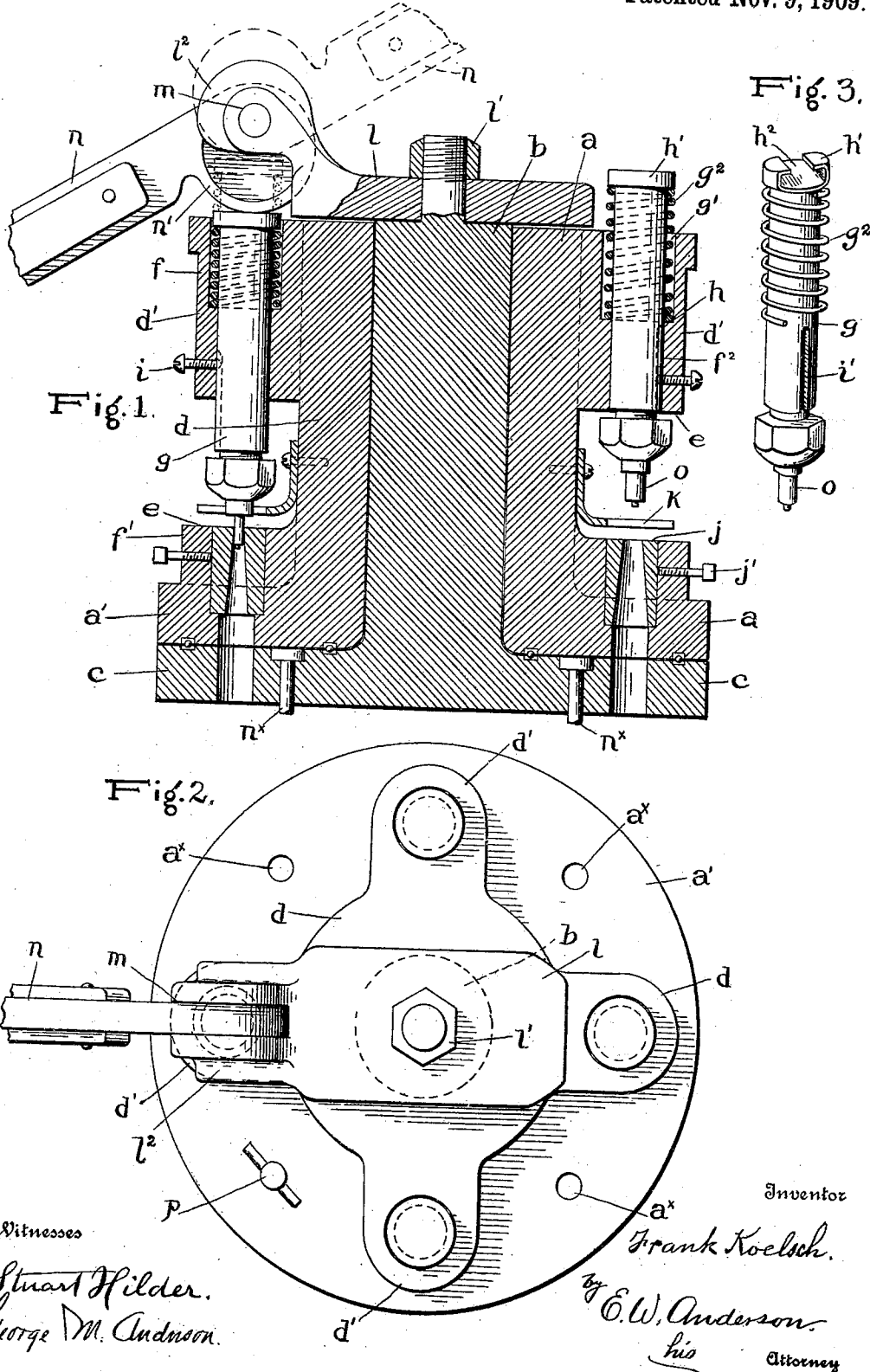


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ROTARY PUNCHING MACHINE.
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939,958.

Patented Nov. 9, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK KOELSCH, OF SCRANTON, PENNSYLVANIA; MARGARET KOELSCH ADMINISTRATRIX OF SAID FRANK KOELSCH, DECEASED.

ROTARY PUNCHING-MACHINE.

939,958.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed April 8, 1909. Serial No. 488,726.

