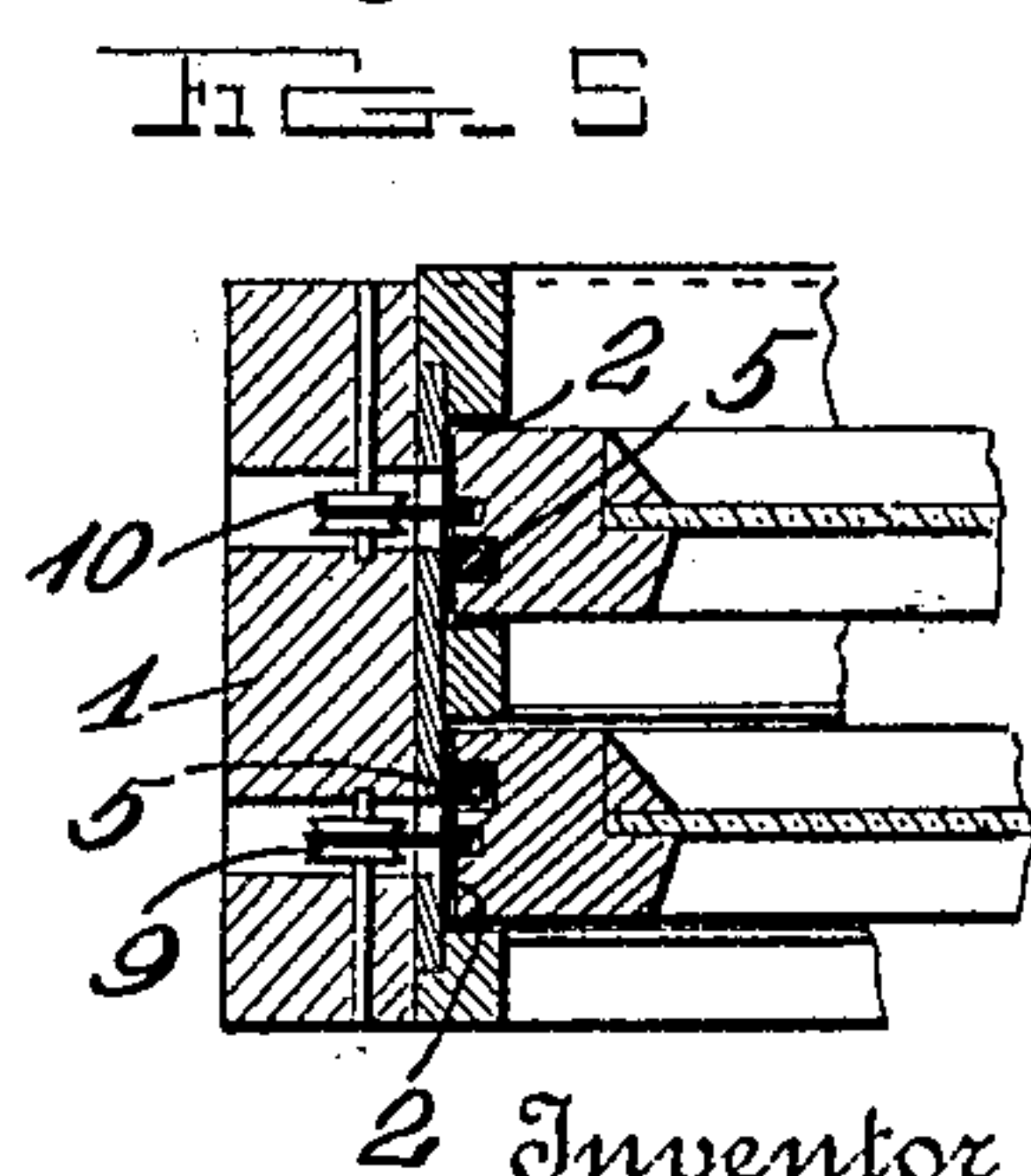
