

(No Model.)

A. MERZ.
SHUTTER WORKER.

No. 454,371.

Patented June 16, 1891.

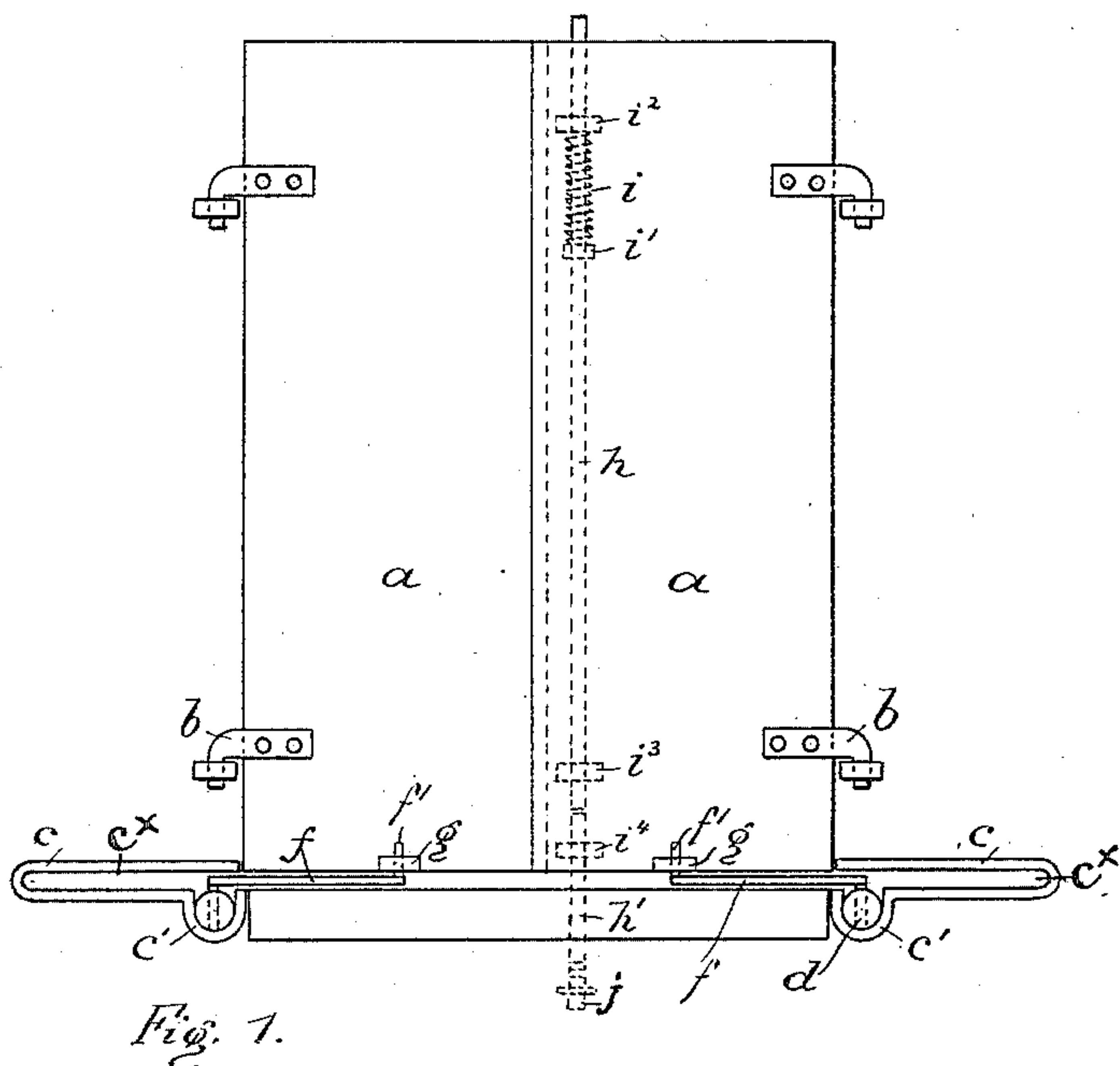


Fig. 1.

