

No. 653,486.

Patented July 10, 1900.

J. W. ROBINSON.
BLACKSMITH'S BLOWER.

(Application filed Mar. 12, 1900.)

(No Model.)

Fig. 1.

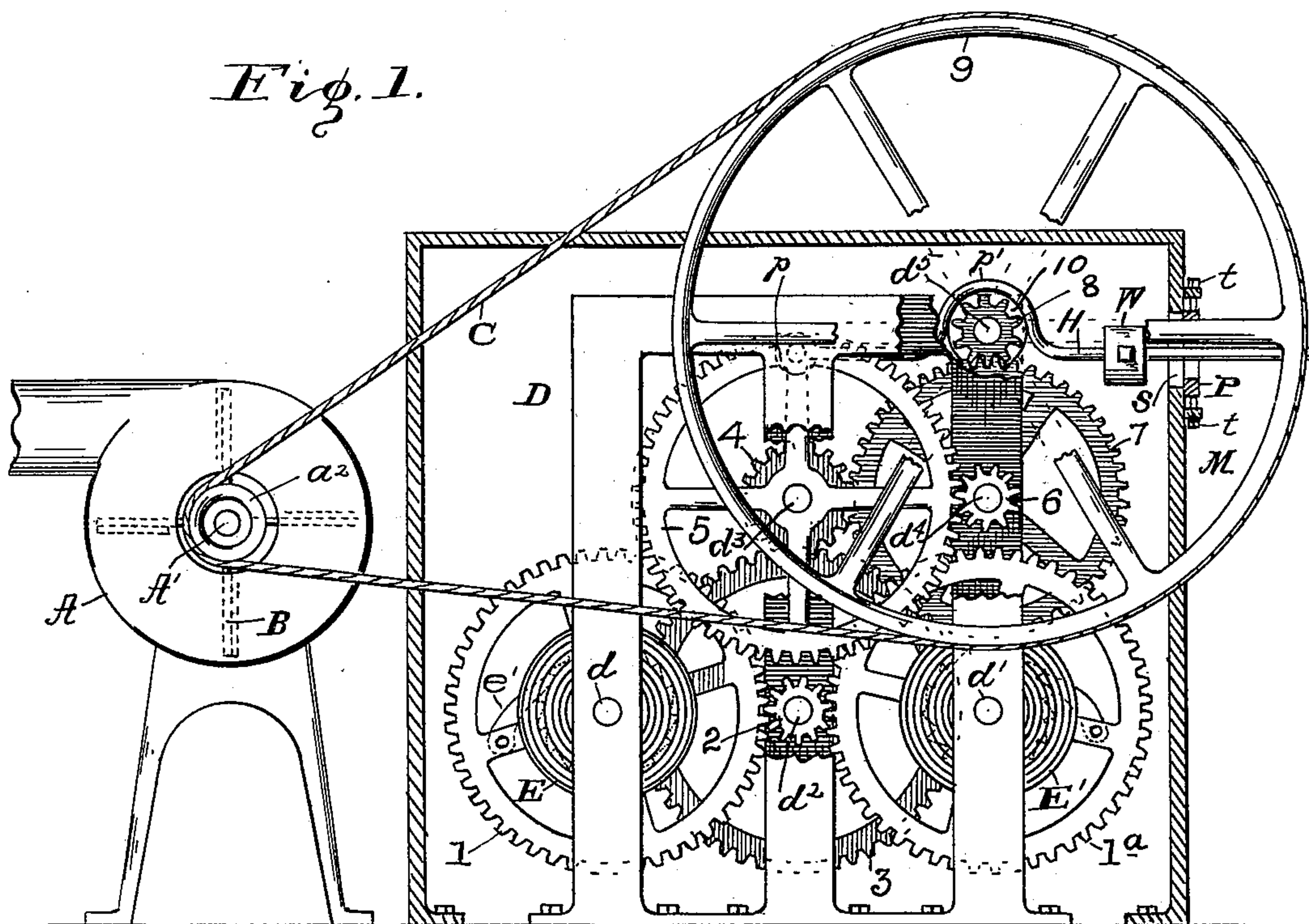


Fig. 2.

