

April 16, 1940.

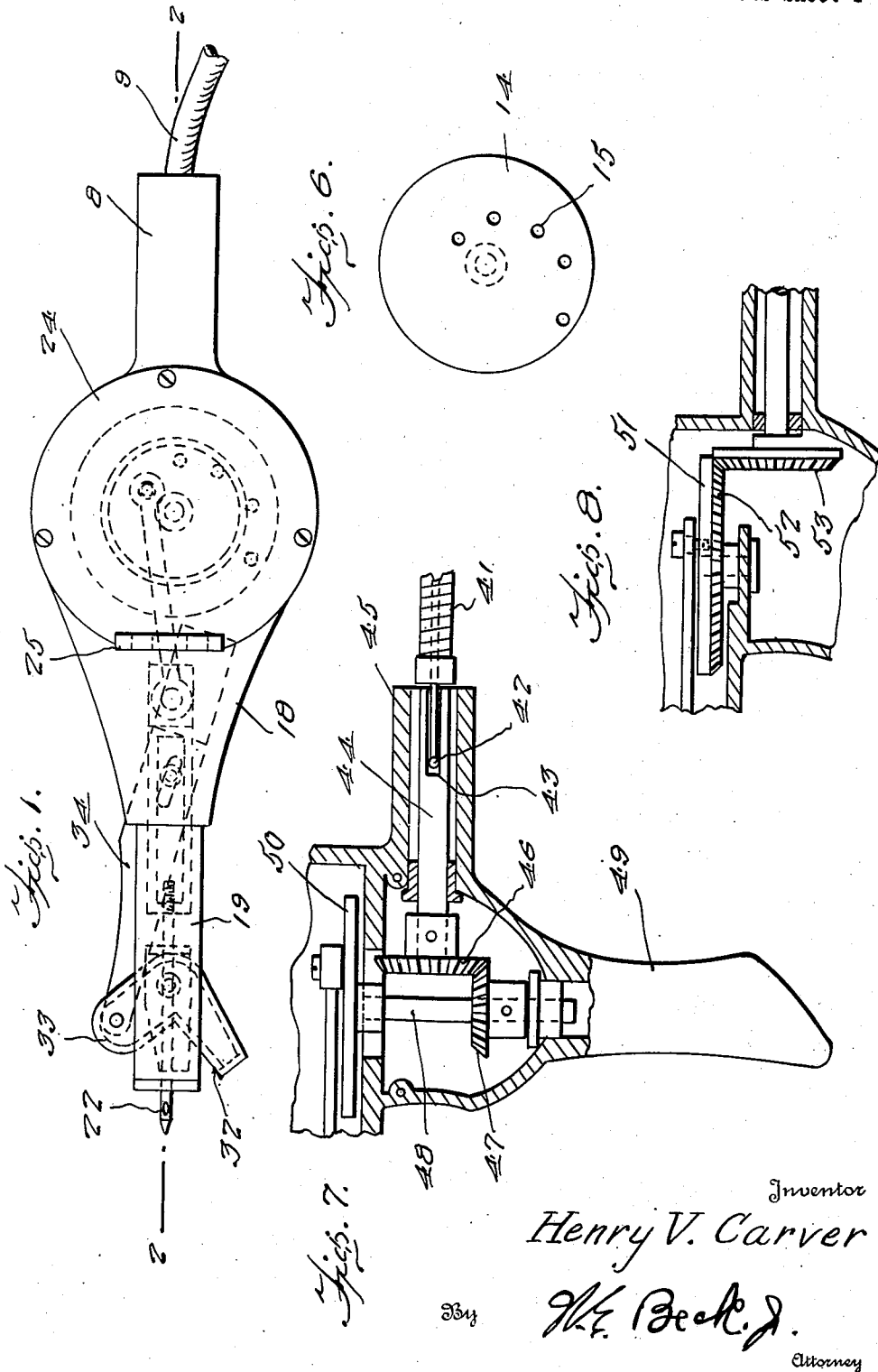
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LOOPER MACHINE

