

A. SHEDLOCK.

PRINTING PRESS.

No. 260,792.

Patented July 11, 1882.

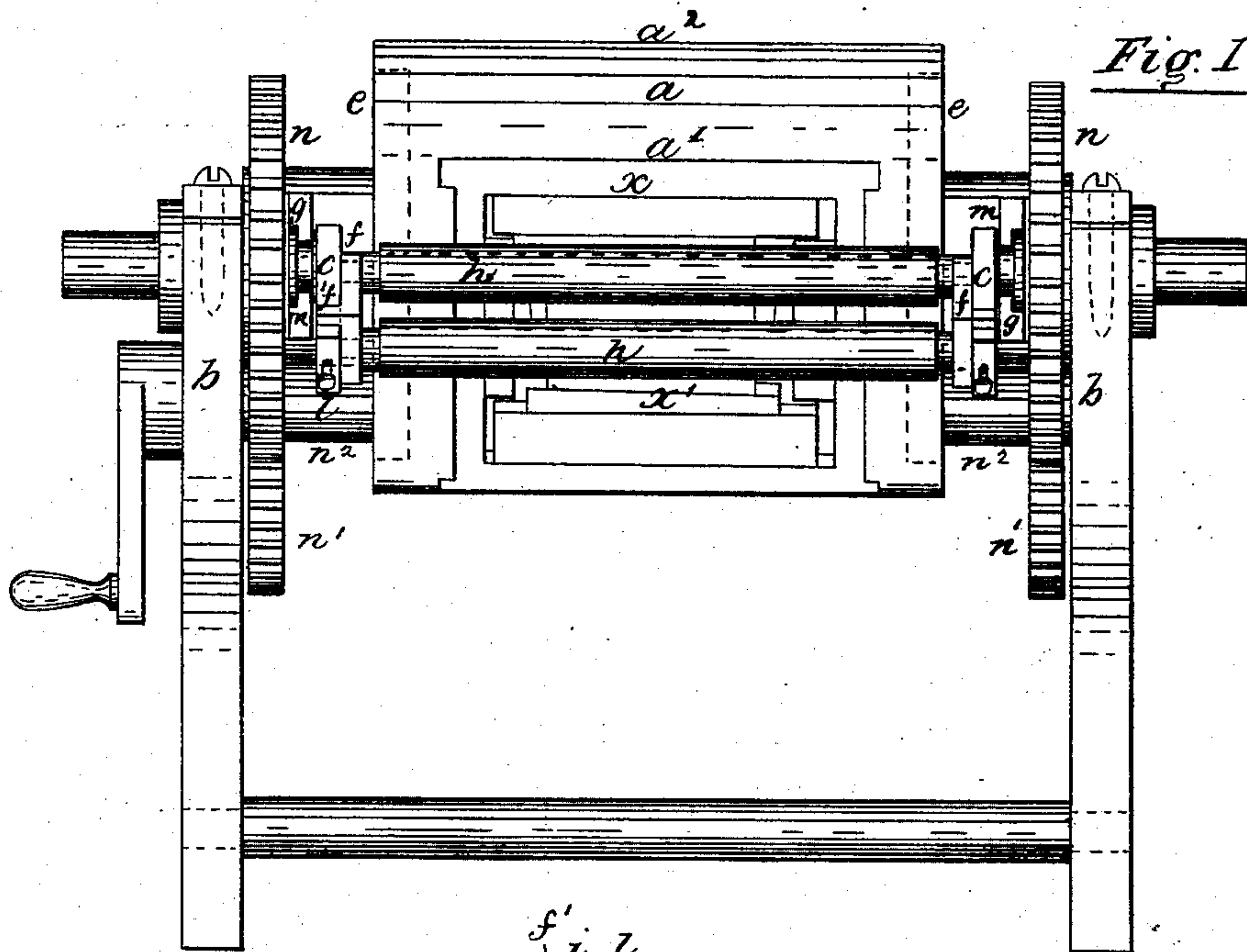


Fig. 1.