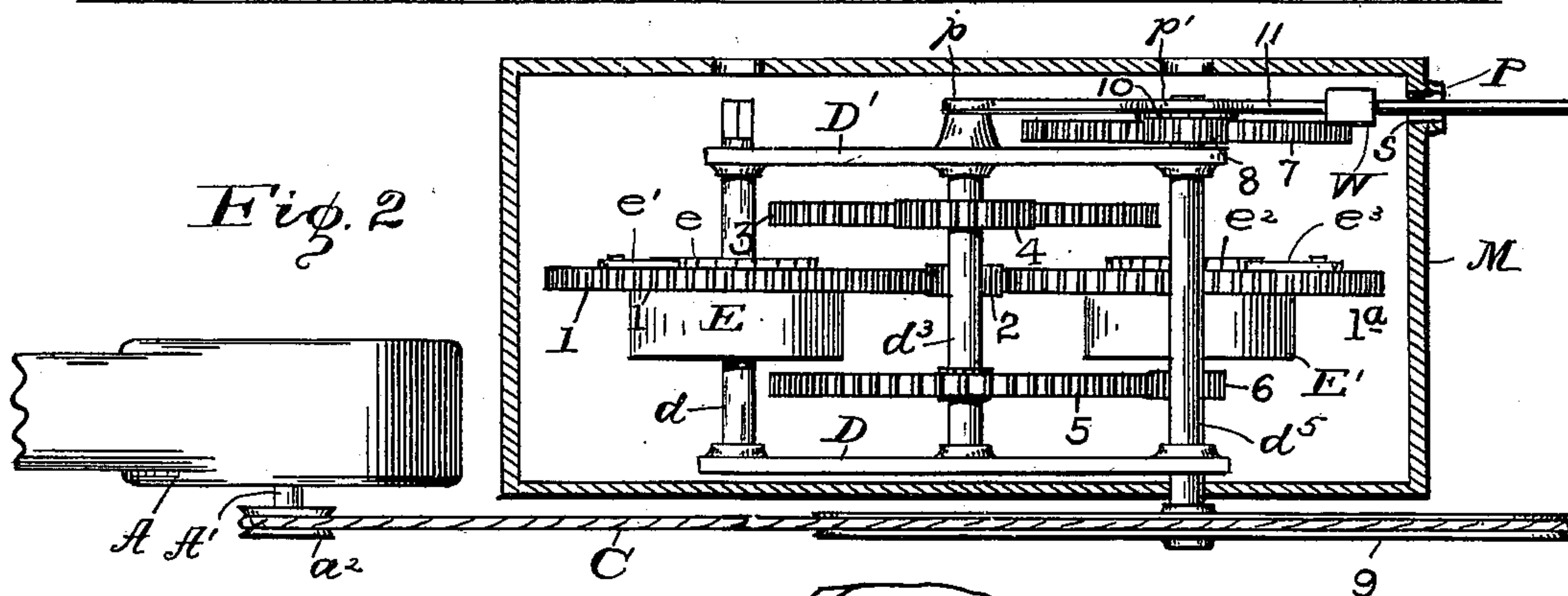
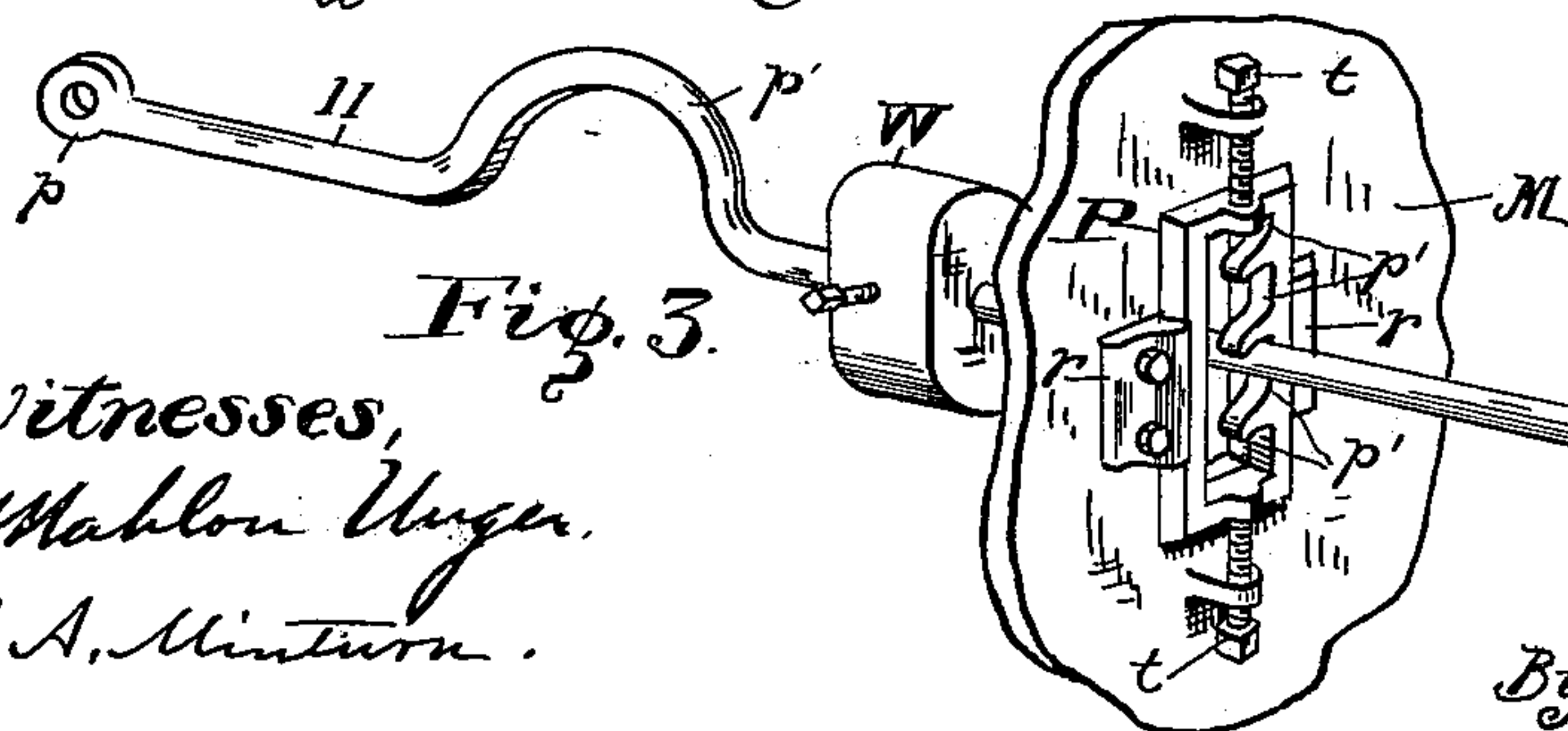


