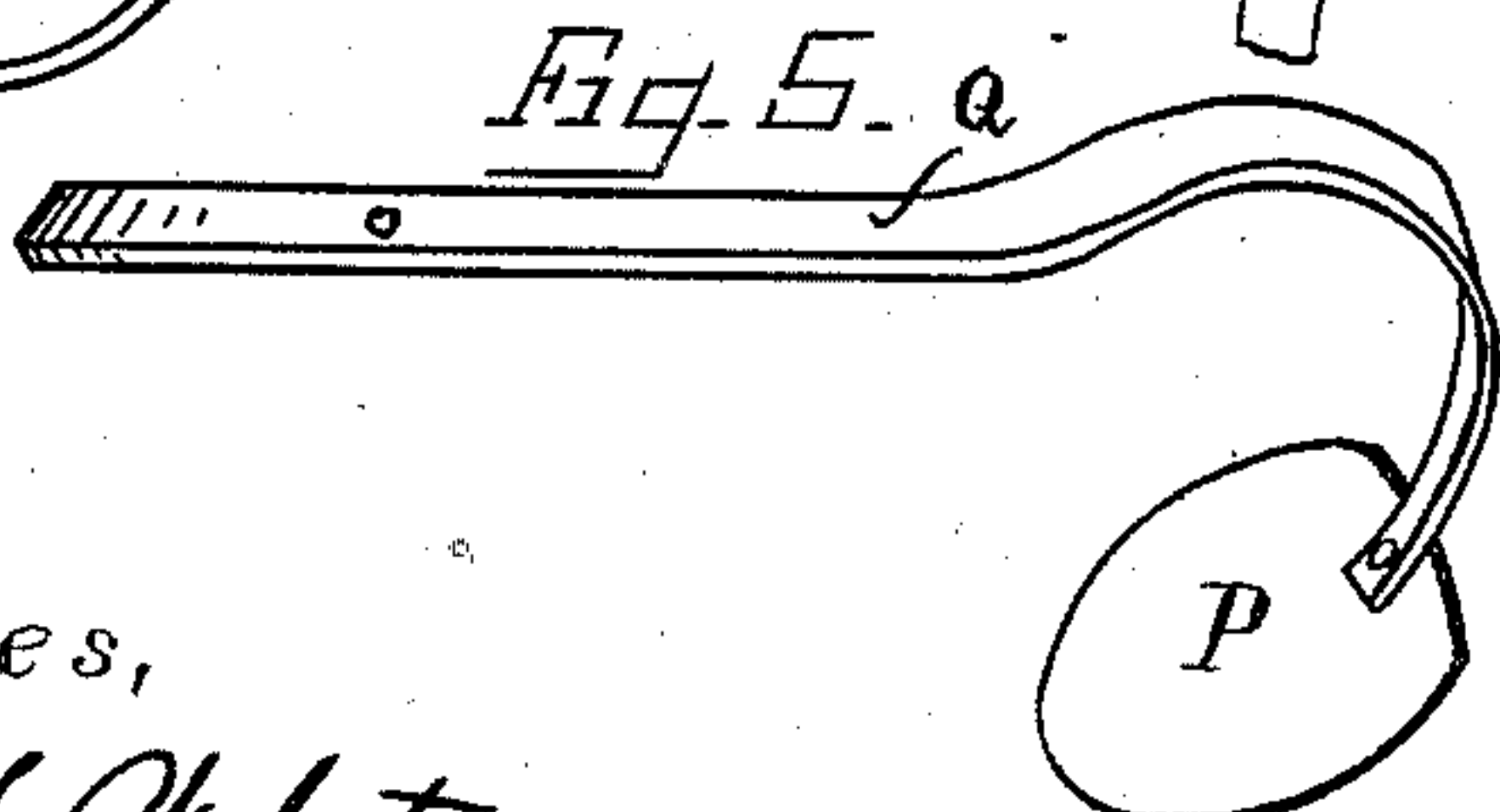