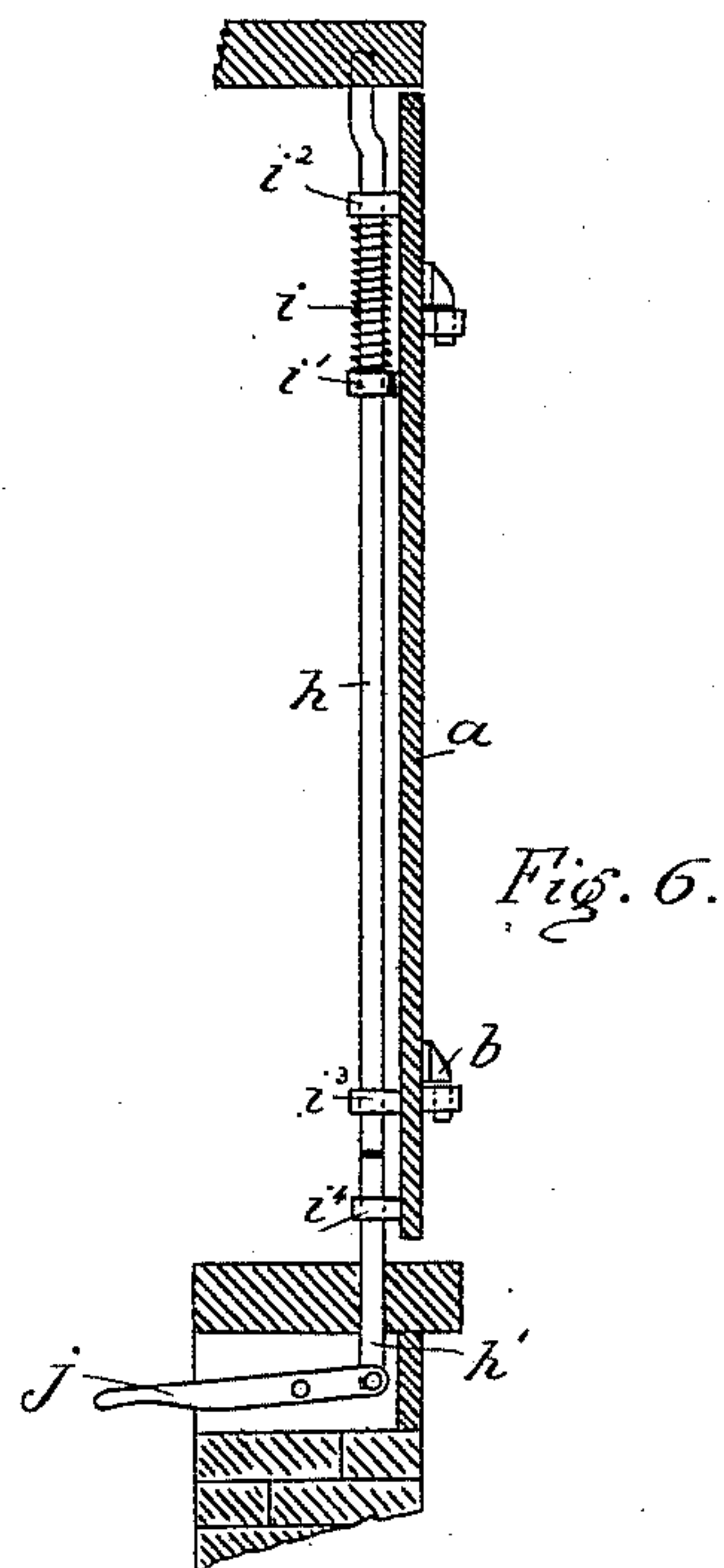


Fig. 6.

