

No. 692,324.

Patented Feb. 4, 1902.

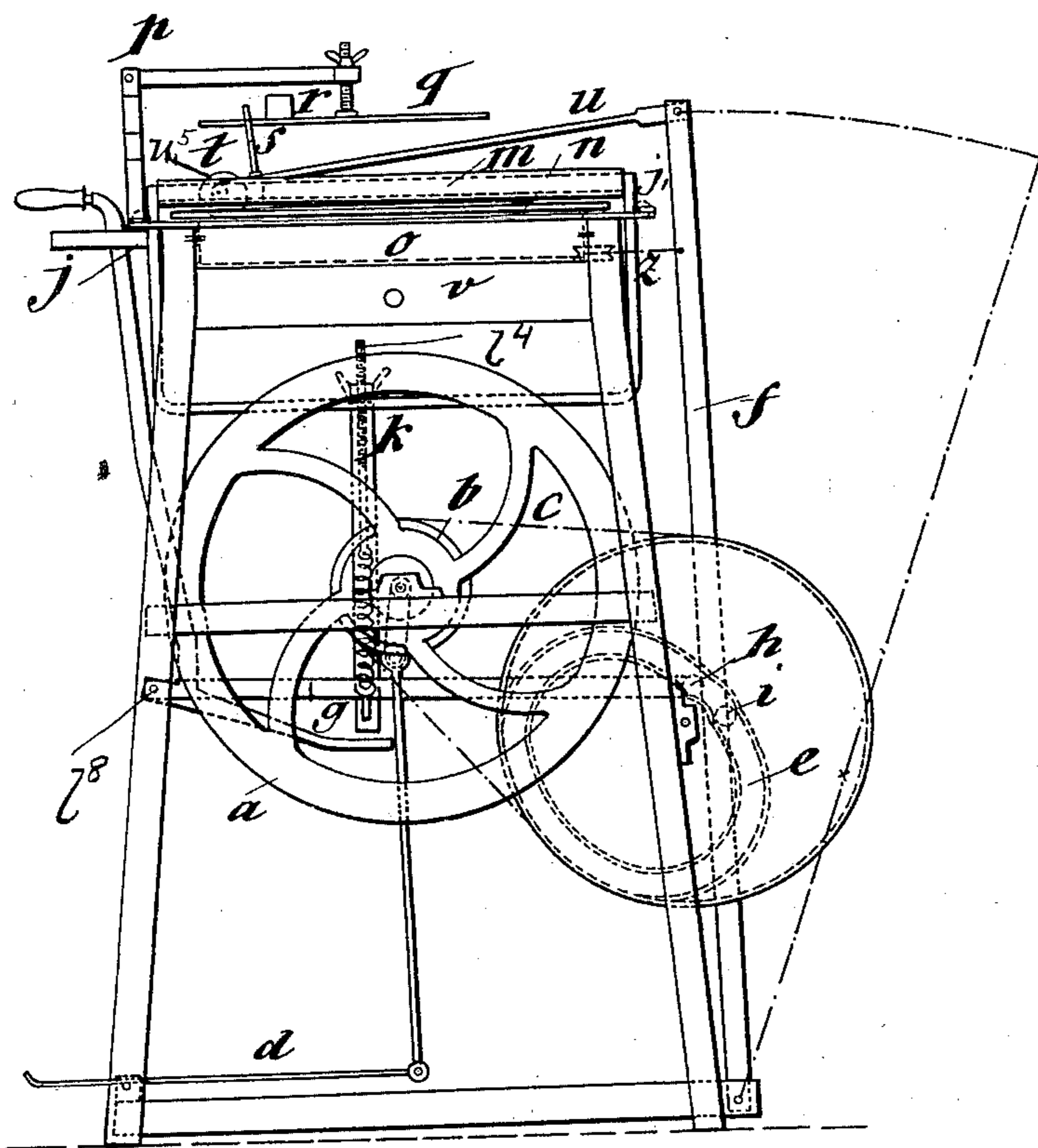
L. MARTIN.
AUTOGRAPHIC COPYING APPARATUS.