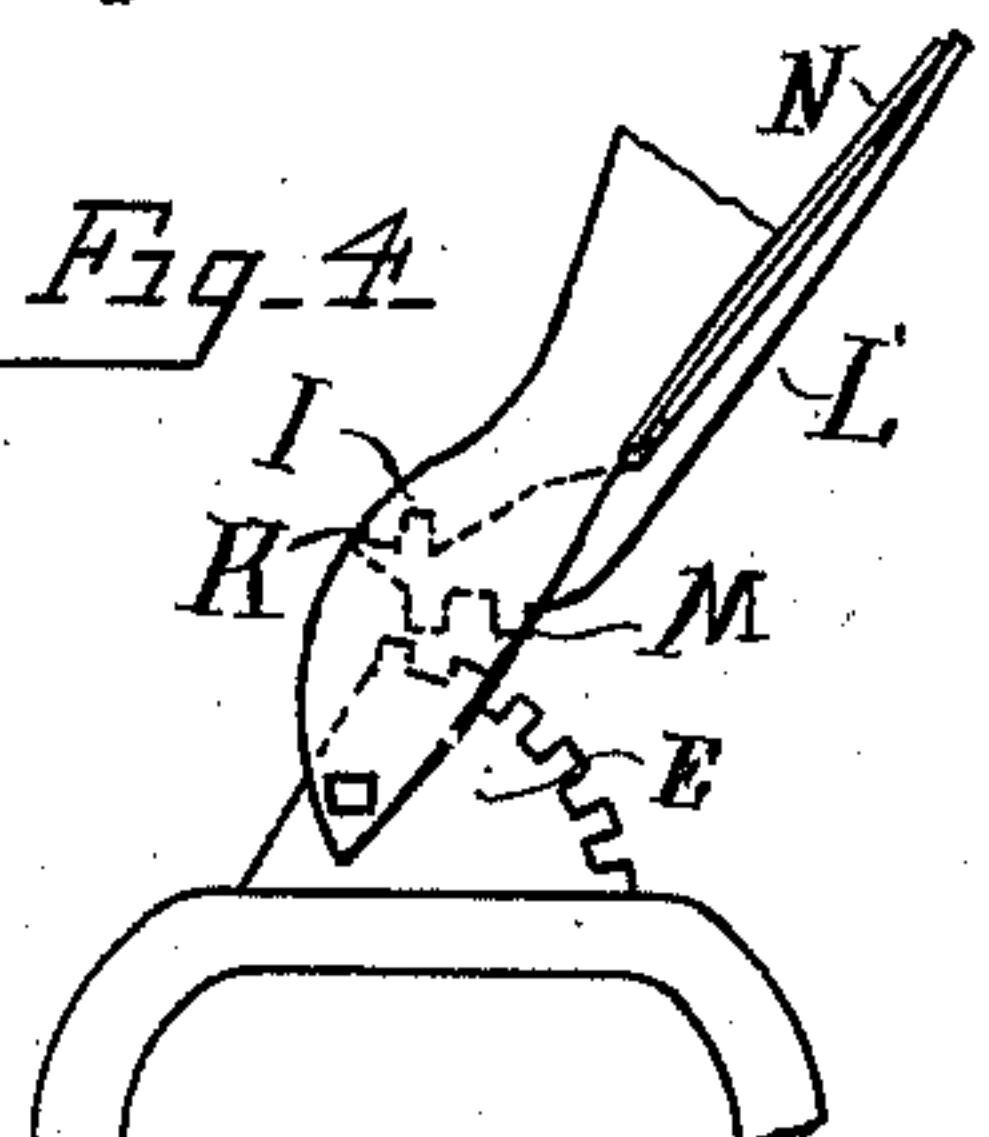