Fig. 3.



Witnesses,
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Inventor,
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UNITED STATES PATENT OFFICE.

JOHN W. ROBINSON, OF PITTSBOROUGH, INDIANA.

BLACKSMITH'S BLOWER.

SPECIFICATION forming part of Letters Patent No. 653,486, dated July 10, 1900.

Application filed March 12, 1900. Serial No. 8,306. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. ROBINSON, a citizen of the United States, residing at Pitts-
borough, in the county of Hendricks and State
5 of Indiana, have invented certain new and
useful Improvements in Blacksmiths' Blow-
ers, of which the following is a specification.

This invention relates to improvements in
motors for operating the blowers for black-
smiths' forges; and the object of the inven-
tion is to provide a spring-actuated motor
that will be cheap to maintain and that will
be inexpensive as to first cost, durable, and
easily operated.

15 I accomplish the objects of the invention
by the mechanism illustrated in the accom-
panying drawings, in which—

Figure 1 is a view in side elevation of my
invention, showing the inclosing case of the
20 motor mechanism in vertical section and part
of the frame to support the gears broken
away and the hub and part of the spokes of
the band-wheel also broken away and re-
moved for the purpose of unobstructing the
25 view of the parts beyond. Fig. 2 is a plan
view of the mechanism shown in Fig. 1, and
Fig. 3 is a view in perspective of the brake-
lever and adjustable notched plate for hold-
ing the lever.

30 Like characters of reference indicate like
parts throughout the several views of the
drawings.

A represents the blower-case, having a shaft
A', on which is mounted a fan B, (shown in
35 dotted lines in Fig. 1,) all of usual and well-
known construction. The shaft A' has a pul-
ley a^2 , which is connected by the belt C with
the larger wheel 9 of the motor, which latter
I will now proceed to describe.