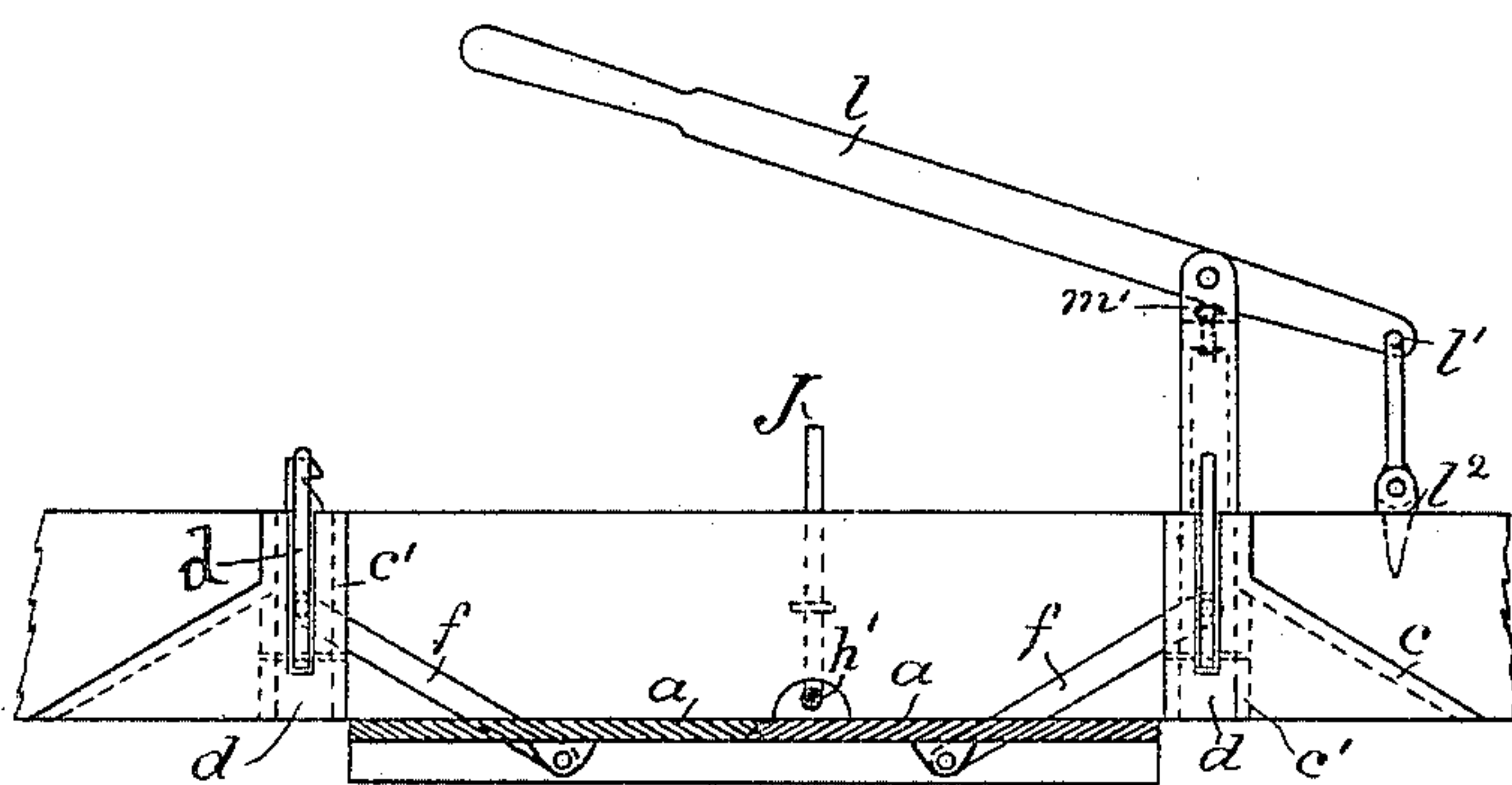


Fig. 2.

