

No. 610,745.

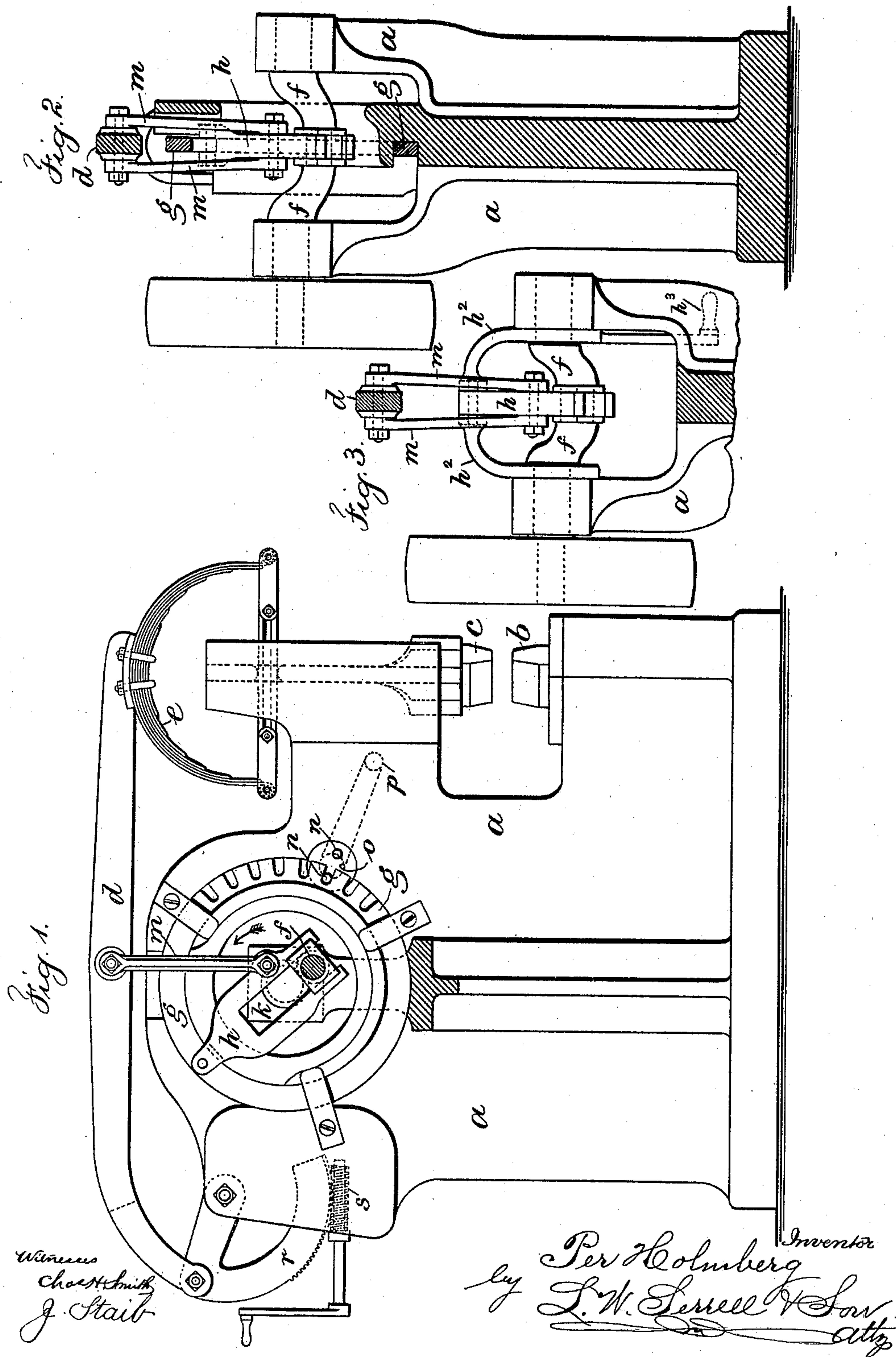
Patented Sept. 13, 1898.

P. HOLMBERG.

ADJUSTING ARRANGEMENT FOR SPRING POWER HAMMERS, &c.

(Application filed Mar. 3, 1898.)

(No Model.)



UNITED STATES PATENT OFFICE.

PER HOLMBERG, OF LJUSNE, SWEDEN, ASSIGNOR TO THE LJUSNE WOXNA
AKTIEBOLAG, OF SAME PLACE.

ADJUSTING ARRANGEMENT FOR SPRING-POWER HAMMERS, &c.

SPECIFICATION forming part of Letters Patent No. 610,745, dated September 13, 1898.

Application filed March 3, 1898. Serial No. 672,357. (No model.)

To all whom it may concern:

Be it known that I, PER HOLMBERG, iron-
turner, a subject of the King of Sweden and
Norway, and a resident of Ljusne, in the King-
dom of Sweden, have invented certain new
and useful Improvements in Adjusting Ar-
rangements for Spring-Power Hammers and
Similar Machines, of which the following is a
specification, reference being had therein to
the accompanying drawings.

