

No. 661,580.

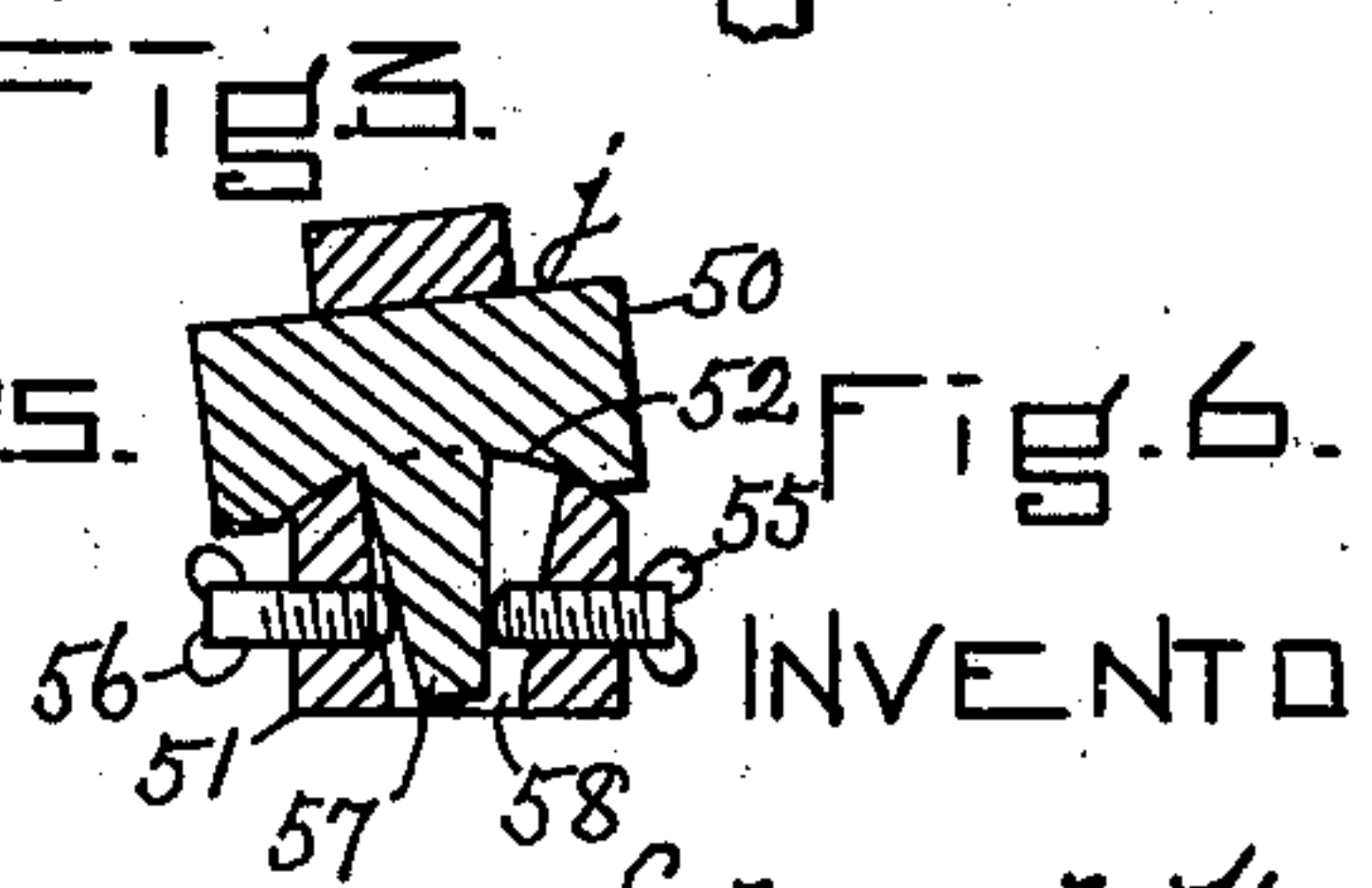
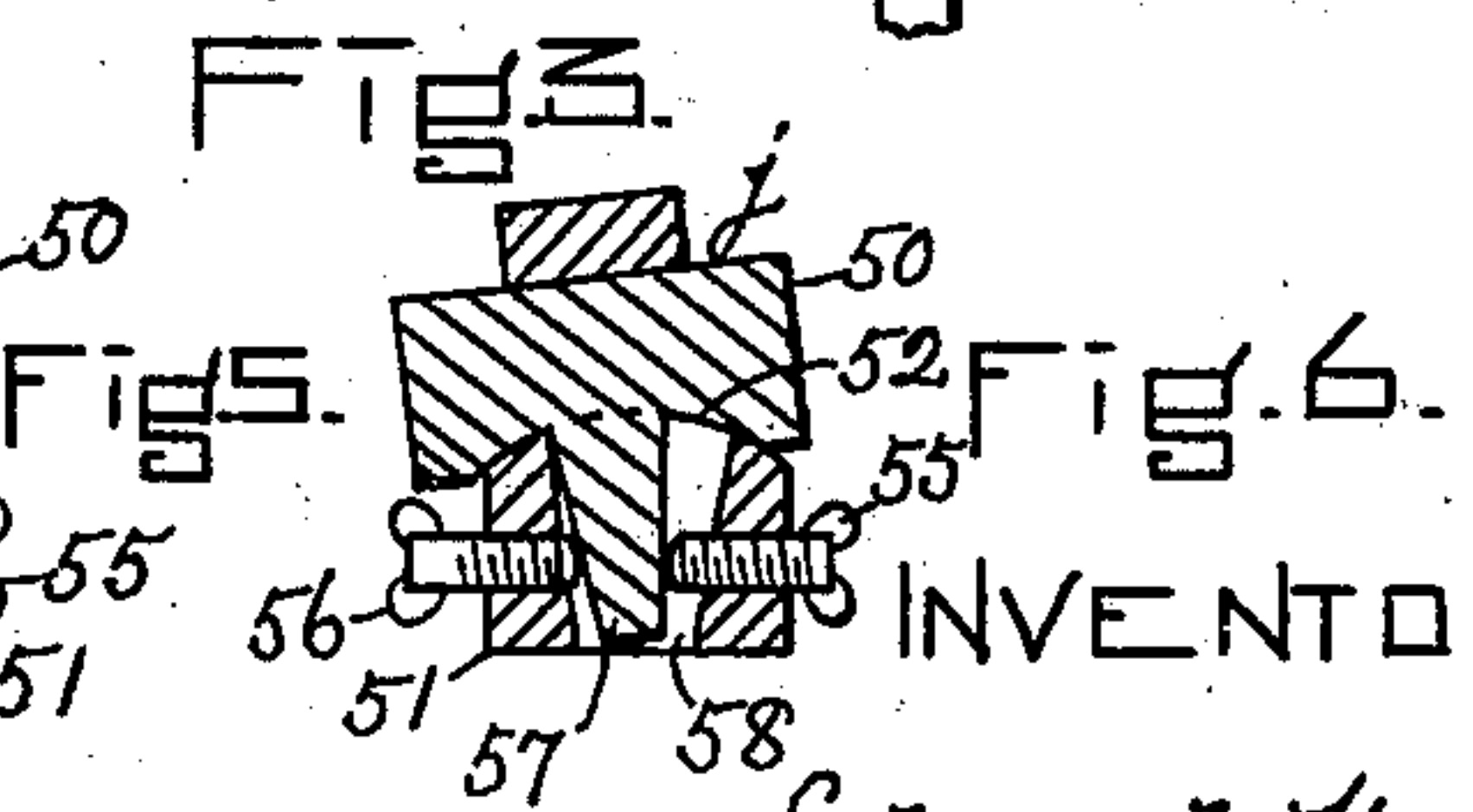