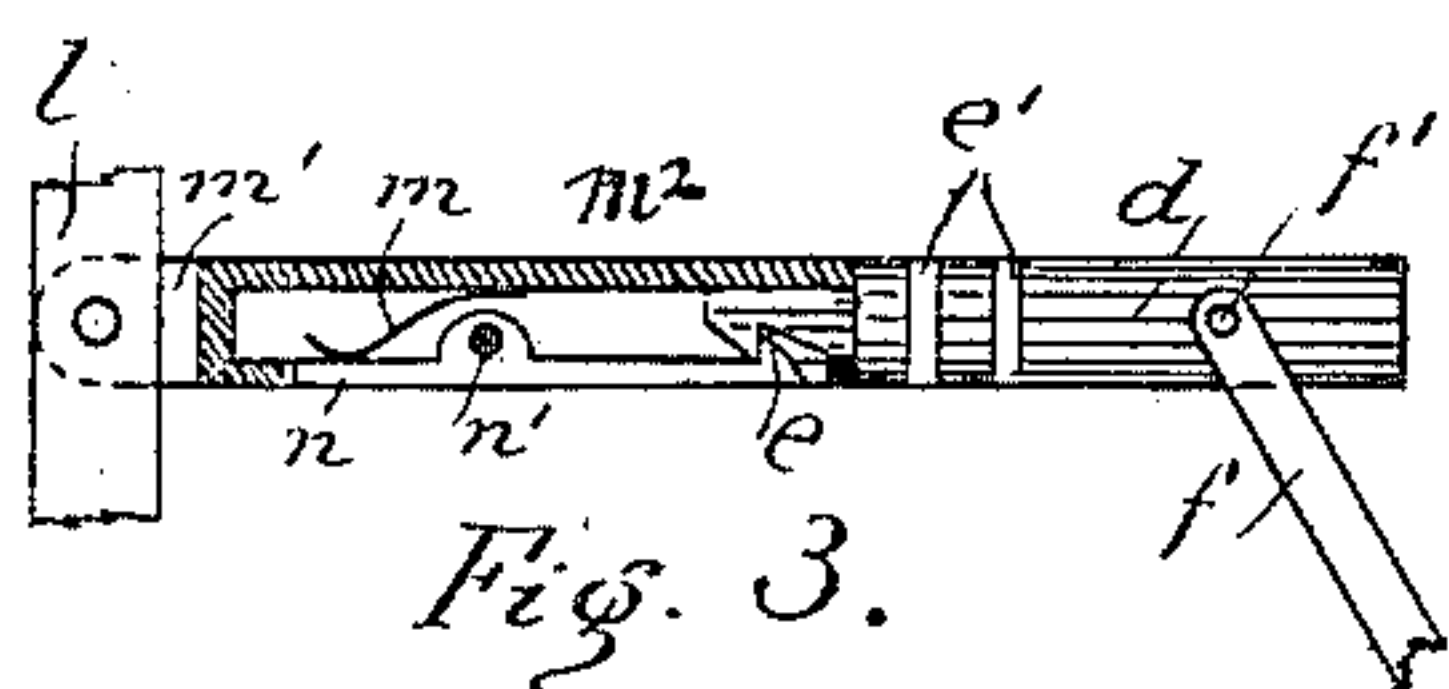


Fig. 3.

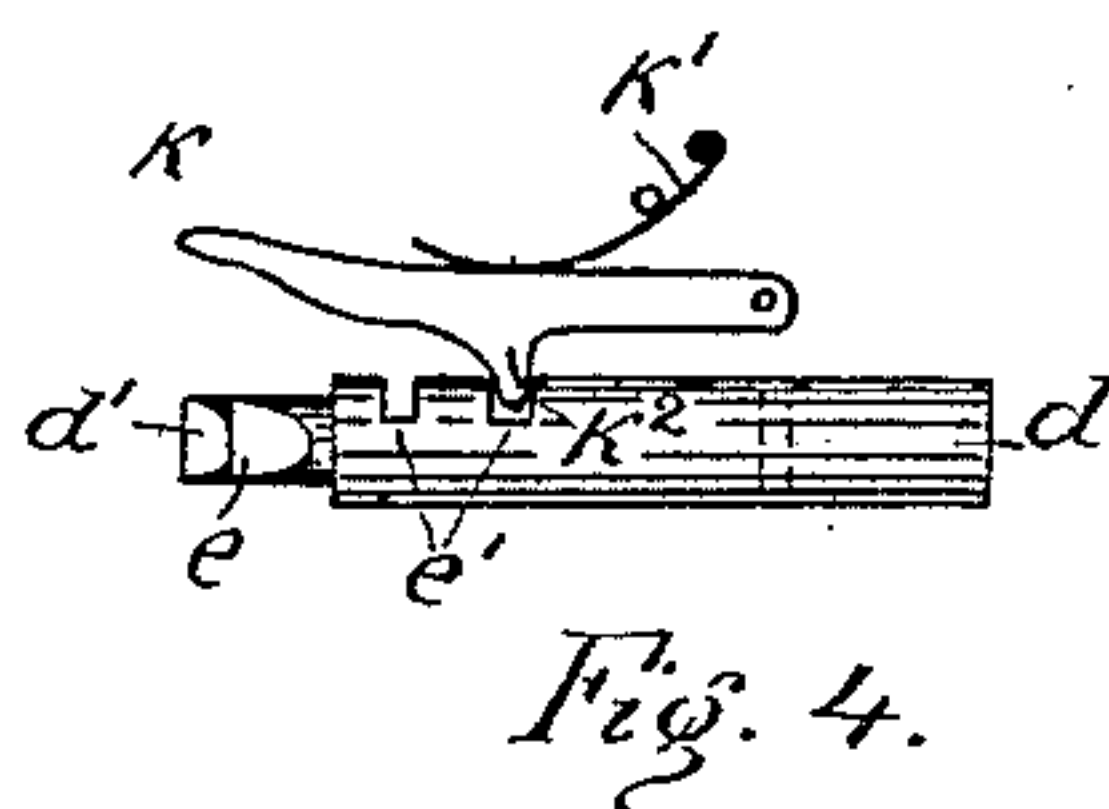


Fig. 4.