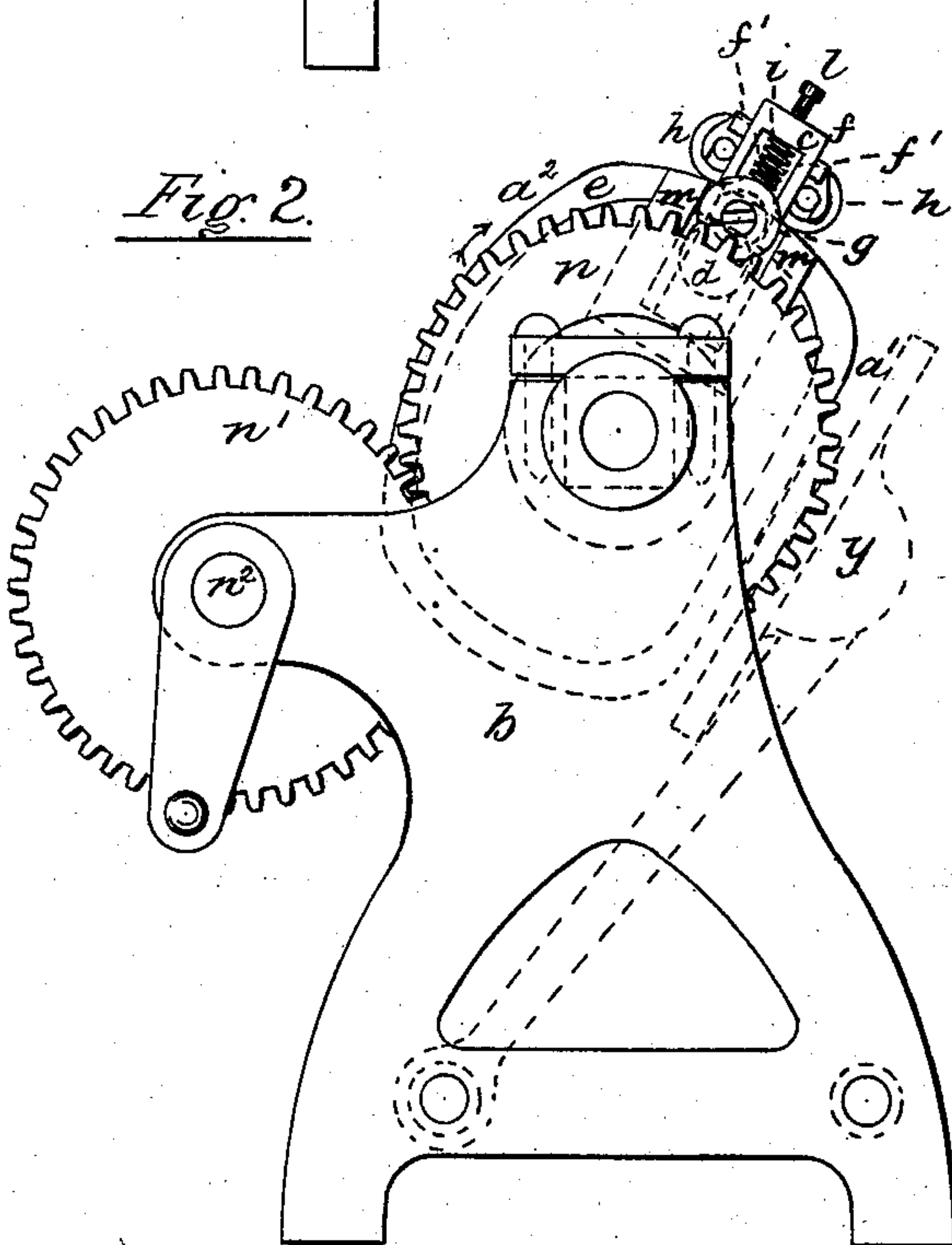


Fig. 2.

