as the
45 pattern requires.

To this end in carrying out my invention I provide an improved cutting-tool comprising a tubular handle, a reciprocating blade therein, means for reciprocating the blade, means
50 for guiding and means for adjusting it, and improvements in the blade and handle adapting them to the work to be performed.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view of the preferred form of my improved
55 cutter in operation for cutting a hole in a piece of ornamented fabric. Fig. 2 is an enlarged fragmentary sectional view, partly in elevation, cut on the line 2 2 in Fig. 3 and looking in the direction of the arrow. Fig. 60
3 is an end elevation of the tool shown in Fig. 2. Fig. 4 is a view corresponding to Fig. 2, cut on the line 4 4 of Fig. 3 and looking in the direction of the arrow. Fig. 5 is an enlarged fragmentary side elevation of the lower
65 end of the tool. Fig. 6 is a cross-section on the line 6 6 of Fig. 2, looking in the direction of the arrow. Fig. 7 is an enlarged fragmentary side elevation of a modified form of tool.

Referring to the drawings, let A designate the tool as a whole; B, the driving mechanism therefor; C, the handle thereof; D, the
70 cutter or blade; E, the hand of the user, and F the fabric being cut.

The tool may be of any suitable construction which can be moved over the article to be cut, and has a reciprocating blade, a suitable handle, and proper driving mechanism
75 so united and mounted that the user can hold and operate the tool while watching the cutting operation. In the construction shown the blade D is carried within the handle C, a frame G is carried at the top of the handle, and an electromotor B is used as the driving
80 mechanism, this motor being fed by conductors H, and comprising magnets *a*, operating a fly-wheel armature *b*, which revolves on a shaft *c*, having a crank or eccentric I, to which is connected a connecting-rod J, carrying at
85 its end the blade D.

According to the preferred form of my invention the blade D has a wide flat cutting end *d*, having a semicircular or tapering edge
90 *e* crossing its end diametrically, the curve or taper of which extends from one side to the other side of the blade and at each side joins an upright or vertical side cutting edge *f* thereon. Above its cutting end the blade is best formed
95 of a flat body *g*, rectangular in cross-section and having on its upper end a screw-threaded shank *h*, which is adjustably screwed into a screw-threaded socket *i* in the rod J, which at its outer end has a screw-threaded socket
100

5 *k*, adjustably engaging the screw-threaded
 end of an eye-coupling *l*, which passes over
 the crank *I*. The handle *C* has a smooth upper
 end *m*, which fits adjustably into an internal
 10 smooth socket *n* in the frame *G* and is
 clamped therein by a set-screw or other suitable
 clamp *L* to hold it at the desired adjustment.
 From this point the handle extends downwardly,
 15 with any suitable external contour for grasping
 purposes, and at its lower end it has a tapering
 smooth bearing portion *o*, which is of oblong or
 elliptical cross-section at its end to correspond
 20 with the direction of the cutting edge and the long
 axis of the blade-socket, thus serving as means
 indicating on the handle the direction of the cutting
 edge, as shown in Fig. 3, being rounded off from
 25 its inclining side walls to its end in gradual curves
 on all sides, so that it can be freely pushed in any
 direction over fabric or any other rough surface.
 Internally the handle is formed with a large socket
 30 *p*, extending from its upper end well toward its
 lower end, beyond which is a smaller cylindrical
 socket *q*, united with the socket *p* by beveled walls
r, which socket *q* meets a small socket *s* of
 35 oblong rectangular cross-section corresponding to the
 cross-section of the body *g* of the blade, which socket
 extends through the handle to the lower end thereof,
 with parallel flat side walls and parallel narrow side
 40 walls, the latter terminating at a point *t*, from which
 the narrow sides of the socket are made up of outwardly-
 flaring walls *u*, which begin at the point of uppermost
 45 movement of the cutting edges of the blade and are flared
 sufficiently to avoid danger of contact of this edge
 with them. The sockets *s* and *q* are united by beveled
 50 walls *w*.
 When the blade and its connecting-rod *J* have been
 properly adjusted, they are inserted into the end of
 the handle until the body of the blade is seated in the
 55 socket *s* and the cylindrical and reduced end *j* of the
 rod *J* is seated in the socket *q*, the coupling *l* having
 first been connected to the crank *I*. The passing of
 the blade into the handle is facilitated by the tapering
 60 walls *r* and *w*. The handle is then passed into the
 socket *n* in the frame *G* until the desired adjustment is
 obtained, preferably until the edge of the blade does
 not protrude when the crank is in the uppermost position,
 65 and then the handle is set relatively to the frame by
 the clamp *L*. Thereupon rotation of the crank will
 reciprocate the blade out of and into the handle to the
 extent of the throw of the crank. Should this throw be
 70 greater than desired, the handle can be adjusted outwardly
 to leave a greater portion of the throw of the blade within
 the handle, or the connection through the rod *J* can be
 shortened or lengthened to vary the stroke. The flat
 75 body and flat side socket *s* will prevent accidental turning
 or twisting of the blade and hold it non-rotative. This
 socket will guide the blade exactly and the socket *q* will
 80 guide the end of the rod *J*, so