Filed March 4, 1939

2 Sheets-Sheet 1



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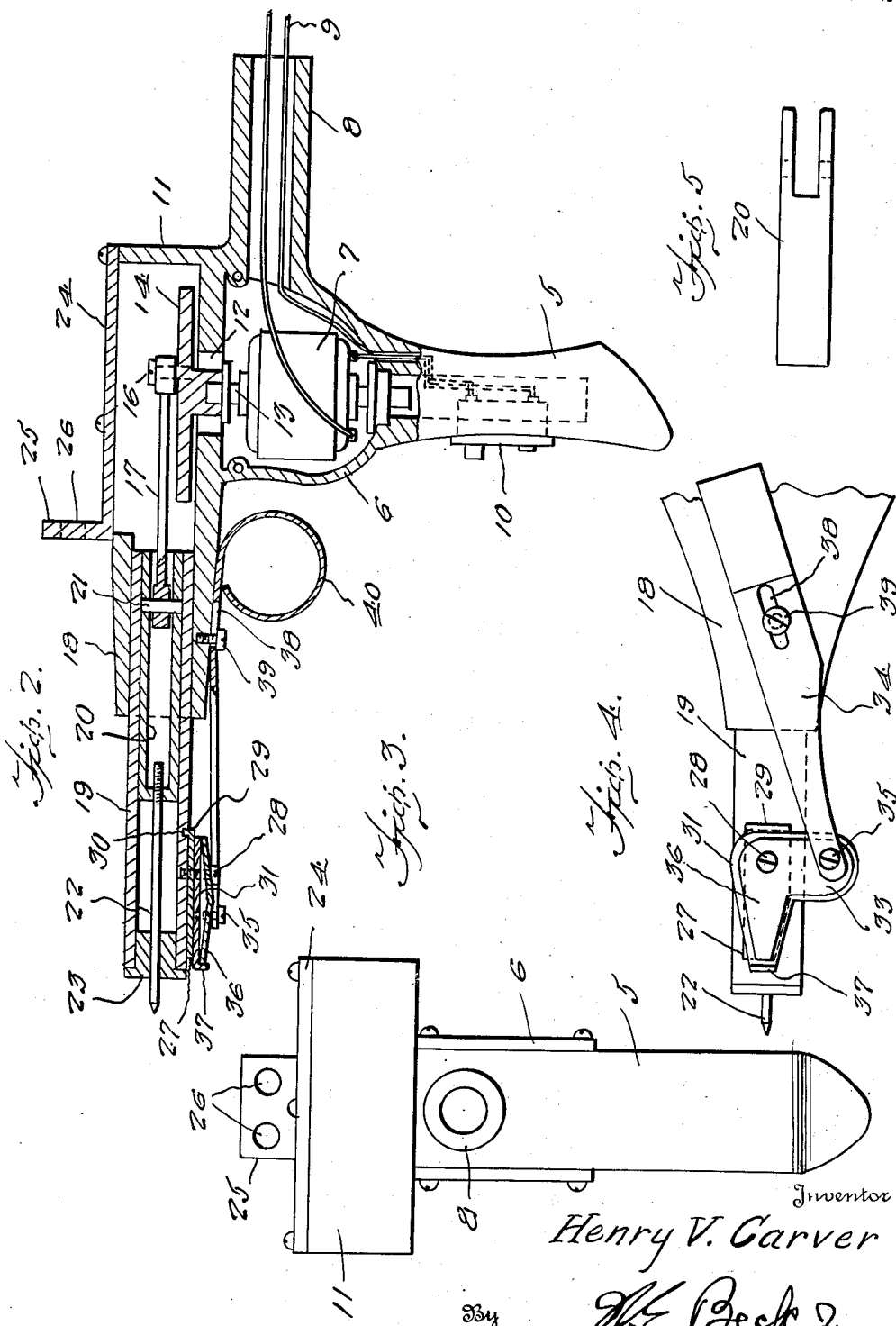
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LOOPER MACHINE

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7 Claims. (Cl. 112-80)

The present invention relates to textile machines and more particularly to portable hand machines for decorating cloth or fabric by inserting yarn or similar looped material through the cloth in order to form various designs or patterns for home or commercial use.

