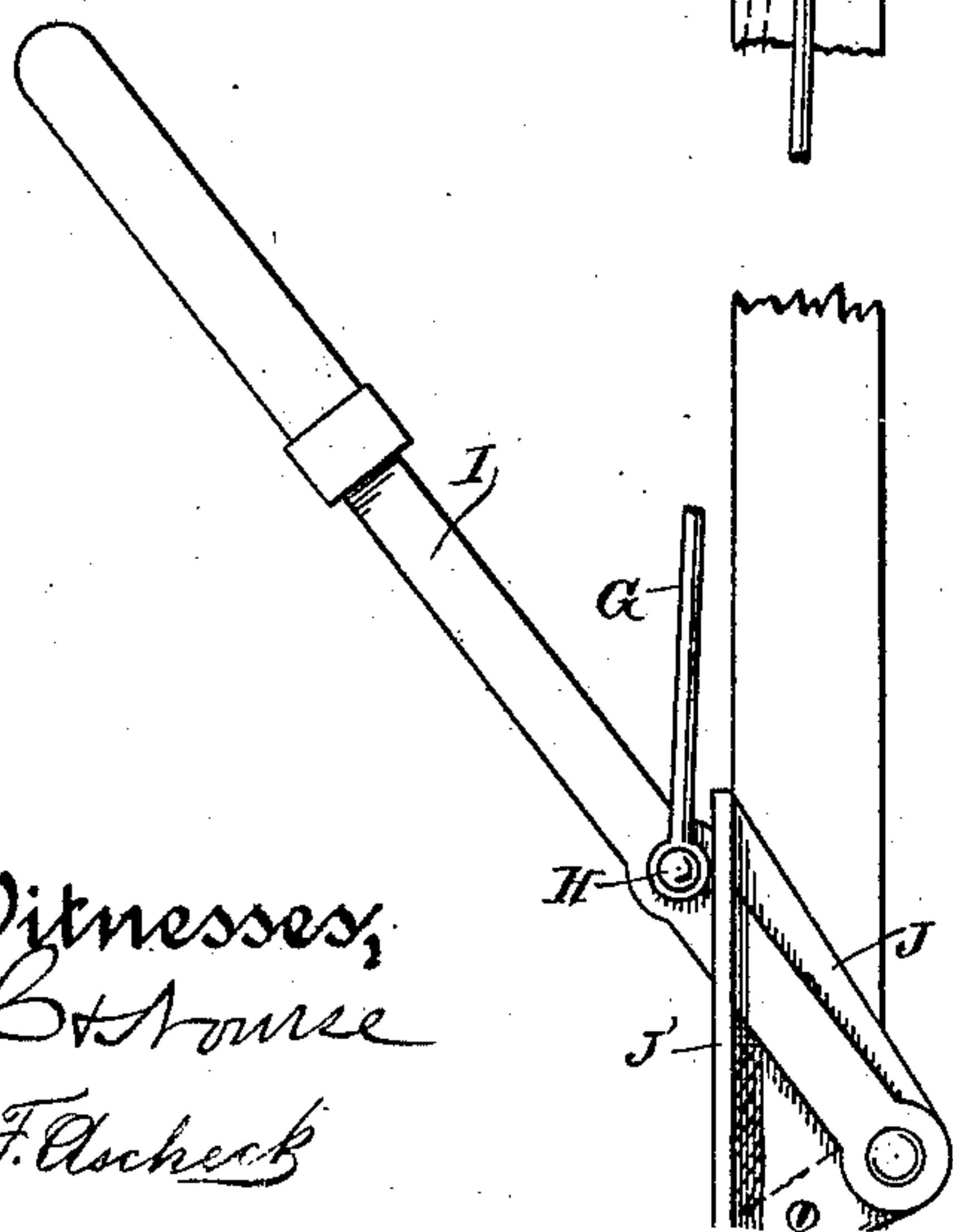