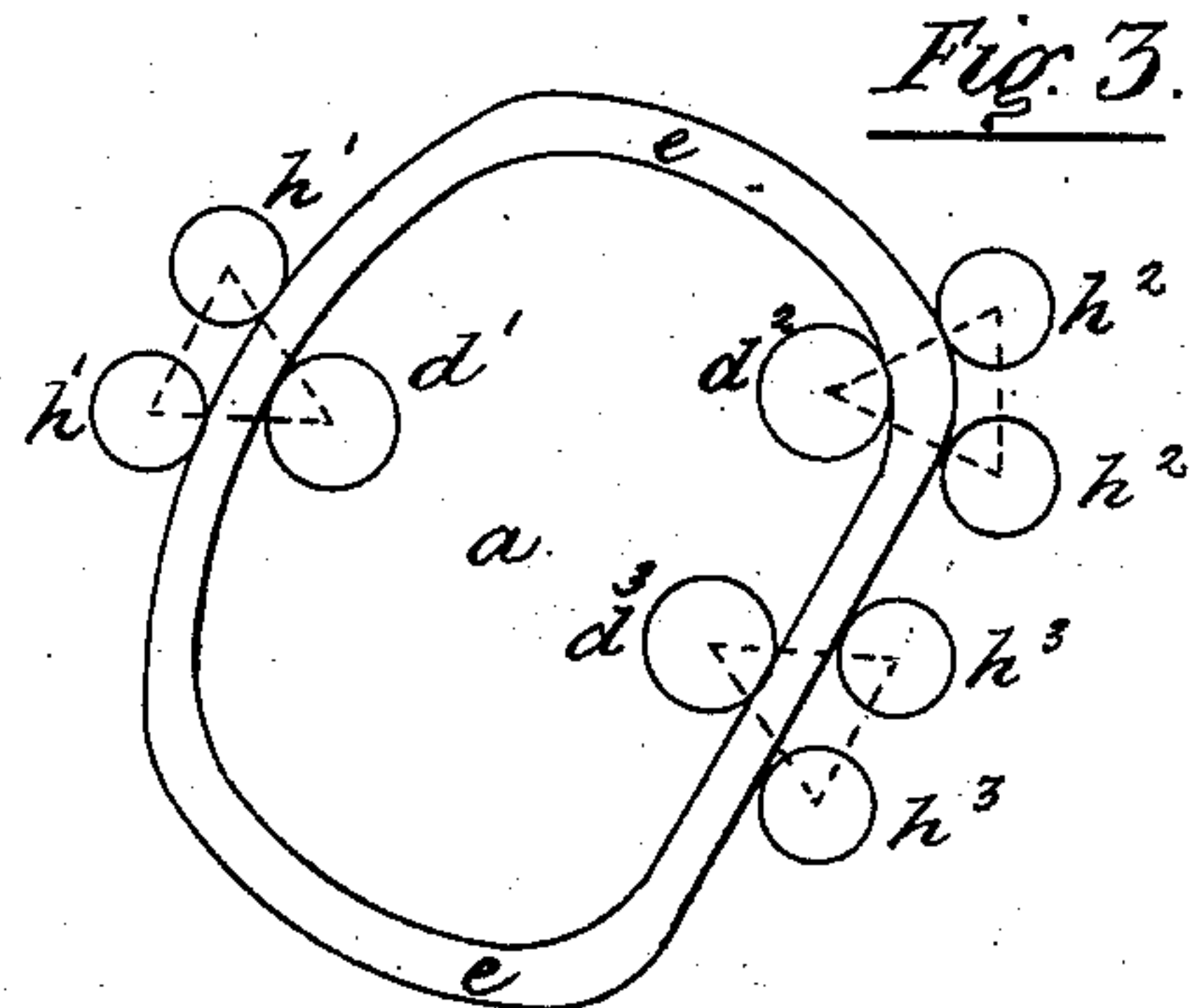


Fig. 3.

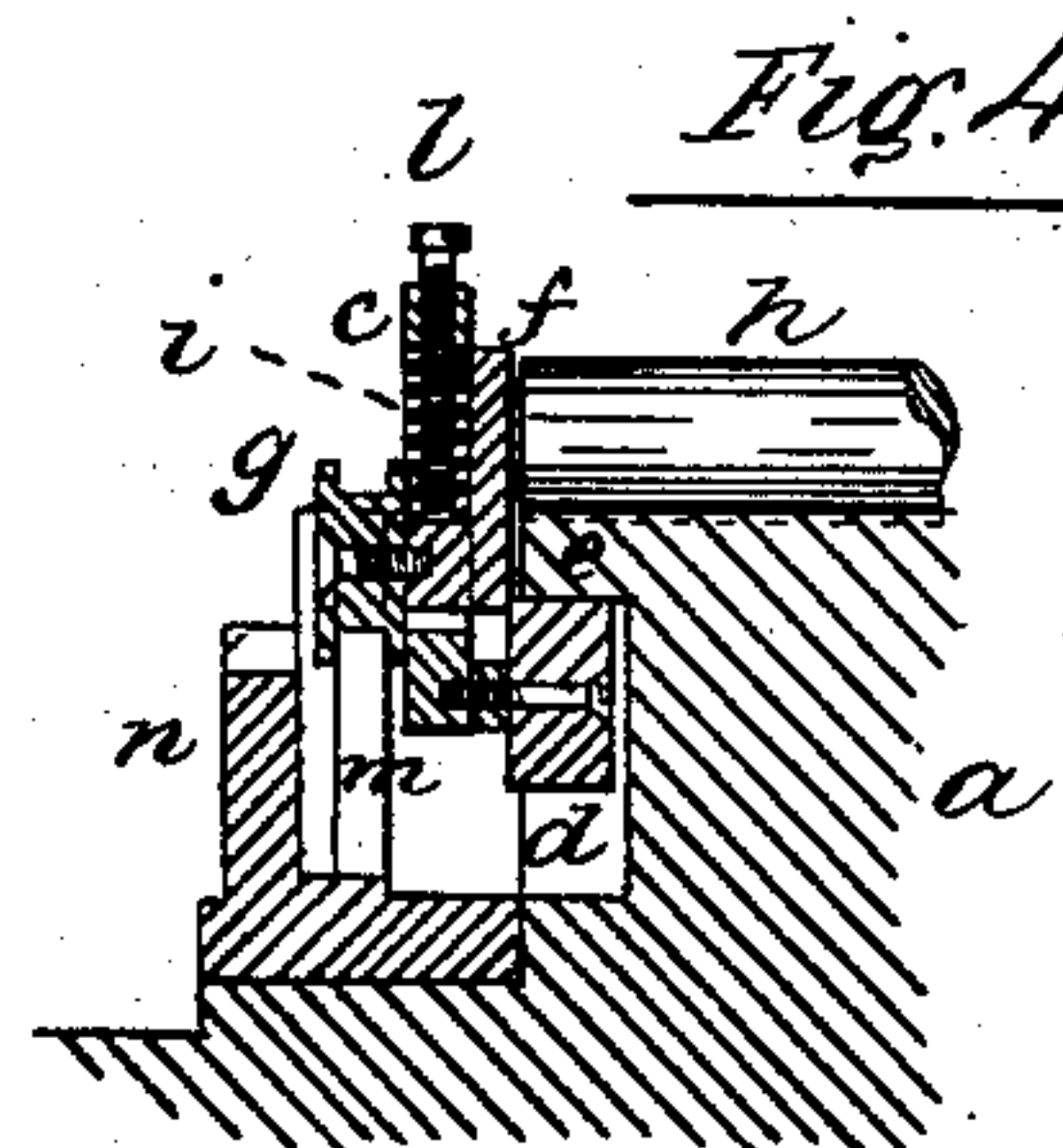


Fig. 4.