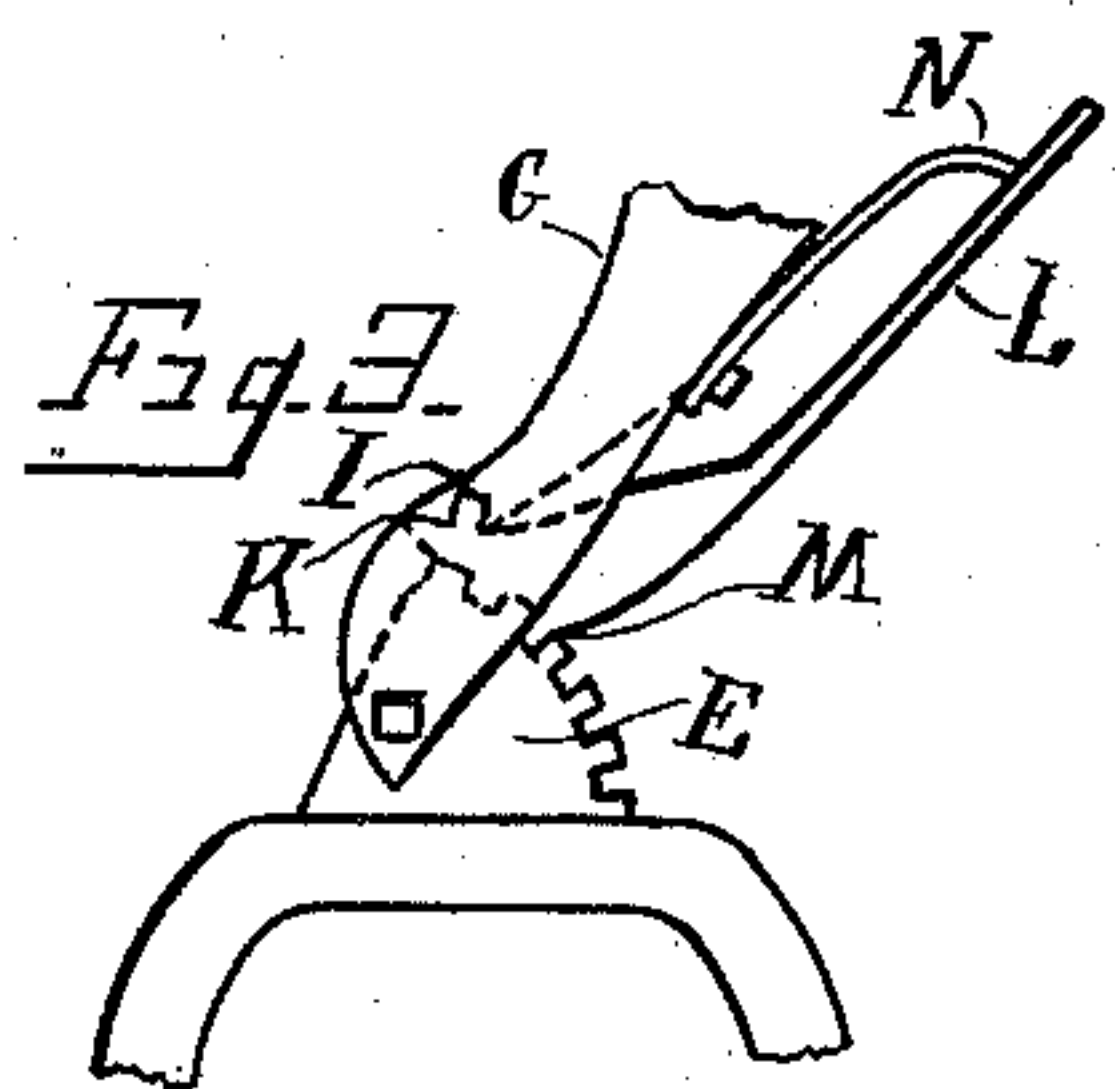