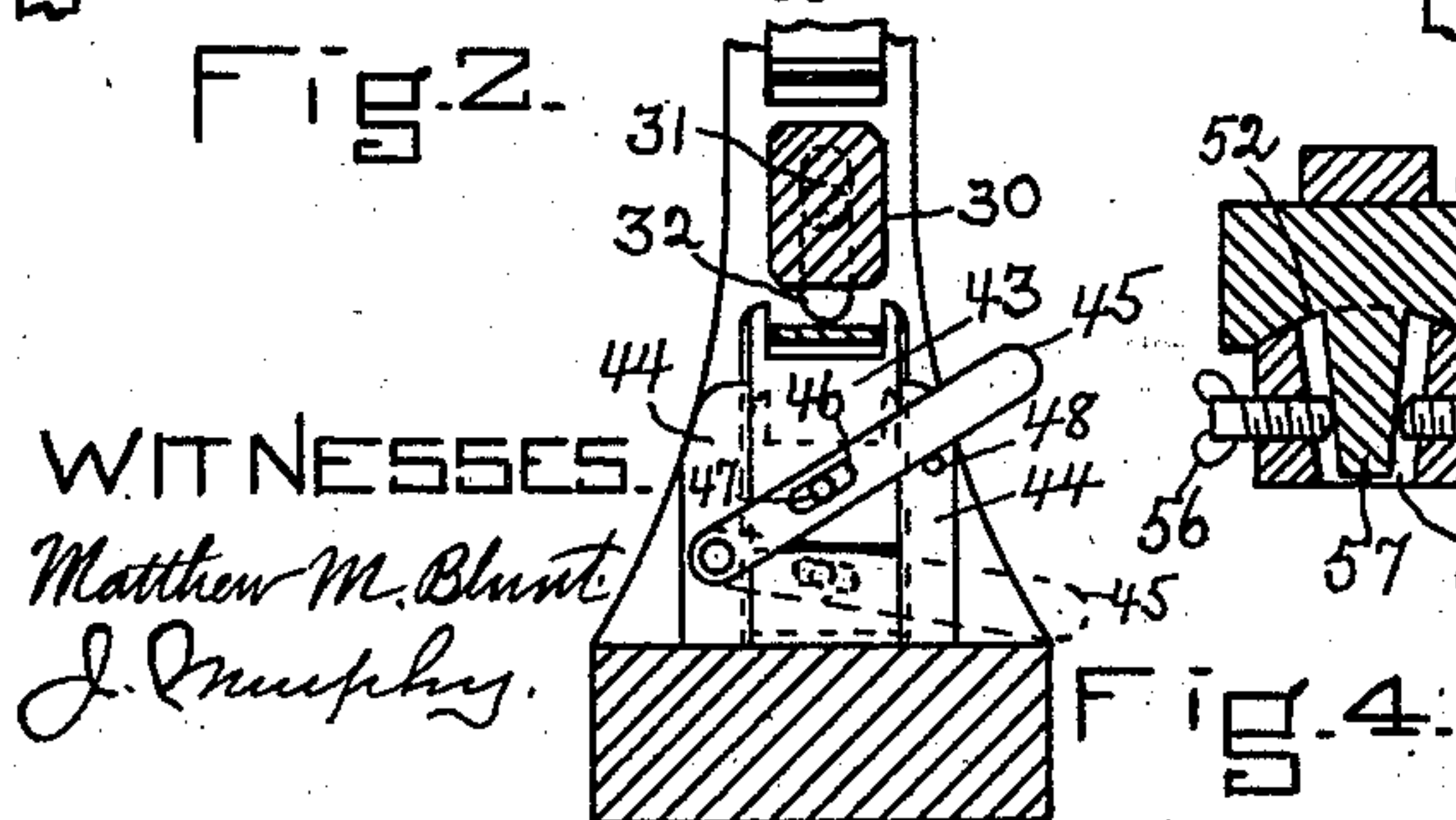
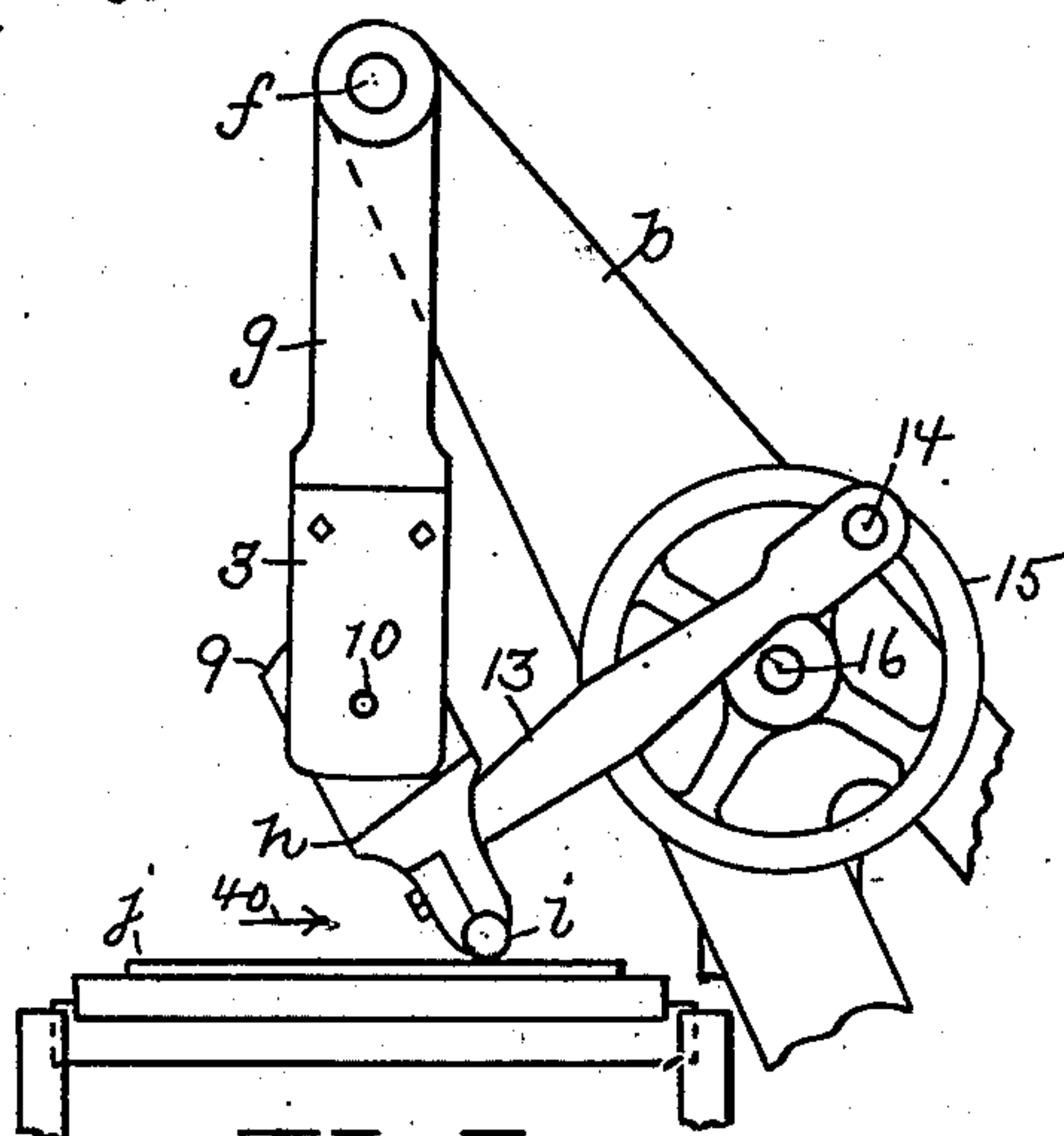
