

(No Model.)

4 Sheets—Sheet 1.

W. OLIVER.

COIN OPERATED INDUCTION COIL.

No. 372,168.

Patented Oct. 25, 1887.

Fig. 1.

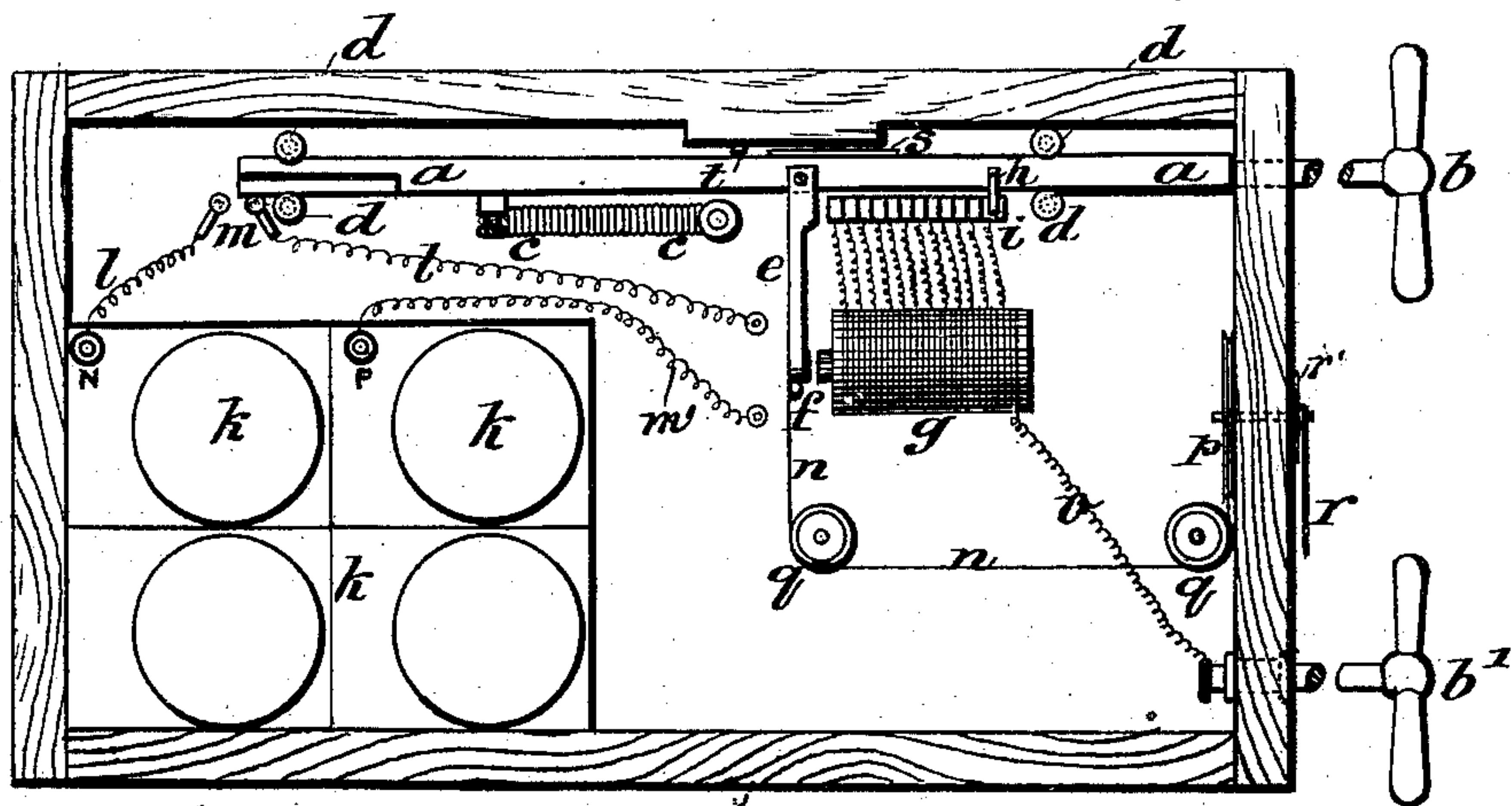


Fig. 2.