(Application filed Feb. 16, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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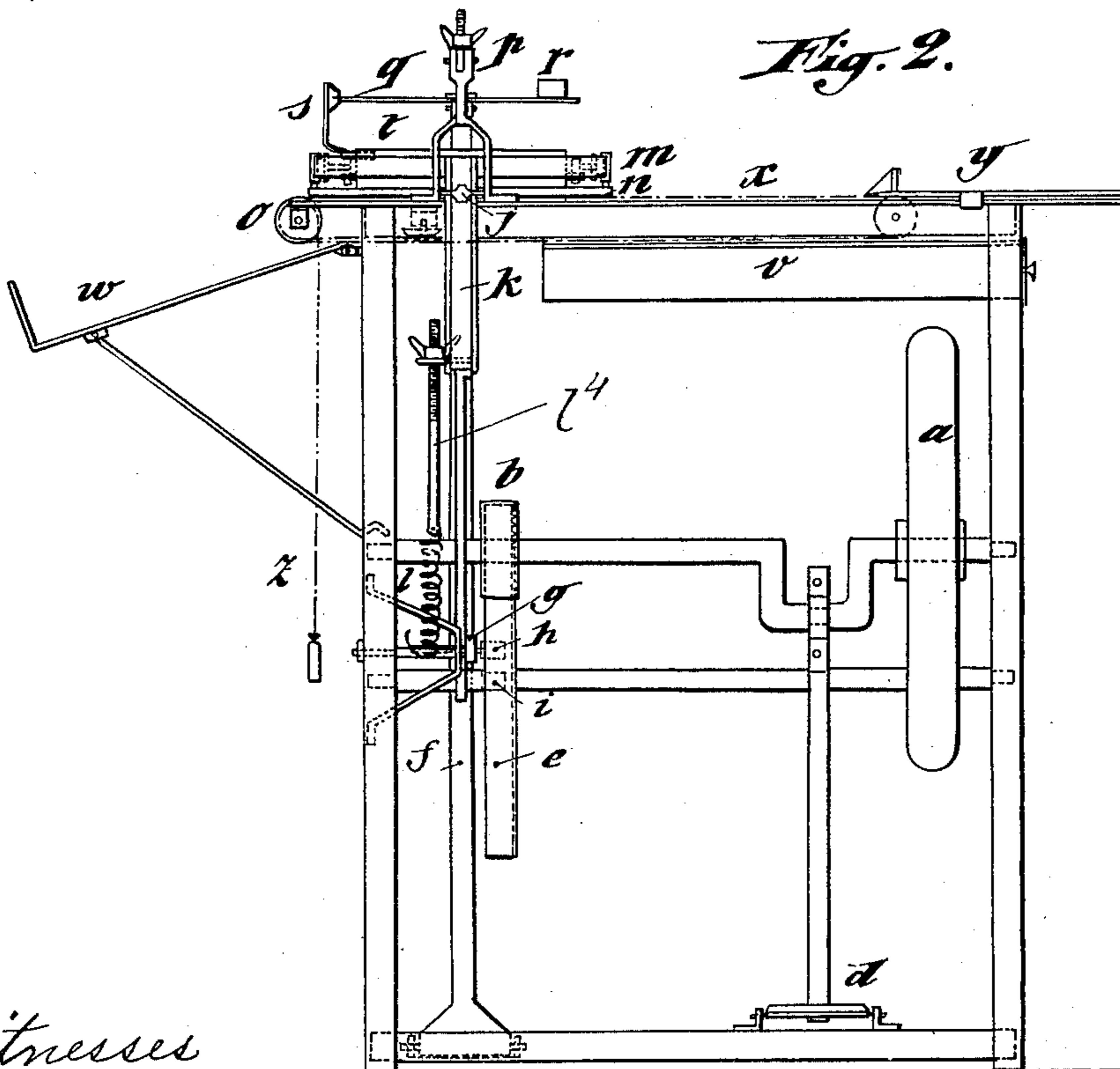
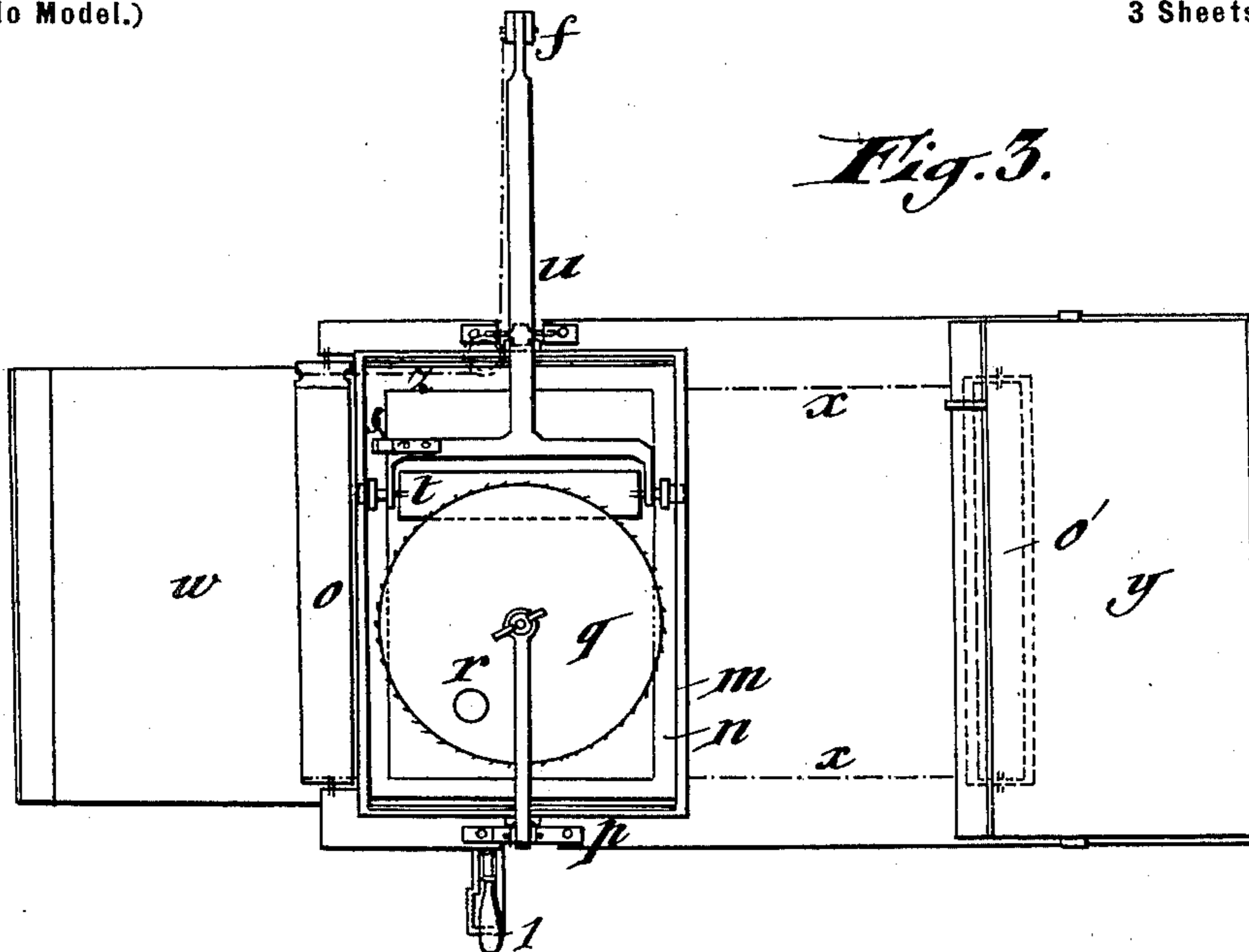
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AUTOGRAPHIC COPYING APPARATUS