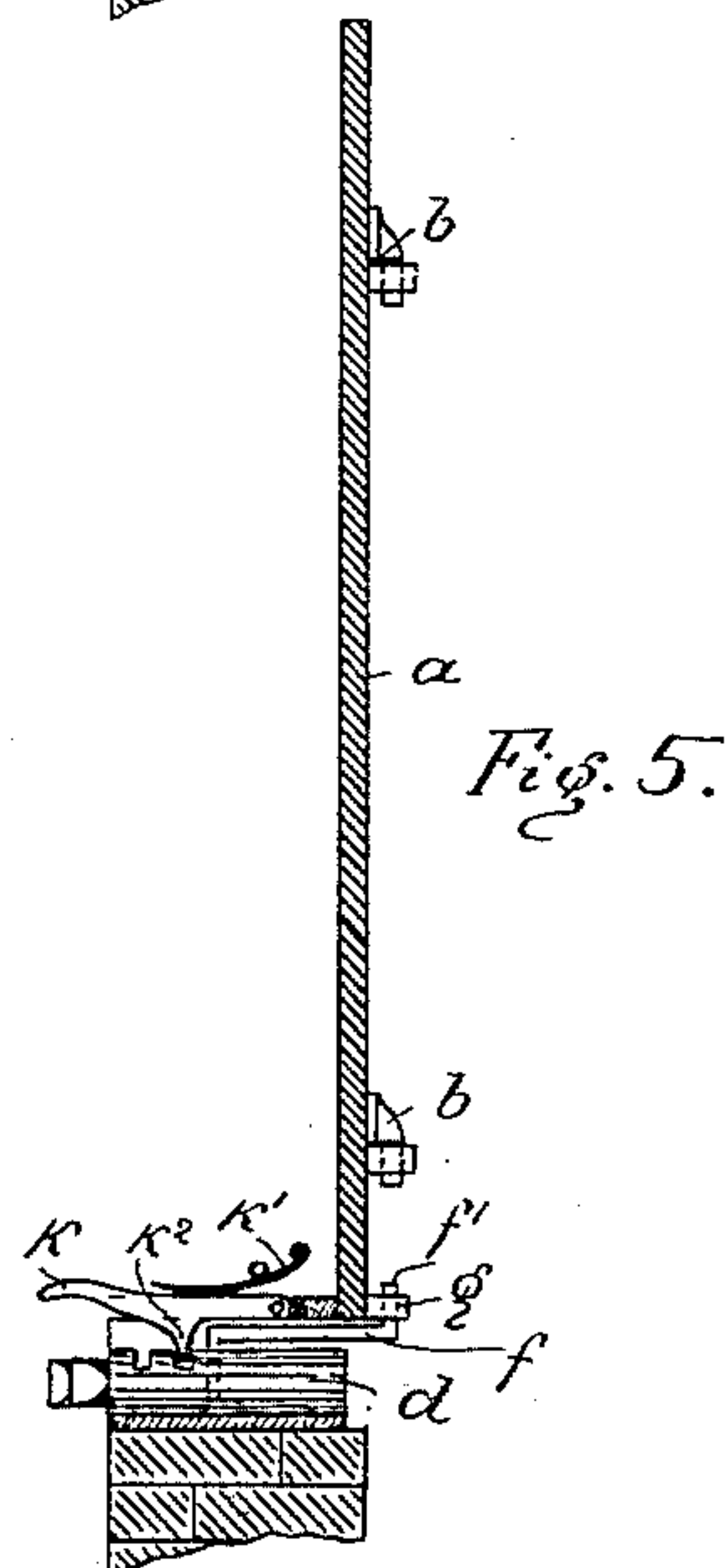


Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

ANTON MERZ, OF CHICAGO, ILLINOIS.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 454,371, dated June 16, 1891.

Application filed March 19, 1891. Serial No. 385,591. (No model.)

To all whom it may concern:

Be it known that I, ANTON MERZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Shutter-Workers, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

10 Figure 1 shows in front elevation a pair of closed shutters provided with my improved shutter-worker mechanism. Fig. 2 shows Fig. 1 in plan view with the working mechanism on the interior of the shutter. Figs. 3
15 and 4 show details of construction of parts on an enlarged scale. Fig. 5 shows my shutter-worker in transverse vertical section, taken at the outer edge of the closed shutter. Fig. 6 shows my device in a transverse vertical
20 section, taken near the center of the closed shutter.