An object of the invention is to provide a hand tool of this character embodying the shape of a pistol to facilitate guiding the tool over the surface of the cloth.

A further object is to provide a power driven needle mounted in the tool for forming the loops and also providing a manually operated cutter adjacent the needle to cut the yarn at the end of an outline or design to avoid the necessity of laying down the tool and picking up a pair of shears for this purpose.

An additional object is to provide a tool of this character of simple and practical construction, which is efficient and reliable in use and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof wherein like numerals refer to like parts throughout and in which—

Figure 1 is a top plan view of the device.

Figure 2 is a longitudinal sectional view taken on the line 2-2 of Figure 1.

Figure 3 is a rear elevational view.

Figure 4 is a fragmentary bottom plan view showing the cutter.

Figure 5 is a detail of the plunger.

Figure 6 is a plan view of the adjustable driving eccentric.

Figure 7 is a fragmentary longitudinal sectional view of a modified form of drive mechanism, and

Figure 8 is a fragmentary detail of a further modification.

Referring now to the drawings in detail, the numeral 5 designates a hand grip for the tool on which is mounted a housing 6 for an electric motor 7, the rear of the hand grip having a tubular extension 8 for a conduit for the electric wires 9 leading to the motor. At the front of the handgrip is mounted a switch 10 connected in the circuit with the motor for controlling the latter.

Mounted on the housing is a casting 11 having an opening 12 for accommodating the shaft 13 of the motor and to which is fixedly secured a disk 14 having a group of eccentrically arranged

openings 15 for adjustably receiving a pin 16 to which a pitman 17 is connected to regulate the throw thereof.

The casting, at its front end, is formed with a tubular extension 18 within which is fitted one end of a barrel 19, providing a working fit for a piston 20 to which the pitman 17 is pivoted by means of a pin 21.

A needle 22 is threaded in the outer end of the piston, or otherwise suitably secured thereto, the point of the needle projecting outwardly of the barrel and slidable in a guide 23 constituting a plug for the barrel. A suitable vent opening may be formed in the barrel or the plug to avoid compression within the barrel by the working of the piston.

The top of the casting 11 is provided with a removable cover 24 having an upstanding front flange 25 formed with thread guide openings 26, the thread or yarn being fed from a suitable source through the guide openings 26 to the needle.

A pivoted cutter is provided for cutting the yarn, after the loops have been formed in the cloth, the cutter comprising a stationary cutter blade 27 positioned longitudinally along the under side of the barrel adjacent its outer end, and secured by a pivot pin or screw 28, the inner end of the blade having an angular flange 29 seated in a transverse groove 30 in the barrel to prevent pivotal movement of the blade. Also pivoted on the screw 28 is a movable blade 31 having a cutting edge 32 adapted to cooperate with the adjacent edge of the blade 27, the blade 31 having a lateral arm 33 to which a manipulating lever 34 is pivoted at one end as at 35. A leaf spring 36 is interposed between the lever and the blade 31 to cause the latter to bear against the blade 27. The outer end of the blade 31 is provided with an angular flange 37 forming an abutment for one end of the spring to prevent relative movement of the spring and blade.

The lever 34 is provided with a slotted opening 38 through which a screw 39 is inserted for slidably supporting the lever to the under side of the casting 11. A finger accommodating eye 40 is formed on the rear end of the lever to provide for the manipulation of the cutter by the hand of the person which at the same time also grips the hand grip 5.