(Application filed Feb. 16, 1899.)

(No Model.)

3 Sheets—Sheet 2.



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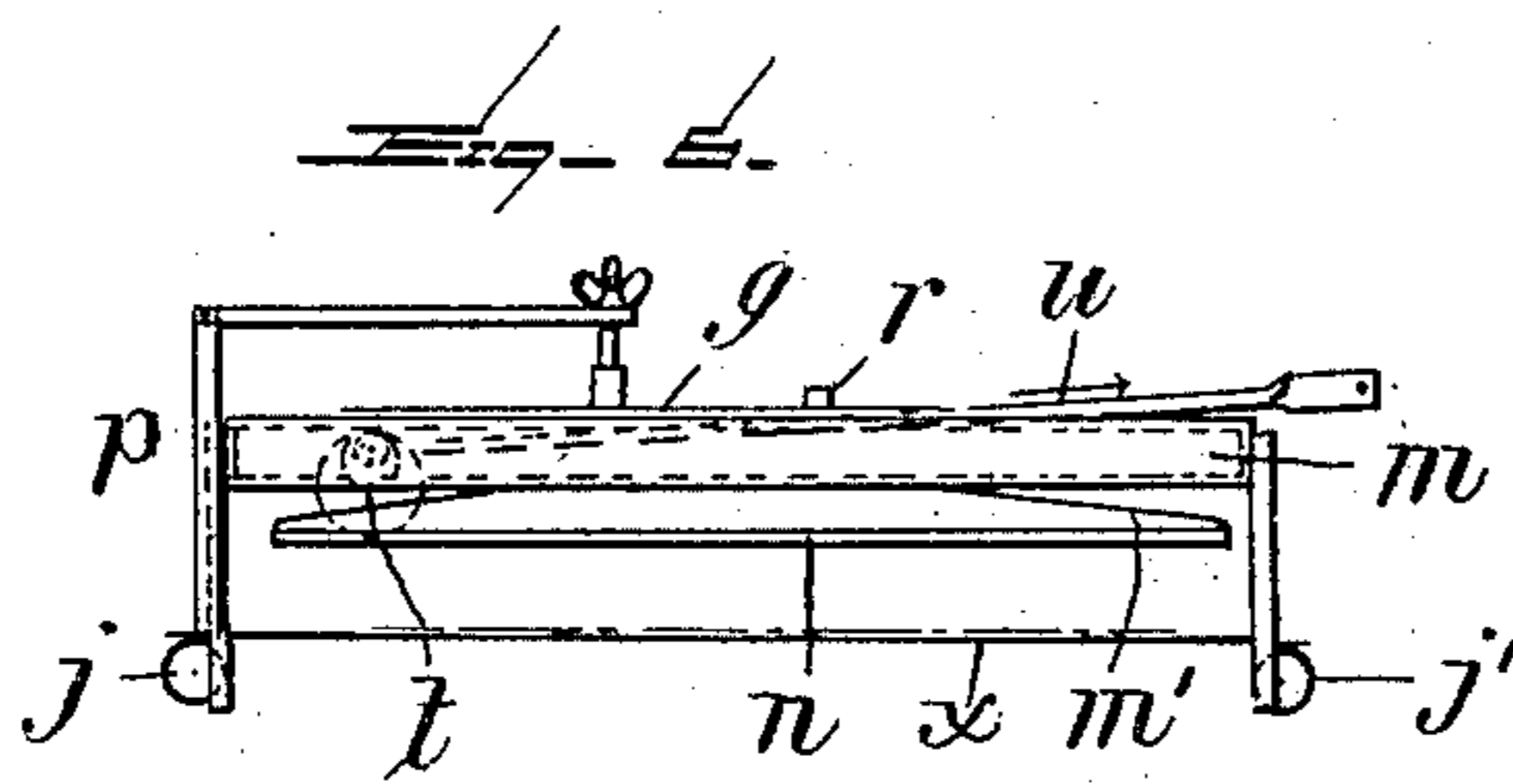
