

(No Model.)

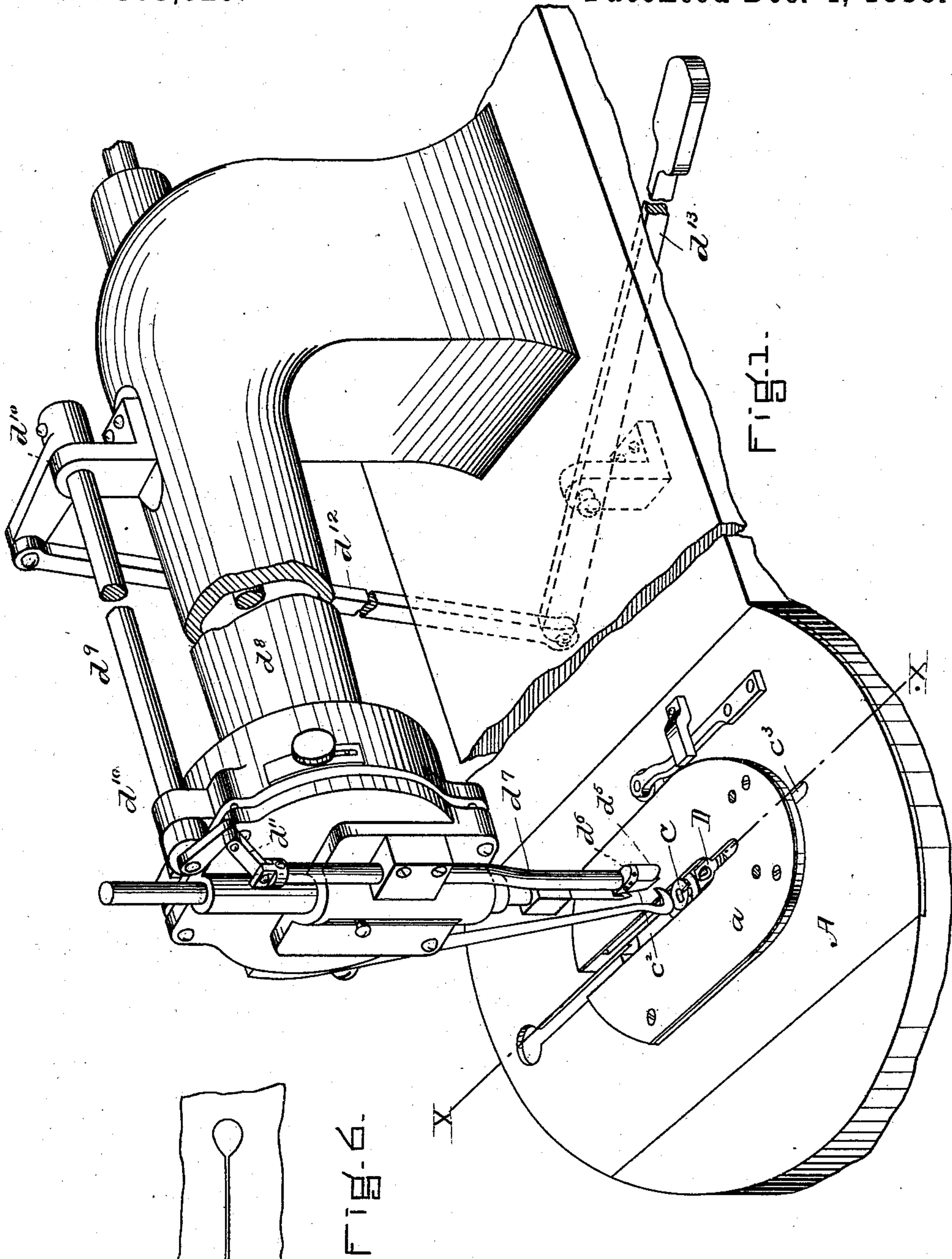
2 Sheets—Sheet 1.

J. H. REED.

CUTTER FOR BUTTON HOLE SEWING MACHINES.

No. 393,925.

Patented Dec. 4, 1888.



WITNESSES.