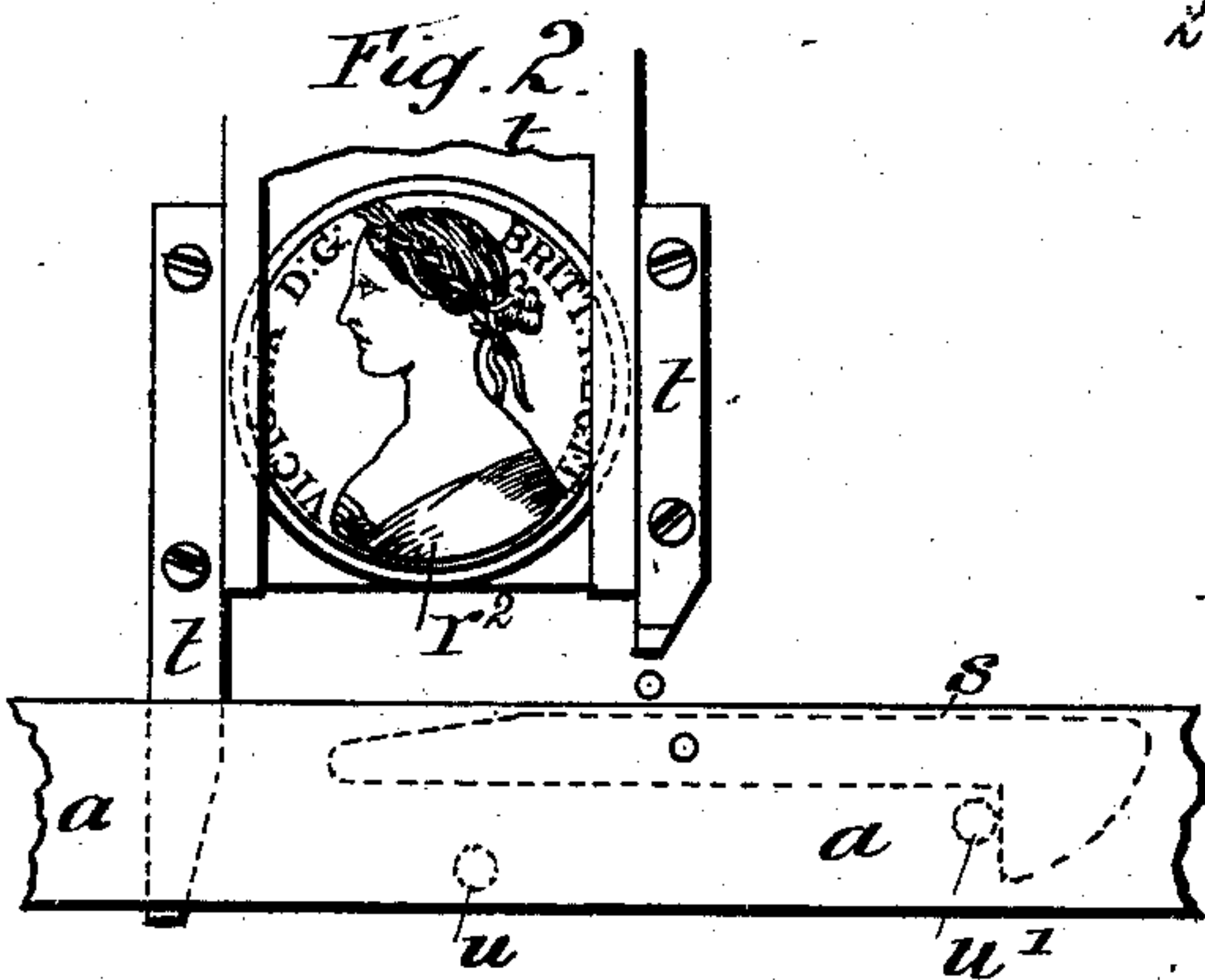


Fig. 3.

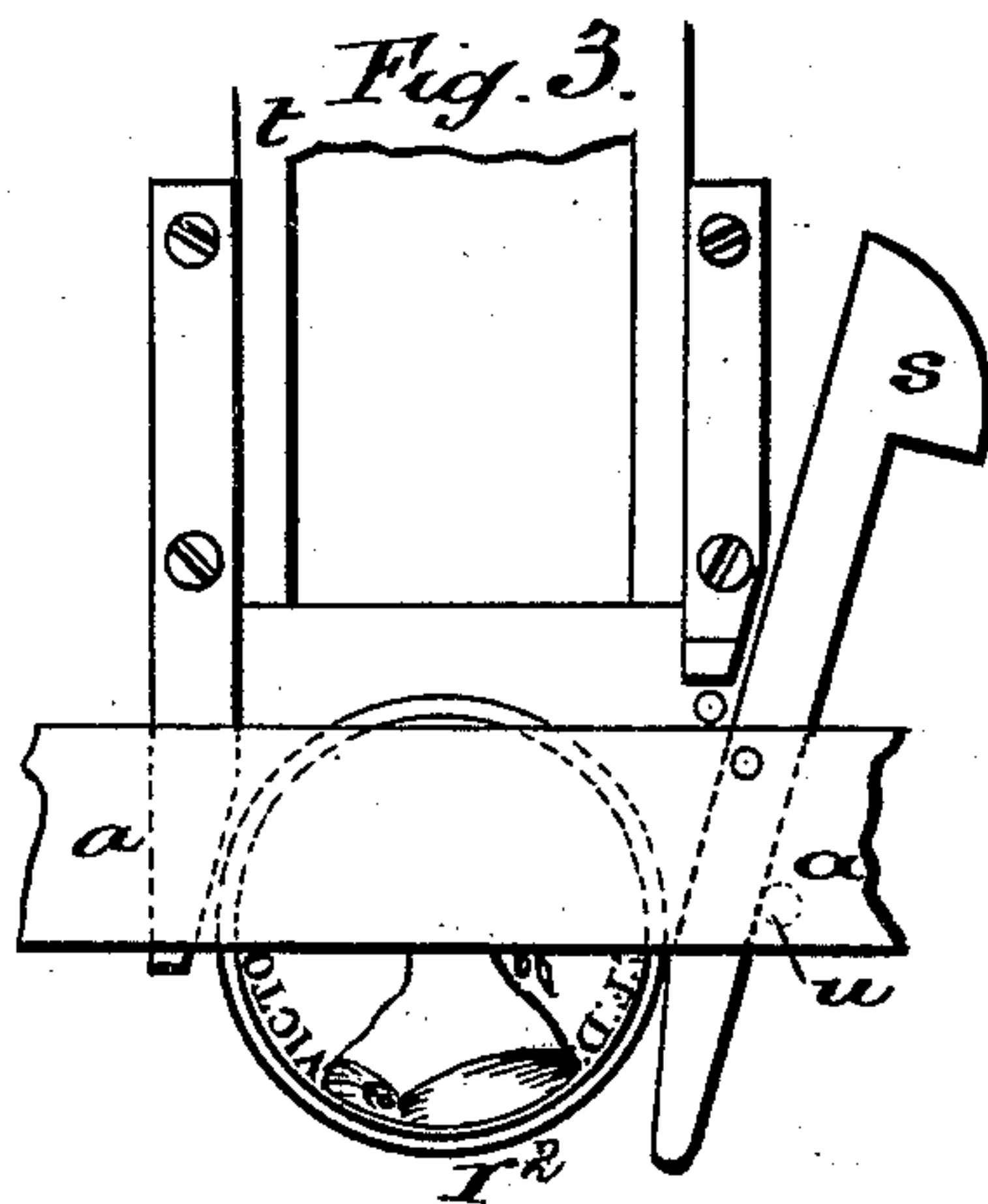


Fig. 6.