Witnesses.

H. D. Williams
William Shedlock

Alfred Shedlock.
Inventor.

(Model.)

2 Sheets—Sheet 2.

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Fig. 5

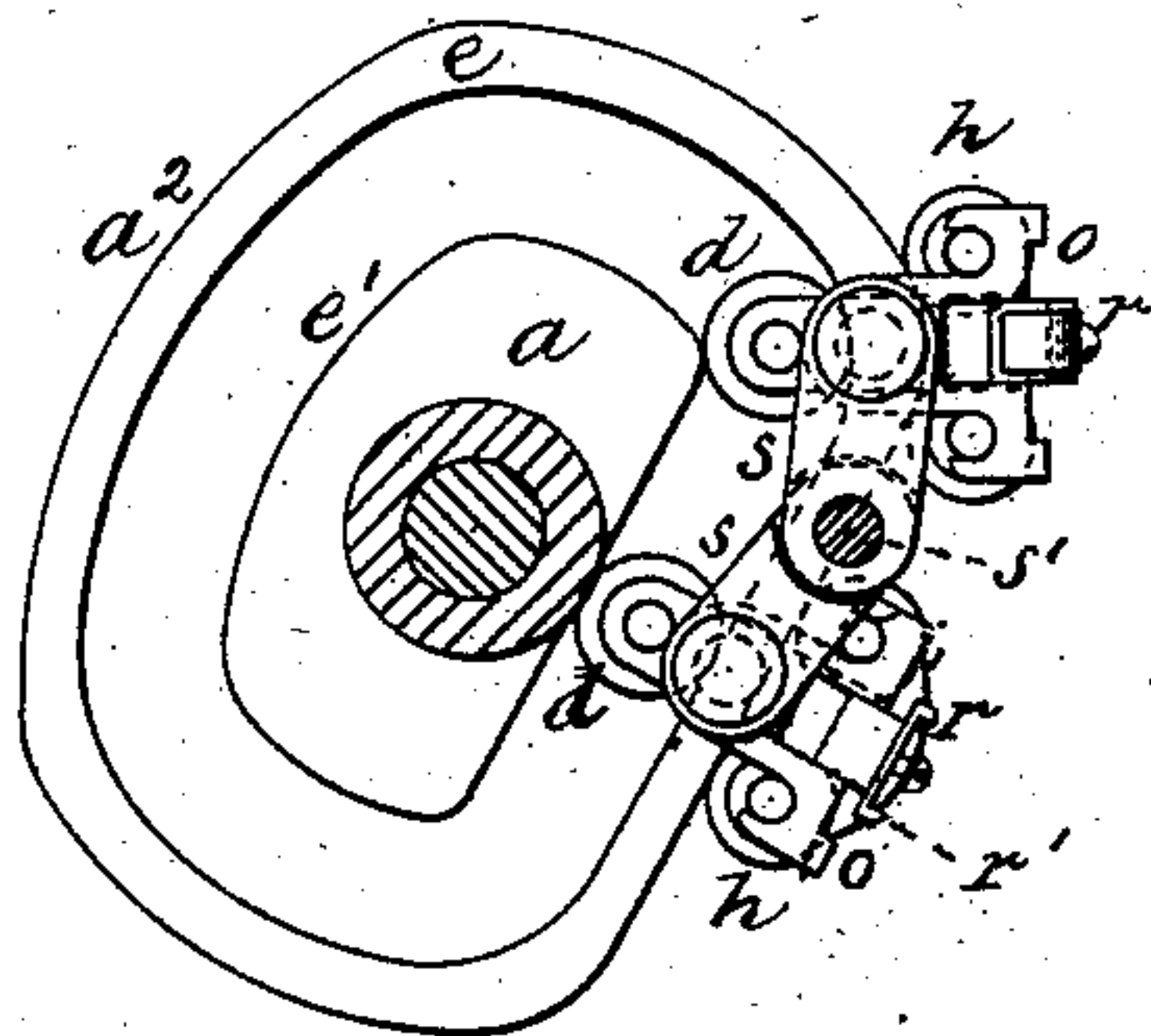


Fig. 6

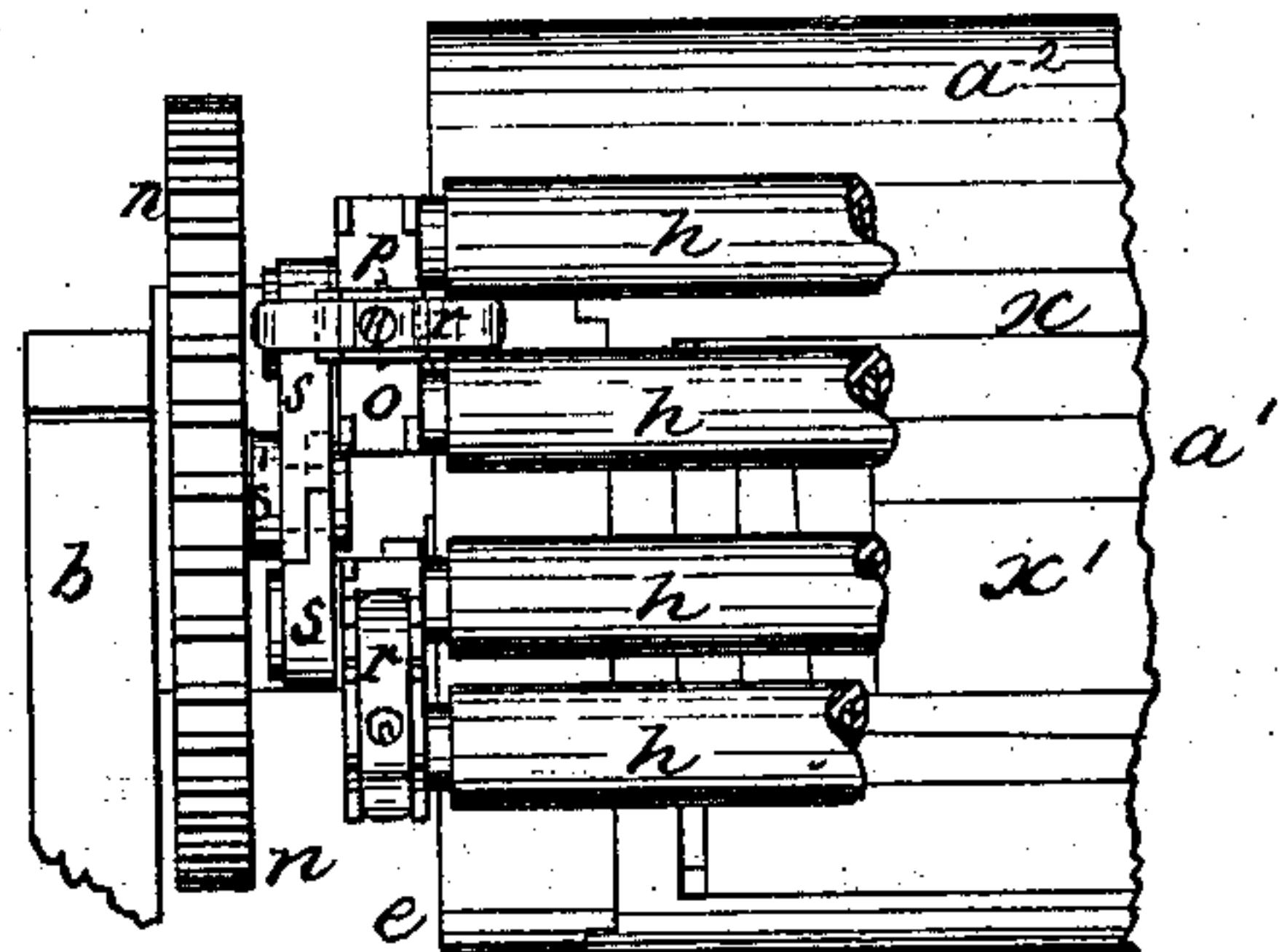


Fig. 8.