Like letters refer to like parts.

The object of my invention is to provide a
25 simple, effective, and easily-applied mechanism to open and close window-shutters without the necessity of opening the window; and to attain said ends I construct my new device in substantially the following manner, namely:

30 I provide a slotted cast-iron piece c , composed of an upper and a lower flat plate united on their outer edges in a diagonal line, so as to form a triangular piece with a slot c^x , as shown. Said diagonal edge is placed away
35 from the shutter, and on the inner edge of the lower plate and integral therewith is a channel or way c' , vertical to the plane of the wall. Said parts are secured into the wall of the building. Into said channel is placed a plug
40 d , capable of moving back and forth freely. The upper side of said channel is open through a longitudinal slot, through which one end or a pin on the end of a rod f plays, pivoted in said plug d , and the other end of said rod is piv-
45 oted in a lug g by a pin f' .

From what has been shown it is evident that when the shutter turns on its hinges b the pin f' will describe an arc of a circle, and thus cause the plug d to move back and forth.
50 When the shutter a is closed, said rod f lies diagonally under the shutter, and when the shutter is open the said rod lies in the outer

edge of the slot c^x . Said plug d has a should-
ered end or neck d' , fitting into a tube m^2 , of
the same or slightly less diameter than said 55
plug, and a notch e , into which a catch n en-
gages. Said catch plays in a slot in said tube,
and is fulcrumed on a pivot at n' and pushed
toward said notch by a spring m . To the
outer end of said tube is attached a swiveled 60
head m' , in which a lever l is fulcrumed on a
pin. By this arrangement the said tube may
turn on its axis so as to face upward with
its spring-catch n for either the right or left
hand shutter. The lever l is connected by a 65
link l' to a hook l^2 , made fast to the wall.
When the said tube is attached to said should-
ered neck d' and the link l' to the hook l^2 and
the tube pushed outward by means of the le-
ver l , it will cause the shutter a to swing out 70
until it stands at or near a right angle to the
wall, and if such movement is made with suffi-
cient rapidity the momentum given to the
opening shutter will cause it to swing beyond
said right-angled position, which is a "dead- 75
point" in the operation of this mechanism, af-
ter which the action of the lever l must be
reversed and continued on until stopped by
the shutter striking against the wall. To
close the shutter the same operation of the 80
lever l is necessary. In order to hold the
shutter in either position, I provide said plug
with one or more notches e' , and a lever k
with a spur k^2 , which is pivoted to the wall
above said plug and depressed by a spring k' , 85
arranged so that the spur k^2 may enter one of
the notches e' when the shutter is in either the
closed or open position, and thereby hold it
in place. Said catch k^2 must be raised out of
its notch e' before any of the parts of the shut- 90
ter can be moved. To provide a stronger
locking mechanism for the closed shutter, I
attach to the outer and overlapping shutter
a vertical bolt h , which moves up and down
freely in eyes $i^2 i^3$, attached to the interior of 95
the shutter. Said bolt is operated by a bolt h' ,
and said bolt h is operated by a lever j , piv-
oted in a vertical slot in the wall. The outer
end of said lever is shown down and its inner
end up, thus raising the bolts h' and h , the lat- 100
ter catching in the cap above while the lower
one passes through an eye i^4 , thus holding both
the upper and lower edges of the shutters.

A coiled spring i surrounds the bolt h and

presses against the eye i^2 , and its lower end rests on a collar i' on the bolt h . This said spring helps to drop the bolt h in case it should otherwise be held from dropping by friction.

What I claim is—

1. In a shutter-worker, the combination, with the slotted plate c , having channel c' below the slot c^x and said channel provided with a longitudinal slot, of the reciprocating plug d in said channel, and rod f , pivoted to and connecting said plug and shutter, substantially as specified.

2. In a shutter-worker, the combination, with the slotted plate c , having channel c' below the slot c^x and said channel provided

with a longitudinal slot, of the notched plug d , catch k^2 to enter the notches of said plug, and rod f , pivoted and connecting said plug and shutter, substantially as specified.

3. In a shutter-worker, the combination, with the slotted plate c , having channel c' , with a longitudinal slot therein, of the notched reciprocating plug d in said channel, rod f , connecting said plug and shutter, a tube m^2 , having a catch to fit on the neck of said plug, and lever, link, and fixed hook l^2 to operate said plug, substantially as specified.

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Witnesses:

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