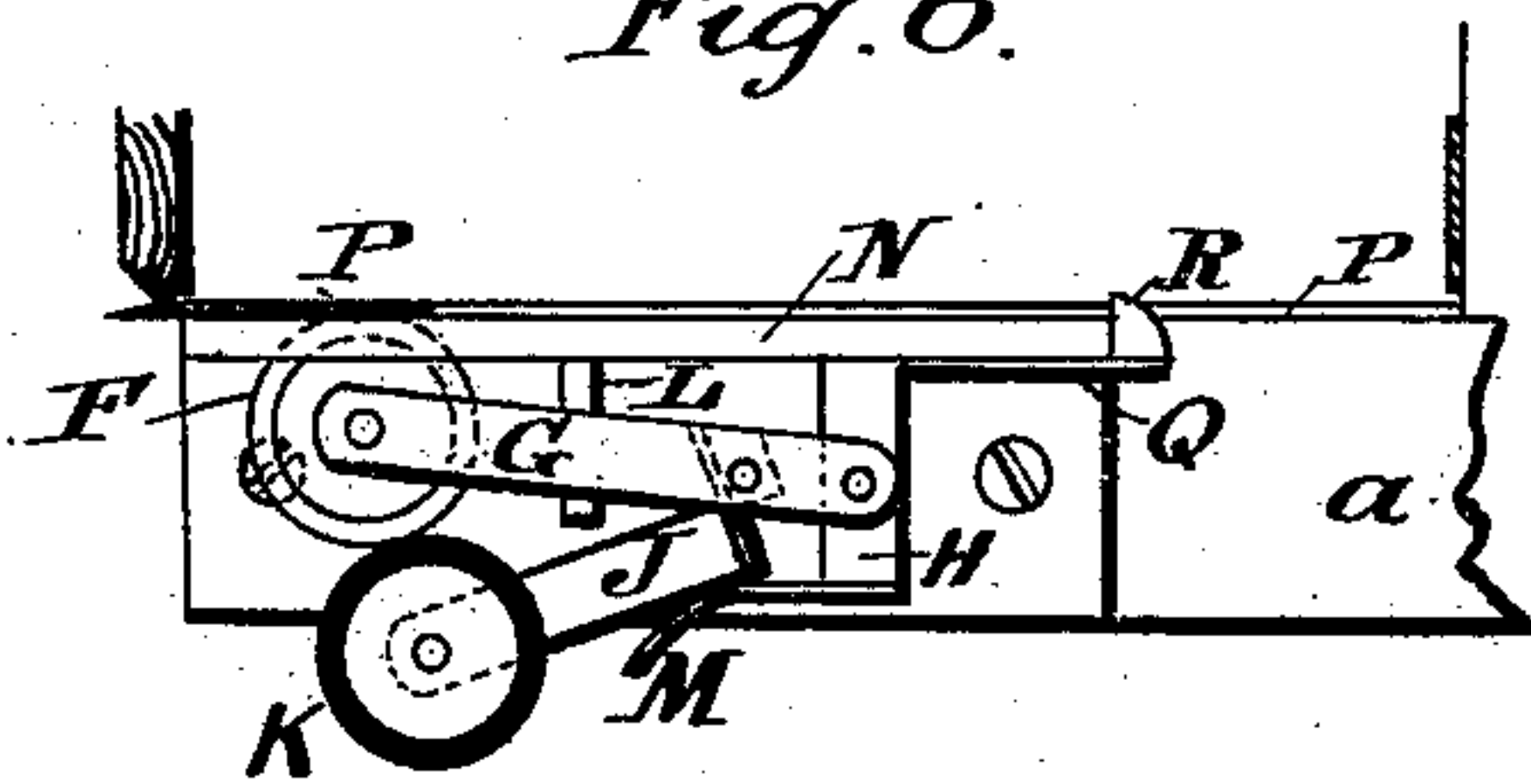
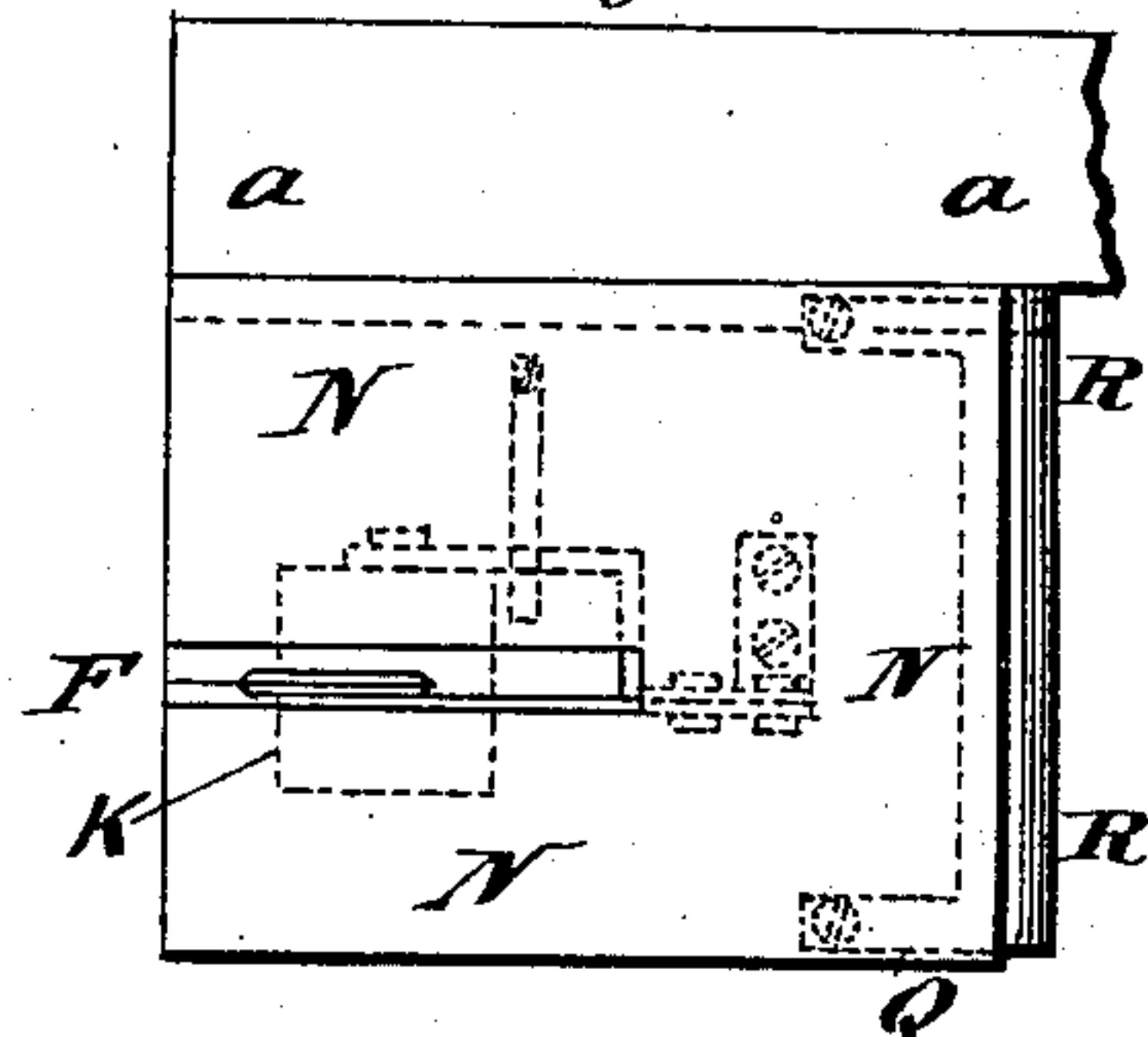


Fig. 7.