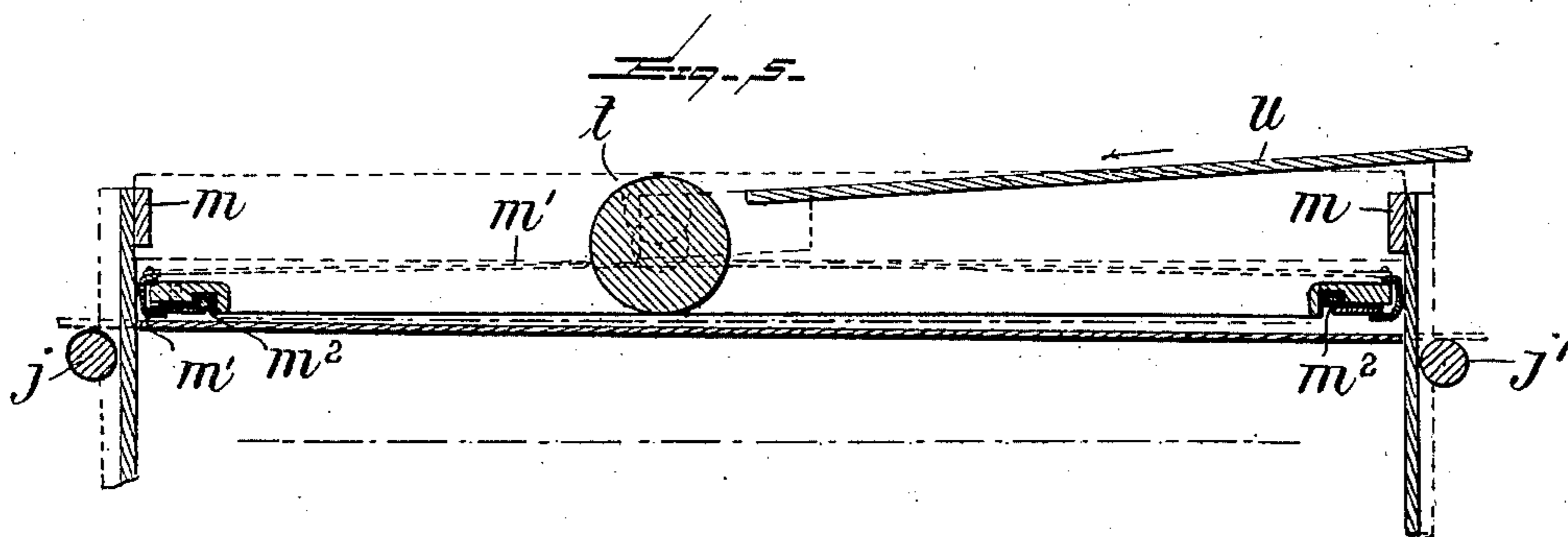
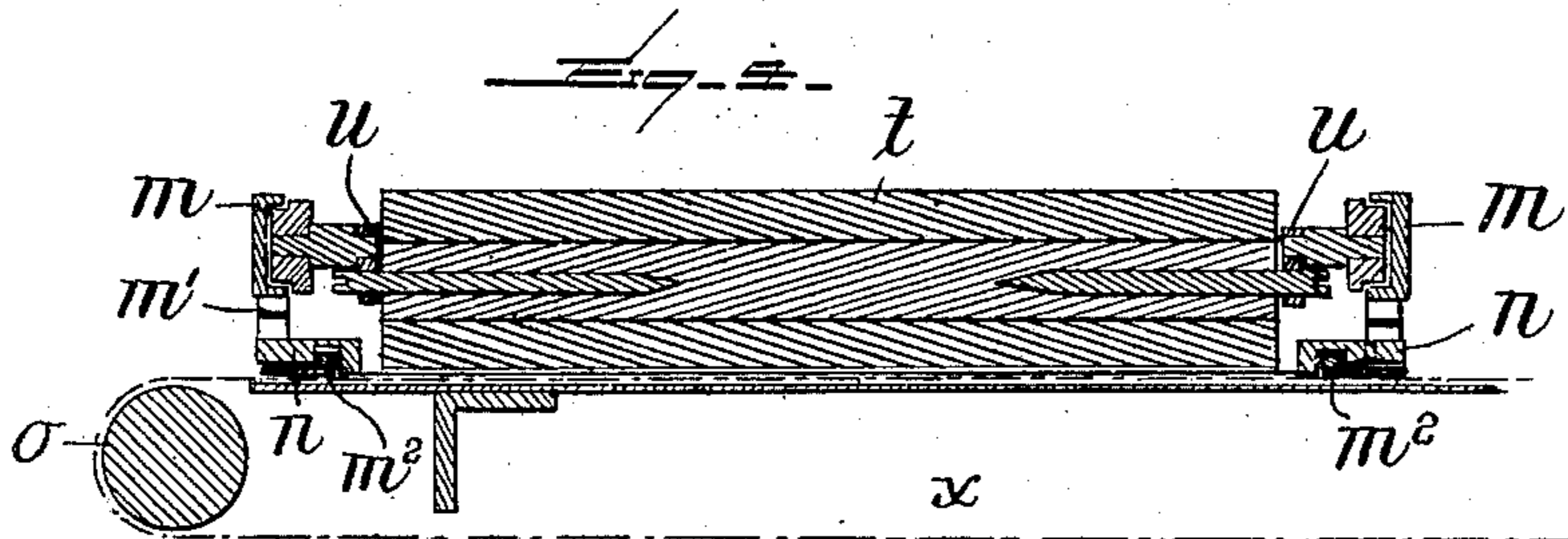
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AUTOGRAPHIC COPYING APPARATUS.

