

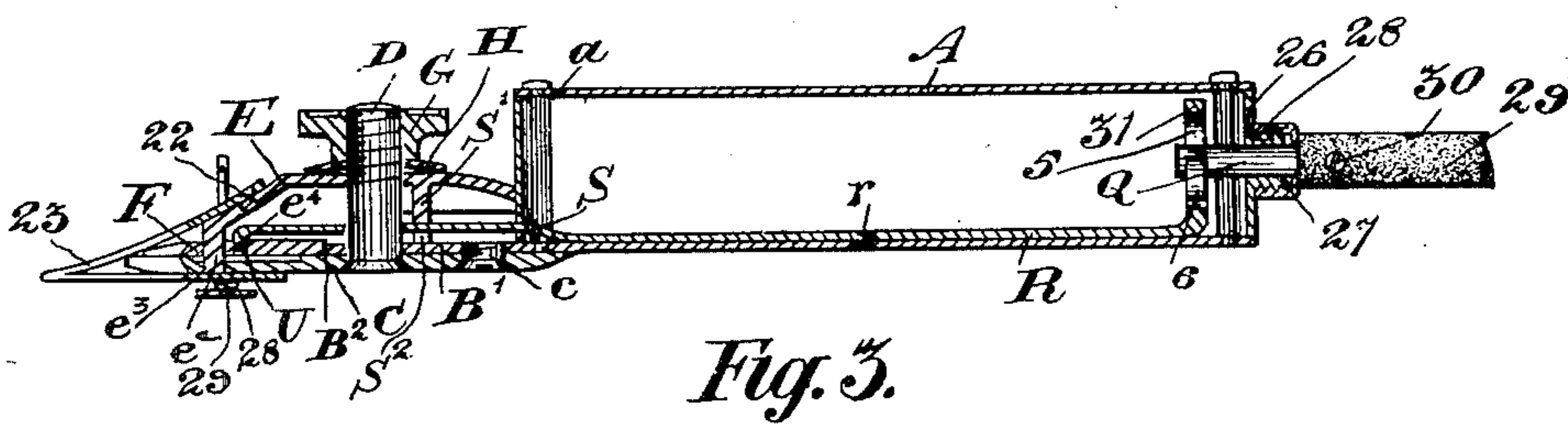
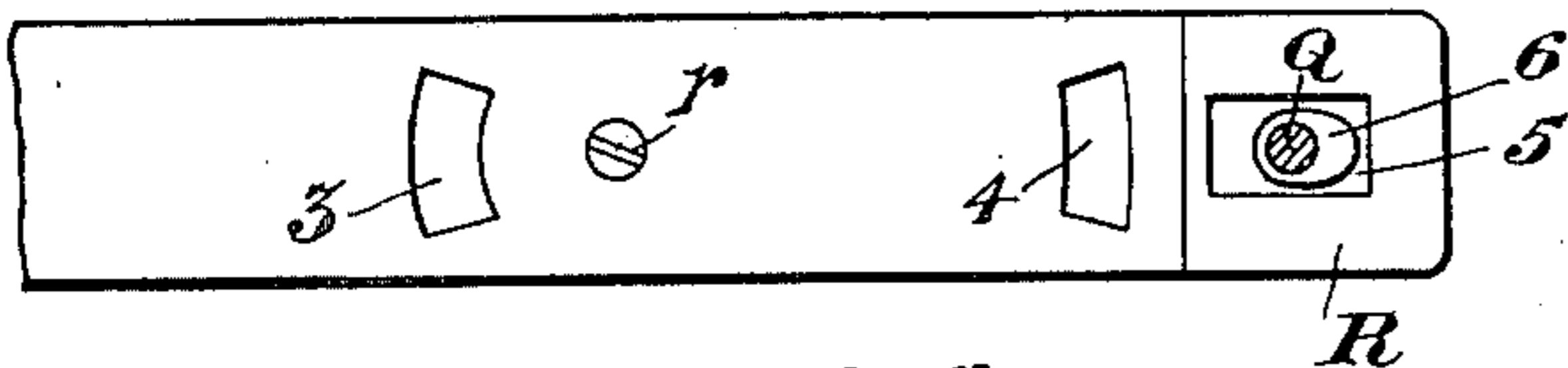