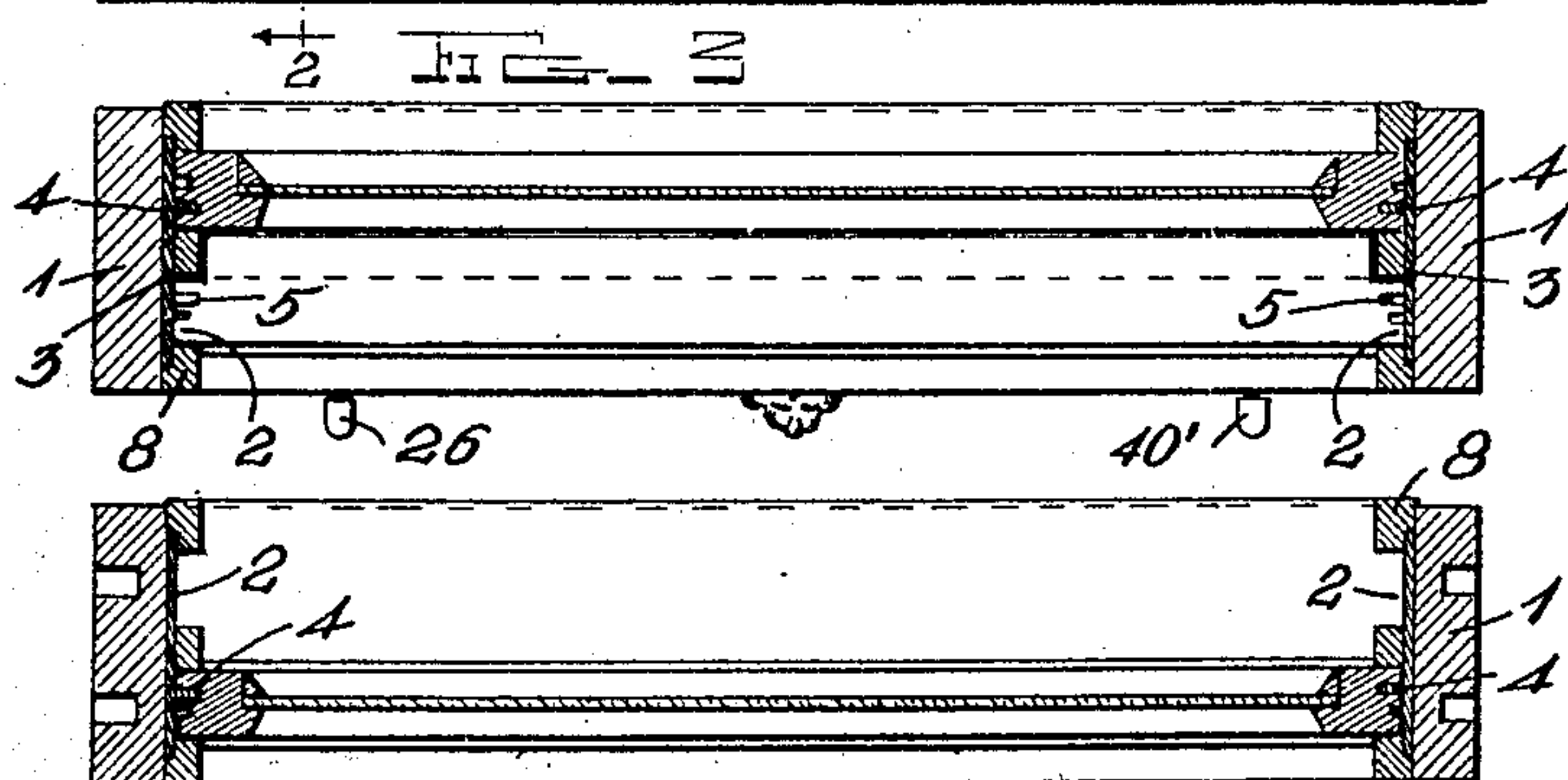
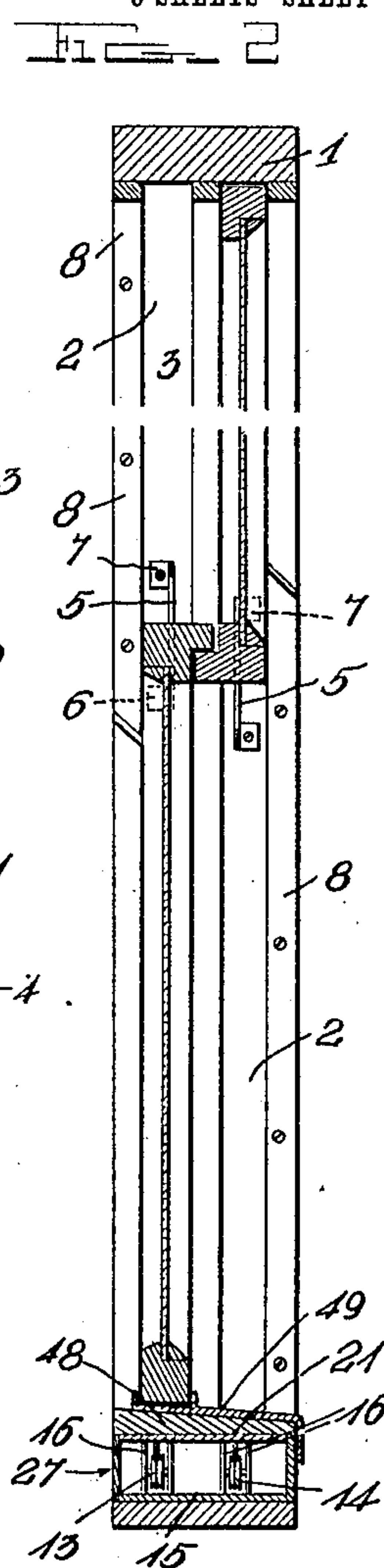