J. W. Dolan.

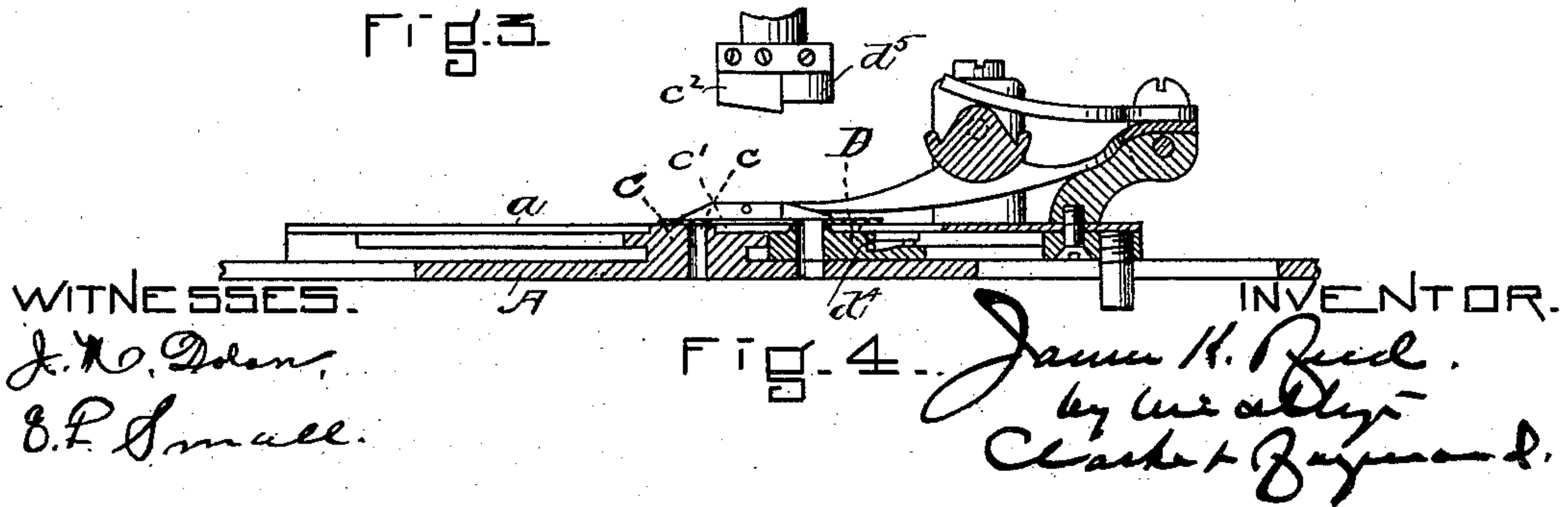
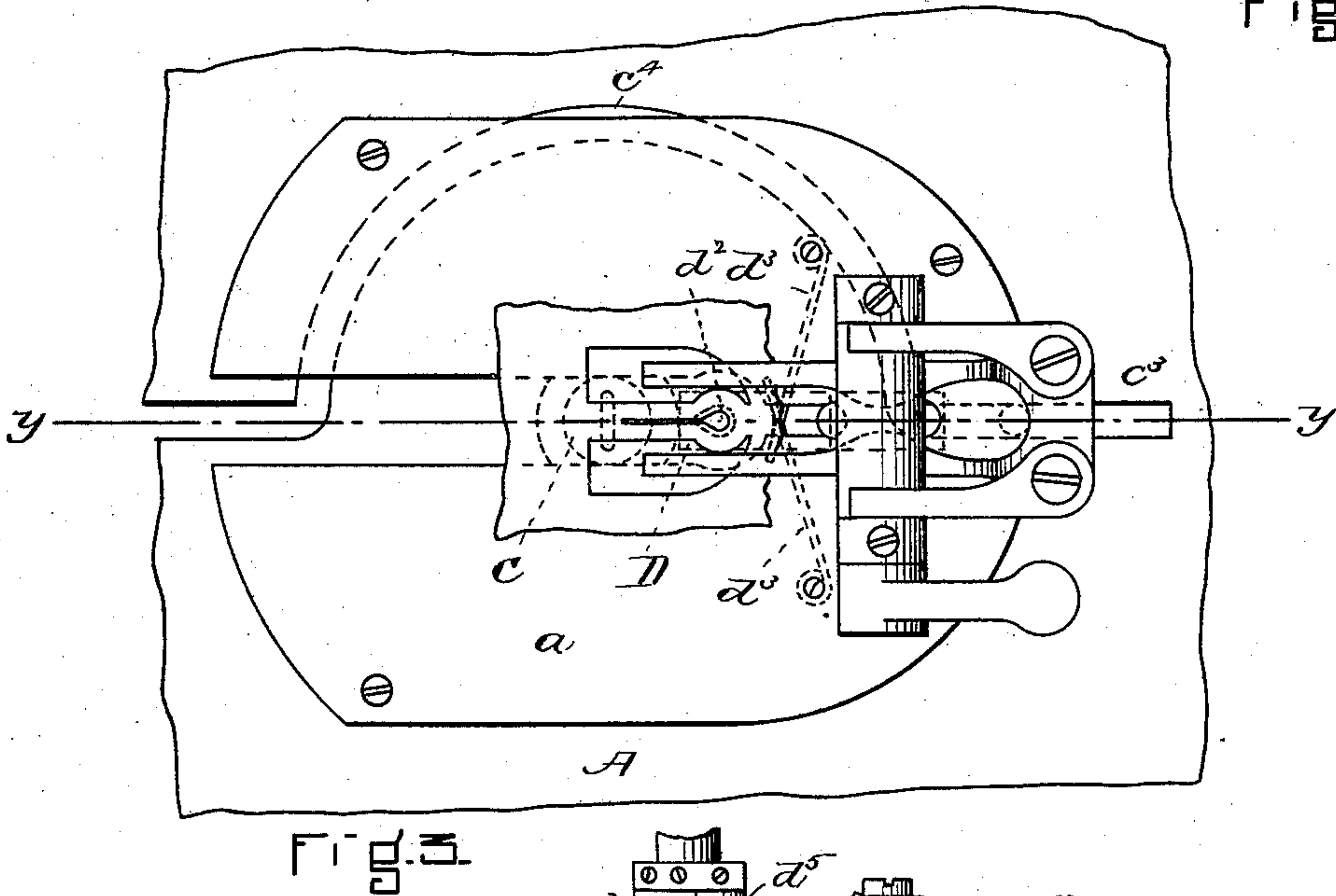