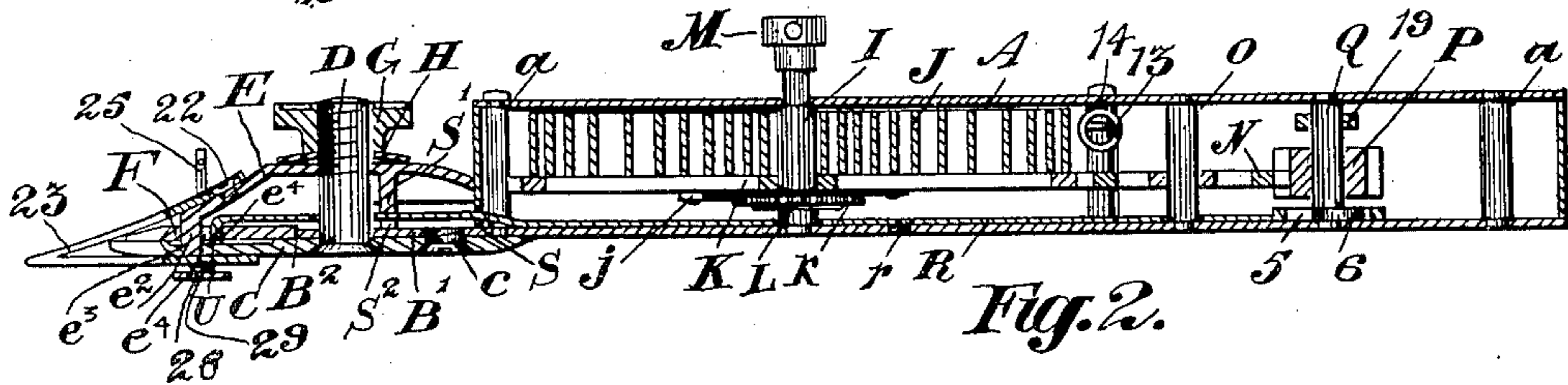
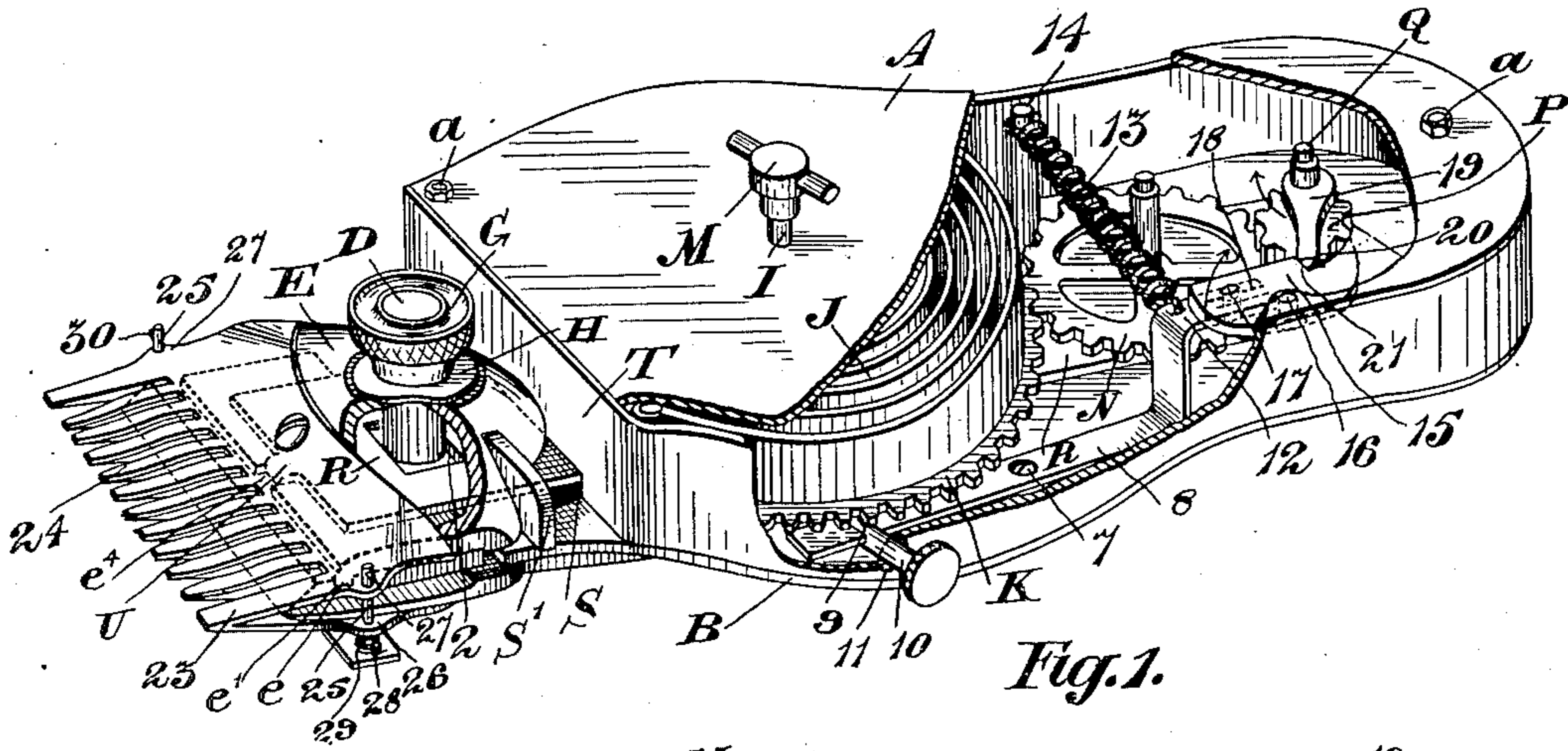
No. 657,074.