In the modified form of the invention illustrated in Figure 7, the operating means for the needle consists of a flexible shaft 41 connected to some suitable source of power and which is at-

tached by a pin 42 in a slot 43 of a shaft 44 jour-
nalled in the extension 45 of the tool. The shaft
41 is provided with a bevel gear 46 engaging a
similar gear 47 of a shaft 48 journaled in the
5 hand grip 49, the disk 50 being secured to the
shaft 48 in the same manner as that heretofore
described.

Figure 8 represents a further modification of
a drive connection utilizing a flexible shaft and
10 embodies a structure similar to that disclosed in
Figure 7 except that the disk 51 is formed with
a gear 52 and is driven directly from the gear 53.

From the foregoing it will be apparent that the
desired reciprocating movement of the needle is
15 obtained through the mechanism above described
and by guiding the tool across the face of the
cloth, the usual loops will be formed to produce
a predetermined ornamental design.

It is believed the details of construction and
20 manner of use of the tool will be readily under-
stood from the foregoing without further detailed
explanation.

Having thus described the invention, what I
claim is:

25 1. In combination, a power operated loop form-
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter at one end of the barrel adapted for cut-
ting the thread carried by the needle, said cut-
30 ter comprising a cutter member attached to the
barrel in proximity to the needle end of the bar-
rel and operating means for the cutter positioned
adjacent the hand grip.

35 2. In combination, a power operated loop form-
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter at one end of the barrel adapted for cut-
ting the thread carried by the needle, said cut-
40 ter comprising a cutting member pivoted to the
barrel adjacent the needle end of the barrel, and
a manipulating member for the cutting member
having a manipulating end adjacent the hand
grip.

45 3. In combination, a power operated loop form-
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter at one end of the barrel, said cutter com-
prising a stationary blade carried by the barrel
50 adjacent the needle end of the barrel and adapt-
ed for cutting the thread carried by the needle,
a pivoted blade cooperating with the stationary
blade and manipulating means for the pivoted
blade positioned adjacent the hand grip.

4. In combination, a power operated loop form-

ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter at one end of the barrel, said cutter com-
prising a pivoted cutter blade carried by the bar-
5 rel adjacent the needle end of the barrel and
adapted for cutting the thread carried by the
needle, and a reciprocating operating handle for
the blade slidably attached to the barrel and hav-
ing a manipulating end adjacent the hand grip.

5. In combination, a power operated loop form- 10
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter at one end of the barrel, said cutter com-
prising a stationary blade attached to the barrel
in proximity to the needle end of the barrel and 15
adapted for cutting the thread carried by the
needle, a movable blade, spring means yieldably
forcing the movable blade into cutting coopera-
tion with the stationary blade, a pivot pin form-
ing a common connection for the blades and the 20
spring for securing the same to the barrel, and a
manipulating lever for said movable blade posi-
tioned adjacent the hand grip.

6. In combination, a power operated loop form- 25
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter comprising a stationary blade attached to
the barrel in proximity to the needle end of the
barrel and adapted for cutting the thread carried 30
by the needle, a movable blade, spring means
yieldably forcing the movable blade into cutting
cooperation with the stationary blade, a pivot
pin forming a common connection for the blades
and the spring for securing the same to the bar- 35
rel, means for retaining the stationary blade
against pivotal movement on the barrel, means
connecting the spring to the movable blade
against relative movement, a lateral arm on the
movable blade and a manually operated recipro- 40
cating lever carried by the barrel adjacent the
hand grip and operatively connected to said arm.

7. In combination, a power operated loop form-
ing tool of a type provided with a hand grip, a
barrel and a reciprocating needle, and a thread
cutter comprising a pivoted cutting blade attached 45
to the underside of the barrel in proximity to
the needle end thereof and adapted for cutting
the thread carried by the needle, a longitudinally
extending arm slidably attached to the barrel
and also connected at one end to the blade and 50
a finger accommodating loop at the other end of
the arm and positioned adjacent the hand grip
for manipulating the blade.

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