

R. ROBINSON.
 PHOTO PRINTING FRAME.
 APPLICATION FILED JAN. 22, 1910.

1,030,540.

Patented June 25, 1912.

2 SHEETS-SHEET 1.

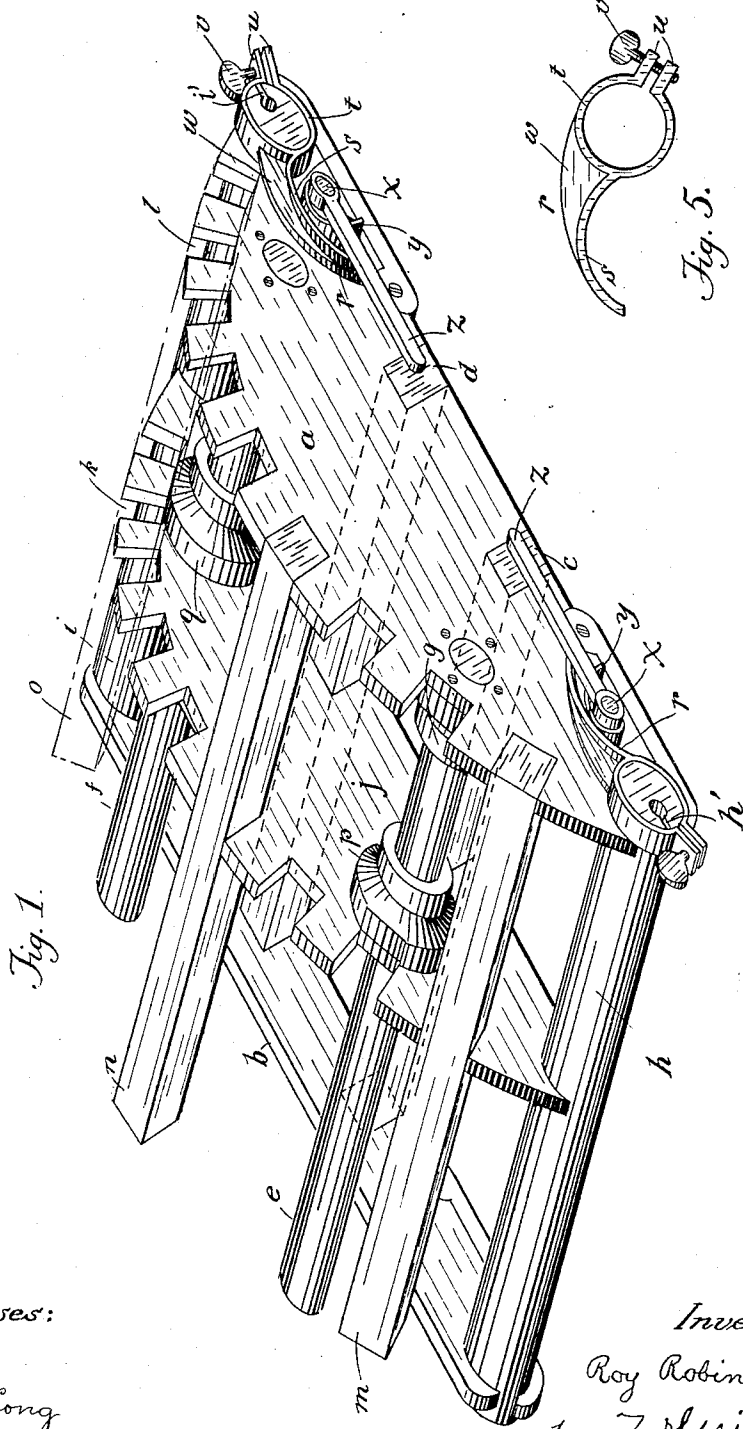


Fig. 1.

Fig. 5.

Witnesses:

Cecil Long
 Oomartin.