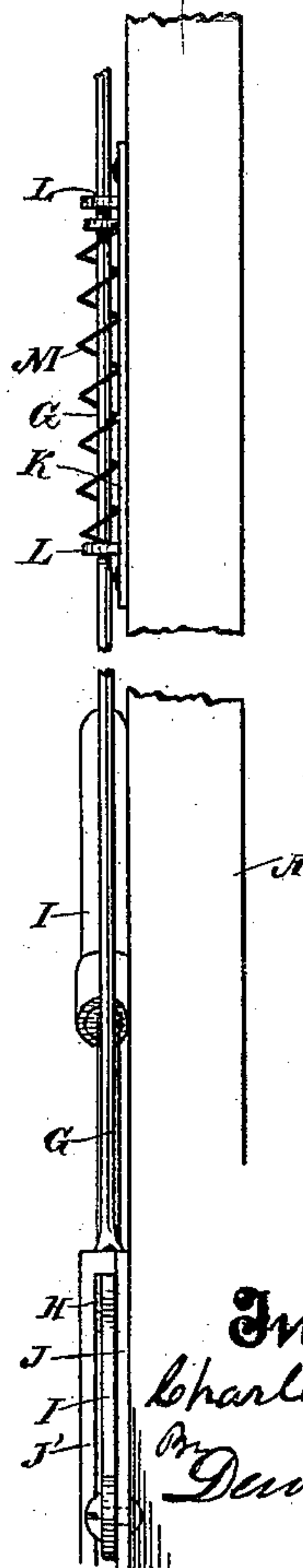
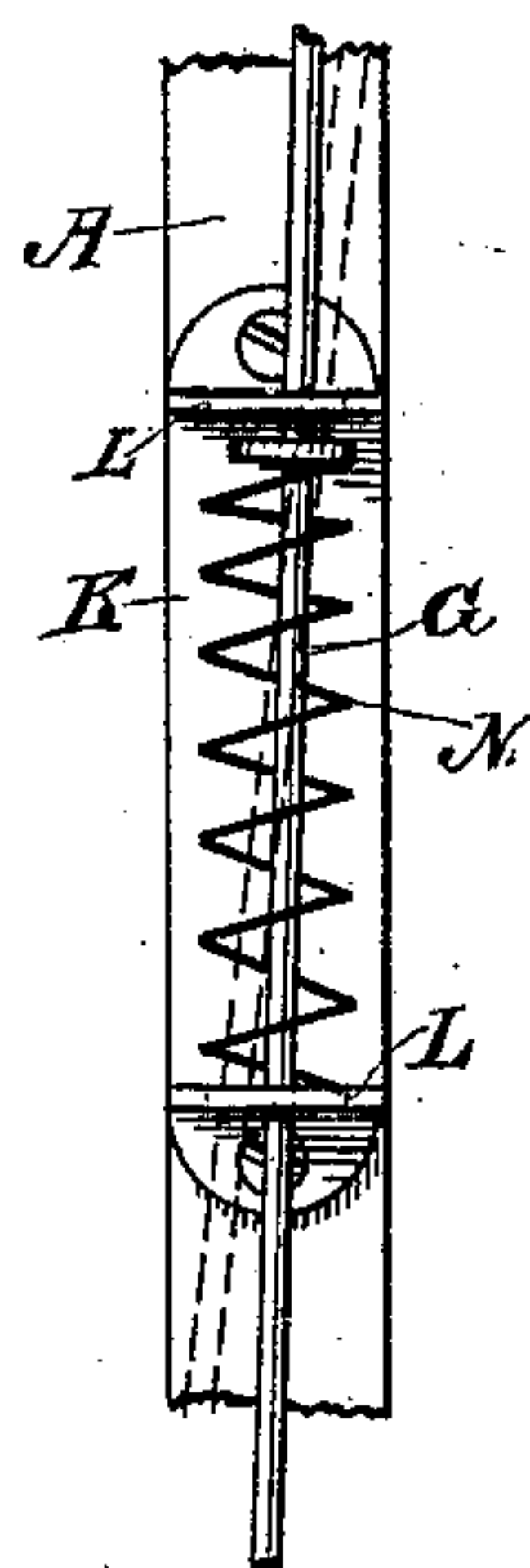