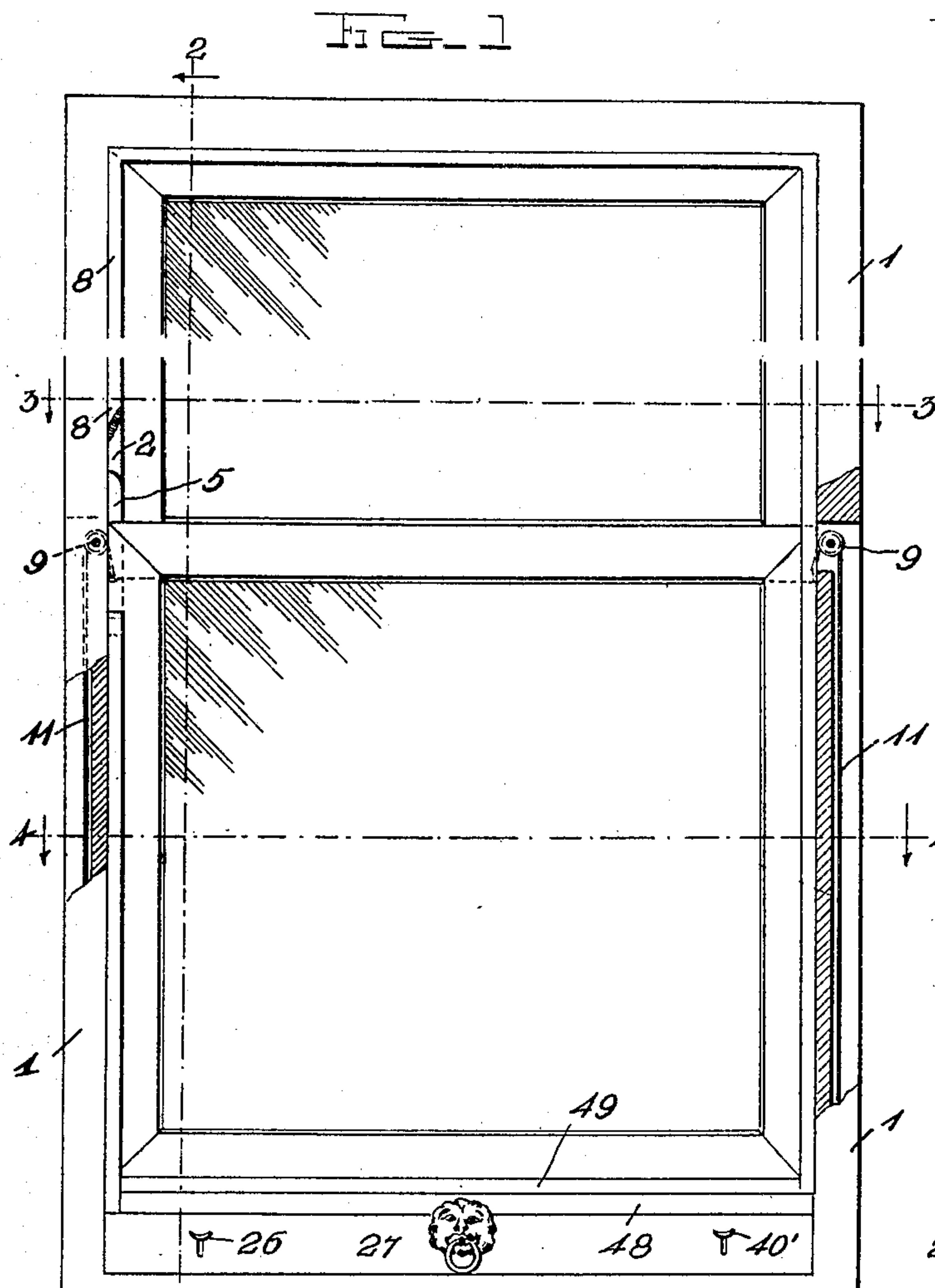


