(No Model.)

G. W. WEISS.

MACHINE FOR PERFORATING PAPER PATTERNS.

No. 440,799. Patented Nov. 18, 1890.

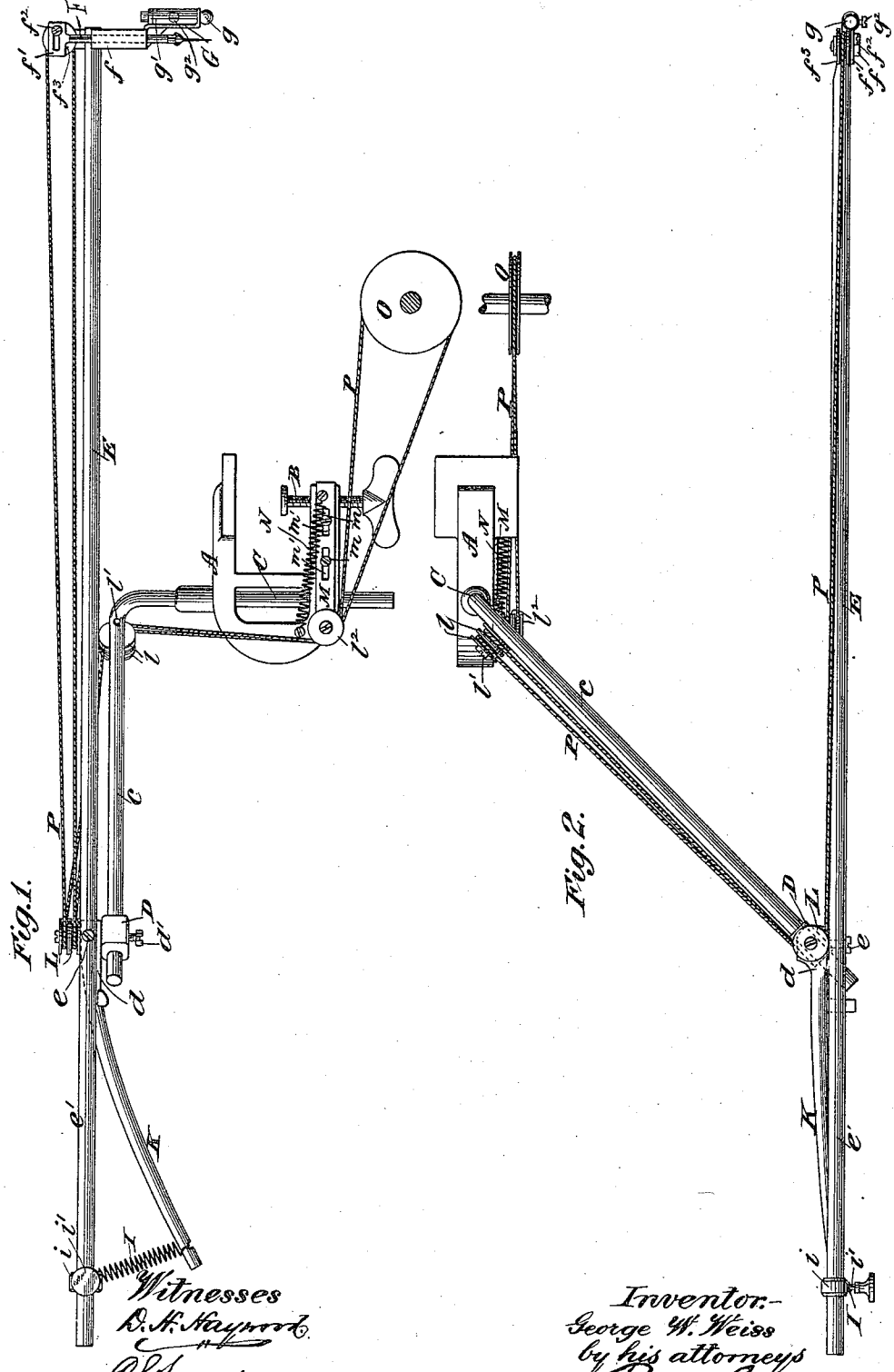

Fig. 1.

Fig. 2.

Witnesses
D. F. Hayward
C. L. Sundgren

Inventor:
George W. Weiss
by his attorneys
Brown & Seward

UNITED STATES PATENT OFFICE.

GEORGE W. WEISS, OF BROOKLYN, NEW YORK.

MACHINE FOR PERFORATING PAPER PATTERNS.

SPECIFICATION forming part of Letters Patent No. 440,799, dated November 18, 1890.

Application filed May 29, 1890. Serial No. 353,540. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WEISS, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Machines for Perforating Paper Patterns, of which the following is a specification.

My invention relates to a machine for perforating paper patterns and the like, in which a reciprocating punch is carried by a jointed arm so arranged as to admit of the punch being moved along a path of any desired conformation.

The object is to provide a machine of this character in which the punch may be driven by a single belt, and in which the several parts may be so united as to admit of a delicate adjustment of the reciprocating punch to the line along which the perforations are to be made, and to simplify, as far as possible, the machine as a whole.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a view of the machine in side elevation, and Fig. 2 represents a top plan view of the same.