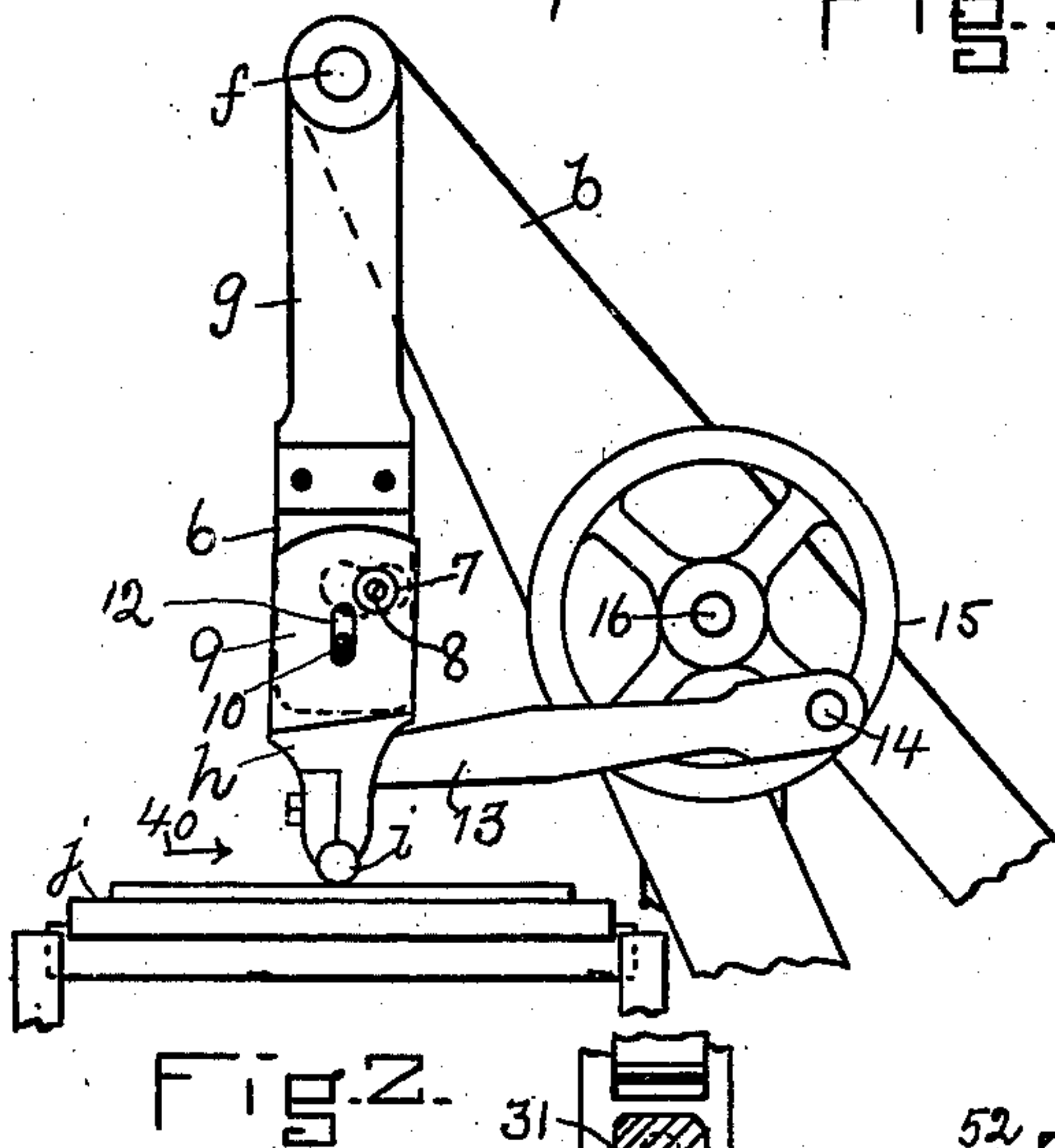
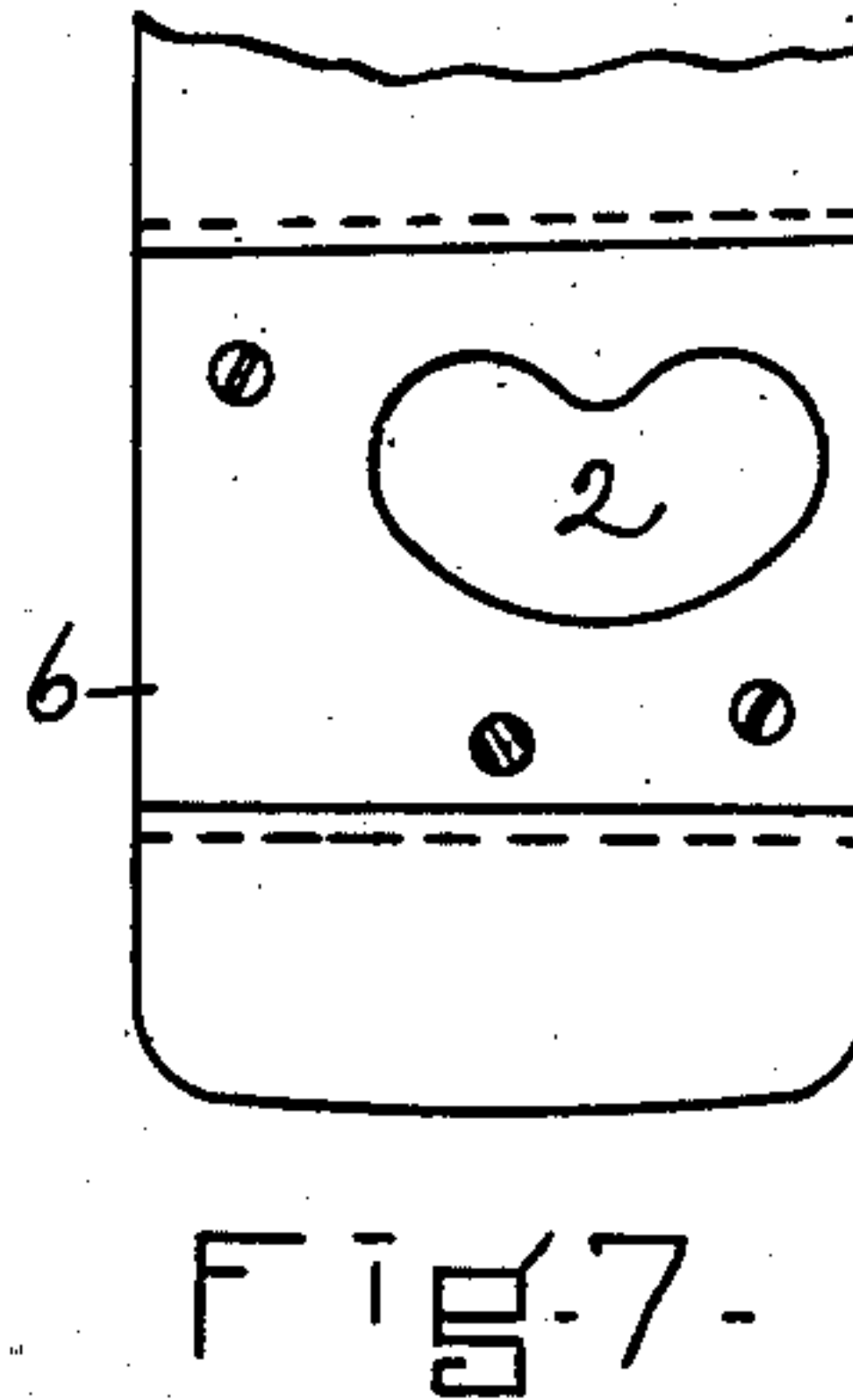