912,779.

L. BARBIERI.
SASH OPERATING DEVICE.
APPLICATION FILED MAR. 19, 1908.

Patented Feb. 16, 1909.

3 SHEETS—SHEET 1.



Witnesses

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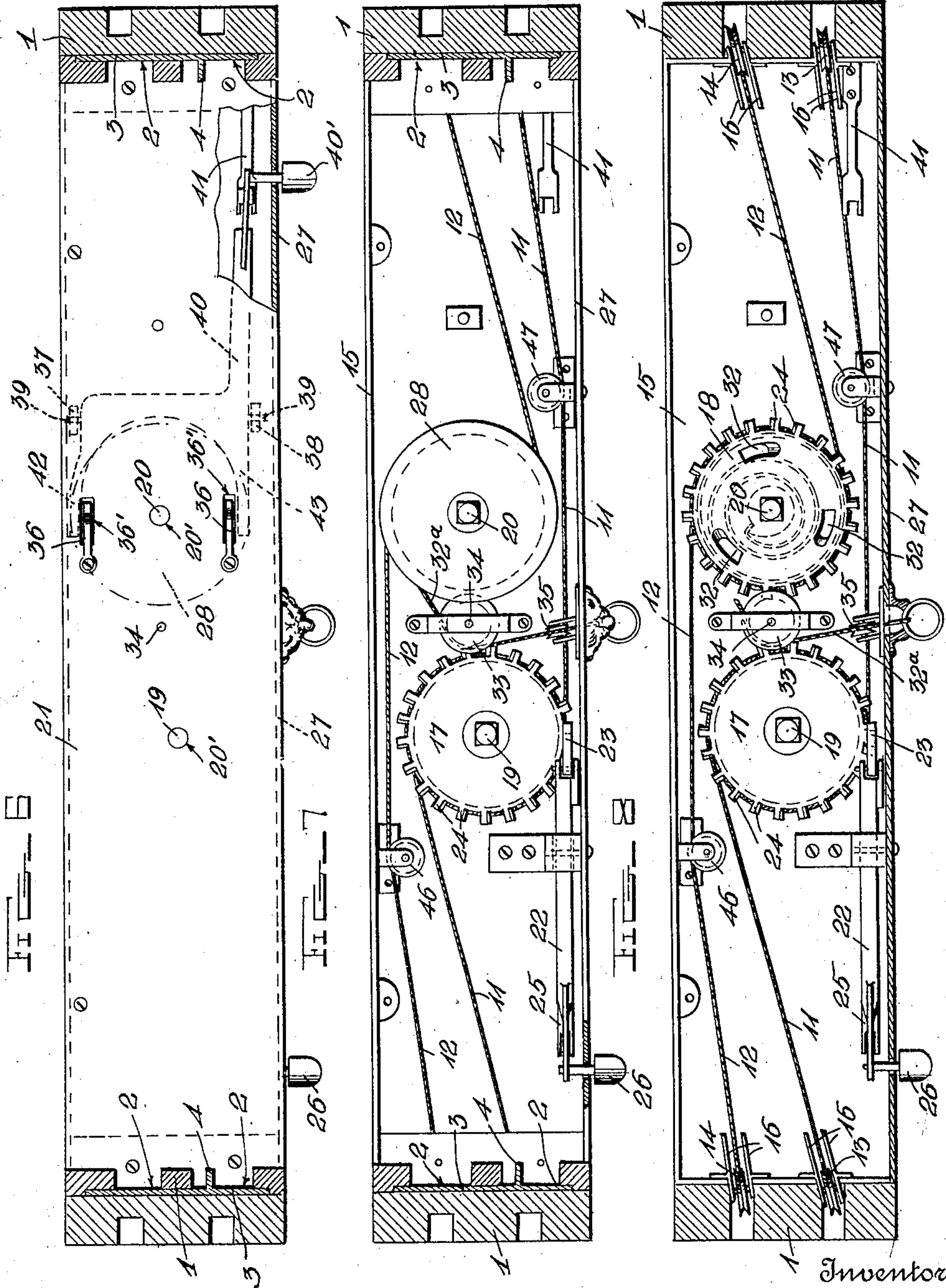
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3 SHEETS—SHEET 2.