(Application filed Feb. 16, 1899.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS MARTIN, OF LAUSANNE, SWITZERLAND.

AUTOGRAPHIC COPYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 692,324, dated February 4, 1902.

Application filed February 16, 1899. Serial No. 705,700. (No model.)

To all whom it may concern:

Be it known that I, LOUIS MARTIN, a citizen of Switzerland, residing at Lausanne, Switzerland, have invented certain new and useful

5 Improvements in Autographic Copying Apparatus, of which the following is a specification.

The present invention relates to an autographic copying apparatus designed to reproduce a great number of copies in a very rapid manner of handwriting or type-written matter executed on paper treated with stearin; and it comprises such a simple method of operation that it can be employed by everybody.

15 The accompanying drawings, which are given by way of example, illustrate one form of construction of the invention.

Figure 1 is a side elevation of the apparatus. Fig. 2 is a front elevation, and Fig. 3 is a plan of the same. Figs. 4 and 5 are enlarged sectional views showing the arrangement of the frames *m n* and other parts hereinafter referred to. Fig. 6 shows the frames *m n* and the inking-roller raised above the

25 table.

The parts that constitute the autographic copying apparatus are as follows:

A treadle *d* (where no other suitable motor is available) may be employed to operate the whole apparatus by acting upon a fly-wheel *a*, upon whose axle there is fixed a pulley *b*, (or pinion,) gearing through the belt *c* (or a gear-wheel) with the cam *e*, that operates a vertical lever *f* and a horizontal lever *g*, both hereinafter described. An endless apron, which is kept stretched by means of two parallel rollers *o* and *o'*, serves by means of an intermittent rotary motion to bring the sheets of paper under the frame *n* and thence onto a table *w*, on which they are piled according as the printing proceeds. The vertical lever *f* is fixed at its lower end by means of a hinge to a cross-piece of the table, which serves as a support. It carries at one-third of its height

45 a roller *i*, that works in the groove of the cam, and at its upper end it is provided with a joint for connection with the arm *u* of the inking-roller *t*, which is covered with gelatin and to which it imparts to-and-fro motion.

50 The horizontal lever *g* is shorter than the foregoing lever, and it is supported by means of a hinge at about the middle of a leg of the

table, and it carries its eccentric roller *h* at the opposite end. About the middle of this lever *g* there is jointed with slight play a 55 forked support *k*, the two arms of which rise above and outside of the two edges of the table and slide between two guide-rollers *j* and *j'*, fixed to the latter. These arms are secured at their ends to the two ends of the 60 framing *m*, which is intended to support the frame *n* of the original sheet and the inking-roller *t*, which parts are thus alternately raised and lowered by the lever *g* at each revolution of the cam. The arm *u* of the inking- 65 roller is also formed at its end of fork shape and is provided at its two ends outside and a little above the axis of the inking-roller with a guide-roller *u'*, working in a straight groove inside and along the frame *m*. By the alternate 70 operation of the two levers *f* and *g* the inking-roller describes an exact rectangle in its movement. A pressure-spring *l*, Fig. 2, having a regulating-screw *l'*, tightens the joint of the lever *g* and of the support *k*, which has a play 75 of two centimeters and produces the desired pressure of the inking-roller upon the original. A hand-lever *l*, the lower part of which is elbowed and pivoted at this elbow at *l'* upon the same shaft as the lever *g*, serves to pre- 80 vent impression during the operation when it is drawn backward and held in the hook *A* from the fact that the lower end of said lever, which has been somewhat raised, opposes the complete descent of the support *k*, and there- 85 fore of the inking-roller. Said lever *l* is utilized in the three following cases: first, for preventing the loss of sheets of paper badly placed upon the apron, said sheets being thus brought under the frame without being 90 spoiled; second, for preventing the apron from being soiled by ink from the inking-roller upon starting the machine, and, third, for holding the inking-roller out of contact with the table when the machine does not operate. 95 The framing *m* supports the inking-roller by means of the two guide-rollers of the arm *u* at a height of four centimeters during the return of the said roller to the rear and presses it upon the original that rests on the web and 100 the table during impression when the roller moves forward. The framing *m* carries under it another frame *m'*, having two flexible sides, and the two ends in the shape of clasps

serve to receive and hold the frame *n*, under which the original sheet is fixed, by means of another small iron frame *m*², Figs. 4 and 5, held in a groove in said frame *n* by means of
5 hooks or in any suitable way.