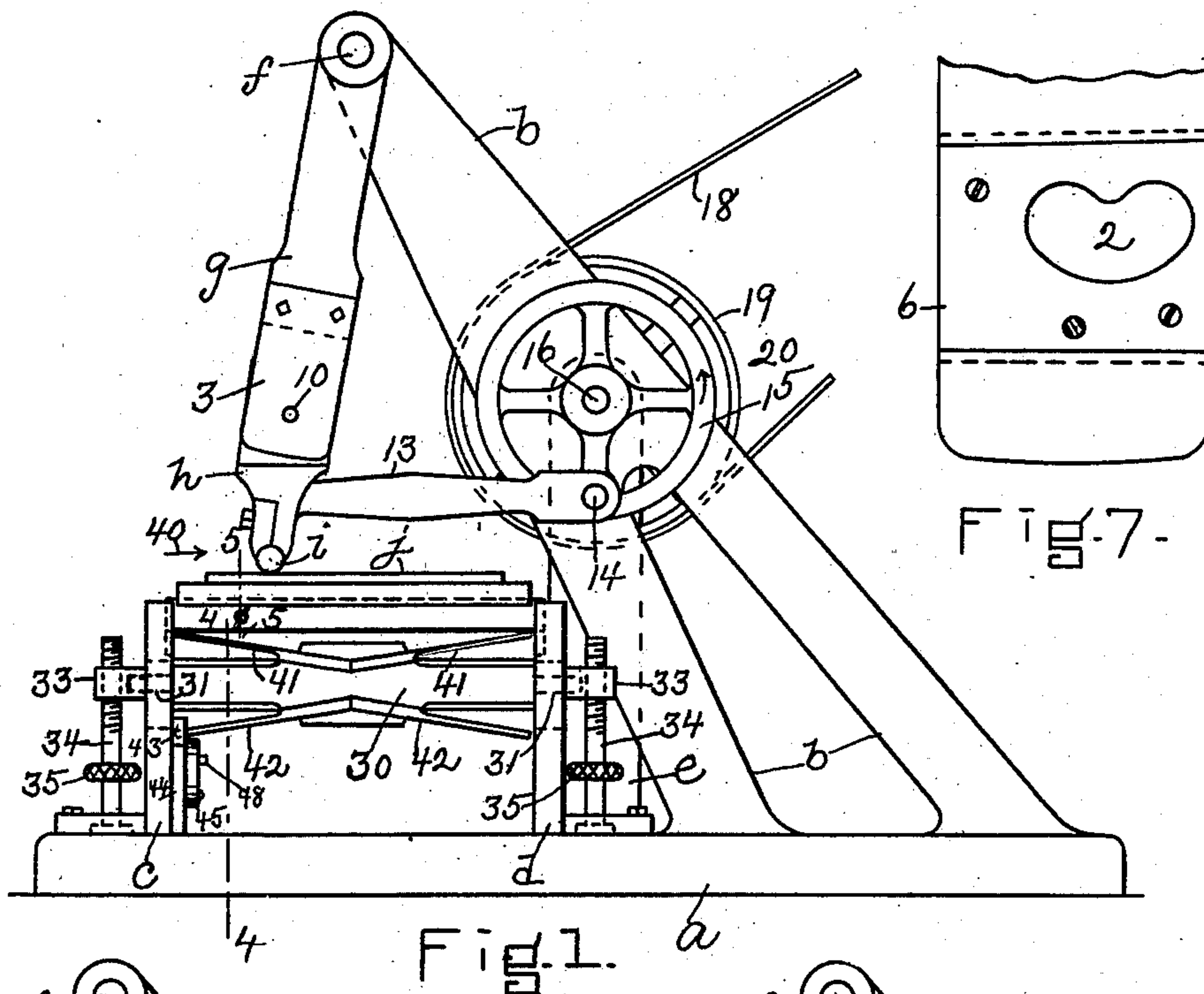
Patented Nov. 13, 1900.