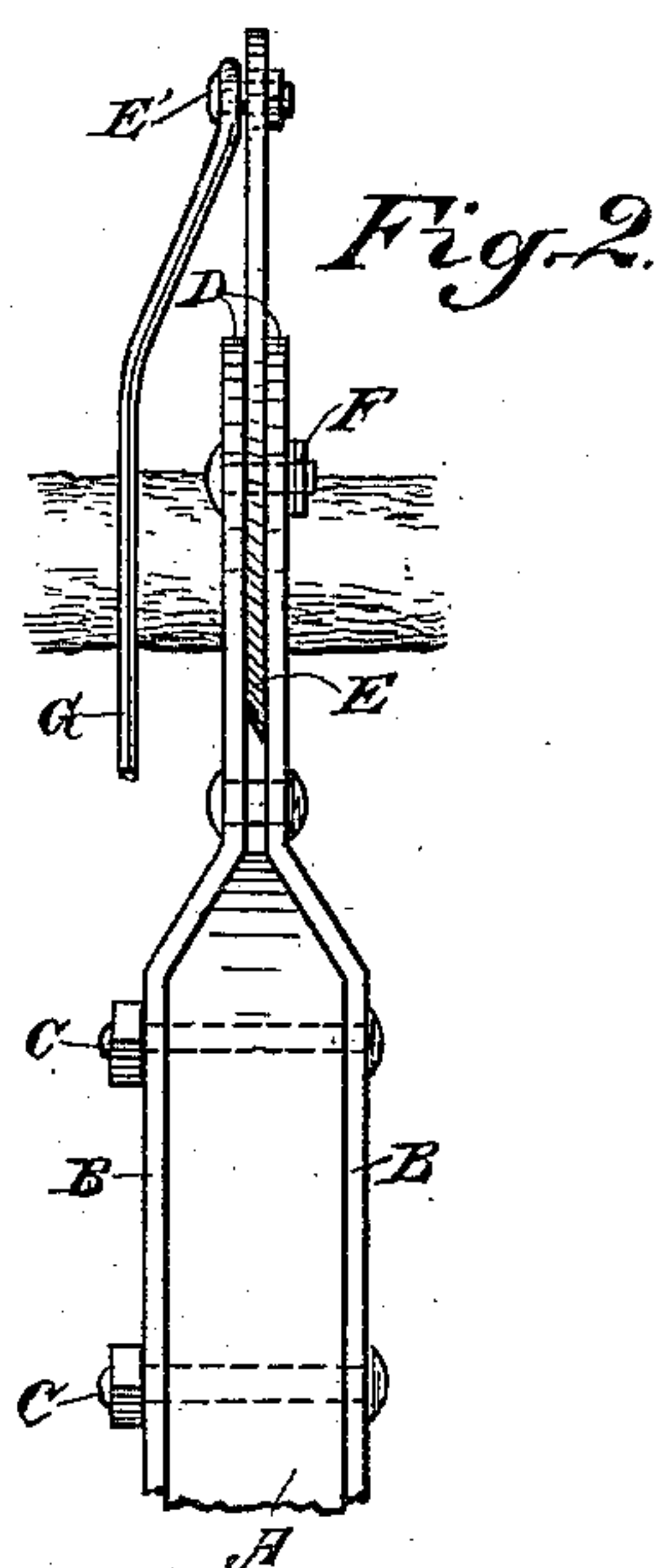