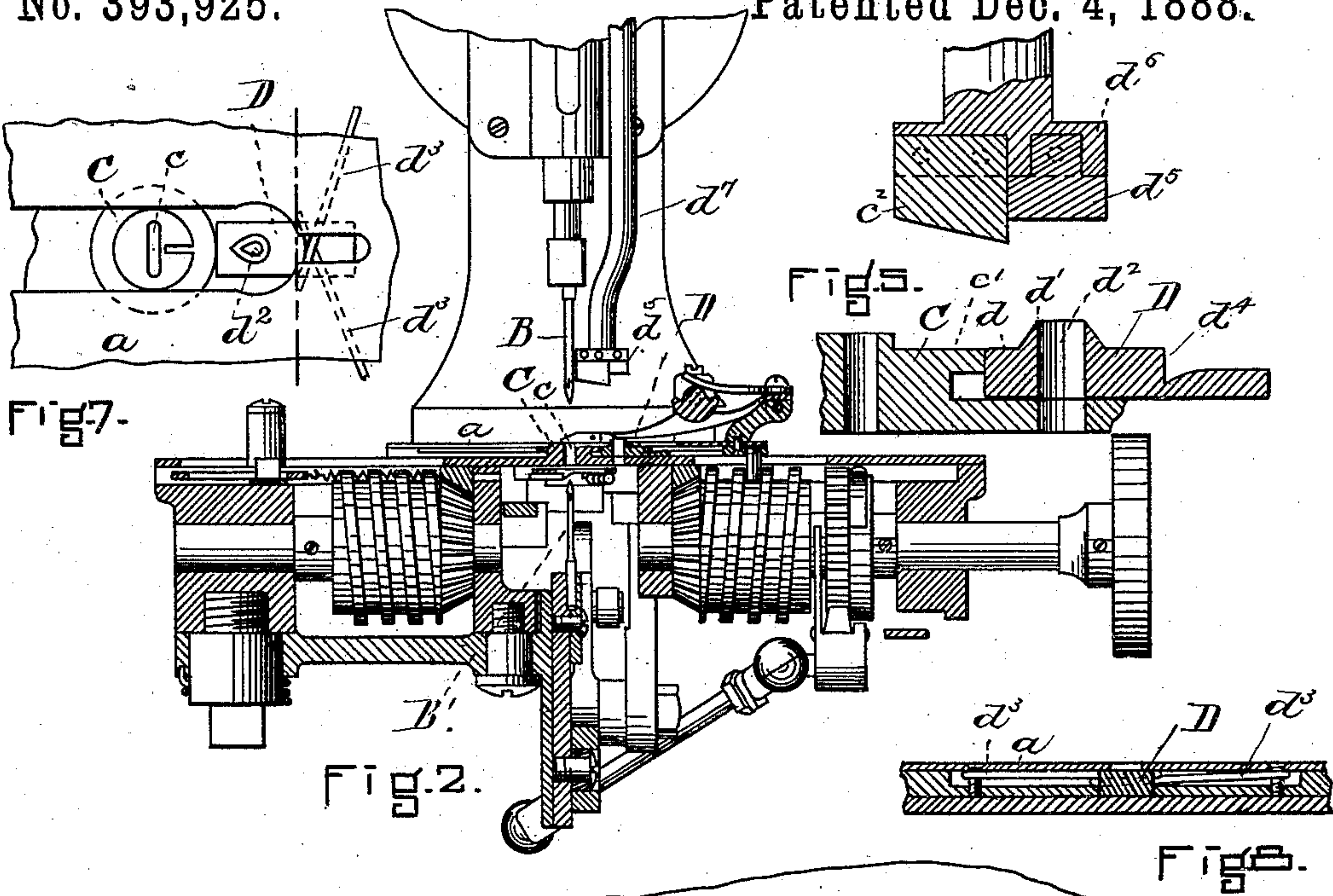
E. P. Small.