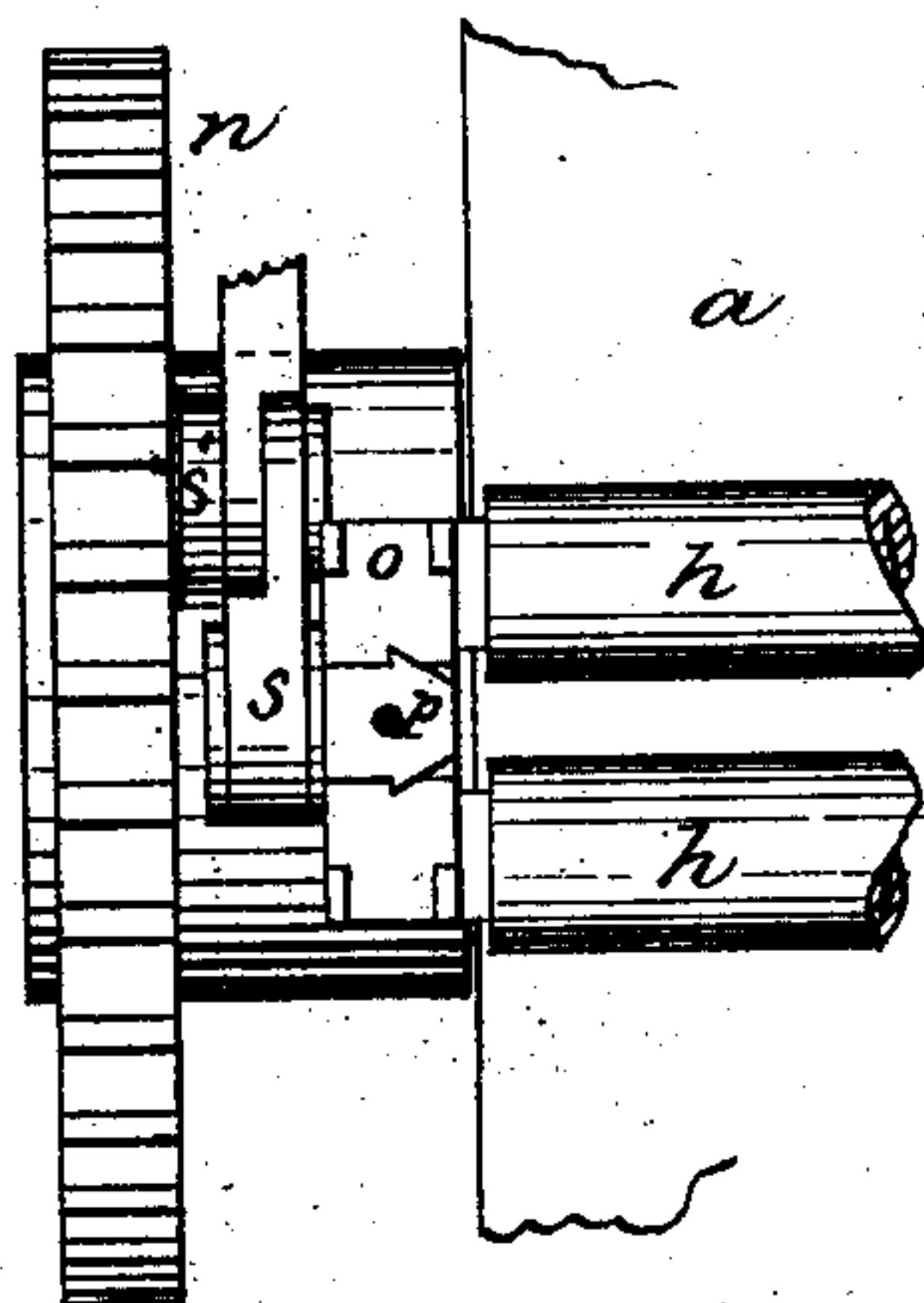
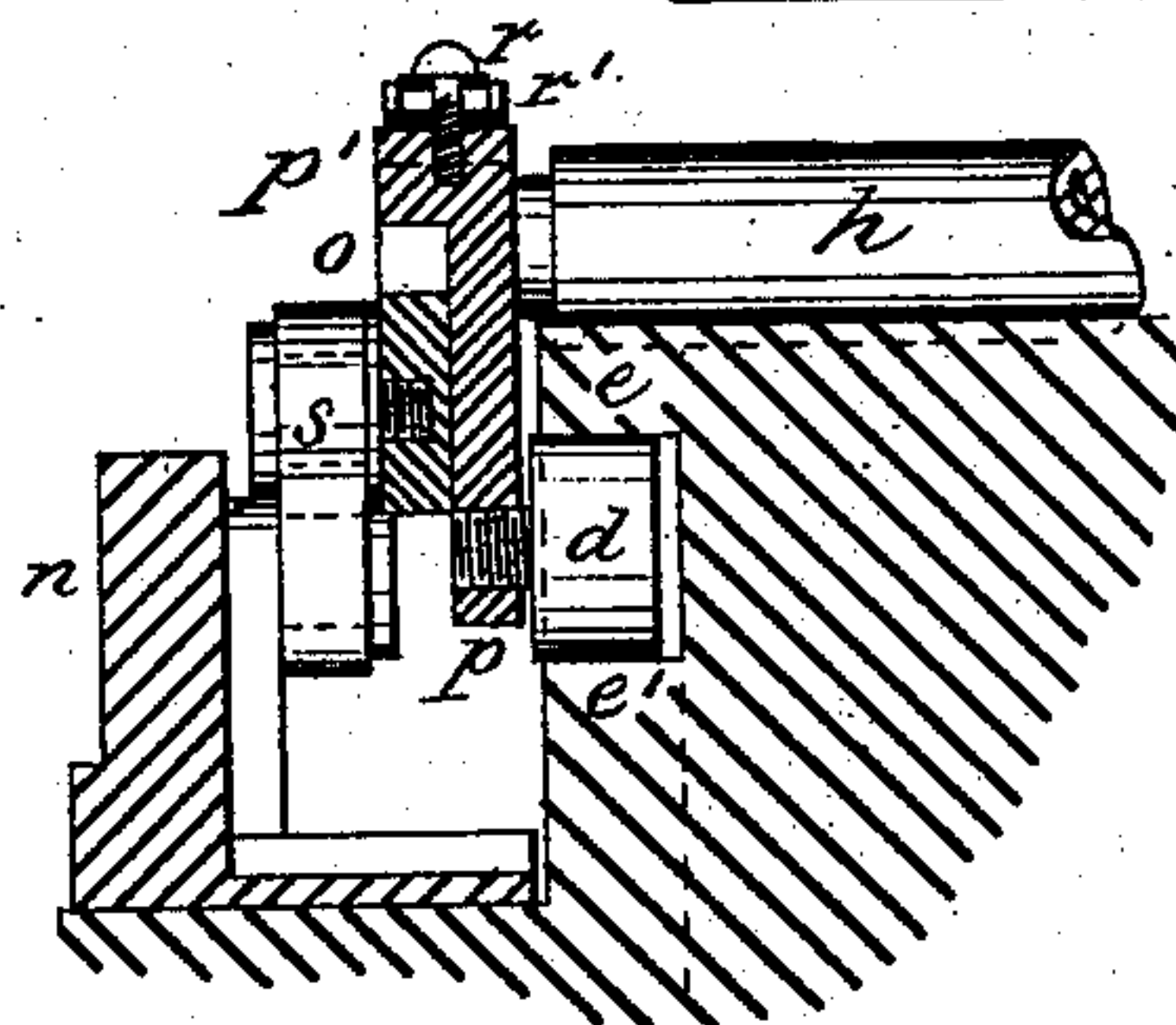


Fig. 7.



