

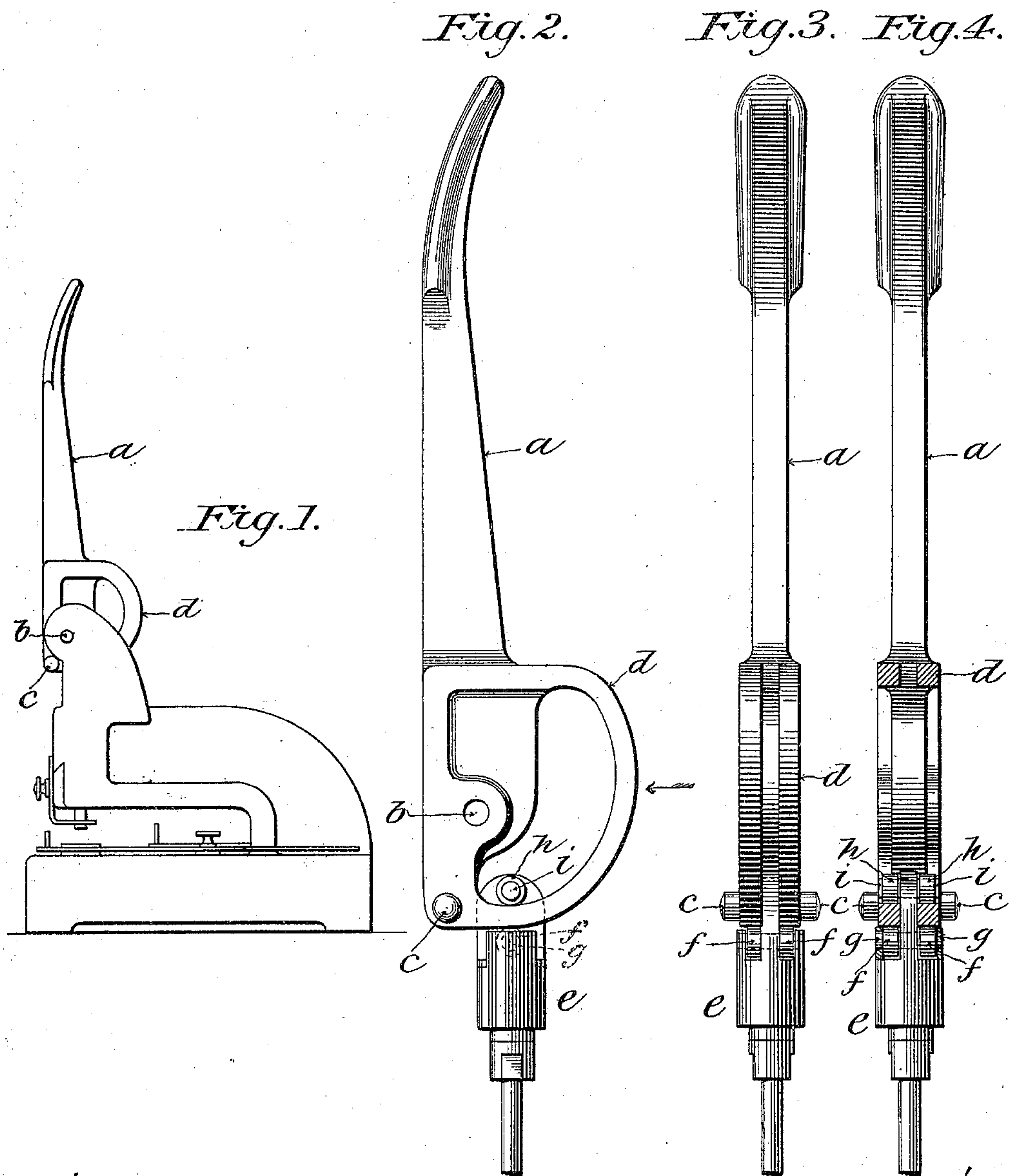
No. 687,906.

Patented Dec. 3, 1901.

E. L. SIBLEY.
DUPLEX PUNCH.

(Application filed Apr. 8, 1901.)

(No Model.)



Witnesses:

A. M. Long.
E. L. Sibley.

Inventor:

Edward L. Sibley.
by W. H. Finckel
his Atty.

UNITED STATES PATENT OFFICE.

EDWARD L. SIBLEY, OF BENNINGTON, VERMONT.

DUPLEX PUNCH.

SPECIFICATION forming part of Letters Patent No. 687,906, dated December 3, 1901.

Application filed April 8, 1901. Serial No. 54,910. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. SIBLEY, a citizen of the United States, residing at Bennington, in the county of Bennington and State of Vermont, have invented a certain new and useful Improvement in Duplex Punches, of which the following is a full, clear, and exact description.

This invention relates to a well-known form of punch for use in punching holes in paper and other material; and the object of the invention is to provide a double-acting punch-lever, so as not only to insure the positive driving of the punch through the material to form the hole, but also to withdraw the punch positively from the material when the hole is formed.

The invention consists of a punch having a punch-actuating lever made as a slotted cam substantially of **D** form and forming tracks upon which is hung the punch proper. I prefer to interpose between the punch and the tracks antifriction devices, such as rollers.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of an ordinary form of punch supplied with my improvement. Fig. 2 is a side elevation of a punch-lever and a portion of the punch detached. Fig. 3 is a rear elevation of the parts shown in Fig. 2 looking in the direction of the arrow, and Fig. 4 is a rear view with the cam in vertical section.

The parts not described may be as usual.

The lever *a* is pivoted to the head of the machine at *b* and is provided with transverse stop-lugs *c*, which come into contact with the head of the machine to limit the movement of the lever in one direction. The rear of the lever *a* is provided with a cam *d* of **D** form in side elevation, and this cam is slotted vertically to form not only cam-surfaces to act in conjunction with the punch *e*, but also to form rails upon which the punch is hung in such manner that in depressing the lever and the punch the outer portion of the rails will act positively upon the punch to force the punch

through the material to be perforated, and in raising the lever to withdraw the punch from the material after it has been perforated the inner portions of the rails act upon the punch in a like positive manner.

In order to render the operation of the punch easy and as near frictionless as possible, I prefer to provide the punch with suitable antifriction devices, such as rollers *f*, arranged in slots in the head of the punch and supported upon a pin *g* common to both, against which the outer surfaces of the cam-rails act in depressing the punch, and other rollers *h*, which are supported upon a transverse pin *i* common to both and fixed in the head of the punch, which cooperate with the inner surfaces of the rails in withdrawing the punch from the perforated material. By reason of this double action of the cam upon the punch I designate my invention a "duplex punch."

What I claim is—

1. A punch, having an actuating-lever provided with a cam slotted longitudinally to form cam-rails, and a perforating member or punch proper positively connected with both sides of said rails, substantially as described.

2. A punch, having a punch-lever constructed with a longitudinally-slotted cam forming cam-rails, and a punch supplied with antifriction devices arranged outside and inside of said rails, substantially as described.

3. A punch, having a punch-lever provided with a longitudinally-slotted cam forming cam-rails, and a punch provided with rollers secured therein and arranged to coact with the outer surfaces of said cam-rails, and other rollers arranged to coact with the inner surfaces of said rails, whereby the said punch is positively moved both to cut the material to be acted upon and in being withdrawn from the cut material, substantially as described.

In testimony whereof I have hereunto set my hand this 5th day of April, A. D. 1901.

EDWARD L. SIBLEY.

Witnesses:

EDWARD L. BATES,
E. E. HART.