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Witnesses
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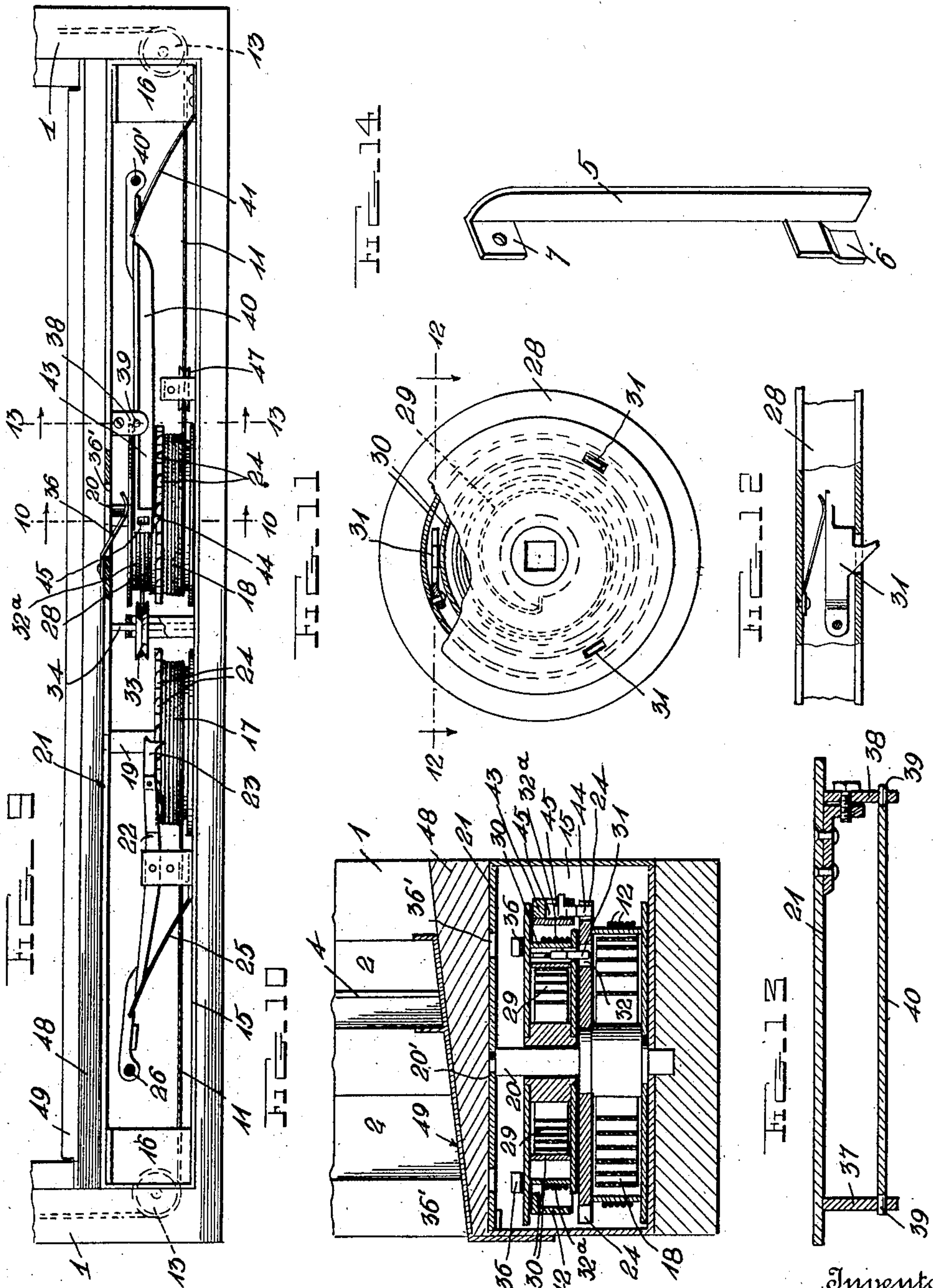
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3 SHEETS—SHEET 3.

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Witnesses

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UNITED STATES PATENT OFFICE.

LOUIS BARBIERI, OF NEW YORK, N. Y.

SASH-OPERATING DEVICE.

No. 912,779.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed March 19, 1908. Serial No. 422,108.

To all whom it may concern:

Be it known that I, LOUIS BARBIERI, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Sash-Operating Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to sash manipulating devices, and particularly to that type of device in which the sashes are raised and lowered without engaging them with the hands.

The object of the invention is to provide a device of this character which will be cheap to manufacture, which will be simple and efficient in operation, and which may be properly regulated to determine the height of the sash and the frame.

A further object of the invention is the provision of means which will enable me to accomplish the above functions in such a manner that the parts will be easily and readily accessible for the purpose of repairing and replacement of worn parts, thus obviating the necessity of employing a skilled workman to repair any slight defect in the mechanism, such as a broken cord or the like.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation with parts broken away, Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1, Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1, Fig. 4 is a similar view taken on the line 4—4 of Fig. 1, Fig. 5 is a horizontal sectional view showing the arrangement of the upper pair of guide rollers, Fig. 6 is a horizontal section on an enlarged scale through the lower part of the window frame, the filling plate and sill drum being removed, Fig. 7 is a similar view with the sill plate removed, Fig. 8 is a similar view with the idle drum removed and parts in section, Fig. 9 is a front elevation of the lower part of the frame, the front plate being removed, Fig. 10 is a vertical sectional view taken on the line 10—10 of Fig. 9, Fig. 11 is a bottom plan view of

the idle drum partly in section, Fig. 12 is a sectional view taken on the line 12—12 of Fig. 11 and looking in the direction of the arrow, Fig. 13 is a vertical section taken on the line 13—13 of Fig. 9 disclosing the pivotal mounting of the tripping device, Fig. 14 is a perspective view of one of the removable upper ends of the beads.