The support for the machine is here shown as a U-shaped bracket A, provided in one of its branches with a clamp-screw B, by which the support may be removably secured to the edge of a table.

In the support A a spindle C is mounted so as to turn freely, the upper end of the spindle having formed integral therewith or rigidly secured thereto a horizontal supporting-arm *c*. On the arm *c* a sliding clip or bracket D is secured.

To the sliding bracket D a rotary support *d* is attached, and to the said rotary support *d* a horizontal arm E is pivotally secured, as at *e*, so that the arm E may swing up and down, while at the same time it is free to rotate in a horizontal plane with its support. The sliding clip or bracket D is provided with a set-screw *d'* for securing it in the desired horizontal adjustment on the arm *c*.

To the outer end of the arm E the reciprocating punch F is secured, and is conveniently mounted in a suitable guide *f* and provided with a slotted cross-head *f'*, engaged with a crank-pin f^2 on a drive-wheel f^3.

A depending standard G is secured to the guide *f* and provided with a foot-piece *g*, adapted to rest upon and move along the surface of the paper or other material to be perforated. To the depending standard G a socket-piece *g'* is secured for the reception of the shank or stem of the foot-piece *g*, the said foot-piece being made vertically adjustable by means of a set-screw g^2, which extends through the wall of the socket into engagement with the stem. The socket-piece *g'* may be used as a handle for the purpose of guiding the punch along the line to be perforated.

The end of the arm E which carries the punch is counterbalanced by means of a spring I, secured at one end to an arm K, projecting from or secured to the rotary support *d*, and its opposite end secured to a slide *i* on the projected end *e'* of the arm E. The slide *i* is provided with a set-screw *i'* for the purpose of adjusting the slide *i* in such a position upon the arm *e'* as may be required to exert a proper tension to hold the foot *g* normally above the paper or other material to be perforated, but at the same time requiring only the slightest pressure to lower the foot onto the paper. Motion is transmitted to the driving-wheel f^3 as follows: Two loose pulleys L are mounted upon the sliding bracket D, and two corresponding pulleys *l* are loosely mounted upon a stud or axle *l'*, projecting from the side of the arm *c* near the spindle C. Another two loose pulleys l^2 are mounted upon the end of a sliding movable bar M, secured to the support A. The sliding bar M is conveniently secured to the support A and limited in its forward and backward movement by means of a pair of set-screws *m*, which extend through elongated slots *m'* in the bar M into the support A. The object of the sliding bar M is to take up slack in the belt due to the horizontally-swinging movement of the arm E, and to keep a proper tension on said belt at all times a tension-spring N is secured at one end to the frame A and at its opposite end to the sliding bar M.

O represents a wheel for actuating the machine. It may be a wheel of a sewing-ma-

chine or any other convenient source of power. Beginning at the upper portion of the wheel O the belt P extends to one of the pulleys l^2 on the sliding bar M, thence about one of the pulleys l on the arm c, thence around one of the pulleys L on the slide D, thence around the drive-wheel f^3, thence back to and around the other pulley L, thence back to and over the other pulley l, thence back to and under the other pulley l^2 to the bottom of and around the actuating-wheel O to the point of starting.

By means of the adjustable sliding bracket D on the arm c any stretching of the belt may be taken up from time to time, and in case of breakage of the belt and its considerable shortening when its ends are again united this may be compensated for by adjusting the slide D on the arm c to correspond.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a perforating-machine of the character described, the combination, with a suitable support, an arm pivoted in the support to swing freely, a pivoted second arm carried by the first-named arm to swing freely, and a perforating device carried by the last-named arm, of guide-pulleys located at or near the pivotal points of the arms, a driving-wheel in connection with the perforating device, an actuating-wheel, and a single belt or band extending from the actuating device to the drive-wheel and return, the said belt being directed by said guide-pulleys, substantially as set forth.

2. In a perforating-machine of the character described, the combination, with a suitable support, a swinging arm pivoted in the support, and a pivoted second swinging arm carried by the first-named arm, of a perforating device secured to the last-named swinging arm, an actuating device, a belt or band leading from the actuating device to the perforating device, and a spring-actuated reciprocating slide secured to a support between the actuating device and the perforating device and carrying guide-pulleys about which the band or belt passes, for the purpose substantially set forth.

3. In a perforating-machine of the character described, the combination, with a suitable support and an arm pivoted in said support, of an adjustable clip or bracket secured upon the said arm, a second arm pivotally secured to said adjustable clip or bracket, a perforating device carried by said last-named arm, an actuating device, guide-pulleys mounted on said adjustable clip or bracket, and a band or belt extending from the actuating device to the perforating device and directed by said guide-pulleys, substantially as set forth.

4. In a perforating-machine of the character described, the combination, with a suitable support and a swinging arm pivoted therein, of a pivoted second arm carried by the first-named arm to swing freely in a horizontal direction and tilt vertically, an arm projecting from the pivotal support, an adjustable slide on the projected end of the vertically-tilting arm, and a spring connecting said slide with the arm projected from the pivotal support, substantially as set forth.

GEORGE W. WEISS.

Witnesses:
FREDK. HAYNES,
D. H. HAYWOOD.