Patented Sept. 4, 1900.

D. J. ARCHER.
HAIR CLIPPER.

(Application filed Dec. 23, 1899.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID JOHN ARCHER, OF TORONTO, CANADA.

HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 657,074, dated September 4, 1900.

Application filed December 23, 1899. Serial No. 741,390. (No model.)

To all whom it may concern:

Be it known that I, DAVID JOHN ARCHER, barber, of the city of Toronto, in the county of York, Province of Ontario, Canada, have
5 invented certain new and useful Improvements in Hair-Clippers, of which the following is a specification.

My invention relates to improvements in hair-clippers; and the object of my invention
10 is to provide suitable means for operating the cutter-bar of the ordinary hair-clipper much quicker than is ordinarily the case and also to enable the operator to move the clipper in any direction over the head and cut the hair;
15 and it consists, essentially, in suitably attaching to the cutter-bar a pivoted reciprocating arm and providing suitable means for operating said arm and attaching a suitable device to and inclosing the cutter-bar and knife
20 to enable the hair-clipper to be moved in any direction over the head and cut the hair, as hereinafter more particularly explained.

Figure 1 is a perspective view of my hair-clipper, parts of the casing being broken
25 away to show the position of the operating parts. Fig. 2 is a longitudinal vertical section through Fig. 1, showing the construction of the means for operating the knife. Fig. 2^a is a plan view of the operated portion of the reciprocating arm, showing cam for operating same and slots in said arm. Fig. 3 is a longitudinal section through the hair-clipper, showing an alternative form of means for operating the knife.

35 In the drawings like characters of reference indicate corresponding parts in each figure.

On reference to the drawings it will be seen that I employ the ordinary cutter-bar, knife, and their connected parts, with a few modifications, in carrying out my invention.
40

The casing A is held together by suitable studs *a*, provided with nuts screwed on to their upper ends and being riveted to the casing at their lower ends. The bottom plate
45 B of the casing projects some distance in front of the said casing at B' and has secured to its under side by the screw *c* the cutter-bar C.

