

No. 702,555.

Patented June 17, 1902.

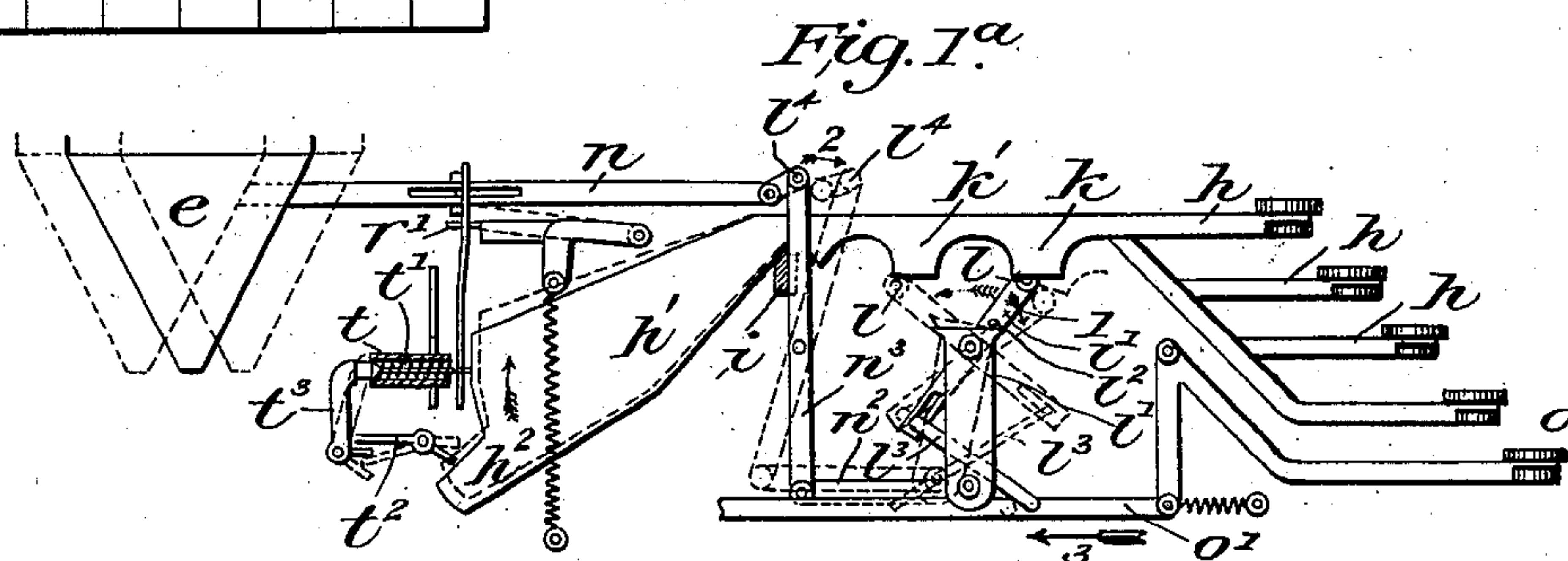
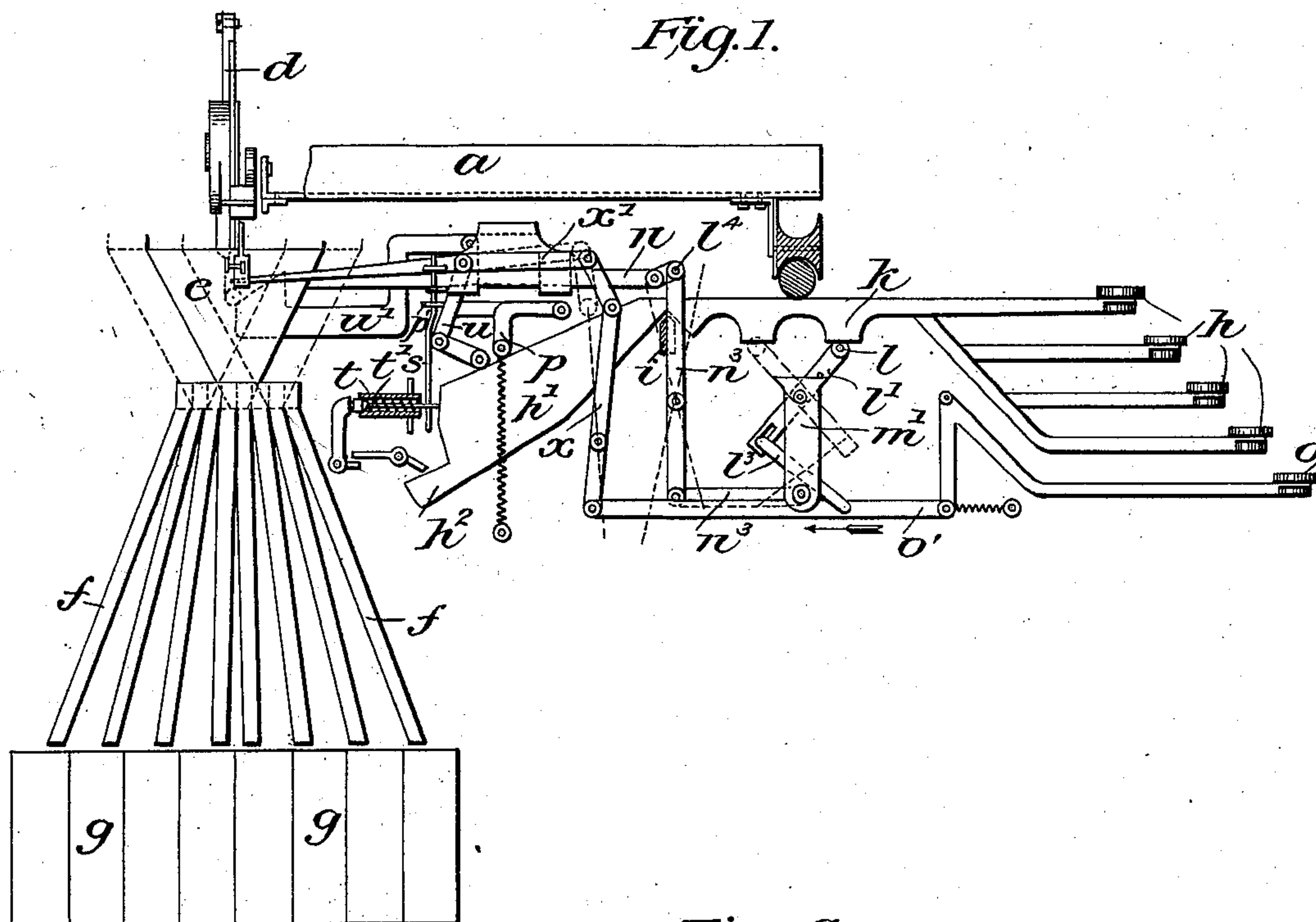
J. HINKLEIN.