Witnesses.

J. A. Rutherford.  
Robert Emmett.

Inventor.  
William Oliver.  
By James L. Norris  
Atty.

(No Model.)

4 Sheets—Sheet 2.

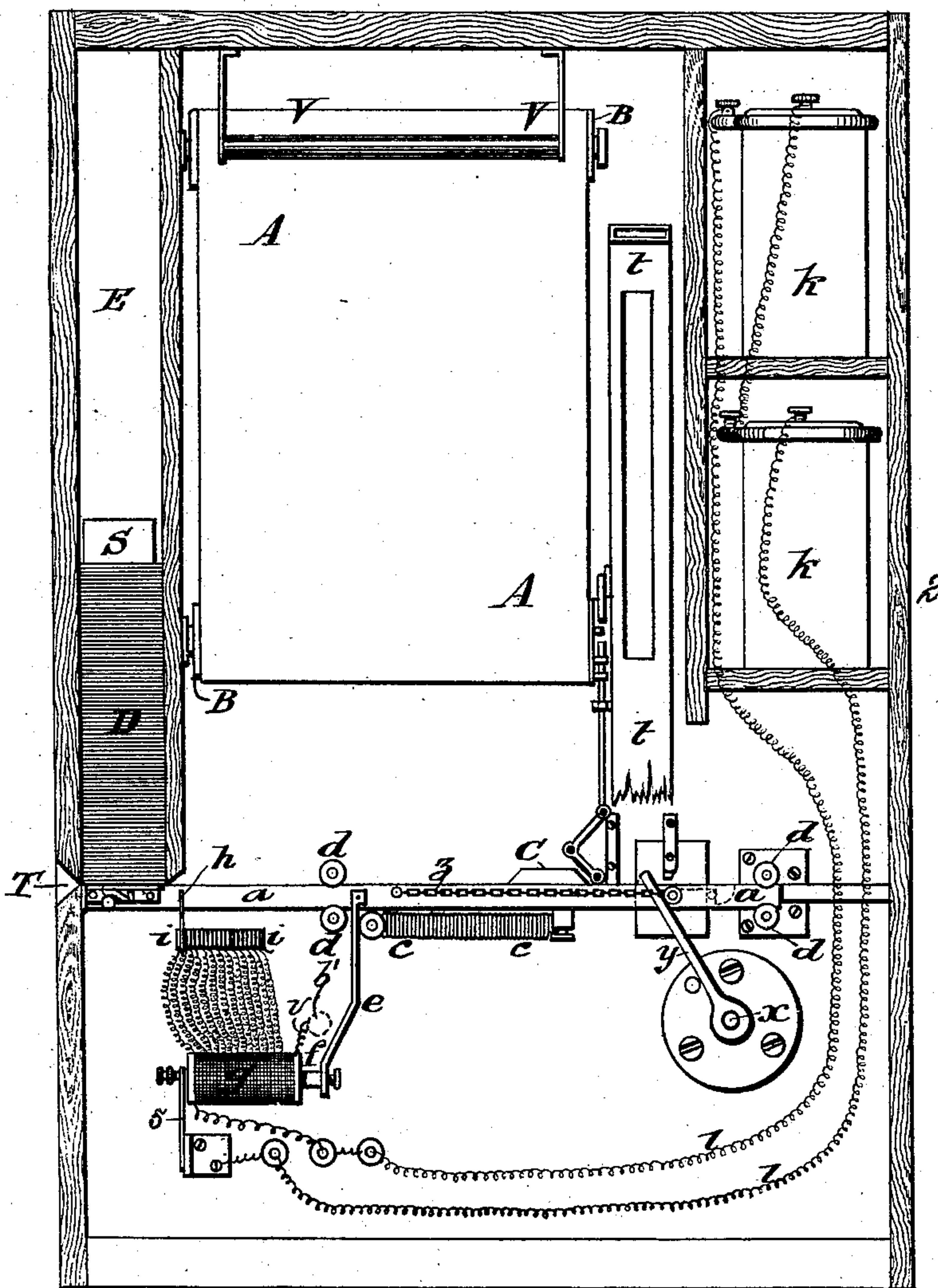
W. OLIVER.

COIN OPERATED INDUCTION COIL.

No. 372,168.

Patented Oct. 25, 1887.

*Fig. 4.*



*Witnesses*

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4 Sheets—Sheet 3.