Inventor:

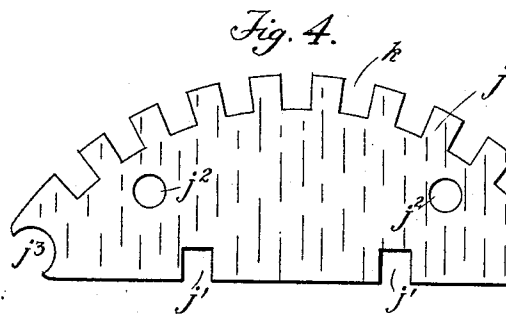
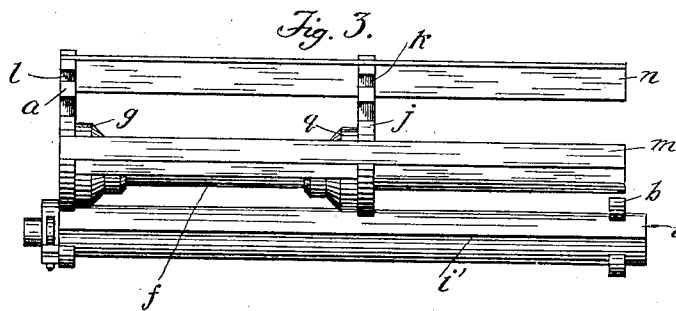
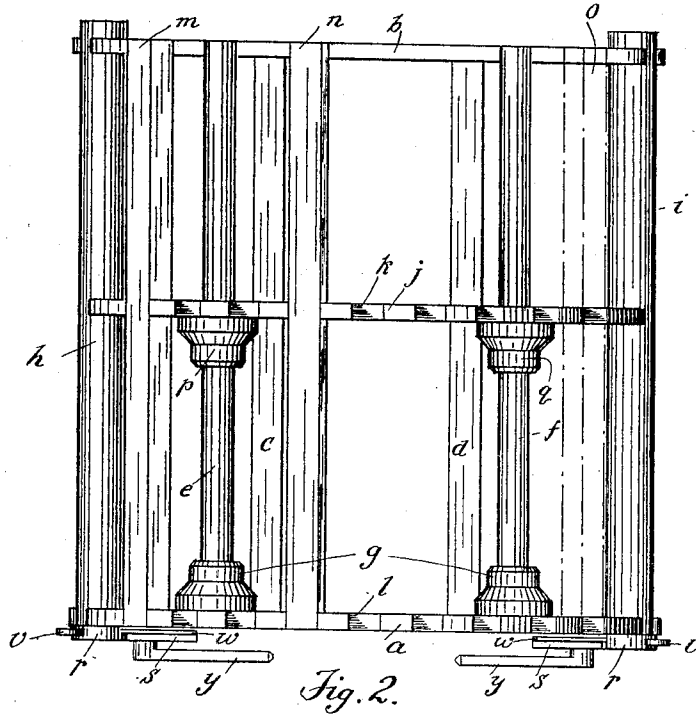
Roy Robinson
 by *Z. Geisler*
 Atty.

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2 SHEETS-SHEET 2.



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 O. Martin.

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UNITED STATES PATENT OFFICE.

ROY ROBINSON, OF PORTLAND, OREGON.

PHOTO PRINTING-FRAME.

1,030,540.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed January 22, 1910. Serial No. 539,608.

To all whom it may concern:

Be it known that I, ROY ROBINSON, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Photo Printing-Frames, of which the following is a specification, reference being had to the accompanying drawings, constituting a part thereof.

This invention has for its object to provide a printing frame adapted for making transfer prints on metal sheets for photo engraving work, also for making blue prints; and to this end my device comprises a frame which is adjustable both in length and width, and embodies the features hereinafter fully described.

In the drawings: Figure 1 is a perspective view of my printing frame, being on a larger scale than the remaining figures; Fig. 2 is a top view thereof; Fig. 3 is a right-end view; Fig. 4 is an elevation of the adjustable intermediate supporting plate; and Fig. 5 is a detail of construction of one of the arms provided on the ends of the two rollers, rotatably mounted in the ends of my frame, and providing means for stretching the base strip across the face of my frame, the ends of said base strip being secured in said rollers.