40 D and D' are the frames which support the
shafts and wheels of the clockwork mechan-
ism.

d is a shaft supported by the frames D and
D', on which shaft the cogged wheel 1 is
45 mounted loosely, and E is a spiral spring which
has one of its ends attached to the shaft and
the other fastened to the wheel 1. On the
side of the wheel opposite the spring is the
ratchet-wheel e , mounted in a fixed position
50 on the shaft and held by dog e' against the
action of the spring E. d' is a second shaft

parallel with shaft d , on which is loosely
mounted cogged wheel 1^a . E' is a spring,
same as E, which has one end fastened to
shaft d' and the other fastened to wheel 1^a . 55
The shaft d' has ratchet-wheel e^2 , which is
held by dog e^3 against the action of the spring
E'. The shafts d and d' project outside of the
frame on one side of the latter and are squared
to receive a crank or key for winding up the 60
springs E and E'.

d^2 is a shaft mounted between shafts d and
 d' . It has a small pinion 2, which meshes
with the teeth of both of the cogged wheels 1
and 1^a . Also mounted on shaft d^2 is the 65
larger cogged wheel 3, which meshes with
teeth of smaller cogged wheel 4, immediately
above it on shaft d^3 . The shaft d^3 also has
the larger cogged wheel 5, which meshes with
smaller wheel 6 on shaft d^4 . The shaft d^4 70
also has larger wheel 7, which meshes with
smaller wheel 8 on shaft d^5 , and the shaft d^5
carries the combined pulley and fly-wheel 9.
The wheel 9 is belted, as previously stated,
to pulley a^2 on the blower-shaft. The shaft 75
 d^5 also has a friction-wheel 10 on the opposite
end from wheel 9, against which a brake-bar 11
is made to contact with force regulated to stop
the mechanism entirely or to regulate the ra-
pidity of movement of same. This lever is 80
pivoted at its inner end p and has its other end
projected outside of the casing M, which in-
closes the mechanism. It has the curved por-
tion p' in order to contact with as much of the
surface of the friction-wheel as possible and 85
is provided with a sliding weight W, by mov-
ing which on the bar the pressure against the
wheel 10 can be regulated. By depressing
the outer end of the brake-bar 11 sufficiently
the entire movement of the wheels will be 90
stopped and the action of the motor will be
started by releasing the brake-lever. By par-
tially releasing it the mechanism can be run
at a speed less than its maximum equal to the
retarding pressure exerted by the brake-bar. 95
By having a series of stops to hold the bar 11
at various adjustments I am able to regu-
late the pressure against the wheel 10, and
thereby regulate the speed of the motor. To
carry out this adjustment practically, I will 100
provide a vertical slot s through the end of
the casing M through which the brake-bar

11 is projected and will provide notches in the side of the slot, into which the bar will be caught by a lateral movement thereof.

Inasmuch as a careful adjustment of speed
5 is required to give the desired blast at the forge and as the notches might not be properly positioned owing to a change in conditions caused by improper first construction or by a springing of the brake-bar out of
10 shape, I provide a sliding plate P to cover the slot in the casing M, which plate I slot for the passing of the end of the brake-bar and provide with lateral notches p' , into which the bar will be placed by a lateral
15 movement of said bar. The plate P will work between the guides $r r$ and will be held and moved by the set-screws $t t$ in a manner which will be clearly understood from the drawings.

20 Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

The combination with a rotary blower for blacksmiths' forges having a pulley on the
25 shaft carrying the blower-fans, of a motor comprising a pair of shafts each having a loosely-mounted wheel, springs connecting

the wheels to the shafts said wheels having pawl-and-ratchet mechanism a shaft having a fly-wheel, a belt connecting this fly-wheel 30 with the pulley on the blower, said fly-wheel shaft being connected by a train of cogged wheels with the shafts carrying the springs, a friction-wheel on the same shaft as the fly-wheel, a brake-bar pivotally secured at one 35 of its ends and having a curved portion to contact under certain conditions with the friction-wheel, a casing surrounding the motor mechanism having a slot in its wall through which the bar is projected, a sliding plate 40 working in guides on the outside of the casing and having a slot through which the brake-bar is projected, said slot having notches to receive the bar and hold it and set-screws to hold the adjustment which may be 45 given to said sliding plate thereby, as and for the purposes specified.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 21st day of February, A. D. 1900.

JOHN W. ROBINSON. [L. s.]

Witnesses:

JOSEPH A. MINTURN,
S. MAHLON UNGER.