Referring more especially to the drawings, 1 represents an ordinary window frame having its sides provided with longitudinal grooves 2, which are covered with sash plates 3, having guiding beads 4 upon which the sashes are adapted to run. These guiding beads are provided at their ends with removable strips 5, each having at their lower ends a tapered lug 6 to engage notches in the sash plates, and at their upper ends are lugs 7 adapted to engage a similar notch and to be engaged by a clamping screw. The auxiliary ends of the sash beads are removable for the purpose of taking the sashes out of the frame when it is found necessary for any purpose whatever, the guard rail 8 being cut away, as shown for this purpose. At the top of the grooves 2 I provide a double pair of rollers 9 and 10, two on each side of the frame for the reception of the elevating cords 11 and 12, which will be hereinafter described.

The elevating cords 11 and 12 pass from their connection with the sashes over the pulleys down through the grooves 2 to a double pair of pulleys 13 and 14, secured in the sill boxing 15, between vertical webs 16, and from thence to the winding drums 17 and 18, which are journaled upon the stub shafts 19 and 20, projecting from the bottom of the boxing 15, and being engaged with the apertures 20' in the sill plate 21, which overlies the boxing and is secured thereto in any suitable manner. Both of these drums are similar, in that they each comprise a pair of plates joined together by a peripheral web, around which the cords are adapted to swing, a series of teeth formed in the periphery of the upper plate and a spring held between the plates and keyed to the web at one end and at its other end to the stub shafts. These stub shafts are held stationary with respect to the boxing so that the drums revolve around them as the sashes are lowered to wind up the springs to hold them under tension.

A tripping arm 22 is carried adjacent the winding drum 17, and has upon its inner end a gravity pawl 23, which normally engages

the teeth of this drum and rides idle there-
over when the sash is being lowered, the
cords playing out of the drum at the time,
and the spring being wound up to elevate
5 the sides when the drum is released. The
opposite end of this tripping arm has en-
gaging it a leaf spring 25, which forces the
inner pawl end normally into engagement
with the top of the drum so that the pawl
10 will properly engage the teeth at all times.
The outer end of the lever beyond its spring
engagement is provided with an upstanding
lug screw threaded to receive the thumb
piece 26, which passes through the front
15 plate 27, to be in position for manual engage-
ment.

Mounted upon the top of the drum 18 in
slidable engagement with the stub shaft is a
centrally squared arbor of an idle drum 28,
20 which has attached to it a spiral spring 29,
which controls the idle drum 30. The bot-
tom plate of this drum has projecting
through its lower face a series of spring
pressed pawls 31, which engage the notches
25 32, formed upon the upper face plate of the
drum 18. These notches have a squared
wall at one end, and a beveling wall at the
other end which permits the pawls 31 to ride
freely out of the notch in one operation and
30 to engage the squared wall and rotate the
drum 18. A suitable operating cord 32^a is
passed around the drum and around a guid-
ing pulley 33, mounted upon a vertical stub
shaft 34, projecting upwardly from the bot-
35 tom of the boxing between the two pulleys.
This cord passes around the pulley 33 over a
pulley 35 carried by the front plate and
through the front plate where it is secured
to an operating ring in this instance held in
40 the mouth of a lion's head carried upon the
front plate. This idle drum is held in en-
gagement with the drum 18 by leaf springs
36, which are secured to the top face of the
sill plate 21 and passed through the aper-
45 tures 36' therein.

A pair of lugs 37 and 38, the latter being
removable, depend from the lower face of
the plate 21, and are apertured to receive
the pivot pintles 39, of a tripping device 40.
50 This tripping device has its inner end spring
pressed up into engagement with the sill
plate 21 by a leaf spring 41, and its outer end
formed in the shape of a semi-circle to sur-
round the idle drum 28 and to provide arms
55 42 and 43, which engage the upper and larger
disk of the drum, so as to raise it from its en-
gagement with the winding drum 18. A
suitable gravity pawl 44 is carried in the arm
43, so as to slip up and down in a bearing 45,
60 formed at the end thereof, whereby it may
engage the peripheral teeth of the drum 18
to hold it in its wound up position.

