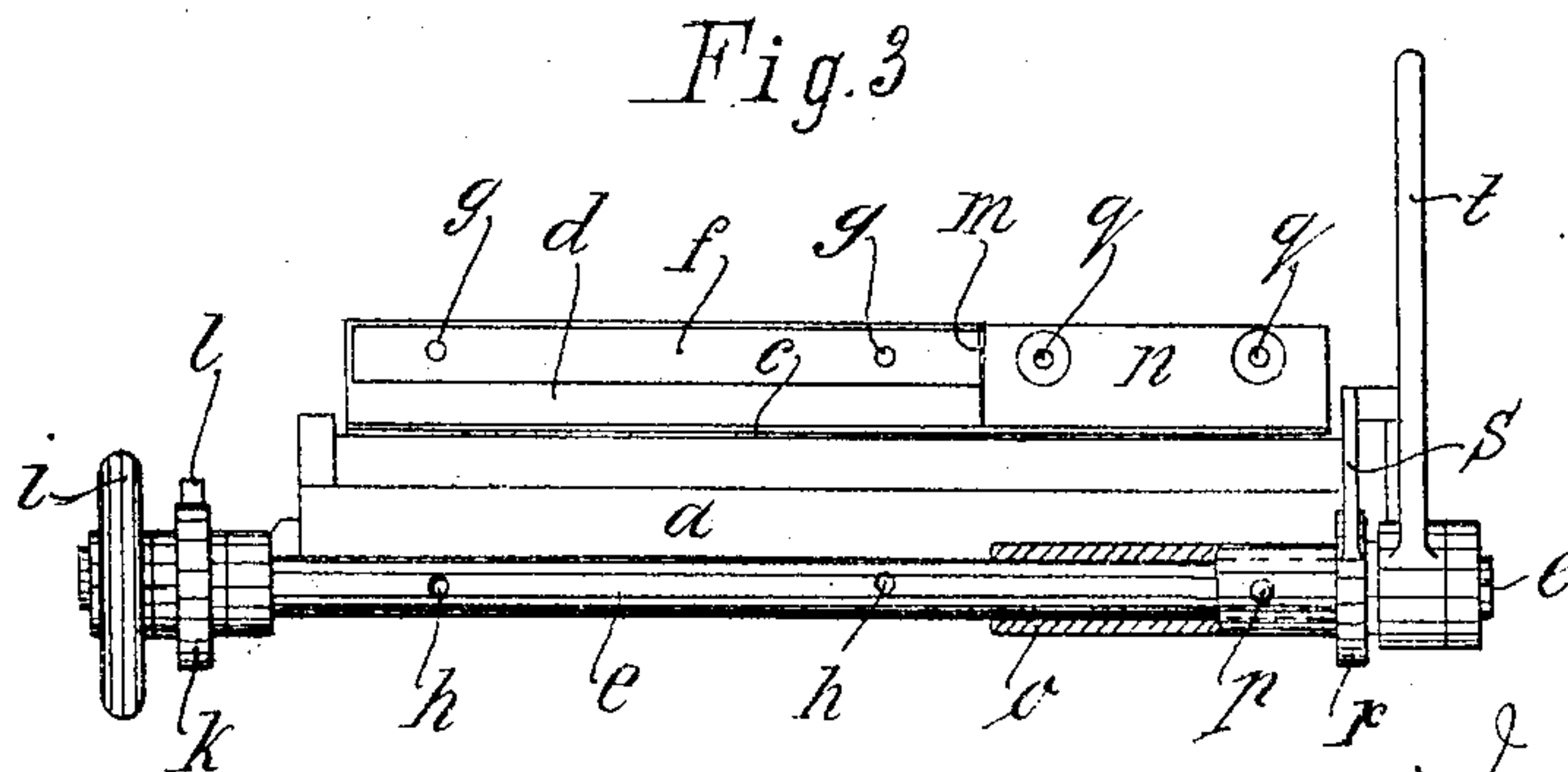
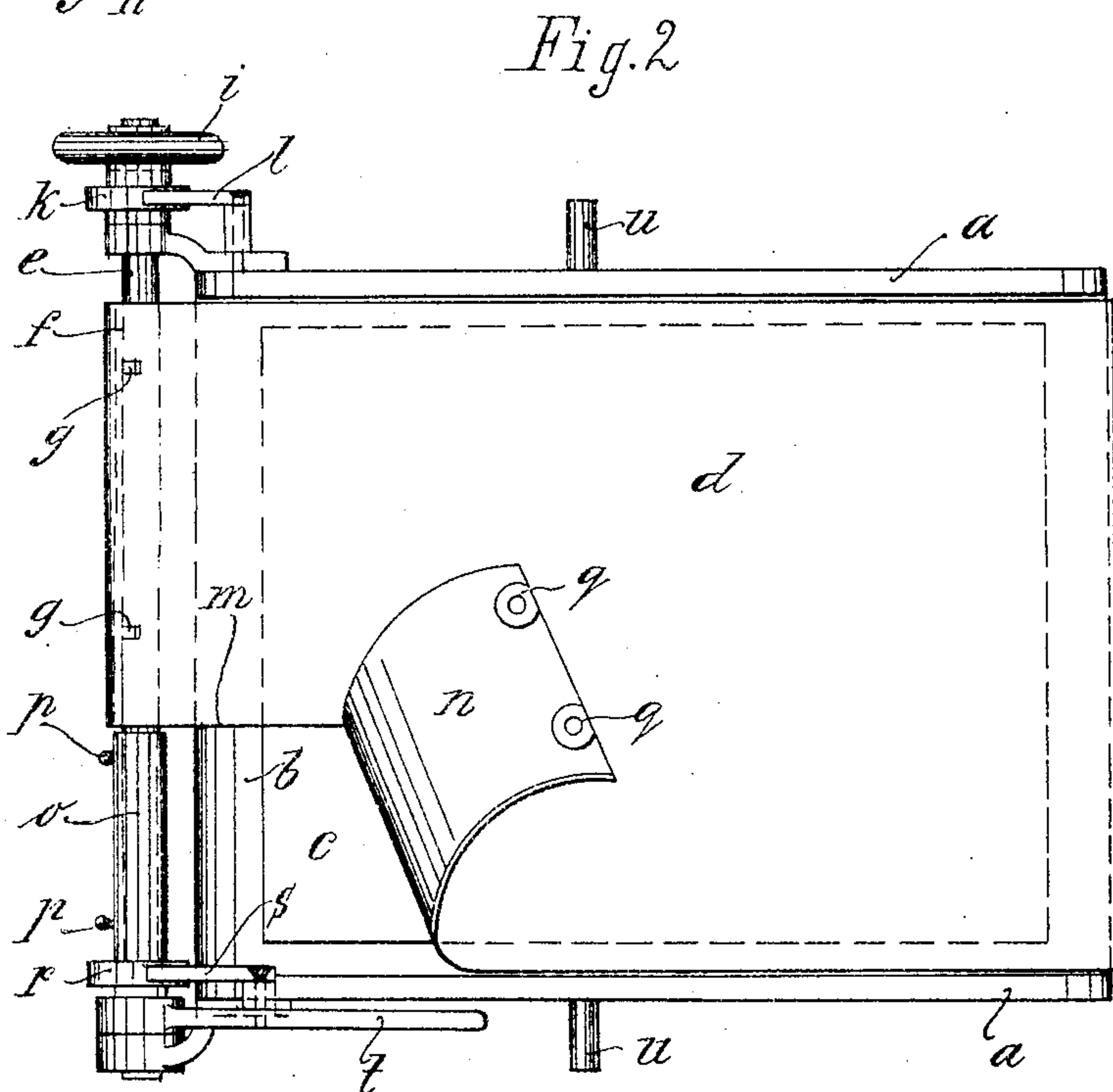