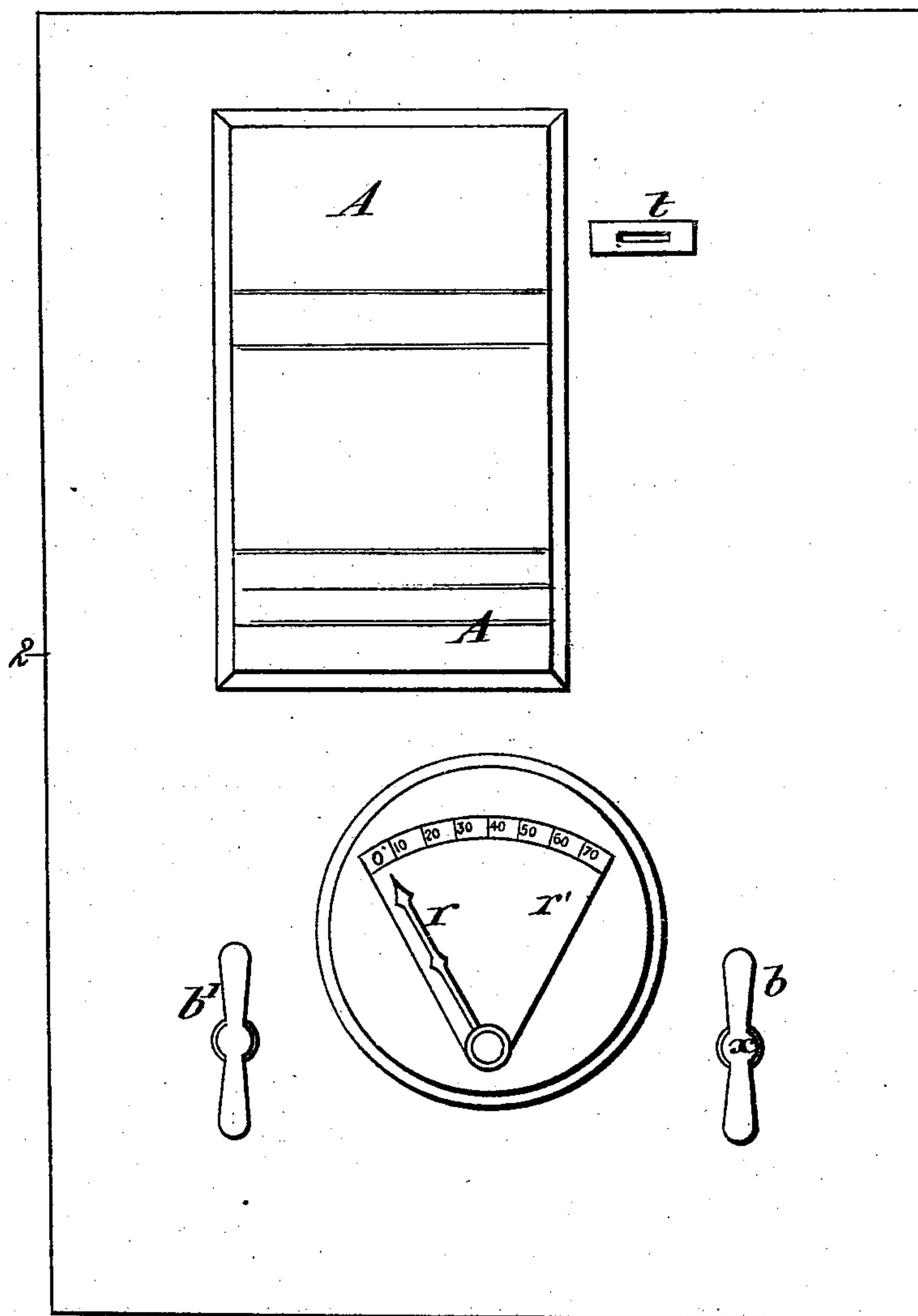
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COIN OPERATED INDUCTION COIL.

No. 372,168.

Patented Oct. 25, 1887.

*Fig. 5.*



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(No Model.)

4 Sheets—Sheet 4.

W. OLIVER.  
COIN OPERATED INDUCTION COIL.

No. 372,168.

Fig. 8. Patented Oct. 25, 1887.