INVENTOR.
James H. Reed.
by his atty-
Charles F. Raymond.

2. Sheets—Sheet 2.

CUTTER FOR BUTTON HOLE SEWING MACHINES.

Patented Dec. 4, 1888.



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UNITED STATES PATENT OFFICE.

JAMES H. REED, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE GLOBE
BUTTONHOLE MACHINE COMPANY, OF KITFERY, MAINE.

CUTTER FOR BUTTON-HOLE SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 393,925, dated December 4, 1888.

Application filed March 21, 1888. Serial No. 267,967. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. REED, of
Lynn, in the county of Essex and State of
Massachusetts, a citizen of the United States,
5 have invented a new and useful Improvement
in Button-Hole-Stitching Machines, of which
the following is a full, clear, and exact de-
scription, reference being had to the accom-
panying drawings, forming a part of this
10 specification, in explaining its nature.

The invention relates to a mechanism or
device in a button-hole stitching and barring
machine for cutting or forming an eyed but-
ton-hole slit, and it is represented as applied
15 to the form of machine described in my Let-
ters Patent of the United States, No. 378,217,
dated February 21, 1888.

Referring to the drawings, Figure 1 is a
view in perspective of the central and upper
20 parts of the machine provided with my in-
vention. Fig. 2 is a view, part in elevation
and part in cross vertical section, upon the
line $x x$ of Fig. 1. Fig. 3 is a plan of the
clamp-plate and clamp and a portion of the
25 work-plate. Fig. 4 is a section upon the line
 $y y$ of Fig. 3, also representing in elevation the
cutter. Fig. 5 is a view principally in vertical
section of the button-hole-cutting devices.
Fig. 6 is a view in plan of a section of ma-
30 terial representing a cut or slit button-hole.
Fig. 7 is a detail view in plan. Fig. 8 is a sec-
tion on the dotted line of Fig. 7.

A represents the bed-plate of the machine;
a, the clamp-plate, which is provided with the
35 usual forward movement, partial rotation, and
continued forward movement customary in
this class of machines, and the mechanism for
providing it with these movements is of well-
known construction.