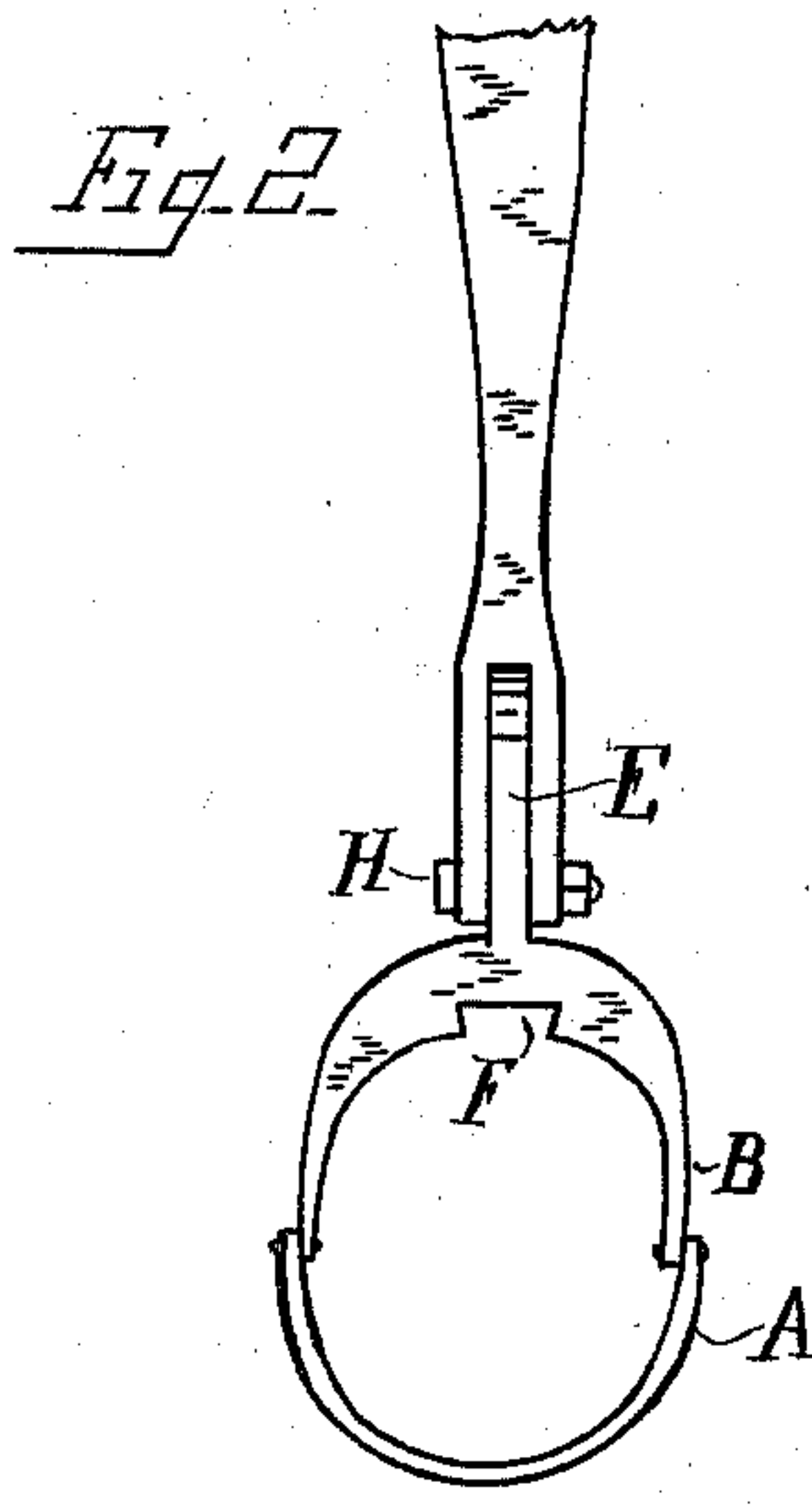