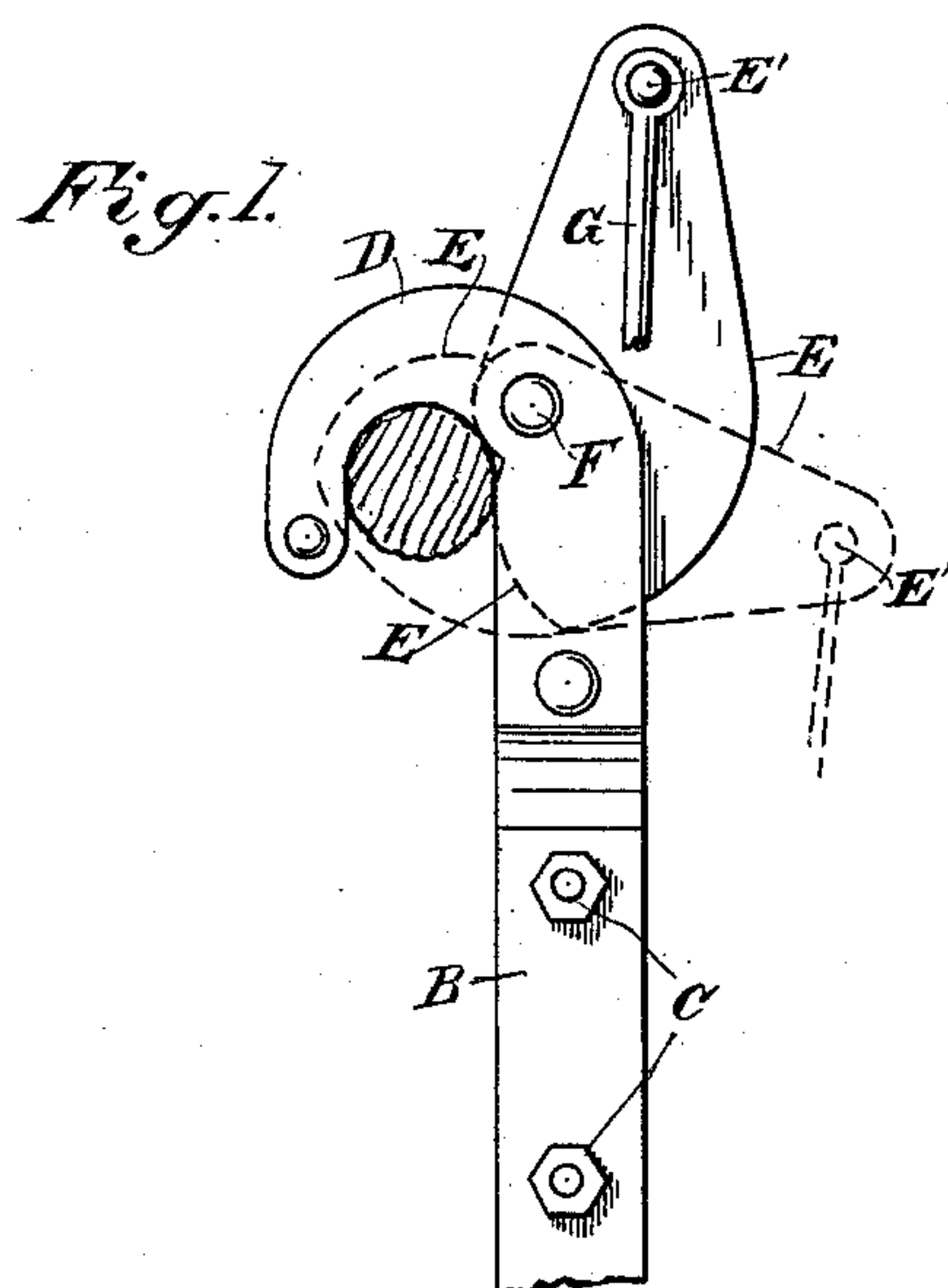