E. HAYES.
LEATHER WORKING MACHINE.

(Application filed Apr. 4, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES.
Matthew M. Blunt.
J. Murphy.

INVENTOR.
Edward Hayes
by Jas. H. Churchill
ATTY

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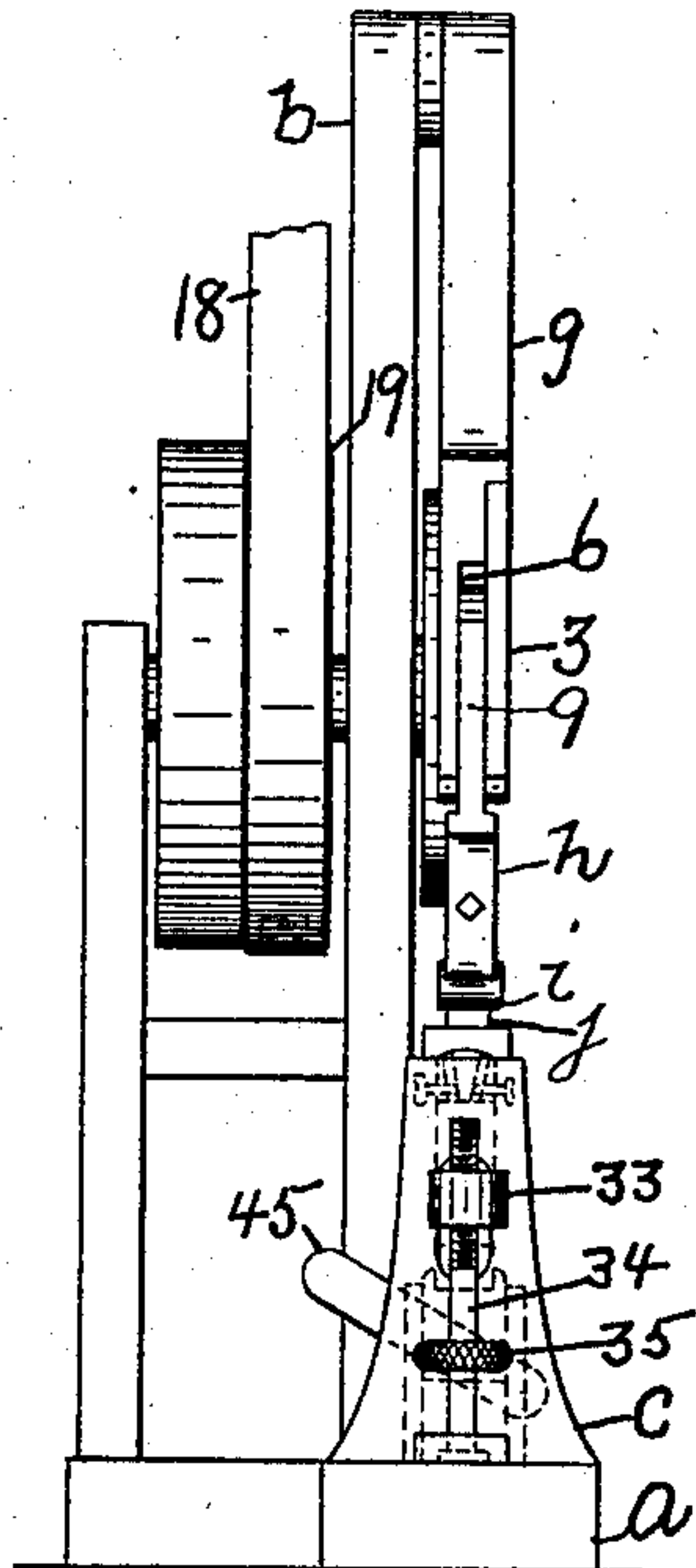


Fig. 8.

WITNESSES

R. W. Stout.
J. Murphy

INVENTOR

Edward Hayes
by *Jas. H. Churchill*
att'y.

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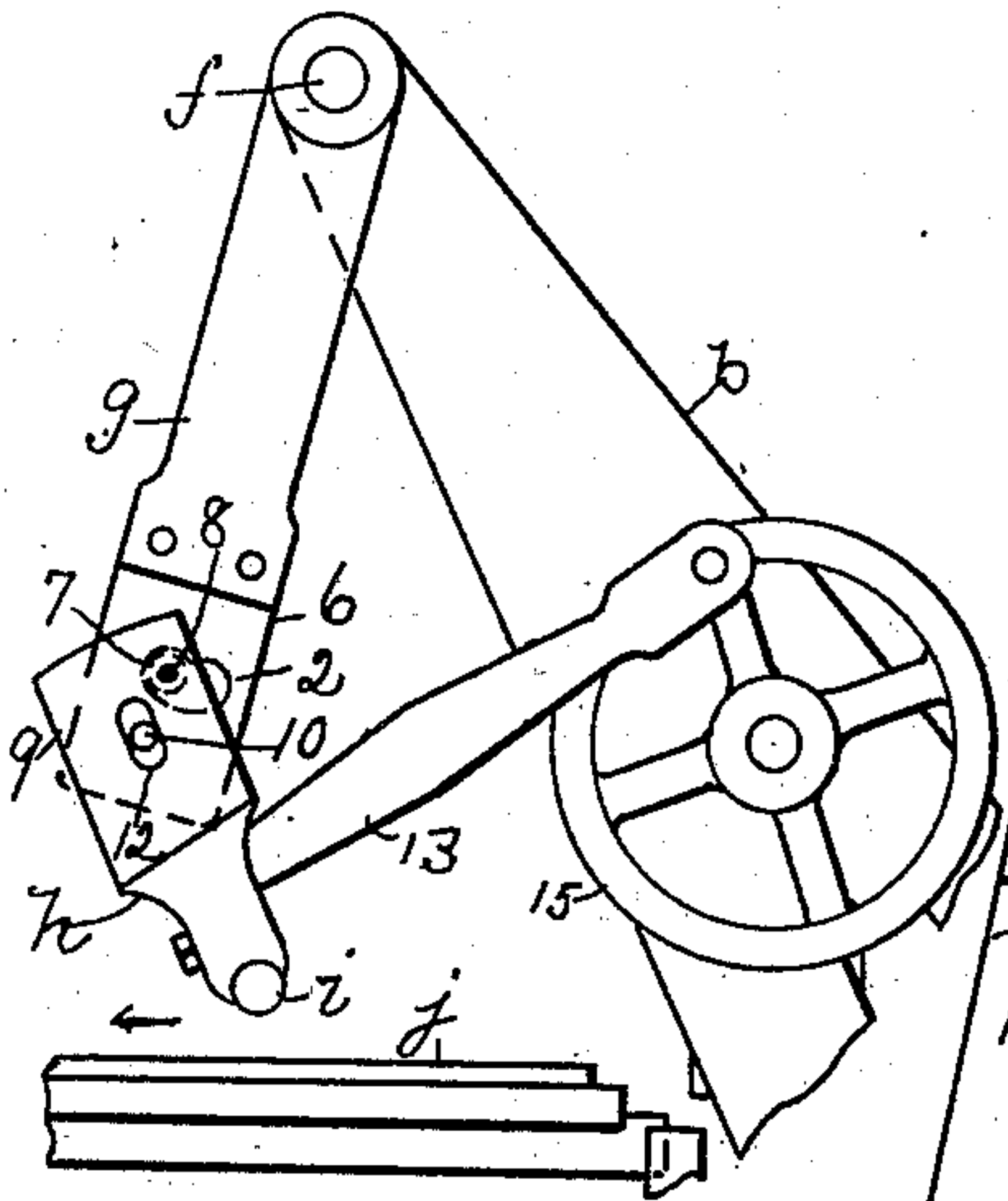


Fig. 12.