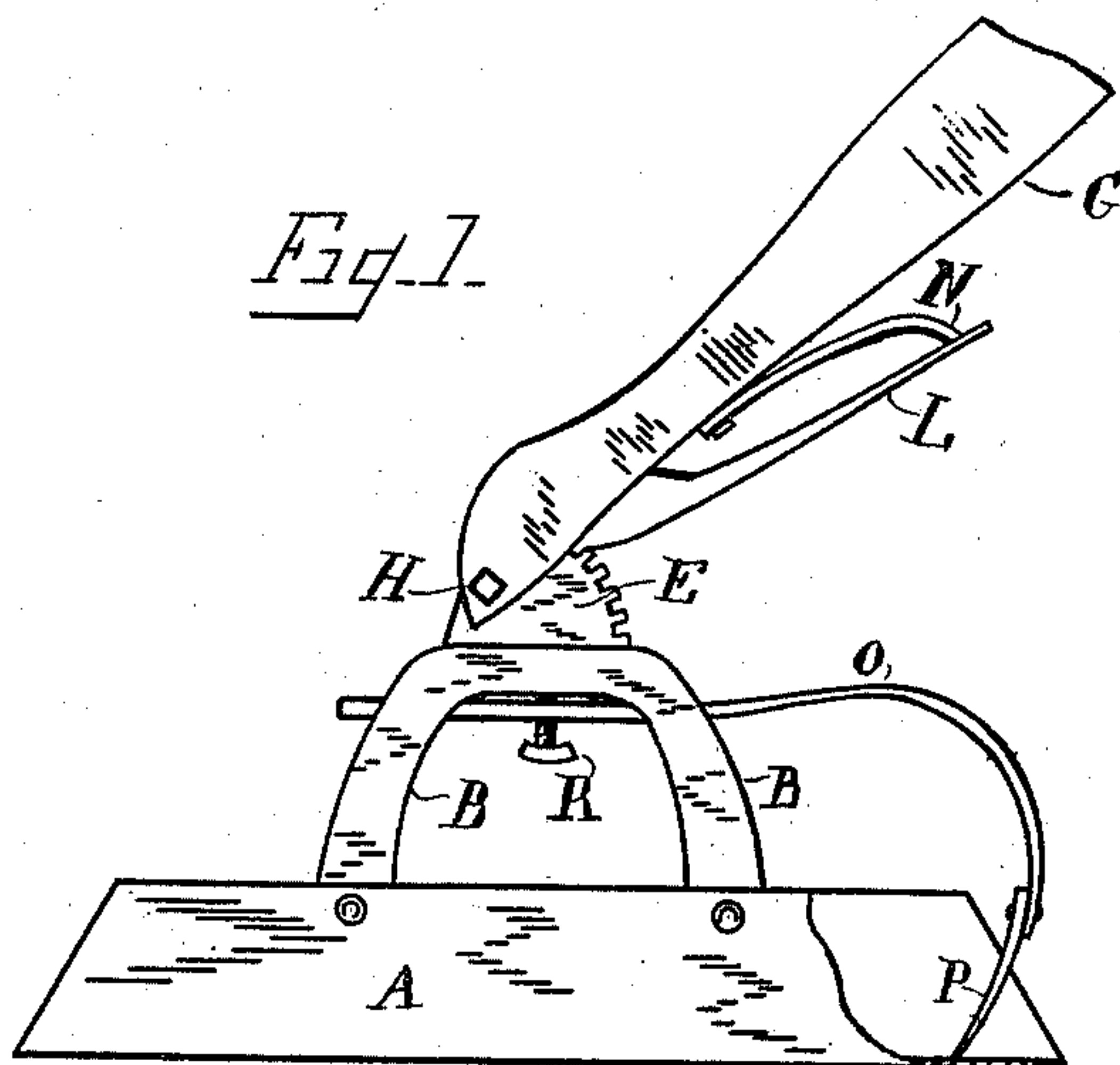