Witnesses.

H. D. Williams
William Shedlock

Alfred Shedlock.
Inventor.

UNITED STATES PATENT OFFICE.

ALFRED SHEDLOCK, OF NEW YORK, ASSIGNOR TO GEORGE P. BYRNE,
TRUSTEE, OF BROOKLYN, NEW YORK.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 260,792, dated July 11, 1882.

Application filed May 4, 1881. (Model.)

To all whom it may concern:

Be it known that I, ALFRED SHEDLOCK, of the city of New York, county and State of New York, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

This invention relates to that class of printing-presses in which the ink-rollers revolve around a stationary segmental cylinder, the periphery being the ink-distributing surface, and the form secured on the plane which cuts away the segment, as exemplified in the Letters Patent of the United States No. 168,635, granted to Griffith and Byrne, October 11, 1875; and it has for its object to increase the form capacity without materially adding to the size of the press, and to cause the ink-rollers to properly travel over the form and ink-distributing surface. The form-bed, instead of being a plane cut from a cylindrical body, is a plane forming one of the sides of a flattened body, and the ink-rollers are caused to roll over the face of the type and the balance of the surface of the flattened body upon which the ink is distributed by being held in pairs in small carriers, which are controlled in their movement by cams formed on the ends of the flattened body, and which are driven by means of suitable moving connections attached to the gear-wheels running on bearings provided therefor at the ends of the stationary flattened body, said gear-wheels being actuated from the driving-shaft of the press by means of wheels or pinions thereon, all of which will be fully understood by reference to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet 1, is a front elevation of my improvements in printing-presses. Fig. 2, Sheet 1, is a side elevation of the same. Fig. 3, Sheet 1, is an end view of the flattened body, showing the ink-rollers in different positions. Fig. 4, Sheet 1, is a sectional view cut through one of the ink-roller carriers. Fig. 5, Sheet 2, is an end elevation of a modification, partly in section. Fig. 6, Sheet 2, is a front elevation of the same. Fig. 7, Sheet 2, is a central section of one of the roller-carriers enlarged; and Fig. 8, Sheet 2, is a plan view of the same.

Referring to Figs. 1, 2, 3, and 4, the flattened

body *a*, which forms the type-bed *a'* and ink-distributing surface *a²*, is rigidly secured in position by its end hubs fitting into recesses on the tops of the side frames, *b b*.

The ink-roller carriers, of which there is one at each end of the flattened body for each pair of ink-rollers, consist of the piece *c*, provided with the roller *d*, arranged to bear against the internal face of the flange-cam *e*, formed at each end of the body *a*, and the plate *f*, provided with a lug which fits into a rectangular opening in the piece *c*, and two lugs, *f'*, which bear against the sides of the piece *c*, leaving the plate *f* and piece *c* free to move up and down in relation to each other; but they are prevented from separating laterally by the grooved roller *g*, which rotates on a stud secured in the lug of the plate *f*, which fits into the rectangular opening in the piece *c*.

The end journals of the ink-rollers *h h* work in open bearings in the plate *f*, as shown in Fig. 2, and they are held against the ink-distributing surface *a²* and the face of the type, which would be held in a chase slipped down the inside of the flanges (shown in Fig. 1) at the ends of the type-bed *a'*, by means of a spiral spring, *i*, placed between the top of the lug on plate *f* in the rectangular opening of the piece *c* and the upper side of said opening, which spring at the same time holds the roller *d* against the internal face of the cam *e*; and, referring to Fig. 3, it will be seen that the internal face of the cam-flange *e* is so shaped in relation to the outside of the body *a* that the ink-rollers *h h* and roller *d*, when in contact with their respective bearing-surfaces, maintain the same relative position to one another in whatever part of the body *a* they may be, as illustrated by the dotted similar and equal-sized triangles connecting the centers of the three sets of circles, *h' d'*, *h² d²*, and *h³ d³*, so that there will be no movement imparted to the spring *i* as the rollers revolve around the body, provided the ink-rollers *h h* are perfectly cylindrical, in which case the screw *l*, which passes through the top of the piece *c*, can be set down so as to touch the top of the lug on the plate *f*, thus virtually making piece *c* and plate *f* solid; but I prefer under ordinary circumstances to leave a little space between the ends of the screws

and the lugs, and to keep the ink-rollers to their work by means of the springs *i i*.

To remove and replace the ink-rollers *h h*, the screws *l* are backed sufficiently to allow the plates *f* to be raised against the action of the springs *i*, so that the open bearings in the plates *f* leave the journals of the rollers *h* free.

The ink-roller carriers at both ends of the body *a* are alike, and there may be any number of them necessary to hold the required number of ink-rollers, one pair only and two pairs of ink-rollers being shown in the drawings. They are caused to revolve around the body *a* by the grooved rollers *g*, fitting into flanged radial grooves *m m* on the inside faces of the gear-wheels or drivers *n n*, rotating on the hubs of the body *a* and driven by the gear wheels or pinions *n'*, secured to the driving-shaft *n*².