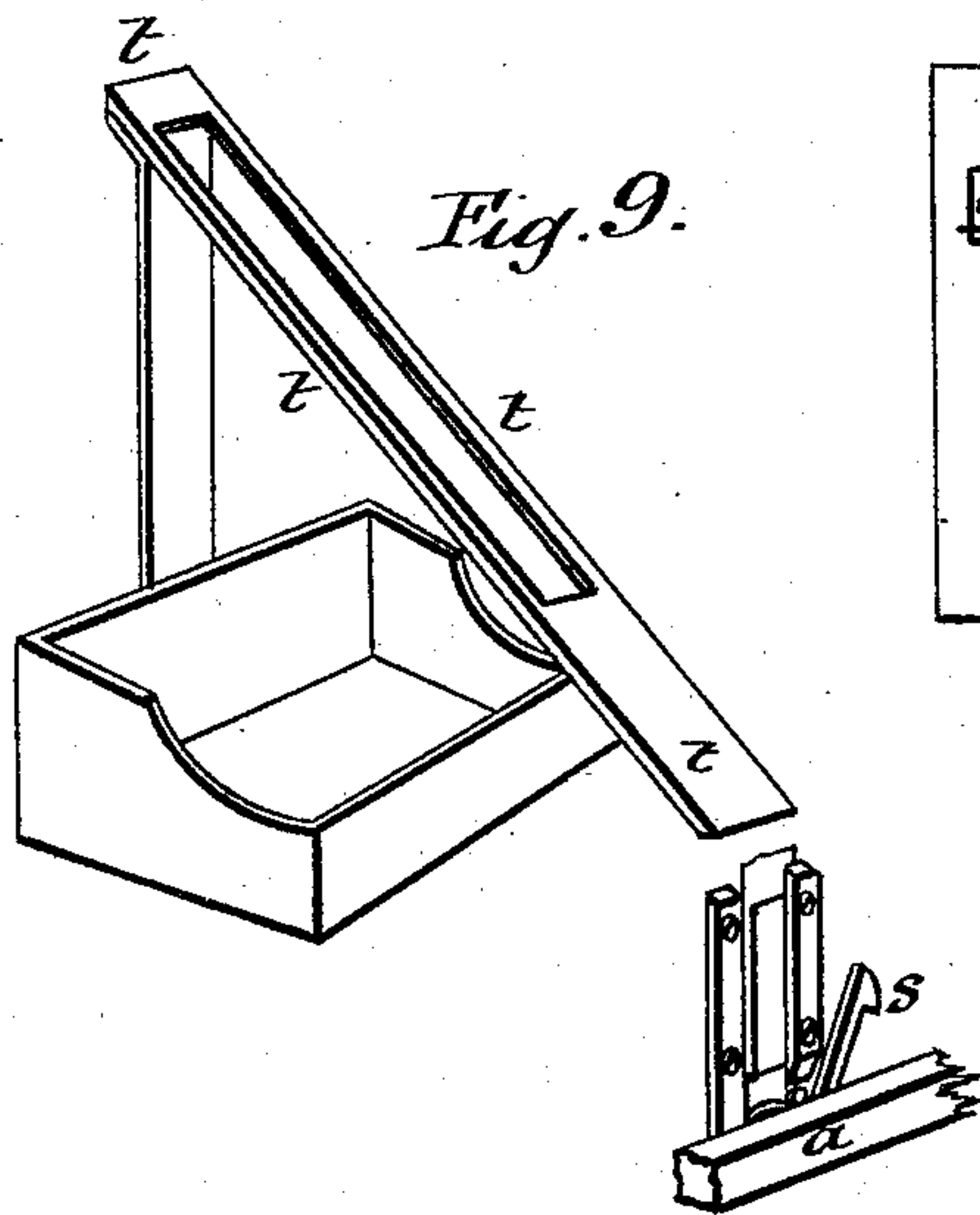
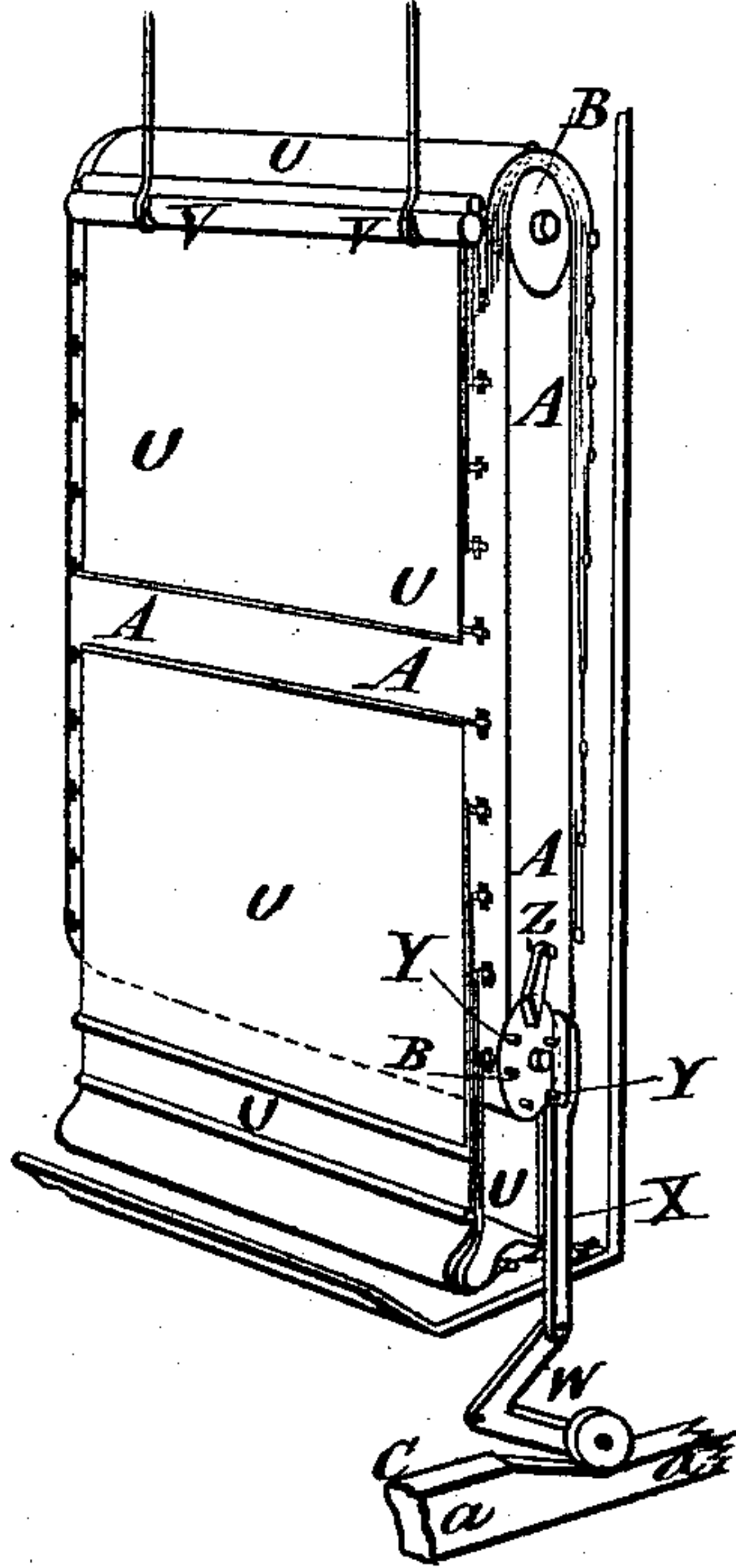
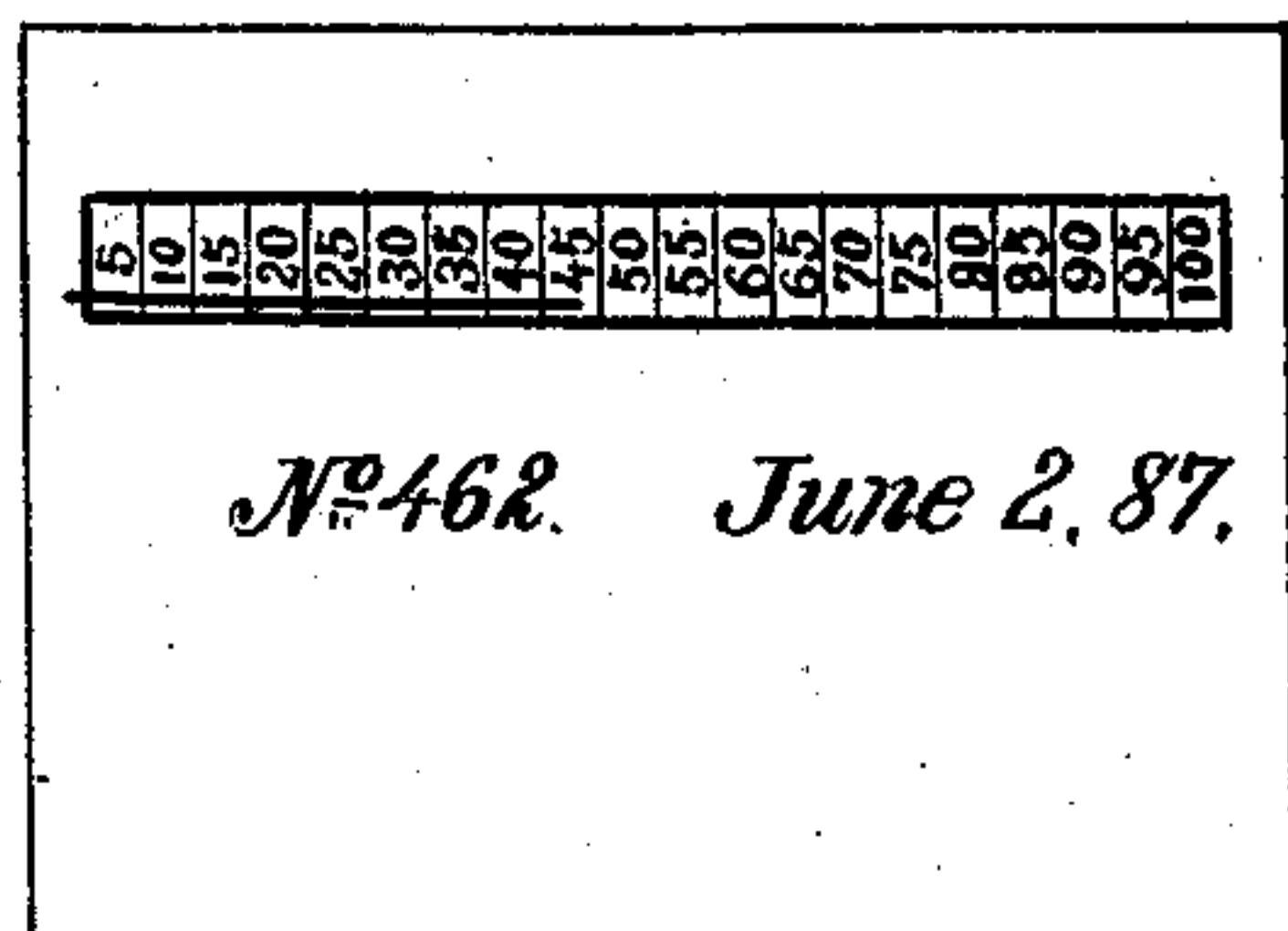


Fig. 10.