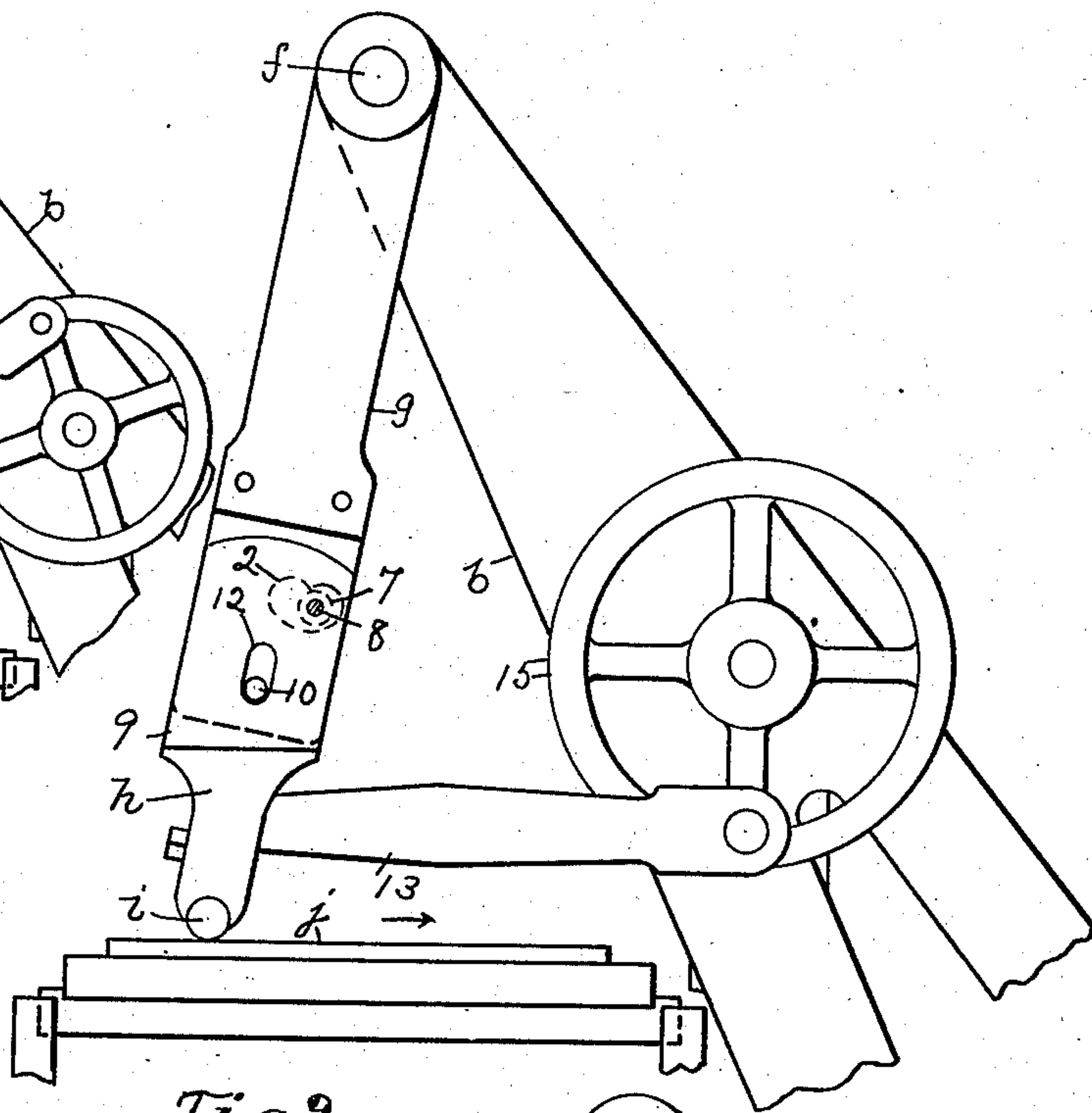


Fig. 9.

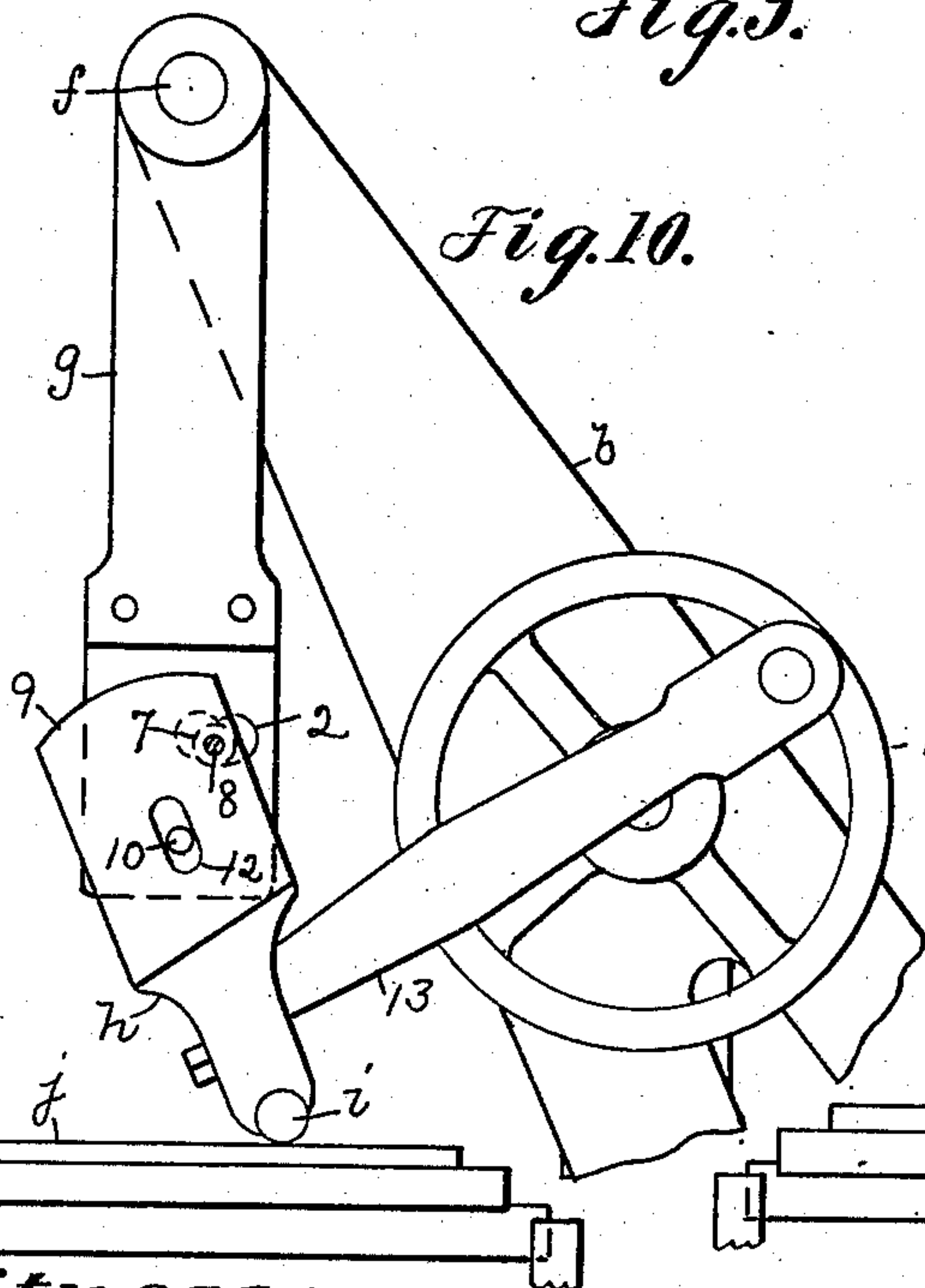


Fig. 10.