Instead of the grooved roller *g*, rectangular blocks may be used, adapted to slide in the flanged radial grooves *m m*; and, instead of the flanged radial grooves *m m* and grooved rollers *g* being employed to drive the ink-roller carriers, they may be substituted by links connected to them and pivoted to the sides of the gear-wheels *n n*; and the form of the body *a* may be varied—as, for instance, its general form may be elliptical, with the flat surface for the type-bed *a'*.

x represents a chase holding a form, *x'*, placed in the grooves on the sides of the type-bed *a'*. The dotted lines *y*, Fig. 2, represent the platen of the press. Its actuating mechanism is not here shown, as I propose to use for this purpose the devices illustrated in the before-mentioned patent to Griffith and Byrne, No. 168,635, dated October 11, 1875. The gear-wheels *n n'* revolve in the direction indicated by the arrow *z*, Fig. 2.

In the modification shown in Figs. 5, 6, 7, and 8 the main piece *o* of the roller-carrier has a dovetail groove in its face, which is adjacent to the cam *e*, and in which fits the sliding piece *p*. The cam-roller *d* is pivoted to this slide *p*. To hold the carrier in place when the ink-rollers *h h* are removed, I make the cam *e* a closed cam by forming the face *e'* on the end of the body *a*.

The slide *p* has a projection, *p'*, which fits into an opening formed in the upper end of the main piece *o*, and to the top of this projection is attached, by means of a screw, the small half-elliptical spring *r*, the ends of which bear on the top of the main piece *o* between the lugs, to prevent it jarring out of place when the press is running; and should the spring *r* from any cause break, the main piece *o* is prevented from moving outward sufficiently to free the journals of the ink-rollers *h* by reason of it coming in contact with the saddle-piece *r'*.

When it is desired to remove from or replace the ink-rollers in the press the spring *r* and saddle *r'* are turned around into a right-angular position, as shown at Fig. 6, in the up-

per carrier, which allows the main piece *o* to be raised until the open bearings clear the journals of the ink-rollers *h*.

Two pairs of ink-rollers are here shown, the carriers of each pair being constructed as above described, and the main piece *o* of each carrier is connected to the wheel *n* by means of the link *s*, the one end of the links of the two carriers at each end of the body *a* being pivoted to the side of the wheels *n* by one stud, as shown at *s'*, so that as the wheel *n* revolves on the hub of the body *a* the carriers of the front pair of ink-rollers are pushed around the body *a* and the carriers of the second pair are pulled around the body *a*.

Fig. 5 is an end view of the body and ink-roller carriers with the wheel *n* removed, and Fig. 6 is a front elevation of one end of the body, &c. In Fig. 8 the half-elliptical spring is removed to more clearly show the construction of the carrier.

If it is desired to operate the press with only one ink-roller to each pair of carriers, or with only one pair of ink-rollers, then in place of the ink-rollers removed I propose to use plain rods with bearing-rollers the size of the ink-rollers on their ends to cause the carriers to travel around the cams *e*, the same as when the ink-rollers are used.

I wish it understood that I do not claim broadly ink-rollers adapted to be rotated around a fixed body which constitutes the type-bed and ink-distributing surface, as such is shown in the before-mentioned patent to Griffith and Byrne; but

What I claim, and desire to secure by Letters Patent, is—

1. As an improvement in printing-presses, the stationary body forming the type-bed and ink-distributing surface, and provided with a flange-cam at each end, ink-roller carriers having each a roller attached thereto, adapted to work against the internal faces of the flange-cams, and open bearings for the ink-rollers, and rotating wheels on the hubs of the fixed body connected to the ink-roller carriers, substantially as and for the purpose hereinbefore set forth.

2. In a printing-press, a stationary irregularly-formed ink-distributing and chase-holding body, having at each end an irregularly-formed flange-cam, in combination with two ink-rollers and their carriers, provided with bearing-rollers adapted to work on the internal faces of the cams and hold the ink-rollers firmly to the periphery of the body in all positions, substantially in the manner and for the purpose hereinbefore set forth.

3. In a printing-press, in combination, the flattened body *a*, provided with the cams *e*, the ink-roller carriers *c*, provided with rollers *d*, and drivers *n n*, connected by moving connections to the ink-roller carriers, substantially as and for the purposes hereinbefore set forth.

4. In combination, the ink-rollers *h h*, plate

f, sliding on piece *c*, provided with roller *d*, spring *i*, and cam *e*, substantially in the manner and for the the purposes hereinbefore set forth.

5 5. The flanged radial grooves *m m* on driver *n*, the grooved roller *g*, the ink-roller carrier *f* *c d*, cam *e* on the end of the flattened body *a*, and the ink-rollers *h h*, in combination, con-

structed and operating substantially in the manner and for the purpose set forth. 10

In testimony whereof I have hereunto set my hand this 30th day of April, A. D. 1881.

ALFRED SHEDLOCK.

Witnesses:

JOHN D. SHEDLOCK,

H. D. WILLIAMS.