TYPE DISTRIBUTING MACHINE.

(Application filed Dec. 28, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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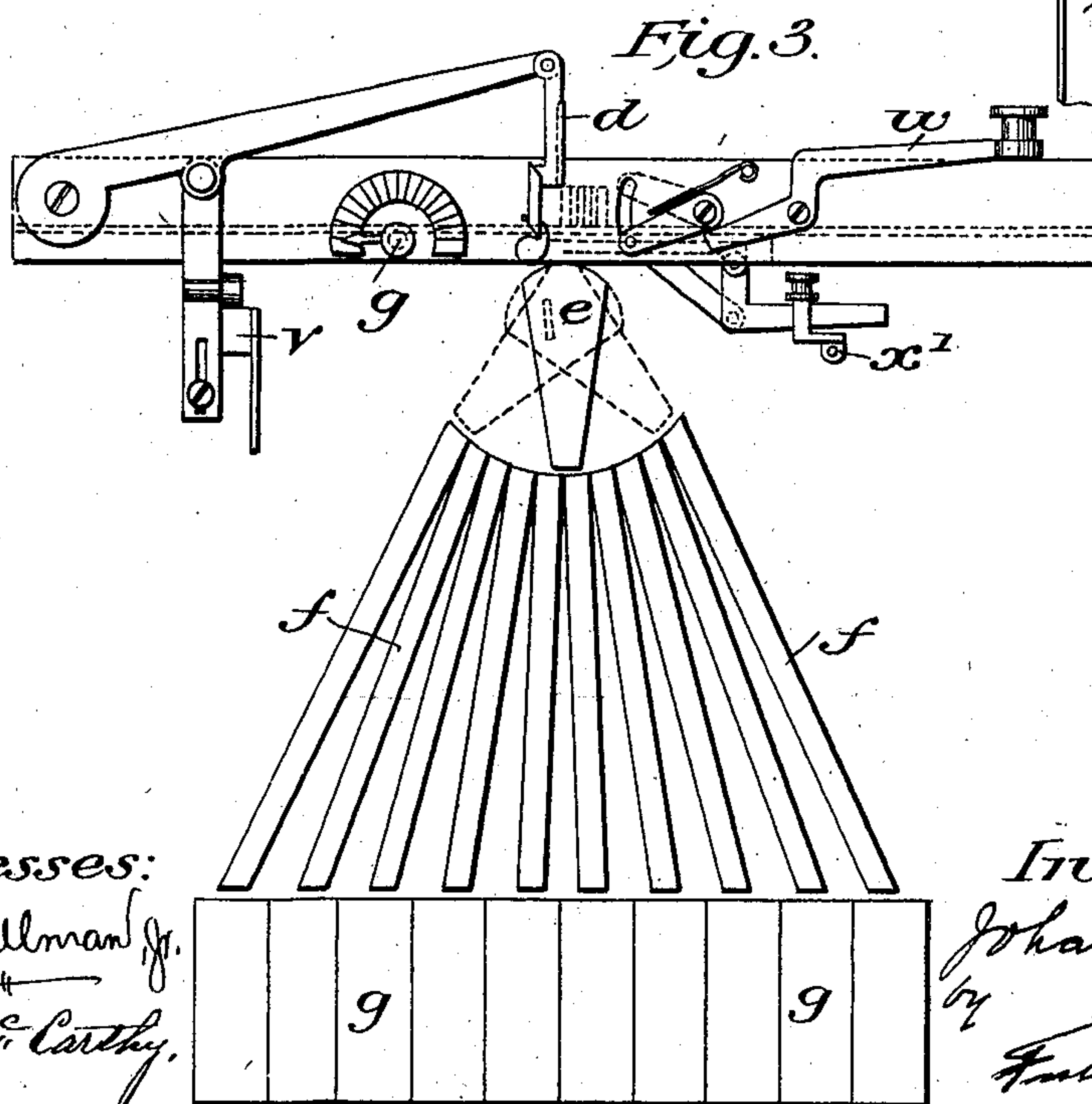
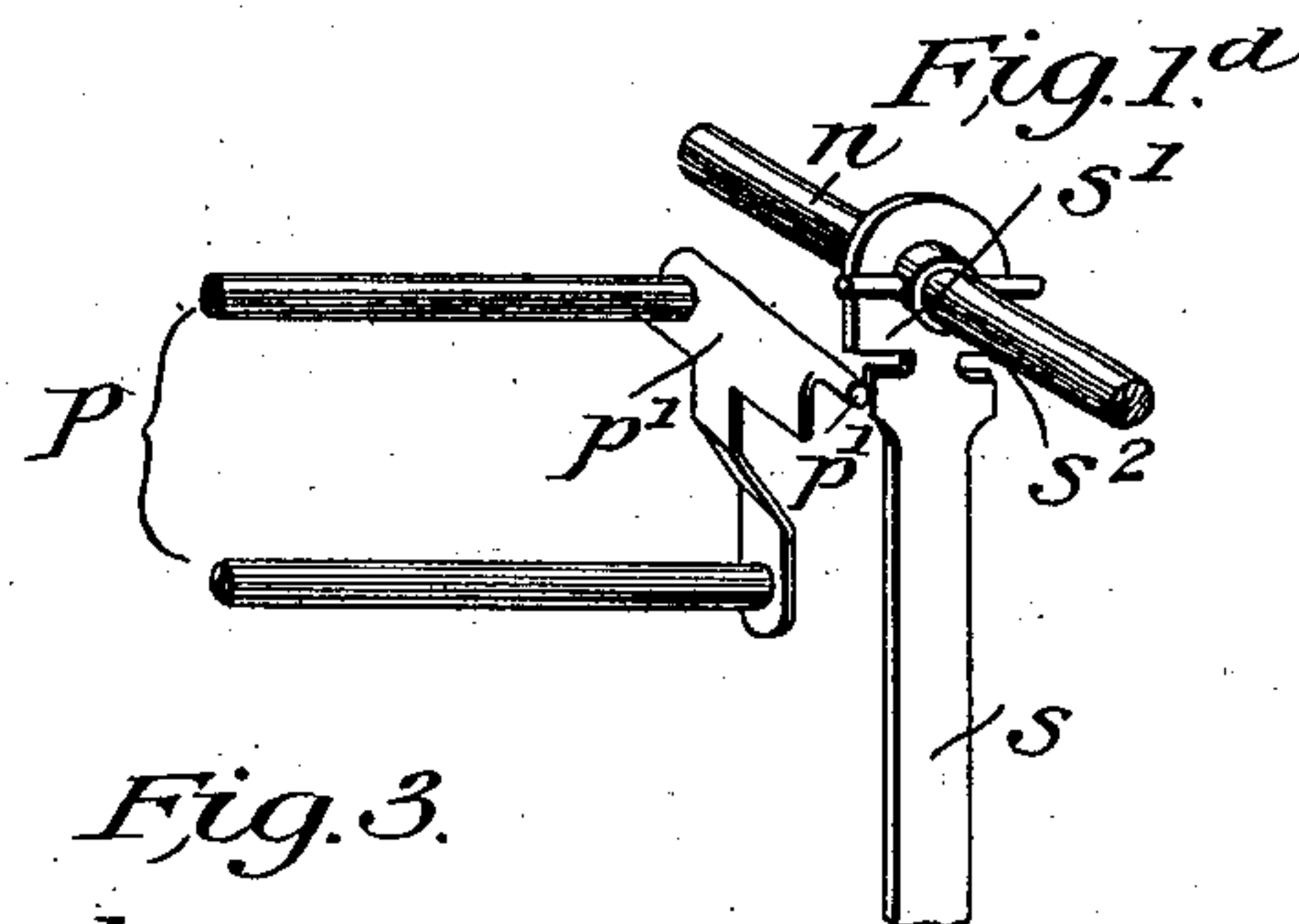