My printing frame comprises a fixed vertical side plate *a*, a parallel, opposite side bar *b*, and transverse tie rods or bars, *c*, *d*, rigidly connecting the members *a*, *b*. In the fixed side plate, *a*, are inserted the near ends of two guide bars *e*, *f*, preferably cylindrical. In order to rigidly hold said guide bars *e*, *f*, the side plate, *a*, is preferably made with bosses *g*. In the longitudinal ends of the frame members, *a*, *b*, are rotatably mounted two rollers *h*, *i*. On the guide bars *e*, *f* and the rollers *h*, *i* is mounted an intermediate vertical plate *j* (an elevation of which is shown in Fig. 4), adjustable toward and from the fixed side member *a*. The members *a*, *j* are of the same shape; they constitute the supporting members for the work to be done on my printing frame; they are convexed on arcs of equal radii, and their convexed faces are provided with a series of notches *k*, *l*, in which to removably receive supporting bars *m*, *n*, *o*. On the near ends of each of the rollers, *h*, *i*, are mounted arms *r*, an elevation of one of which is shown in Fig. 5. Each arm comprises a con-

caved portion *s*, a split collar-portion *t*, provided with ears *u* and a clamping screw *v*, and a web *w* being provided to stiffen the concaved member *s*. For convenience I prefer to adapt each of the rollers, *h*, *i*, to be rotated. The side member, *a*, is provided on its outer face with rotatable journal pins *x*, on each of which is rigidly mounted a cam arm *y*, provided with a lever handle *z*. The rollers *h*, *i* are respectively provided with slits *h'*, *i'*, said slits being shown in Figs. 1 and 3, and the purpose thereof is to receive the ends of the celluloid sheet, not shown, but which in practice is laid over the work.

My device is designed for transferring a printing face from a negative onto a metal sheet. When so used the metal sheet is laid across the convexed face of my frame; the adjustable supporting bars *m*, *n* and *o*—or two thereof, if only two are necessary—having previously been properly arranged in accordance with the length of the work, and the adjustable plate *j* in accordance with the width of the work. After the ends of the celluloid sheet have been inserted in the slits *h'*, *i'* of the rollers *h*, by then lifting one, or preferably both, of the arms *z* the cam arms *y* will bear against the concaved faces *s* of the arms *r*, thus rotating the rollers *h*, *i*, and winding up the ends of the celluloid sheet and stretching it across the frame. The work of making the transfer onto the metal sheet is then finished in the well known manner.

By reason of the described arrangement of the arms *r* and the cam arms *y*, the stretching of the overlying transparent flexible sheet is readily and conveniently accomplished. The arms *r* are provided with the described split clamping collars *t*, so that the rollers *h* may be properly arranged relative to the length of the celluloid sheet and so as to enable the described stretching devices to properly perform their function.

The notches *j'* at the base of the intermediate member *j* are provided for the tie bars *c*, *d*, the holes *j''* for the ends of the guide bars *e*, *f*, and the semi-circular cut-out places *j'''* are provided for the rollers *h*, *i*.

I claim:

1. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fas-

tening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate, and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; and means for rotating one roller.

2. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fastening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate, and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; and an arm on said rotatable roller.

3. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fastening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate, and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; and an arm on said rotatable roller, such arm provided with a concaved bottom face.

4. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fastening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate, and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; an arm on said rotatable roller; said arm being circumferentially adjustable on said rotatable roller and provided with a concaved bottom face; and a pivoted cam arm and lever, said cam arm being adapted to engage with said concaved bottom face of the arm on said roller.

5. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fastening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side

plate and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; an arm on said rotatable roller; said arm including a split clamping collar by which it is fixed circumferentially adjustable on one end of said rotatable roller; and a pivoted cam arm and lever, said cam arm being adapted to engage with said roller arm.

6. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; rollers in the ends of the frame, one of said rollers being rotatable, and such rollers being provided with means for fastening the ends of a sheet thereon; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate, and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; an arm on said rotatable roller, such arm provided with a concaved bottom face; said arm including a split clamping collar by which it is fixed circumferentially adjustable on one end of said rotatable roller; and a pivoted cam arm and lever, said cam arm being adapted to engage with said concaved bottom face of the arm on said roller.

7. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; slitted rollers in the ends of the frame, one of said rollers being rotatable; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; and means for rotating one roller.

8. A printing frame comprising a fixed side plate and an opposite side bar; transverse bars connecting the front and rear sides; slitted rollers in the ends of the frame, one of said rollers being rotatable; an intermediate adjustable plate and guiding means therefor, the top faces of said fixed side plate and the intermediate plate being convexed on arcs of equal radii, for the purpose specified; an arm on said rotatable roller; said arm being circumferentially adjustable on said rotatable roller and provided with a concaved bottom face; and a pivoted cam arm and lever, said cam arm being adapted to engage with said roller arm.

ROY ROBINSON.

Witnesses:

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