Witnesses  
J. A. Rutherford.  
Robert Everett.

Inventor:  
William Oliver.  
By James L. Norris.  
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# UNITED STATES PATENT OFFICE

WILLIAM OLIVER, OF LONDON, ENGLAND, ASSIGNOR TO MESSIEURS  
DANIEL JUDSON & SON, (LIMITED,) OF SAME PLACE.

## COIN-OPERATED INDUCTION-COIL.

SPECIFICATION forming part of Letters Patent No. 372,168, dated October 25, 1887.

Application filed January 22, 1887. Serial No. 225,230. (No model.) Patented in England July 20, 1886, No. 9,939.

*To all whom it may concern:*

Be it known that I, WILLIAM OLIVER, a subject of the Queen of Great Britain, residing at Albert House, Canonbury, London, Eng-  
land, have invented an Improved Coin Oper-  
ated Induction-Coil, (for which I have ob-  
tained a patent in Great Britain, No. 9,939,  
bearing date July 20, 1886,) of which the fol-  
lowing is a specification.

My invention relates to a machine for auto-  
matically indicating on a dial, or registering  
by other means—such as printing or marking  
on a card or other substance—the relative  
strength of an electric, a faradic, or galvanic  
current which is being administered, and at  
the same time exhibiting an advertisement or  
not, the whole to be rendered workable by the  
dropping in of a coin or coins.

The invention consists in the construction  
and combination of parts, which will be here-  
inafter fully described and claimed.

In the accompanying drawings, Figure 1 is  
a horizontal sectional view of one form of ap-  
paratus in which the degree of strength of the  
electric current is indicated on a dial. Figs.  
2 and 3 are detail views of the sliding bar and  
coin-actuated locking and releasing device.  
Fig. 4 is a vertical sectional view of another  
form of apparatus which has means for print-  
ing on cards and is combined with advertising  
devices. Fig. 5 is a front view of the casing,  
showing handle-electrodes, indicating-dial,  
and advertising-apron. Figs. 6 and 7 are side  
and top views of the card marking and eject-  
ing device. Fig. 8 is a perspective view of  
the advertising devices. Fig. 9 is a detail  
view of the coin-chute and slide-bar. Fig. 10  
is a view of a numbered ticket after it has  
been marked to indicate forty-five degrees of  
current strength.

Referring to Fig. 1, the reference-numeral  
2 designates a casing or box which incloses a  
faradic or other desired type of inductorium,  
*g*. In the present instance the secondary coil  
of said inductorium is made in sections, each  
containing an increasing number of strands or  
wires of different resistance. These wires or  
sections are connected in series, and each sec-  
tion is connected with a contact-plate, *i*, made  
of metallic and insulating sections. A hori-  
zontal bar, *a*, is free to slide within the casing

between suitable rollers, *d*, and to the front of  
this bar is connected a handle, *b*, the stem of  
which can slide through the front wall of the  
casing 2. A contact-finger, *h*, carried by the  
bar *a*, moves over the contact-plate *i*, and is  
successively brought in contact with the me-  
tallic portions thereof. A spring, *c*, connected  
with the bar *a* and with a stud on the casing  
2, serves to return the same to the position seen  
in Fig. 1 as soon as the pressure which has  
moved the bar backward is removed.

A voltaic battery of any desired number of  
cells, *k*, is arranged within the casing 2, and  
has its negative and positive terminal wires *l*  
*m'* connected, respectively, with circuit-closing  
plates *m* and one terminal of the primary coil  
of the inductorium and with the other terminal  
of said primary coil. As has already been  
stated, the different sections of the secondary  
coil of the inductorium are all connected with  
the contact-plate, and the other terminal wire,  
*v*, of said united coils is carried to a fixed han-  
dle, *b'*, extending from the front of the casing.  
The bar *a* is of suitable length to break the  
primary circuit when it is in its normal posi-  
tion. When, however, it is pushed inward, a  
metal rear portion thereof insulated from the  
main portion moves over or touches both the  
contact-plates *m*, hence closing the primary  
circuit. At the same time secondary currents  
are induced in the inductorium and are con-  
veyed by the bar *a* and wire *v* to the handles  
*b b'*, and they are applied to the person having  
hold of said handles.

An arm, *e*, projecting from the bar *a*, has  
attached a cord, *n*, which passes over guide-  
pulleys *q*, and is connected with a pulley, *p*,  
on the arbor of a pointer, *r*, which passes over  
the index-scale *r'*.

It will be seen that by pushing the bar *a* in  
an inward direction the pointer is rotated to  
move from zero to any number within the  
range of its movement.

The bar *a* is normally held in a locked posi-  
tion by means of the devices seen in Figs. 2  
and 3. These consist of the hooked lever-  
catch *s*, which is pivoted to some suitable por-  
tion or bracket of the casing 2, and is adapted  
to co-operate with the pins *u* and *u'*, arranged  
one in advance of the other on the bar *a*.  
When the bar *a* is in its normal position, the



clutch-lever assumes the position seen in Fig. 2 and covers the lower mouth of a vertical tube or chute, *t*. By dropping into said chute a coin, *v*<sup>2</sup>, of a sufficient weight to tip the lever *s*, the hook portion thereof is released from the pin *u'*, and then the falling of the weight into a suitable receptacle beneath and the movement of the bar *a* will bring it into the position shown in Fig. 3. The restoration of the bar *a* to its normal position by the action of the spring *c* will again cause the lever *s* to lock the bar *a* until a new coin is inserted, when said bar is again free to be moved inward.