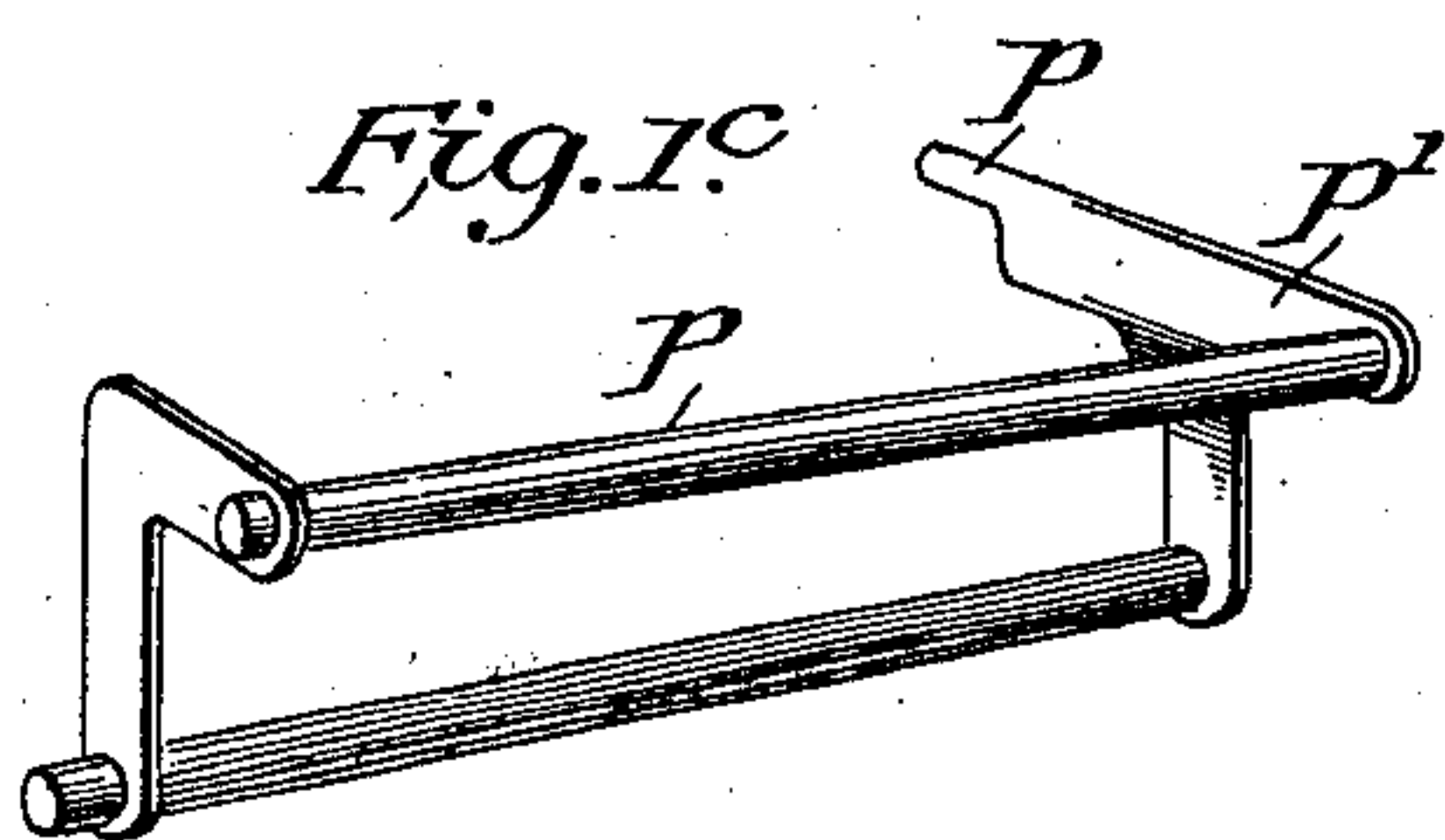
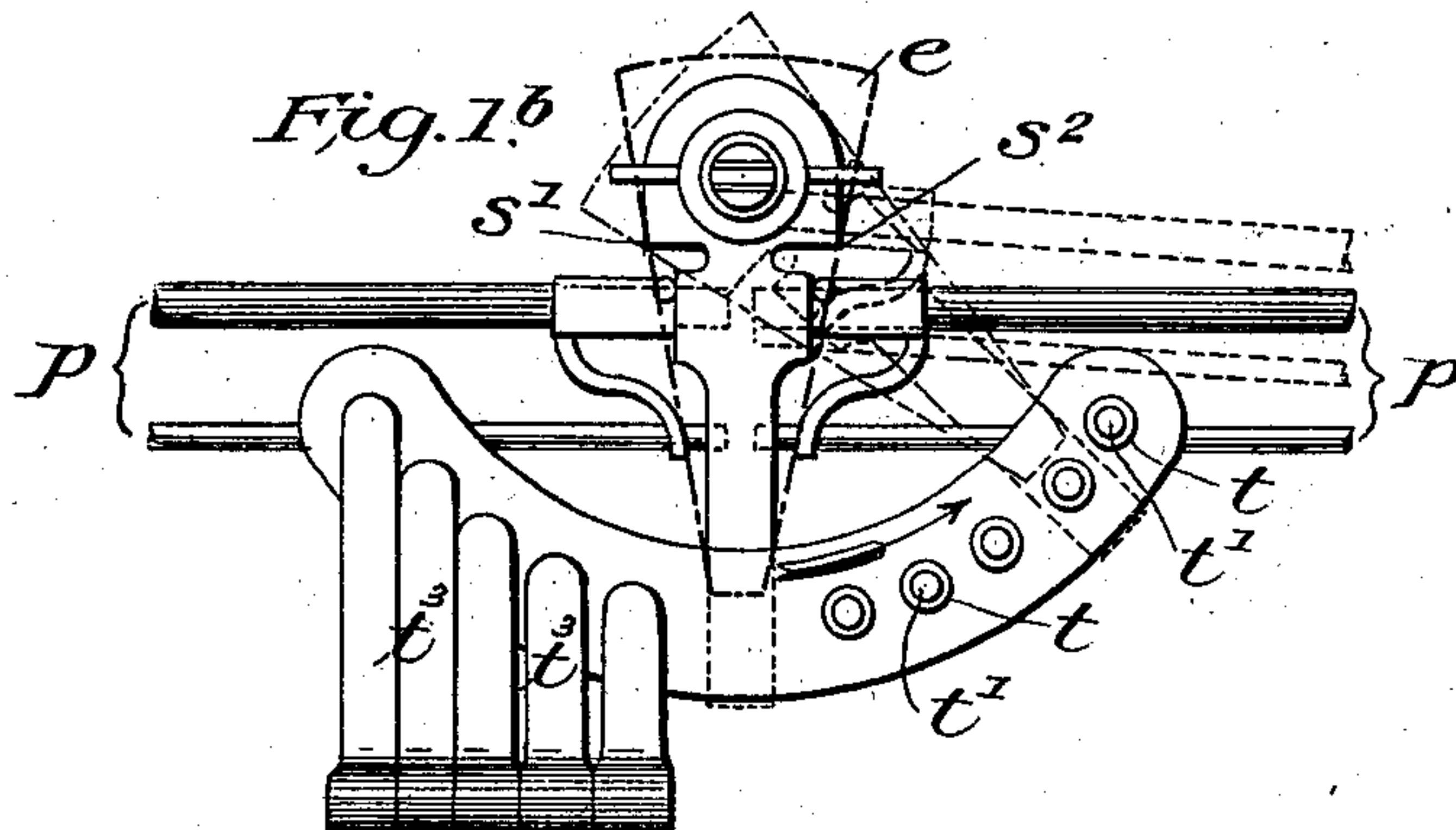
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