that between the rod and blade there will be no spring,
 all the distortion due to the crank motion being taken up
 75 in the rod above the socket *q* and in the socket *p*. For this purpose
 the end of the rod at *j* is made cylindrical and a snug
 fit with the socket *q*.

The tapered or rounded bottom edge of the knife and the
 80 keen sharp side edges thereof will permit its feed over
 the surface to be cut without danger of catching and permit
 the continuous cutting operation. Its reciprocation will be
 suited in rapidity to the work to be performed. The cutting
 85 strain on the progressing edge will not dull the opposite
 edge, by reason of the guidance of its body *g* in the socket
s and the flaring walls of the end socket *u*.

In operation the article to be cut will be 85 laid or fastened upon a
 suitable surface and the user will then trace along the edges
 of the upturned ornamentation or braid, cutting the portions
 to be removed from within the latter and watching the blade
 90 as the cutting progresses. The blade can be pushed either
 edge first and worked with facility into and out of corners
 and along all irregular curves.

It will be seen that my invention provides improved means
 95 for cutting holes in fabrics and for other purposes, and it
 will be understood that the invention is not limited to the
 particular details of construction and arrangement set forth
 as constituting its preferred form, but that it can be availed
 100 of according to such modifications as circumstances or the
 judgment of those skilled in the art may dictate and for any
 desired uses.

The construction shown in Fig. 7 shows a modified cutting
 105 edge on the blade, the lower end *e'* being curved and the
 side edges *f'* being toothed or serrated, so that the blade will
 have a saw effect, and these edges being tapered away from
 the walls of the socket in the handle *C'*, so that contact with
 110 the latter will be avoided.

What I claim is, in tools for cutting holes in fabrics and for
 like purposes, the following-defined novel features and combinations,
 115 substantially as hereinbefore set forth, namely:

1. The improved tool for cutting holes in fabrics and the like,
 comprising a tubular handle having a wide, smooth lower bearing
 end for sliding over the fabric, a reciprocating blade therein
 120 having a cutting edge crossing its end diametrically, and
 alternately moving within, and projecting beyond, the bearing
 end of said handle, and means reciprocating said blade, whereby
 the handle can be held by the hand and the tool moved over
 125 the fabric with its working end in contact with the surface thereof,
 for severing the fabric as the blade reciprocates.

2. The improved tool for cutting holes in fabrics and for like
 130 uses, comprising a tubular handle having a smooth outer bearing
 end for resting on and sliding over the fabric, and having an
 internal blade-socket having flat walls, in combination with a flat-sided blade

fitting said socket, having cutting edges at its sides and across its end, and alternately moving entirely into, and partly out of, said socket, and means carried by the other end of said handle reciprocating such blade in the socket of said handle.

3. The improved tool for cutting holes in fabrics and the like, comprising a reciprocating flat-sided cutting-blade, in combination with a tubular handle inclosing such blade, means reciprocating the latter connected to such handle, such handle having a reduced end at the cutting end of said blade of oblong cross-section having rounded edges extending from its sides to its end, substantially as and for the purpose set forth.

4. The improved tool for cutting holes in fabrics and the like, comprising a frame G, in combination with a handle C having internal sockets *p q* and *s*, a blade D in the latter socket, a rod J connected to said blade with-

in said socket *q*, means for reciprocating said blade, and a crank connection between such means and said rod, substantially as and for the purpose set forth.

5. The improved tool for cutting holes in fabrics and for like purposes, consisting of a tubular handle having a socket *s* of oblong cross-section, in combination with a flat-sided blade D reciprocating in said socket, and having a shank *h*, a connecting-rod J adjustably secured to said shank and reciprocating in said handle, and means connected to said handle and said rod for reciprocating the latter.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES W. COHN.

Witnesses:

GEORGE W. FRASER,
THOMAS F. WALLACE.