To all whom it may concern:

Be it known that I, FRANK KOELSCH, a citizen of the United States, resident of Scranton, in the county of Lackawanna and State of Pennsylvania, have made a certain new and useful invention in Rotary Punching-Machines; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

Figure 1 is a central transverse section of the invention with parts not in section, and the operating lever partly broken away. Fig. 2 is a plan view of the invention with the operating lever partly broken away. Fig. 3 is a detail view of one of the punch holders provided with a modified form of head.

The invention has relation to rotary punch machines, and it consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a*, represents a rotary frame which turns upon an upright pivot column or stem *b*, of a base *c*, which is designed to be secured to the table or bench by means of bolts at *n*, *n*. The frame *a*, includes a circular base portion *a'*, a central cylinder portion *d*, having journal bearings upon the stem *b*, and radial punch and die carrying portions *d'*, *d'*. These radial portions *d'*, *d'*, four being shown arranged symmetrically around the central body *d*, are recessed near their lower ends at *e*, *e*, for the reception of the material to be punched, and to enable the punches to be received in the holders, etc., whereby each part *d*, is divided into an upper punch carrying part *f*, and a lower die carrying part *f'*, separated by the recess or interval *e*. Each part *f*, is provided with a cylinder bore or aperture *f²*, for the cylinder punch holder *g*, such bore being enlarged at its upper end at *g'*, for the reception of a retracting coil spring *g²*, fitting around each punch holder, having bearing at its lower end against shoulder *h*, at the base of the enlarged bore *g'*, and at its upper end bearing against a head *h'*, of the punch holder. A radial screw *i*, engaging a screw threaded aperture of the part *f*,

has bearing at its inner end in a longitudinal groove *i'*, of each punch holder, thus providing for true vertical movement thereof. Each lower part *f²*, is arranged to receive a die *j*, a screw *j'*, serving to secure the die in position. A stripper *k*, is employed above each die and separated therefrom by an interval for the insertion of the work.

A top plate *l*, is bolted at *l'*, to the pivotal stem *b*, said plate having upward extending end lugs *l²*, provided with fulcrum bearings *m*, for an operating lever *n*, having an eccentric head, designed to bear upon the head of one of the punch carriers to depress the same, with the punch *o*, at the lower end thereof.

A removable pin *p*, engaging alined perforations *a^x*, and *c^x*, of the base portions *a'*, and *c*, serves to keep the punches centered with respect to the dies.

When it is desired to rotate the frame *a*, to bring a new punch (which may be larger or smaller or otherwise different) into operative relation with respect to the lever *n*, the pin *p*, is removed from its seat, the frame *a*, rotated upon pivot stem *b* to the required degree, and the pin *p*, reinserted, a number of perforations *a^x*, (four as shown) being provided in the base *a'*. The operator thus always remains in the same place and can readily bring the required punches into position for work.

A modified form of head for the punch holders *g*, is shown in Fig. 3 of the drawings, wherein the head *h'*, of the holder is provided with a recess or groove *h²*, for the reception of the eccentric head of the operating lever.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A rotary punching machine comprising a support having a pivot stem, a rotary frame having a central cylinder aperture engaging said pivot stem, and a plurality of radial punch and die carrying portions, reciprocal punch holders fitting in the punch carrying portions, a top plate secured to said stem and provided with upward extending end lugs capable of alinement with the punches an operating lever having an eccentric head provided with journal bearings in said end lugs, retracting springs for the punch holders and means for retaining punch and die in vertically alined position.

2. A rotary punching machine, comprising a support having a pivot stem and provided with a plurality of vertical perforations, a top plate secured to said stem and
5 provided with upward extending end lugs capable of alinement with the punches, a rotary frame having a central cylinder aperture engaging said stem, a base resting upon said support and provided with a plurality
10 of vertical apertures capable of alinement with the support apertures, a plurality of radial punch carrying portions and an equal number of radial die carrying portions, reciprocal punch holders fitting in said
15 punch carrying portions and having upper heads and vertical guide grooves in their lower portions, said punch carrying por-

tions having annular recesses surrounding the upper portions of the punches, retracting springs fitting in said recesses and bearing
20 at the upper ends thereof against the punch heads, radial pins engaging said guide grooves of the punch holders, a removable pin engaging alined perforations of said
25 support and rotary frame, and an operating lever having an eccentric head provided with journal bearings in said end lugs.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK KOELSCH.

Witnesses:

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S. B. DAWSON.