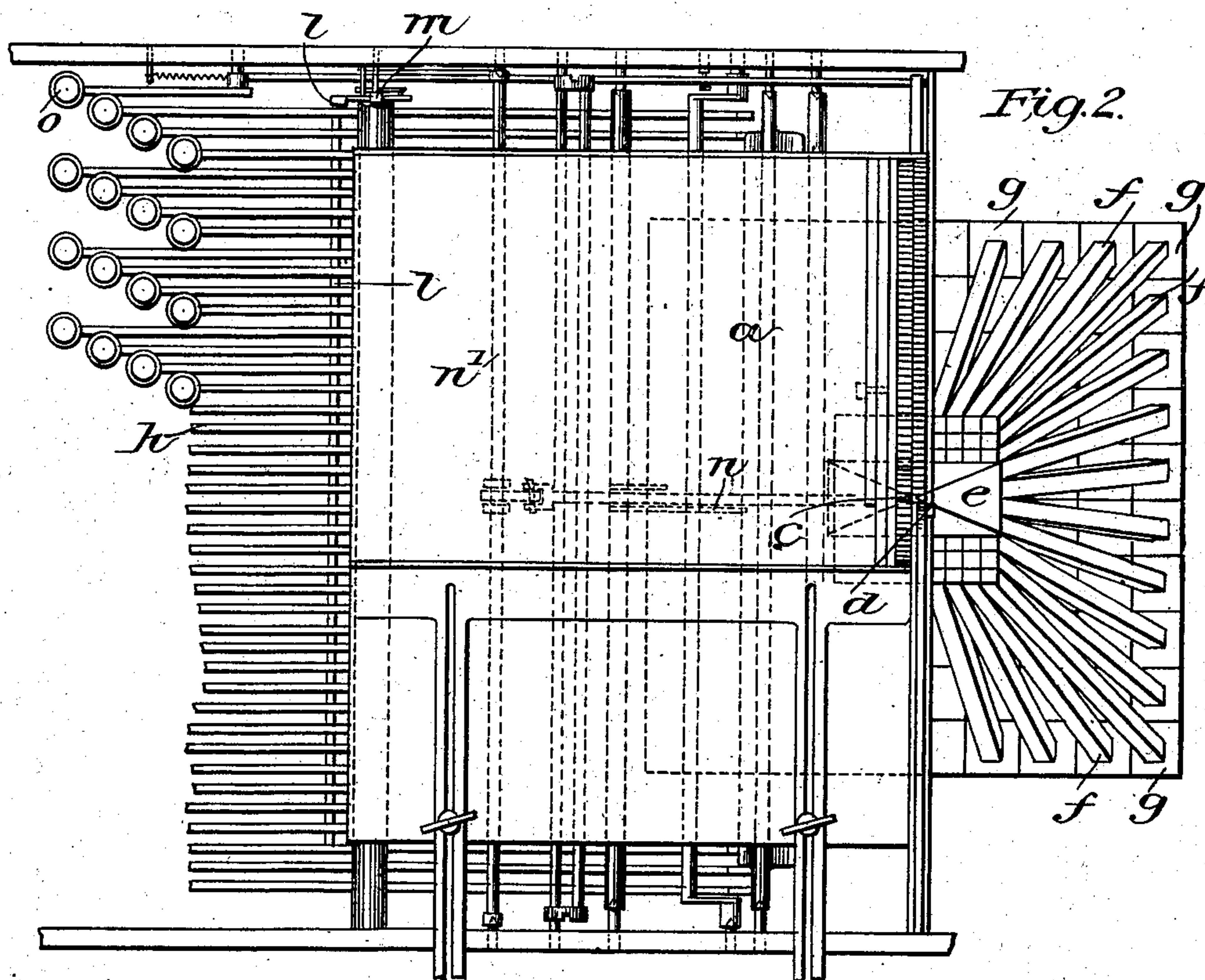