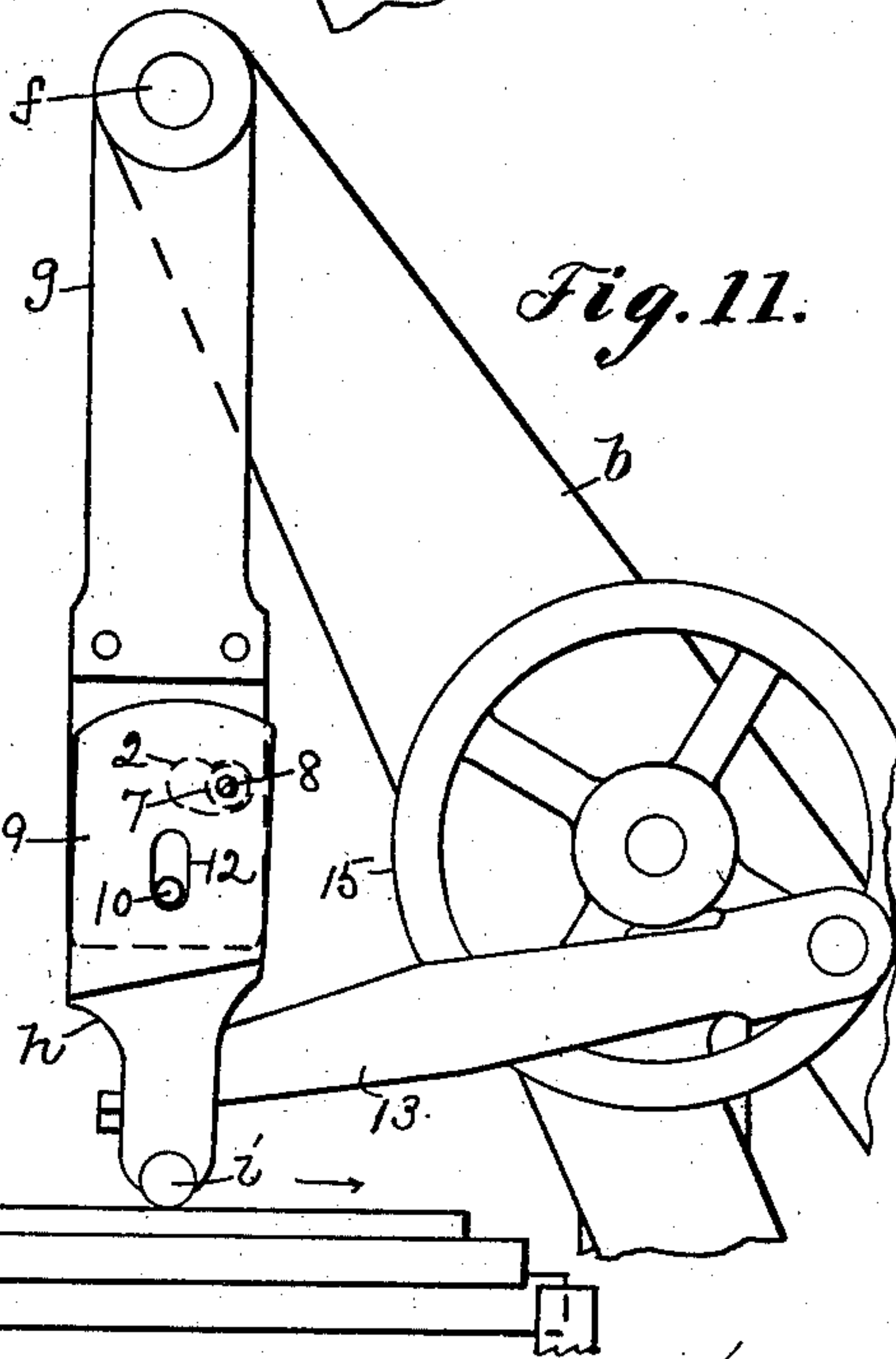


Fig. 11.

Witnesses.
C. H. Gannett
J. Murphy

Inventor.
Edward Hayes
By Jas. H. Churchill
att'y.

UNITED STATES PATENT OFFICE.

EDWARD HAYES, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE VAUGHN MACHINE COMPANY, OF PORTLAND, MAINE.

LEATHER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 661,580, dated November 13, 1900.

Application filed April 4, 1899. Serial No. 711,664. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HAYES, a citizen of the United States, residing in Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Leather-Working Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to leather-working machines of that class in which the operating-tool is supported by a pendulum, and has for one of its objects to obtain a uniform pressure upon the leather of the operating-tool throughout the length of its stroke. For this purpose the tool-carrier is loosely attached to the pendulum and is operated upon by a cam which is properly shaped to keep the tool in engagement with the leather for the entire length or substantially the entire length of the stroke of said tool.

The invention further has for its object to provide machines of the class described with a reversible bed-support and with, preferably, a laterally-adjustable bed, as will be described.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation of a leather-working machine embodying this invention; Figs. 2 and 3, details in elevation to be referred to, showing the operating-tool in different positions; Fig. 4, a cross-section on the line 4 4, Fig. 1, looking toward the left; Figs. 5 and 6, sectional details to be referred to, the section being taken on the line 5 5, Fig. 1; Fig. 7, an enlarged detail to be referred to; Fig. 8, an end elevation of the machine shown in Fig. 1, and Figs. 9 to 12 details to show the operation of the cam on the tool-carrier.

The framework of the machine herein shown comprises a base *a*, an inclined upright *b*, and substantially vertical standards or up-rights *c*, *d*, and *e*, which may be of metal or other suitable material and are attached to the base.

The inclined upright *b* has pivoted to it at *f* a pendulum *g*, which supports a tool-carrier *h*, provided with a glazing or other tool *i*,

which coöperates with a bed *j*, upon which the leather rests while under the action of the said tool.

The tool-carrier *h* is connected to the pendulum, so as to move therewith and yet be free to move independent thereof, so that as the pendulum moves in the arc of a circle, with the pivot *f* as a center, the said carrier may move in a substantially straight path, as will be described. This result is accomplished, as herein shown, by acting on the tool-carrier by a cam groove or slot 2, (see Fig. 7,) preferably in side pieces or arms 3 6, firmly attached to the pendulum and into which project rollers 7 on a stud or pin 8, extended through the upper portion 9 of the tool-carrier *h*, which portion 9 is extended between said arms and connected therewith by a pin 10, extended through a vertical slot 12 in the tool-carrier *h*, as shown in Fig. 2.