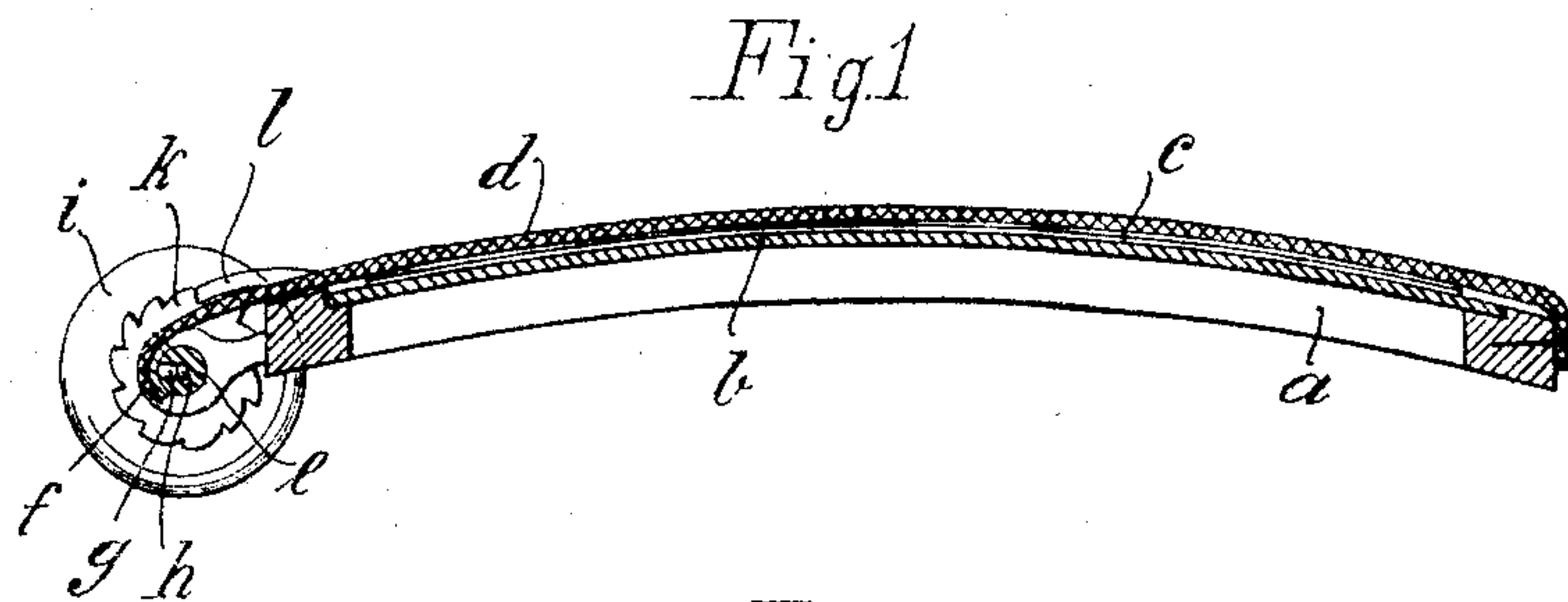