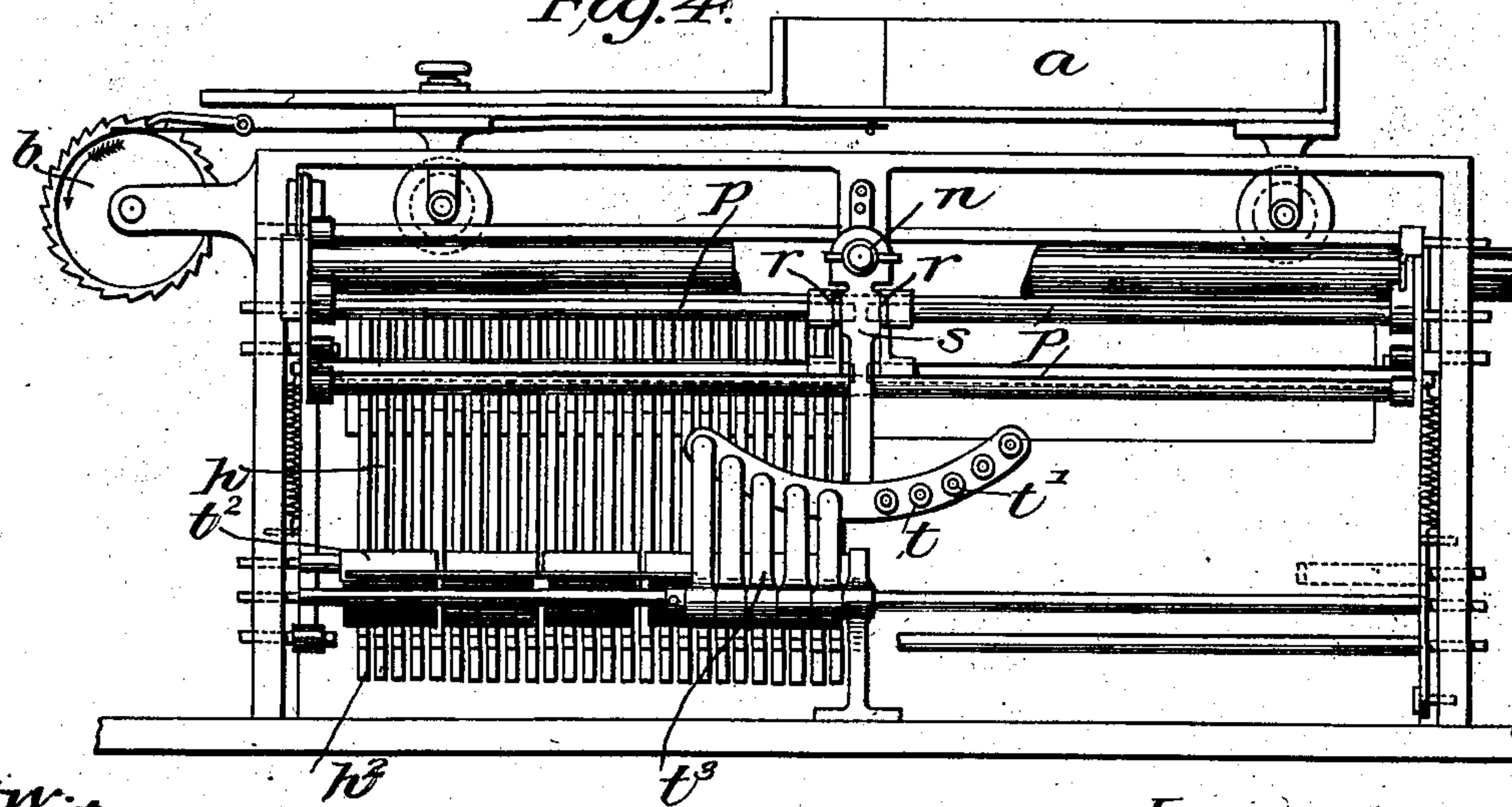