This invention relates to an arrangement
by means of which the length of the stroke
of spring-power hammers and similar ma-
chines can easily be adjusted while the ma-
chine is running.

Figure 1 shows a hammer of this kind,
viewed from one side and partly in section;
and Fig. 2 shows a transverse section of the
same. Fig. 3 shows a modification.

The hammer is composed, as usual, of a
frame *a*, an anvil *b*, a hammer-head *c*, a le-
ver *d*, to which the hammer-head is attached
by means of the spring *e*, and a crank-shaft
f, acting on the lever. In the plane of the le-
ver *d* there is supported in the frame *a* a ring
g of comparatively large diameter, through
which ring the crank-shaft *f* passes. To the
ring is jointed an arm *h*, which is connected
to the crank of the shaft *f* by being provided
with a slot *k*, in which reciprocates during the
rotation of the crank a journal-box or sliding
block embracing the crank. The arm *h*, which
is by this means given an oscillating move-
ment, is finally connected to the lever *d* by
means of the links *m*. The length of the
stroke is adjusted by revolving the ring. If
the ring be rotated toward the right, Fig. 1,
the angle formed between the arm *h* and the
perpendicular through the shaft *f* will be de-
creased. The stroke of the arm *h*, and con-
sequently that of the lever and the hammer-
head, will thus be smaller. When rotating
the ring toward the left, the angle mentioned
will increase and the stroke of the arm and
the hammer-head will be greater. For re-
volving the said ring various arrangements
may be employed. In the drawings the ring
is provided with teeth, with which engage
two pins *n*, that act as a pinion, the pins be-
ing attached to a common center piece, the
shaft *o* of which is provided with a crank-

handle *p*. An additional advantage of the
construction described is that the hammer-
head ascends slowly and descends quickly, as
the crank at the rotation of the shaft *f* in the
direction of the arrow, Fig. 1, acts on the
outer part of the arm *h* when the hammer-
head ascends, but on the inner part of the
arm when the hammer-head descends. In
order to allow of raising and lowering the
hammer-head to suit different thicknesses of
the work-pieces, the rear end of the lever *d*
is attached to a worm-wheel sector *r*, mounted
on the frame and engaging with a worm *s*.
By turning a handle attached to the latter
the joint of the sector and lever may be raised
or lowered.

The construction described may be so modi-
fied that instead of the ring *g* a crank may be
used for moving the fulcrum of the arm *h*.
This arrangement is shown in Fig. 3. On the
shaft *f* is carried the crank *h*², from which the
arm *h* extends in the same manner as from
the ring. If the crank *h*² be turned, the said
crank for this purpose being provided with a
special crank *h*³, a hand-wheel, or the like,
the fulcrum of the arm *h* will be moved in the
same manner as by means of the ring. The
crank *h*² remains stationary, while the shaft
f revolves. It is also possible to employ in-
terrupted crank-shafts journaled in the same
line, one of them, *f*, at one side of the ma-
chine and the other, *h*², at the other. This
arrangement, however, will not be as durable
as that with through-cranks described above.

The adjusting arrangement above de-
scribed may evidently be employed also in
other machines having a motion similar to
that above referred to.

Having now described my invention, what
I claim as new, and desire to secure by Letters
Patent, is—

1. The combination in a spring-power ham-
mer with the hammer-lever and actuating-
crank, of a slotted arm upon which the crank
acts, links connecting the slotted arm with
the hammer-lever, and a pivotal support for
one end of the slotted arm and means for ad-
justing the same in an arc of a circle around
the crank-shaft and varying the throw of the
hammer, substantially as specified.

2. The combination in a spring-power ham-

mer with the hammer-lever and actuating-
crank, of a slotted arm upon which the crank
acts, links connecting the slotted arm with
the hammer-lever, a ring and its support
5 around the crank-shaft, a pivotal connection
between the ring and slotted arm and means
for turning the ring around and varying the
throw of the hammer, substantially as speci-
fied.
10 3. The combination in a spring-power ham-
mer with the hammer-lever and actuating-
crank, of a slotted arm upon which the crank
acts, links connecting the slotted arm with
the hammer-lever, and a pivotal support for
15 one end of the slotted arm and means for ad-
justing the same in an arc of a circle around
the crank-shaft and varying the throw of the
hammer, a sector and pivotal connection
thereto of the hammer, and means for adjust-
20 ing such sector and pivot to raise or lower the
hammer-head, substantially as specified.

4. The combination in a spring-power ham-
mer with the hammer-lever and actuating-
crank, of a slotted arm upon which the crank
acts, links connecting the slotted arm with 25
the hammer-lever, and a pivotal support for
one end of the slotted arm and means for ad-
justing the same in an arc of a circle around
the crank-shaft and varying the throw of the
hammer, a worm-wheel sector and pivotal con- 30
nection thereto of the hammer and a worm-
pinion for adjusting such sector and pivot to
raise or lower the hammer-head, substantially
as specified.

In witness whereof I have hereunto signed 35
my name in the presence of two subscribing
witnesses.

PER HOLMBERG.

Witnesses:

ERNST SVANQVIST,
E. HERMANSSON.