D is a threaded stud held in the cutter-bar
50 C and extending through the retaining-cap E. The stud D keeps the flange *e* (see dotted lines in Fig. 1) of the retaining-cap E down

in the slot *e'* of the knife F. The retaining-cap E is provided with a lug *e*², which, extending through the slot *e*⁴ in the knife F, fits
55 a slot *e*³ in the cutter-bar C. This is the same construction as is in the hair-clippers now commonly in use.

G is the adjusting-nut of the threaded stud D, which rests upon the washer H. 60

The back portion of the knife F abuts the forward end of the plate B, as shown at B².

Secured to the stud I, which has bearing in the casing A, is a spring J, which rests upon the drive-wheel K, having bearing on
65 said stud. Secured to the under side of the drive-wheel K is a pawl *j*, which is held by the spring *k* (which is also secured to the under side of the drive-wheel K) in contact with the ratchet-wheel L, which is keyed to
70 the stud. This construction is the same as is used in an ordinary clock and operates the same way.

M is the head of the stud I.

Meshing with the drive-wheel K is a driven
75 wheel N, keyed to the stud O, which has bearing in the casing A. Meshing with the driven wheel N is a pinion P, keyed to the stud Q, which has bearing in the casing A.

R is a reciprocating arm secured to the bottom plate B by the pivot *r*. This reciprocating arm extends through the slot S in the front T of the casing A and by means of the depending piece U extends into the slot *e*⁴ in the knife F. Where the studs D, I, and O
85 pass through the reciprocating arm R are slots 2, 3, and 4. (See Figs. 1 and 2^a.) These slots permit the movement of the reciprocating arm around its pivot *r*.

5 is a slot in the rear end of the reciprocating arm R, in which operates the cam 6, which is keyed to the stud Q. 90

Secured at 9 to the forward end of the lever 8 (which is pivoted to the bottom plate B by the pivot 7) is a compressing lever 10,
95 which passes through the hole 11 in the side of the casing A. The upper and rearwardly extending portion 12 of the lever 8 is connected by the spring 13 to the stud 14.

15 is a dog pivoted at 16 to the top of the casing A. 100

17 is a pin secured to the dog 15 and extending downwardly into the slot 18 in the end 12 of the lever 8.

Keyed near the upper portion of the stud Q is an arm 19, whose end 20 normally rests in contact with the square shoulder 21 of the dog 15.

5 Secured to the retaining-cap E by the screw 22 and enveloping the knife F and the cutter-bar C is a guard 23, which is provided with teeth 24, which hold the hair in position while it is being cut by the knife F. Held
10 in position under the guard 23 and secured to the uprights 25 (which have bearing in the lugs 26 and 27) is a plate 28. On the uprights 25 and between the plate 28 and the lugs 26 are springs 29.

15 30 indicate cross-pins which prevent the uprights 25 from moving out of their bearings.

The object of the spring-controlled plate 28 is to enable the operator to maintain the guard 23 the desired distance from the head, so as to cut the hair to the desired length, as
20 will be understood.

S' is a depending piece secured to the retaining-cap E and extends down on each side of the reciprocating arm R, so as to form a
25 side support for said arm to prevent it from moving too far either way. The said reciprocating arm of course passes underneath the depending piece S' through the slot S².