The pin 10 serves to connect the tool-carrier *h* to the pendulum *g*, so that both will oscillate or move in the direction of the length of the bed *j*, and the slot 12 permits the tool-carrier to be moved independent of the pendulum, so as to be held by the cam 2 with its tool *i* in contact with the leather on the bed *j* while the said carrier is moved the length or substantially the length of the bed, which latter movement is effected, as shown, by a connecting-rod 13, pivotally attached to said carrier and to a pin 14 on the wheel 15, fast on the shaft 16, having bearings in the up-rights *b e*.

The shaft 16 may be driven in any suitable manner, as by a belt 18, passed about a pulley 19, fast thereon. As the shaft 16 and crank-wheel revolve in the direction indicated by arrow 20, Fig. 1, the pendulum and the tool-carrier *h* are moved in the direction indicated by arrow 40, and during the forward or operative stroke of the tool-carrier the tool *i* is moved in a straight path parallel with the bed *j* for the entire length or substantially the entire length of the forward stroke of said tool, as represented in Figs. 1, 2, 3, and 9 to 12, inclusive.

In Figs. 1 and 9 the tool is represented at the beginning of its forward stroke, in Figs. 2 and 11 at the middle of said stroke, in Figs. 3 and 10 at the end of the forward

stroke, and in Fig. 12 about the middle of the backward stroke. The cam 2 is properly shaped to effect this result, which is desired in glazing-machines, as the operative stroke 5 of the tool is lengthened and the pressure of the tool upon the leather is uniform throughout the length of its forward stroke, thereby insuring uniform results in the work. During the return stroke of the operating-tool it is out of contact with the work, as in machines of this class as now commonly constructed. By changing the shape of the cam 2 the tool may be made to engage the leather at various portions of its forward stroke, and 15 the said cam is preferably shaped so as to gradually engage the leather at the beginning of its forward stroke.

I prefer to operate the tool-carrier by two cam-grooves, one on each side of said carrier; 20 but one of said cam-grooves may be omitted.

Another feature of this invention consists in providing a reversible support for the bed *j*. The support referred to is herein shown as a bar 30, provided with journals 31, which 25 extends through suitable slots 32 in the uprights *c d* and into bearings 33, movable vertically on upright screw-rods 34, provided, as shown, with hand-wheels 35, by which the rods 34 may be rotated to move the journal-bearings 33 vertically, and thereby adjust the 30 bed with relation to the tool *i*. The slots 32 are made of suitable length to permit this movement. The support 30 has secured to its upper and lower sides cushions or springs 41 42, which may and preferably will be leaf-springs and of different strength or stiffness—that is, one spring, as 41, may be a light spring, which supports the bed *j* when light stock is being worked, and the other, as 40 42, may be a heavier or stiffer spring to support the bed *j* when heavier or thicker stock is to be worked. The springs 41 42 may be brought into operative position with relation to the bed by reversing the supporting-bar 30. 45 This bar is normally locked against rotation, which may be effected, as shown, (see Fig. 4,) by means of a vertically-movable slide 43, forked at its upper end to engage the lower spring, (shown in Fig. 1 as the spring 42.) 50 The locking-slide 43 is movable in suitable guides 44 and may be moved, as shown, by a lever 45, provided with a slot 46, into which projects a pin 47 on said slide, and the said lever may be locked in its operative or elevated position in any suitable manner, as by 55 a pin 48, inserted into a hole in one of the guides 44 below the lever, as shown in Fig. 4. When the slide 43 is in its elevated position, (shown in Fig. 1,) its forks embrace the 60 lower spring 42 and lock the supporting-bar 30 against rotation. If it is desired to reverse the support 30, lever 45 is unlocked and moved down into its dotted-line position, Fig. 4, thus lowering the slide 43 and disengaging it from the spring 42. The bed *j* is 65 then lifted or removed from the uprights *c d* and the support 30 turned until the spring 42

is in position to sustain the bed, after which the slide 43 is elevated to engage the spring 41 and lock the support 30. The bed *j* is 70 preferably made laterally adjustable, which may be effected, as herein shown, by making the said bed in two parts 50 51 and providing the lower surface of the part 50 with a curved portion 52, which rests on the curved 75 upper surface of the lower part 51, which latter is fitted into suitable guideways in the uprights *c d* and rests on the spring 41. The upper part 50 of the bed is laterally adjustable with relation to the lower part 51 and 80 may be adjusted and secured in its adjusted position by set-screws 55 56, which engage the opposite sides of a lug 57, projecting from the under side of the upper part into a slot or opening 58 in the lower part. (See Figs. 5 85 and 6.) By adjustment of the screws 55 56 the upper part or bed proper, 50, may have its upper surface tilted or adjusted so as to compensate for any irregularity in the diameter of the glazing tool and also to provide for effectively operating on skins of uneven thick- 90 ness. The bed proper may be provided in practice with a bolster of suitable material, such as now commonly used in machines of this class, and not herein shown. 95

I claim—

1. In a machine of the class described, the combination with a pendulum, and means to oscillate it, of a tool-carrier connected to said pendulum to move in the same direction, and 100 a cam to act on said tool-carrier to move it independent of the said pendulum, for the purpose specified.

2. In a machine of the class described, the combination with a pendulum having a fixed 105 fulcrum, and means to oscillate it, of a tool-carrier connected to said pendulum to move in the same direction and to permit of movement in another direction independent of the pendulum, and means to effect said independent movement of the tool-carrier, substantially as described. 110

3. In a machine of the class described, the combination with a bed, of a tool-carrier provided with a tool cooperating therewith, a 115 pendulum pivoted to a stationary or fixed support and movable in the arc of a circle in the direction of the length of the bed, means to loosely connect said tool-carrier with said pendulum to move in the direction of the 120 length of the bed, and means to move said tool-carrier bodily in a different direction from that in which the pendulum is moved, substantially as described.

4. In a machine of the class described, the 125 combination with a stationary support, of a pendulum pivoted thereto to move in the arc of a circle, a tool-carrier connected to said pendulum to move with it and to move independent thereof in the direction of the length 130 of the pendulum, and means to effect said independent movement of the tool-carrier while moving with the said pendulum.

5. In a machine of the class described, the

combination with a stationary support, of a pendulum pivoted thereto, a tool-carrier connected to said pendulum, means to move said pendulum in the arc of a circle, and a cam to act on said tool-carrier and cause it to be moved in a substantially straight path, substantially as described.

6. In a machine of the class described, a bed composed of two parts, the lower surface of the upper part being concaved transversely for substantially its entire length, and the upper surface of the lower part being correspondingly curved, a lug or projection depending from the lower surface of the upper part intermediate of its sides and extended into a slot or opening formed in the lower part intermediate of its sides, and set-screws to engage said lug or projection, substantially as described.

7. In a machine of the class described, the combination with a bed to support the material, of a rotatable support for said bed, yield-

ing means interposed between said bed and its support, and means to lock said rotatable support in its operative position, substantially as described.

8. In a machine of the class described, the combination with a bed, of a rotatable support therefor having yielding means attached to opposite sides, and means to secure said support against rotation, substantially as described.

9. In a machine of the class described, the combination with a bed to support the material, of a vertically adjustable and rotatable support for said bed, substantially as described.

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

EDWARD HAYES.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.