(No Model.)

E. J. ROBINSON.  
CONVERTIBLE DRAIN CLEANER.

No. 385,283.

Patented June 26, 1888.



Witnesses,  
Carroll J. Webster,  
James E. Rayner,

Inventor.  
E. J. Robinson,  
By William Webster,  
Atty

# UNITED STATES PATENT OFFICE.

ESTON J. ROBINSON, OF TOLEDO, OHIO.

## CONVERTIBLE DRAIN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 385,283, dated June 26, 1888.

Application filed December 19, 1887. Serial No. 258,303. (No model.)

*To all whom it may concern:*

Be it known that I, ESTON J. ROBINSON, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have  
5 invented certain new and useful Improvements in a Convertible Open or Closed End Drain-Cleaner; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others  
10 skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

15 My invention relates to a convertible open or closed end drain-cleaner, and has for its object to construct a drain-cleaner for use in forming the bottom of drains for the reception of tile, sewer-pipe, &c., that shall be easy  
20 of adjustment to any desired inclination from the handle, and that can be converted from an open-end cleaner to a closed end with either of the ends desired closed.

Heretofore in the branch of the art to which  
25 my invention belongs it has been found necessary to employ two cleaners to meet the necessities of the work to be accomplished, one of which shall have an open end and be adapted for use in pulverulent soil, and one with closed  
30 end for the more moist places, and this provision fails to fully meet the requirements of the case, as it is necessary at some places to push the cleaner and at others to pull the same, and with one end of the scoop permanently closed there can be no interchangeability  
35 of this character.

It is the object of my invention to obviate these objections and to provide a cleaner in which the scoop may be open at each end, or  
40 by the use of a removable and reversible end portion render it convenient to close either end. I attain these objects by the construction illustrated in the drawings, in which—

Figure 1 is a side elevation, with a portion  
45 of the scoop broken away to disclose the position of the end portion within the scoop. Fig. 2 is a front view of the scoop and handle attachment, the end portion being removed. Fig. 3 is a sectional elevation of a portion of  
50 the bail, showing also the cogged quadrant, the pivotal attachment of the handle, and the

spring actuated device in engagement. Fig. 4 is a like view showing the locking device disengaged. Fig. 5 is a detail view of the removable and reversible end portion.

A designates the scoop, preferably semicircular in cross-section, having a bail, B, attached thereto in any preferred manner, and having an upper quadrant-shaped plate, E, cogged upon its circumferential portion, and a  
60 dovetail groove, F, upon the center of the arched portion.

G designates the metal socket into which the wooden handle is inserted, the socket-piece terminating in a bifurcated end adapted to  
65 embrace plate E and be pivotally secured thereto by bolt H.

Within the socket-piece and centrally of the bifurcation is formed a depression, I, into which fits a projection, K, formed upon the inner  
70 edge of a locking-lever, L, resting partially within the bifurcation and having locking-lugs M upon the outer edge thereof, and adapted to engage with the cogged quadrant E upon the bail when urged into this position  
75 by a spring, N, attached to socket-piece G and bearing upon the outer end of lever L.

O designates the removable and reversible end attachment to scoop A, and consists of a semicircular plate, P, of a size and shape corresponding to the interior of the scoop, and  
80 having a curved bar, Q, adapted to fit closely within dovetail groove F in bail B, and be held to any desired adjustment by means of set-screw R, bearing against the upper face of  
85 the bail centrally of the groove. By this construction any desired angle of the scoop relative to the handle may be given by compressing the spring. Lug K, while resting in depression I, acts as a pivot-point upon which the  
90 locking-lever moves, and disengages locking-lugs M from quadrant E, as shown in Fig. 4, thereby allowing the scoop to be moved freely to any desired inclination.

The operation of the end attachment will be  
95 readily understood. When it is desired to use the scoop with both ends open, set-screw R is unscrewed and bar Q withdrawn from the groove. Should it be desired to close one end of the scoop, the bar is inserted within groove  
100 F from either direction, thereby closing which ever end is desired.



It will be understood that I may employ a bail having a single depending hanger on each side attached to the scoop to give more space for the discharge of earth, if desired, and that

5 I may vary the mode of securing the removable end portion without departing from the spirit of my invention I may also use a spiral in lieu of a flat spring to hold the locking lever in adjustment.

10 What I claim is—

1. In a drain-cleaner, a scoop, in combination with a detachable end portion, as and for the purpose set forth.

15 2. In a drain-cleaner, a scoop, a bail connected therewith, and a removable end portion provided with a bar adjustably connected with the bail, as and for the purpose set forth.

20 3. In a drain-cleaner, in combination with a scoop, a removable and reversible end portion, as and for the purpose set forth.

4. In a drain-cleaner, a scoop, a removable end portion, in combination with a bail secured to the scoop and having an under arched portion provided with a dovetail groove in which the end portion is secured, 25 and an upper segmental cogged portion having a handle pivoted thereto and held to any adjustment relatively to the scoop by means of a locking-lever, as and for the purpose set forth.

30 In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

ESTON J. ROBINSON.

Witnesses:

WILLIAM WEBSTER,  
JAMES E. RAYMER.