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TO FELIX LEVY, OF FRANKFORT-ON-THE-MAIN, GERMANY.

TYPE-DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,555, dated June 17, 1902.

Application filed December 28, 1901. Serial No. 87,631. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES HINKLEIN, a subject of the Emperor of Germany, and a resident of 56 Bornheimer Landstrasse, Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in Type-Distributing Machines, of which the following is a specification.

The object of this invention is to provide a simple and convenient type-distributing machine having a keyboard and levers arranged after the manner of a type-writing machine.

I will describe my invention with reference to the accompanying drawings, of which—

Figure 1 is a side sectional elevation, Fig. 2 a plan, and Fig. 3 an end view, of so much of a type-distributing machine as is necessary to illustrate my invention. Fig. 4 shows in elevation parts of the internal mechanism, the parts shown in Fig. 3 being omitted; and Figs 1^a, 1^b, 1^c, and 1^d show the mechanisms for operating the hopper by which the separate types are fed into guides which conduct the types into their proper recesses or boxes in the type-cases.

a is a carriage on which is placed the matter to be distributed, which carriage is operated in one direction by a spring-barrel *b*, which tends to drive the carriage in the direction toward the said spring-barrel in a similar manner to the carriage of a type-writing machine, but is prevented from doing so by the foremost type on the carriage bearing against a stop *c*, Fig. 2. The foremost type, which is in contact with the stop *c*, is by the depression of a key forced by a plunger *d*, Figs. 2 and 3, into a hopper *e*, by which it is conducted into one of a series of channels *f* leading to the boxes or recesses *g* in the type-cases, Figs. 1 and 3. The outlet from the said hopper corresponds in size and shape to the transverse section of one of the channels *f*. When the key bearing a character corresponding to the character on the foremost type in the carriage *a* is depressed, the hopper *e* is caused to move so as to bring its discharge-opening opposite the entrance to the channel *f* leading to the box or recess in the type-cases to receive the said type.

The mechanism for imparting motion to the hopper comprises the key-levers *h*, which

are arranged to turn on the knife-edge of a bar *i*, so that when a key is depressed a projection *h'* on the key-lever *h* presses on a rod *l*, which extends across the machine and has mounted thereon the upper end of a lever *l'*, which turns on a rod *m*, which rod also carries a swinging lever *m'*, on which a pin or projection *l''* on the lever *l'* acts, so as to cause it to turn on the rod *m* in one or other direction, according to which side of the rod *m* the pin is caused to act. For instance, if the pin *l''* presses on the top of the lever *m'* at a point to the right of the rod *m*, Figs. 1 and 1^a, the lever *m'* will be caused to assume the position shown in dotted lines in Fig. 1^a, while the lever *l'* will be caused, by the projection *h'* on the key-lever *h*, to turn into the position shown by dotted lines in Fig. 1^a. The lever *m'* is connected, by means of links *n*², to the lower end *n*³ of a lever *l*⁴, centered on a rod *l*⁵, the said lever *l*⁴ being connected at its upper end by a link to the hopper *e*, so that when the lever *m'* is moved into the position shown by dotted lines the upper end of the lever *l*⁴ will move in the direction of the arrow 2, Fig. 1^a, into the position shown by dotted lines in Fig. 1^a, and as the upper end of the lever *l*⁴ is connected by the rod *n* to the hopper *e* the said hopper *e* is moved from its normal central position (shown by full lines) to the right into the position shown by dotted lines in Fig. 1^a. The projections *h'* on the key-levers *h* are of different depths, so that the rod *l* will be depressed to a greater or lesser extent, according to which key is depressed, and consequently the hopper *e* will be correspondingly moved to a greater or lesser extent to the right in Figs. 1 and 1^a.

An auxiliary key *o* is connected by a rod *o'* and link *l*³ to the lower end of the lever *l'*, so that when the said auxiliary key is depressed the rod *o'* is moved in the direction of the arrow 3 and the lever *l'* is by the link *l*³ brought into the position shown by dotted lines in Fig. 1, the rod *l* being brought under projections *h'* on the levers *h*, so that if while the auxiliary key is depressed one of the other keys is also depressed the pin *l''* on the lever *l'* will press on the top of the lever *m'* on the left-hand side of the axis *m* and turn it into a position opposite to that hereinbe-

fore described, and shown by dotted lines in Fig. 1^a, and consequently the hopper *e* is moved to the left of its central normal position. (Shown by full lines in Figs. 1 and 1^a.)

5 Each key when depressed will thus cause a movement of the hopper *e* either to the right or to the left, according to whether the auxiliary key *o* be depressed or not. By this arrangement each key is utilized for two types of
10 different character, thereby reducing the number of keys to one-half the number of types of different character to be distributed. In addition to this rectilinear motion of the hopper *e* it has also imparted to it an oscillatory cur-
15 vilinear motion on the rod *n*, the direction of the oscillation to the right or to the left and the extent of its oscillations being varied according to the key that is depressed. This oscillating motion is obtained by the arrange-
20 ment shown in Figs. 1^a, 1^b, 1^c, 1^d.