It will be seen that the degree of movement of the bar *a* determines the number of secondary coils of the inductorium which are thrown into circuit, and hence the degree or intensity of the current administered can be read on the dial *v'*.

It is obvious that when the bar *a* is moved inward to its full extent all the coils are in circuit and the current is then of maximum strength.

Figs. 4 and 5 are sectional and front elevations of an apparatus in which the push-bar *a* is moved by turning the handle *b*, the spindle *x* of which carries a bar, *y*, connected by a chain, *z*, with the movable bar *a*.

In the construction shown the variation of the intensity of the induced current is obtained by the mode of regulation shown in Fig. 1 and by moving the core *f'* of the induction-coil by connecting said core with the bar *a* by a pendant arm, *e'*. It will thus be seen that when the handle *b* on the spindle *x* is turned the bar is moved, and, according to the degree of insertion of the core *f* into the coil *g*, the current is intensified. The secondary current is transmitted to the electrode-handles *b* and *b'*, in the construction shown in Fig. 4, by the wire *v* to the fixed handle *b'*, and the contacts *i* and *h* and metal bar *a*, arm *y*, and spindle *x* to the movable handle *b*, mounted on said spindle. Circuit-breaker 5 is combined with the primary circuit and induction coil in the arrangement seen in Fig. 4.

*A* is an endless band for carrying advertisements. It passes round rollers *B B* and is actuated by an inclined plane, *C*, on the movable bar *a*. The movable bar is provided with an inking appliance and means for expelling cards *D* from the box *E*. (Shown separately at Figs. 6 and 7, which are side and top views, respectively.)

*F* is the printing-roller, the arm *G* of which is supported by the block *H* and carries the arm *J* of the ink-cylinder *K*, both being pressed upward by the springs *L* and *M*, so that the printing-roller *F* projects through a slot in the top plate, *N*, (which plate is screwed to the movable bar *a*,) for the purpose of marking the card which rests on the ledges *P*, forming the bottom of the card-box *E*. (See Fig. 4.) The card-expelling spring *Q* is fixed by two screws to the plate *N*, and is bent upward or has a detent or claw, *R*, at its free end. When

the appliance is not in operation, the cards in the box are kept down on the bottom *P* thereof by a weight, *S*, and press down the claw *R* on the spring *Q*. When the bar *a* is moved, it carries the printing-roller *F* from beneath the ledge *P* of the card-box and draws it along the bottom card, thereby printing an inscription thereon. On releasing the bar *a* the printing-roller *F* moves back over the same line, and the claw *R* takes against the card and pushes it forward partly through the orifice *T*, so that it can be pulled out, the printing-roller returning under the ledge *P*, so as not to ink the card.

Fig. 8 is a perspective view of the advertising arrangement. The endless band *A* has secured to it advertisement-sheets *U U*, which can fall one by one as they are released from the pressure-roller *V*, suspended from the top of the box or frame. The endless band *A* is rotated in the following manner: On the bar *a* being moved the inclined plane *C* forces up the roller on the bell-crank lever *W*, and with it the push-pawl *X*, which, taking against the pins *Y* on the roller *B*, causes the endless band to move sufficiently to let one advertisement-sheet fall. The pawl *Z* prevents the band from moving in the wrong direction.

Fig. 9 is a perspective view of the money-tube *t*, said tube being slotted, as shown, so that although a coin of the proper value can slide down to rest upon the catch *s*, a smaller coin will fall through the slot into the box beneath without operating the mechanism.

I claim as my invention—

1. The combination of a box or casing, a battery, a sliding bar carrying a contact-piece, an induction-coil and contact-pieces connected to wires of different electrical resistances wound upon said coil, electrical connections between said battery and coil, a catch for locking the sliding bar, means for releasing said catch by placing a proper coin in the apparatus, two operating-handles, one of which is connected with the sliding bar, electrical connections between said handles and the induction-coil, an index, and connections between said index and the sliding bar, substantially as herein set forth.

2. The combination of an endless band carrying advertisements, a card printing and ejecting mechanism, a sliding bar carrying a contact-point, an induction-coil and fixed contact-pieces connected to wires of different electrical resistances wound upon said coil, a battery, connections between the battery and coil, an index actuated by the movement of the sliding bar, two handles, one of which is connected to the sliding bar and both in electrical connection with the coil, means for operating the printing and advertising devices from the sliding bar, and mechanism for locking the sliding bar until released by placing a proper coin in the casing that incloses the apparatus, whereby an electrical current of desired intensity will be administered to a person operating the handles, the strength of said cur-



rent registered upon a dial and marked or printed upon a card, which is then ejected and the advertising devices simultaneously actuated to exhibit a succession of advertisements, substantially as shown and described.

5 3. An apparatus for giving currents of electricity, comprising a generator of electricity, an induction-coil, a slide-bar for throwing said induction-coil in and out of action, and a locking device for said slide-bar adapted to be released by the weight of a coin or other token, substantially as herein set forth.

15 4. An apparatus for giving currents of electricity on the insertion of a coin or other token, comprising an induction-coil having a movable core, a slide-bar connected with said core, a locking device for said slide-bar, and a coin-passage whereby the inserted coin releases the slide-bar and permits the induction-coil and its circuit to be brought into position for sending the current to electrode-handles, substantially as herein set forth.

25 5. In an apparatus for giving currents of electricity on the insertion of a coin or other token, the combination, with an induction-coil having a movable core, of a slide-bar, a locking device for the latter, and a coin-passage, substantially as herein set forth.

30 6. In an apparatus for giving currents of electricity, the combination, with an induction-coil, of a circuit-closer, handle-electrodes, and a sliding bar having a locking device adapted

to be released by a deposited coin to permit the circuit-closer to be brought into position for sending the induced current to the handle-electrodes, substantially as described. 35

7. In an apparatus for communicating an electric current or shock, the combination, with an induction-coil and a coin-actuated device, and a hand shaft for throwing said induction-coil into action, of a pointer and dial-indicating device for indicating the degree of intensity of the current or shock, substantially as herein set forth. 40

8. In an apparatus for communicating an electric current or shock, the combination, with an induction-coil and a coin-actuated device, and a hand-shaft for throwing said induction-coil into action, of a ticket-box and a printing device carried by the coin-actuated device for indicating the degree or intensity of the current on numbered tickets contained in the ticket-box, substantially as herein set forth. 45

In witness whereof I have hereto signed my name, in the presence of two subscribing witnesses, this 8th day of November, 1886. 55

WILLIAM OLIVER.

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*Of same address.*