The flexible frame permits the frame *n*, and therefore the original sheet, to be separated one centimeter away from the inking-roller when it is raised and while it is making its
10 return stroke. Without said separation the inking-roller would tear the sheet. During the movement of impression the frame *n* and the original sheet rest on the web and the table to receive pressure from the inking-roller.
15 The flexible frame pressing against the framing *m* allows the latter to be completely brought close to said frame *n*.

The frame *n* is the only part which has to be moved from the machine for the purpose
20 of changing the original sheet. It is slipped into position from the side. An inking-disk *q* transfers the ink to the roller *t* during the rearward return movement of the latter. This disk is held in suspension by means of
25 a support *p*, that is provided with a regulating-screw and is bent at an angle by means of a hinge which allows of inverting it.

The finger *s* has two branches, one of which is secured to the left-hand branch of fork *u*,
30 the other being of flexible material and extending on a curve above the plate *q*. Said flexible branch engages at each forward stroke the rim of said plate to rotate it from one-third to one-fourth of a revolution in order to
35 secure a regular distribution of ink over the entire length of the inking-roller. *r* indicates a cup, the bottom of which is provided with an opening, and said cup contains ink.

v is a drawer, and *y* a supporting-leaf.

40 The intermittent motion of the web, serving to convey the sheet while the frame is lifted, is imparted to the left roller *o* by means of a small cord *z*. The latter, attached to the vertical lever *f* near the plate of the table, extends around a small grooved pulley arranged
45 under said table. Thence said cord extends to the end of the left-hand roller *o* and into and around a suitable groove thereon, so that the end of the cord is freely suspended, said
50 end carrying a small weight. When the vertical lever moves toward the table, the web and the two rollers around which it extends remain stationary, because the weight of the cord *z* descends by simply causing said cord
55 to slide in the groove of the roller *o*, the cord being released and but a slight tension being produced on it. At this moment the operator places upon the web to the right of the frame the sheet of paper to be printed. On the
60 other hand, when the vertical lever moves away from the table it pulls the cord *z*, and the tension thus produced will be increased by

the weight, whereby said roller *o* and the web will be actuated. Thus the web brings the sheet of paper under the frame *n*, where said
65 web stops, together with said sheet, at the desired place for the purpose of being printed. On the following movement of the web the same sheet after being printed drops on the table *w*, while a fresh sheet comes under the frame, &c. A marginal table *y*,
70 adapted to slide at will on the right hand of the table, serves to receive the necessary paper for pulling off and for regulating the laying on of the sheets. Finally a drawer *v* is employed for stirring up the ink by means of
75 another hard roller, that serves to add the requisite ink to the inking-disk if the cup *r*, which is pierced at its base and which may be fixed upon said disk, does not furnish sufficient ink. According to the requirements of
80 the case the machine may be completed by accessories which will allow, by means of a roll of paper, of causing the paper strip to advance automatically and of cutting it into sheets on
85 leaving the place of impression. In this manner the laying on of the sheets will be dispensed with. For this purpose the roll of paper, being provided with a central spindle,
90 may be held upon the right-hand roller *o'* between two slotted uprights that are adapted to be fixed to the edges of the table, and the strip of paper is drawn by the left-hand roller
95 *o*, upon which another roller, to be provided, would exert the desired pressure.

Having fully described my invention, I declare that what I claim is—

1. In an apparatus of the character described, the combination of a cam, means for operating the same, a lever *f*, having a connection with and adapted to be oscillated from the cam, a second lever *g*, having a connection with and adapted to be oscillated from the cam, an inking-roller, a jointed connection between it and the first lever, a frame *m*,
100 a connection between it and the lever *g*, and a hand-lever arranged to limit the downward movement of the lever *g*, for the purpose specified.

2. In an apparatus of the character described, the combination of a cam, means for operating the same, a lever *f*, having a connection with and adapted to be oscillated from the cam, a second lever *g*, having a connection with and adapted to be oscillated from the cam, an inking-roller, a jointed connection between it and the lever *f*, a frame *m*,
110 a connection between it and the lever *g*, and an endless apron arranged to travel beneath the frame *m*.

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Witnesses:

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