No. 799,266.

PATENTED SEPT. 12, 1905.

L. RENKEL.  
PHOTOGRAPHIC PRINTING FRAME.

APPLICATION FILED OCT. 21, 1904.



Witnesses  
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# UNITED STATES PATENT OFFICE.

LUDWIG RENKEL, OF STUTTGART, GERMANY.

## PHOTOGRAPHIC-PRINTING FRAME.

No. 799,266.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed October 21, 1904. Serial No. 229,467.

*To all whom it may concern:*

Be it known that I, LUDWIG RENKEL, a subject of the German Emperor, and a resident of Stuttgart, Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements in Photographic-Printing Frames, of which the following is a specification.

This invention relates to such photographic-printing apparati in which the drawing to be copied is placed over a curved sheet of glass, over which a sensitized paper is pressed by means of a cloth.

The present improvement consists in a device for tightening the cover-cloth uniformly, which is obtained by fixing one end of the cloth to one side of the printing-frame proper and the other end to this device rotatory mounted on the opposite side.

A further improvement is obtained by arranging the said apparatus in such a way that an edge of the cover-cloth can be separately released and tightened, so that the progress of the process can be properly seen without necessitating removal of the entire cloth.

The annexed drawings is a representation of a form of my invention.

Figure 1 is a vertical section, Fig. 2 a top view, and Fig. 3 a side view.

Similar letters refer to similar parts throughout the views.

The apparatus consists of a curved wooden frame *a*, with a curved glass plate *b*, on which the drawing *c*, the sensitive paper, and the cloth *d* are placed in the well-known manner. One end of this cloth *d* is fixed to one side of the frame and the other end to a shaft *e*, by means of which the stretching is done. To fix this end of the cloth to said shaft *e*, a metal band *f* is sewed on the border of the cloth and provided with pins *g*, to be inserted in recesses *h* in the shaft *e*. The shaft *e* is mounted on the frame in such a manner that the touching point of the cloth and the frame lies in the direction of the tangent. To roll up the cloth *d*, a hand-wheel *i* is fixed on the shaft *e*, and to prevent unrolling a stopping arrangement, consisting of a cog-wheel *k* and a catch *l*, is provided. The stretching cloth is slitted at *m* to produce a strip *n*, enabling to watch the process without taking off the whole cover. To stretch this strip, a hollow shaft *o* is inserted on the shaft

*e* and provided with pins *p* or the like, on which the strip, which is perforated at the border, can be fixed without interfering with the cloth *d*. This hollow shaft *o* can be turned by a lever *t* and stopped by a small cog-wheel *r* and a catch *s*. The lever can be turned at the side of the frame *a*. The diameter of the shaft *e* may be reduced at the place where the hollow shaft *o* is inserted, so as to give a plain construction. It will be readily understood that any other means of fixing the cloth or the slit to a shaft in a similar way may be provided.

By means of a bolt or the like the two shafts may be coupled together, and the hollow shaft may be turned separately, uncoupling the shafts.

Pins *u* are provided to put the frame in a stand.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a photographic-printing apparatus, the combination of a curved wooden frame, a curved glass plate in said frame, a roller journaled in said frame, means for turning said roller, a stop mechanism for said roller, a cover-cloth having one of its edges secured to the frame and having secured to its opposite edge a band with pins to be inserted in recesses in the roller, in such manner that the strain exerted on the cover-cloth by said roller acts tangentially to the curved glass plate, substantially as described, shown in drawings and for the purpose set forth.

2. In a photographic-printing apparatus, the combination of a frame, a roller journaled in said frame, a cover-cloth fixed with one end to the frame and adapted to be connected at its other end with the roller, said cover-cloth having a slit therein forming a flap in the cloth, a sleeve on the roller to be independently rotated and stopped and to which the edge of the flap is attached, so as to be separately tightened, substantially as described, shown in drawings and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LUDWIG RENKEL.

Witnesses:

STEFAN KOHLE,

WILHELM HASELMAIER.