Suitable pulleys 46 and 47 receive the
cords traveling from the sash drums and
65 guide them to the pulleys 13 and 14. A suit-

able filling plate 48 is secured upon the sill
plate 21 in any suitable manner, and a sill
drum 49 is slid thereover and secured thereto.

In operation the device acts as follows:
When it is desired to raise the lower sash it is 70
only necessary to press the tripping arm 22
which raises the pawl 23 out of engagement
with the teeth of the drum 17, thereby re-
leasing it and allowing the spring to wind up
upon the cords so as to raise the sash. The 75
sash may be lowered by simply pressing
downwardly upon the meeting rail. The
cord at this time unwinding from the drum
and the pawl 23 riding idly over the teeth of
the drum 17. If it is desired to lower the up- 80
per sash the operating cord 32^a is pulled out
so as to rotate the idle drum 28 to force the
pawls 31 into engagement with the notches
32 so as to rotate the drum 18 and unwind
the cords thereon and wind up the spring 85
therein. This action allows the upper sash
to descend by gravity, the pawl 44 of the
tripping lever 40 engaging the teeth of the
drum 18 and holding it in rotated position
with its spring under tension. When the 90
cord 32^a is released the drum rotates on its
arbor back to its normal position with the
spring unwound, the pawls 31 riding idly out
of the beveled ends of the notches 32. When
it is desired to raise the upper sash to normal 95
position the tripping lever 40 is operated by
depressing the outer end thereof in the same
manner as described in connection with the
tripping lever 22, *i. e.*, by engaging the
thumb piece 40', which projects through the 100
front plate 27. This action raises the front
end of the tripping lever and with it the
drum 28, so as to free the pawls 31 from the
drum. The same action also disengages the
pawl 44 from the teeth of the drum 18 and 105
allows the spring therein to wind up the
drum and raise the sash.

Various changes in the form, proportion
and the minor details of construction may be
resorted to without departing from the prin- 110
ciple or sacrificing any of the advantages of
this invention as defined in the appended
claims.

Having thus described my invention, what
I claim and desire to secure by Letters Patent 115
is:—

1. In a device of the class described, the
combination with a frame, of a sash freely
slidable therein, a spring drum, connection
between the drum and the sash which nor- 120
mally holds the sash in raised position,
means to wind up the drum and simultane-
ously to free said connection to allow the
sash to drop by gravity, means to hold said
drum in wound up position, and means to 125
release the drum and to render said oper-
ating means inoperative.

2. In a device of the class described the
combination with a frame, of a sash freely
slidable therein, a spring drum, a cord con- 130

necting the spring drum of the sash and normally tending to hold the sash in raised position, a second spring drum having a pawl and ratchet connection with the first, means to
5 rotate the second spring drum and thereby wind up the first spring drum and simultaneously release the cord to allow the sash to drop by gravity, means to hold the first spring drum in wound up position, and means
10 to simultaneously release said drum and render inoperative the ratchet connection of the second.

3. In a device of the class described, the combination with a frame, of a sash freely
15 slidable therein, a spring drum journaled below the sill of said frame, a cord connection between said drum and the sash, a second drum mounted upon the top of the first and having a pawl and ratchet connection
20 therewith which allows the free rotation of

the second drum with respect to the first in one direction and when rotated rotates the second drum in the opposite direction, means for operating the second drum to control the first whereby the sash may be lowered by
25 gravity, a pawl to hold the first drum in operated position, a tripping lever carrying the pawl and adapted to raise the pawl out of engagement with the first drum and simultaneously to disconnect the ratchet connection of the second drum therewith, and a
30 thumb piece removably connected with said lever for operating the same.

In testimony whereof I have hereunto set my hand in presence of two subscribing
35 witnesses.

LOUIS BARBIERI.

Witnesses:

BENJ. G. COWL,
L. O. HILTON