The rod *n*, which is hollow and is capable of rotating on its longitudinal axis, has fixed on it a downwardly-projecting arm *S*, the boss or head of which arm is provided in prox-
25 imity to the rod *n* with two stops *S'* *S*², with one of which, *S'*, a pin *r* engages when any key in one half of the keyboard is depressed, another pin *r'* engaging the other stop *S*² when any key in the other half of the key-
30 board is depressed, so that the arm *S*, fixed to the rod *n*, is accordingly caused to oscillate either to the right or to the left. The pins *r* and *r'* are carried on frames *p*, actuated by extensions *h'* on the key-levers *h*. On these
35 extensions rest the two frames *p*, Figs. 1^a and 1^c and 1^d, each provided with an arm *p'*, on the free ends of which arms the pins *r* and *r'* are formed. The two frames *p* are operated independently of each other, one frame rest-
40 ing on the extensions *h'* of one half of the key-lever *h*, the other frame resting on the extensions *h'* of the other half of the key-levers *h*. When a key is depressed, the extension *h'* of the key-lever is raised, thereby lifting the
45 frame *p* resting thereon, and with it the pin *r*, (or *r'*), which then engages with the stop *S* (or *S'*) and causes the arm *S* and the hopper *e* to oscillate either to the right or to the left ac-
50 cordingly. The extent of the oscillation of the arm *S* is determined by the pins *t'*, fitted to slide in guides *t*, these pins being arranged in equal number on each half of a circular seg-
55 ment in front of the arm *S*. These pins *t* are normally held by springs in position clear of the arm *S*. On each of the extensions *h'* of the key-levers *h* is a small projection *h*², and on the projections of each half of the key-levers bears a double-armed frame *t*², one arm of
60 which frame rests on one arm of a series of bell-crank levers *t*³, so that when a key is depressed the other arm of one of the said bell-cranks is caused to press on the rear end of a pin *t'*, so as to project the pin into the path of the arm *S*, and so limit the movement of the
65 said arm.

The plunger *d*, by which the types are forced from the carriage *a* into the hopper *e*, is oper-

ated by depressing any one of the keys, by which depression the extension *h'* on the depressed key-lever *h* operates a lever *u*, Fig. 1, 70 connected to a bar *u'*, having an inclined projection *v*, which projection is caused to act on a roller carried on a bar to which the plunger *d* is attached, so as to raise the plunger until the projection passes the said roller, 75 whereupon the plunger falls down and pushes a type from the carriage *a* into the hopper *e*.

w, Fig. 3, is a lever which serves to lift the justifiers or spacers from the types, so that the operator can get hold of them and put them 80 aside. This lever on being depressed actuates a small pin which is situated below the row of type and raises the said spacers above the surface of the types.

The opening through which the types pass 85 from the carriage into the hopper can be regulated to suit the size of the types, for which purpose the auxiliary key *o* is connected to a lever *x*, to the upper end of which is connect-
90 ed a rod *x'*, attached to mechanism for enlarging or decreasing the opening through which the type passes to the hopper, so that by the depression of the key *o* the size of the opening will be regulated according to the width of this type. As the thickness of the type 95 varies with the kind of type, it is also necessary to adjust the opening; but as this is required to be done only once for each kind of type this may be effected by hand by turning
100 an index *y*, Fig. 3, connected with a slide.

The various constructional details of the apparatus may be varied without departing from the invention.

Having now particularly described and as- 105 certained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a type-distributor, the combination of a carriage for supporting the type to be distributed, a hopper to receive the detached 110 type, a plunger to detach the type, a series of keys corresponding to the type to be distributed, a series of channels below the hopper, also corresponding to the types to be distributed, mechanism actuated by any key of the 115 series for operating the plunger, and mechanism actuated by the respective keys for moving the hopper to register with the channel corresponding to the key which is moved, substantially as set forth. 120

2. In a type-distributor, the combination of means for detaching the type, a hopper to receive the detached type, a series of channels, corresponding with the types to be distributed into which the hopper may discharge, a series 125 of keys also corresponding to the types to be distributed, and mechanism actuated by the respective keys for moving the hopper to register with the channel corresponding to the key depressed, substantially as set forth. 130

3. In a type-distributor, the combination of means for detaching the type, a hopper to receive the detached type, a series of channels corresponding with the type to be distributed,

and into which the hopper may discharge, a series of keys also corresponding to the types to be distributed, and mechanism actuated by the keys for imparting a rectilinear movement
5 and also an oscillating movement transversely to the rectilinear movement, substantially as and for the purpose set forth.

4. In a type-distributor, the combination of means for detaching the type, a hopper to re-
10 ceive the detached type, a series of channels, corresponding with the types to be distributed, and into which the hopper may discharge, a series of keys also corresponding with the types to be distributed, lever mech-
15 anism actuated by the keys to impart rectilinear movement to the hopper, and an auxiliary key for shifting the lever mechanism to change the direction of said rectilinear movement of the hopper, substantially as set forth.

20 5. In a type-distributor, the combination of means for detaching the type, a hopper to receive the detached type, a series of channels, corresponding with the types to be distributed, into which the hopper may discharge, a
25 series of keys also corresponding with the types to be distributed, mechanism actuated by the keys for imparting an oscillating movement to the hopper, and stops controlled by

the keys for determining the extent of said oscillating movement, substantially as set forth. 30

6. In a type-distributor, the combination of a carriage for supporting the type to be distributed, a plunger for detaching a single type, a series of keys, and mechanism actuated by any key of the series for actuating said plun- 35
ger, substantially as set forth.

7. In a type-distributor, the combination of means for detaching the type, a hopper to receive the type, a series of channels, corresponding with the types to be distributed, into which
40 the hopper may discharge, a series of key-levers also corresponding with the types to be distributed, a lever system connected to the hopper to impart rectilinear movement to the latter, said system being common to all of said
45 key-levers, projections on said key-levers to engage and operate the lever system, said projections being of different lengths on different key-levers, substantially as set forth.

In testimony whereof I have signed my
50 name to this specification in the presence of two subscribing witnesses.

JOHANNES HINKLEIN.

Witnesses:

FRANZ HAPLACHER,
MICHAEL VOLK.