30 Having now described the principal parts involved in my invention, I shall now describe its operation.

Before the clipper can be operated the spring of course must be wound up. This is done in the usual manner. To start the clipper in operation, the compressing-lever 10 is
35 pressed in, moving the lever 8 around its pivot 7, and by means of the pin 17 operating in the slot 18 move the dog 15 around its pivot 16 in the direction indicated by arrow, thus permitting the end 20 of the arm 19 to escape
40 the square shoulder 21 and revolve in the direction indicated by arrow. As the spring unwinds the energy therein is communicated from the drive-wheel K to the pinion P by
45 means of the driven wheel N, as will be understood. This movement having revolved the arm 19 and the stud Q revolves the cam 6, which abuts the sides of the slot 5, giving a reciprocating movement to the arm R,
50 which by means of its depending piece U resting in the slot e⁴ communicates motion to the knife F and severs the hair, as will be understood. When the compressing-lever 10 is released, the spring 13 draws the lever 8
55 back into the position shown in Fig. 1, so that at one point of its revolution its end 20 comes in contact with the fixed shoulder 21, as shown. This, it will be seen, stops the clipper from operating. The compressing-lever
60 10 can of course be operated to produce the above operation as often as desired, or the said compressing-lever can be held by the thumb inwardly and operate its connected parts, as before described, thus permitting the arm 19
65 to be revolved continuously, and thus keep the clipper working continuously.

On reference to Fig. 3 will be seen an alter-

native form of mechanism for operating the hair-clipper. The back part of the casing A is provided with a bearing 26, in which has
70 bearing the stud Q. Secured to or forming part of the stud Q is a collar 27, which abuts the end of the bearing 26. 28 is a cap screwing over the bearing 26 and inclosing the collar 27. The collar 27, it will be understood,
75 keeps the stud Q in place. The stud Q extends through the cap 28 out a short distance, so that any suitable means for driving the said stud and its connected parts for operating the reciprocating arm R may be
80 secured thereto.

In the drawings I have indicated that a suitable sleeve or universal joint 29 (such as is used in connection with dental engines) might be secured to the stud Q by a set-screw
85 30 or any other suitable means and be driven from any suitable source.

What I claim as my invention is—

1. In a hair-clipper the combination with the cutter-bar, knife, means for supporting
90 the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, gearing interposed between the said wheel and the said arm for reciprocating
95 the latter, a retracting-spring acting on the said arm, a device for locking the said arm against reciprocation and means for freeing the said pivoted arm from engagement with the said locking device and allowing it to
100 operate the cutter-bar, substantially as set forth.

2. In a hair-clipper the combination with the cutter-bar, knife, means for supporting
105 the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, gearing interposed between the said wheel and the said arm for reciprocating the
110 latter, a retracting-spring acting on the said arm, a device fixed to the said casing for locking the said arm against reciprocation and means extending through the said casing for freeing the said pivoted arm from engagement
115 with the said locking device and allowing it to operate the cutter-bar, substantially as set forth.

3. In a hair-clipper the combination with the cutter-bar, knife, means for supporting
120 the said parts and the casing, of a spring-driven wheel, a pivoted reciprocating arm connected to the said bar for operating the same, and pivoted on the other side of the said wheel, gearing interposed between the
125 said wheel and the said arm for reciprocating the latter, a retracting-spring acting on the said arm, a device fixed to the said casing for locking the said arm against reciprocation and a compression-lever extending through
130 the said casing for freeing the said pivoted arm from engagement with the said locking device and allowing it to operate the cutter-bar, substantially as set forth.

4. In a hair-clipper the combination with

the cutter-bar, knife, supporting parts thereof, and the casing, of the drive-spring, stud for same, drive-wheel and its connected parts, the driven wheel, stud for same, pin-
5 ion, stud for same, cam, reciprocating arm, slots in same, spring-controlled pivoted lever, slot in end of said lever, compressing-lever for said pivoted lever, pivoted dog 15, depending pin in same operating in slot in
10 said pivoted lever, shoulder on said dog, and the arm 19 supported as described, all arranged as set forth and for the purpose specified.

5. The combination with the cutter-bar,

knife provided with slot e^4 , and means for 15 supporting said cutter-bar and knife, of the reciprocating arm R provided with the depending piece U which enters the said slot and suitable means for operating said reciprocating arm, as set forth and for the pur- 20 pose specified.

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

DAVID JOHN ARCHER.

Witnesses:

L. C. REYNOLDS,
EGERTON R. CASE.