(No Model.)

C. L. MANN.
PRUNING IMPLEMENT.

No. 472,304.

Patented Apr. 5, 1892.



Witnesses,
G. H. Hourse
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UNITED STATES PATENT OFFICE.

CHARLES L. MANN, OF COLMA STATION, CALIFORNIA.

PRUNING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 472,304, dated April 5, 1892.

Application filed January 5, 1892. Serial No. 417,094. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. MANN, a citizen of Austria, residing at Colma Station, San Mateo county, State of California, have
5 invented an Improvement in Tree-Pruners; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in tree-pruning devices.

10 It consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side view of my pruner. Fig.
15 2 is a rear view of the same.

The object of my invention is to provide in a tree-pruner an improved construction for the knife, whereby a shorter blade and more powerful leverage and a shorter movement of
20 the long arm are obtained; an improved actuating-lever and attachment to the pole, with a wire connecting the lever with the lever-arm of the pruning-knife; a guard and guide for the lever, and a means for retracting the knife
25 when the lever is released, so that the operator can use a pole with one hand to reach to the highest possible point to grasp a limb without the necessity of using the other hand to keep the blade open.

30 A is the pole, which may be made of any suitable or desired length.

B B are plates, which are fitted to the upper end of the pole and secured thereto by bolts C. Above the upper end of the pole
35 these plates are converged toward each other and bent into the form of a hook D, the inner curvature of which is sufficient to seize any sized limb not larger than one inch which it is desired to cut with this device. The two
40 parts of this hook are formed of the plates B, previously described, which are sufficiently far apart to admit the cutting-blade E, which is fulcrumed at F and extends outwardly beyond the fulcrum to the point E', where the
45 pulling-wire G is attached to it. The fulcrum-point F is at such a point with relation to the inner curvature of the hook that when the end E' is thrown upwardly to its highest point the convex edge of the blade E will be just
50 inside of the plates between which it moves, thus leaving a free opening for the introduction of a limb into the hook. When the blade

is forced against the limb, by pulling upon the wire G that portion of the blade which is nearest to the fulcrum-point first engages the
55 limb, and, as the blade moves across it, cuts the limb with a drawing cut, the outer point of the blade passing into the space between the two sides of the hook, as shown in dotted lines. By this construction I obtain the greatest leverage and cutting-power with the shortest
60 blade possible.

The wire G extends from the point E' diagonally across the handle and at the lower end connects at the point H with the lever I.
65 This lever is fulcrumed to a plate J, which is secured to the handle, as shown, so that the lever moves upon the front side of the handle, while the lever-arm of the cutting-knife moves in an arc of ninety degrees upon the rear side
70 of the handle. This relative arrangement of the two levers causes the wire G to pass diagonally across the handle, and as the two arcs in which the lever of the cutting-knife and the lever I move are upon opposite sides of
75 the handles each counteracts the other, so that the movement of the wire G at the point where it crosses the handle is reduced to the minimum and it makes comparatively little movement from one side to the other. At
80 this point is fixed a guide K, having slotted openings L at each end, through which the wire passes. These openings are elongated sufficiently to allow the wire the side movement which it will require when the lever is
85 pulled down, and the wire is thus not greatly bent out of its line of travel and produces little or no friction where it moves through the guide. Within this guide K is a spiral
90 spring M, which connects with the wire, so that when the handle of the lever I is released the spring will act to force the wire up, and with it the lever-arm of the cutting-knife, so as to withdraw the blade and leave the hook open and free to seize the next limb. The
95 plate J, to which the lever I is fulcrumed, and which in turn is secured to the handle, has an upturned flange J' at its front edge, and this flange is slotted, so as to form a guide, through which the handle I passes. The plate and
100 the guide thus limit the motion of the handle and prevent its rubbing against the side of the pole. The bottom of the slot which guides the handle also forms a stop against which

the handle strikes when it is pulled down, and, as the motion caused by the sudden relief when the knife has finished cutting the limb causes the handle to come down suddenly, this stop prevents the hands from being pinched or hurt when this action takes place. The short arc of a circle in which the lever-arm of the knife moves is also a great advantage, because it prevents the clogging and catching of neighboring twigs or limbs between the wire and the pole and knife-blade.

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

15 In a tree-pruning device, a handle, the plates bolted to its upper end, having their upper portions converging toward each other and separated to form a narrow channel between them, and said upper ends being curved into

the form of hooks parallel with each other, a blade fulcrumed in said channel having the convex edge, the sweep of which fills the interior of the hook, a lever-arm or extension of the blade adapted to swing rearwardly from the hook, a lever I, fulcrumed to the lower end of the pole and swinging to the front of the pole, a wire G, connecting the lever of the knife with the lever I, and a guide K, through which the wire passes diagonally to the pole, and the returning-spring M within the guide and connected with the wire, substantially as herein described.

In witness whereof I have hereunto set my hand.

CHAS. L. MANN.

Witnesses:

S. H. NOURSE,

H. F. ASCHECK.