40 B is the upper straight eye-pointed needle,
and B' the lower straight eye-pointed needle.

C is the button, in which the throat c is
formed, and upon which the clamp-plate is
guided and turned. It also acts to provide a
45 portion of the button-hole-cutting device, hav-
ing formed therein a slit, depression, or re-
cess, c' , (see Figs. 4 and 5,) which receives a
portion of the cutter c^2 , which cuts the straight
part of the button-hole slit. This groove or
50 recess c' is in line with the section c^3 of the
guiding-groove c^4 in the work-plate A, and

which guides the movement of the clamp-
plate. There is also secured to the clamp-
plate in a manner to permit its feed move-
ment a block or piece, D, (see Fig. 5,) which 55
has a bed, d , in continuation of the recess c'
of the button C, and an eye-cutter, d' , formed
by an upward-extending preferably cylindri-
cal section sharpened at its upper edge, and
the hole d^2 of which extends through the block 60
D and forms an escape-passage for the pieces
removed from the fabric.

The block is attached to the under surface
of the clamp-plate to slide thereon and to be
carried thereby, and it is kept in contact with 65
the edge of the button by means of a yielding
pressure. In the drawings I have represented
the springs d^3 . (See Fig. 3,) which bear against
the shoulder d^4 , (see Figs. 4 and 5.) This con-
struction serves to constantly keep the block 70
in contact with the edge of the button, even
when the clamp-plate is in the position which
it occupies at the beginning of the stitching
of the button-hole, and this is the position of
the clamp-plate when the button-hole is cut. 75
This position is represented in Figs. 3 and 4.

It is of course desirable to cut the button-
hole slit and punch the eye immediately be-
fore or upon the starting of the machine and
after the work has been placed upon the 80
clamp-plate and stretched and secured thereto
by the work-clamps; and it is also necessary
that the clamp-plate should feed the material
to the sewing devices in the ordinary way
after the slit and eye have been formed, and 85
this movement of the clamp-plate in relation
to the cutting-block D is obtained by making
the connection between the clamp-plate and
the block D a yielding one, which permits the
advancing movement of the clamp in relation 90
to the block and throat, the block remaining
stationary until the clamp-plate is turned,
when, of course, it turns with it, still bearing
against the throat, but not performing any
function until it is again returned to its origi- 95
nal position.

Arranged above the clamp-plate is the cutter
 c^2 , which forms in connection with the recess
 c' and bed d the slit of the button-hole, and
the pressure block or anvil d^5 , which operates 100
in connection with the eyelet-cutter d' to form
the eye of the button-hole. This cutter c^2 and

the block d^5 are represented as supported by a head, d^6 , and as detachably secured thereto; and the head is formed upon the end of a rod or bar, d^7 , supported at the end of the arm d^8 of the machine and adapted to have a vertical movement imparted to it by means of the rock-shaft d^9 , having bearings at d^{10} , and connected with the rod d^7 by the link d^{11} , and with the start-motion treadle by means of the link d^{12} and lever d^{13} , which is connected with such treadle, the intention being to cut the slit and eye and start the machine by one movement of the treadle.

In operation upon the movement of the treadle the cutter c^2 and anvil d^5 are moved downward, the cutter forming a slit in the material, which is held by the clamps of the clamp-plate, and the eyelet-cutter and block d^5 forming the eye, the section of the material removed being forced into the escape-passage d^2 , and the strain of the clamps upon the material will immediately cause the slit to open or spread, and the stitching of the button-hole immediately begins. The clamp mechanism for clamping the material upon the clamp-plate is like that described in my patent, No. 378,404, dated February 21, 1888.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a button-hole stitching and barring machine, the combination of the work-plate and work-clamp, the stitch-forming devices, and a button-hole-cutting device comprising the button C, having the recess c' , the block D, carried by the clamp-plate and having the eyelet-cutter d' , provided with a hole, d^2 , and a bed, d , the anvil d^5 , and cutter c^2 , a block or head, d^6 , carrying said cutter, a reciprocating bar upon which said block is mounted, and a lever-connecting device for reciprocating said block, substantially as described.

2. The combination, in a button-hole-stitching machine, of the stitch-forming devices, the clamp-plate and its clamps, the button having the slit or recess c' , the block D, having the eyelet-cutter d' , and bed d , carried by the clamp-plate and arranged to slide upon the same toward the button, and held in contact with the edge of the button by a spring, said spring, the anvil d^5 and cutter c^2 , a block or head, d^6 , carrying said cutter and anvil, a reciprocating bar upon which said block is mounted, and a lever-connecting device for reciprocating said block, substantially as described.

JAMES H. REED.

Witnesses:

F. F. RAYMOND, 2d,
E. P. SMALL.