

No. 659,696.

Patented Oct. 16, 1900.

C. J. RENZ.
FOUNTAIN PEN.

(Application filed Aug. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

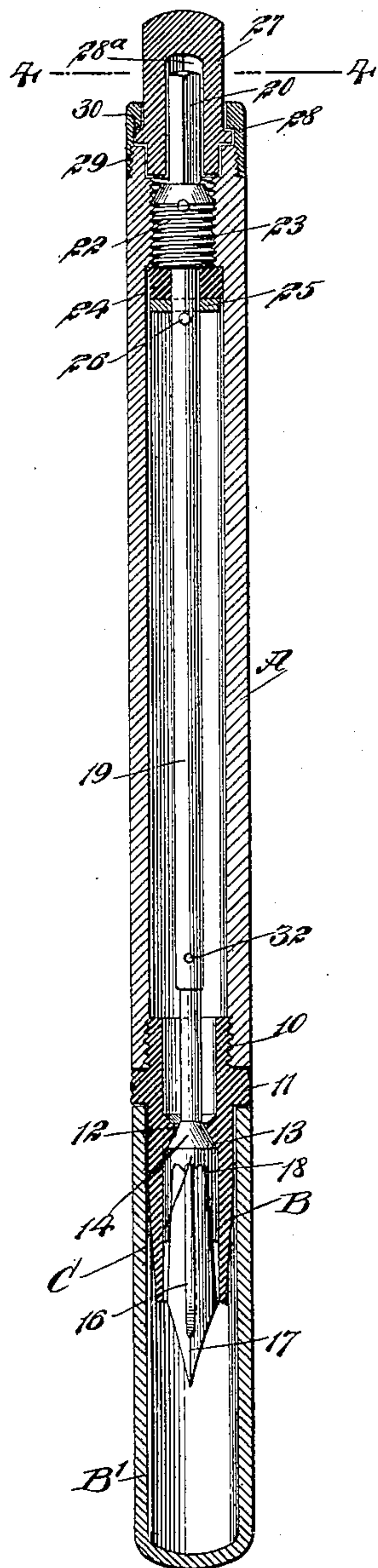


Fig. 2

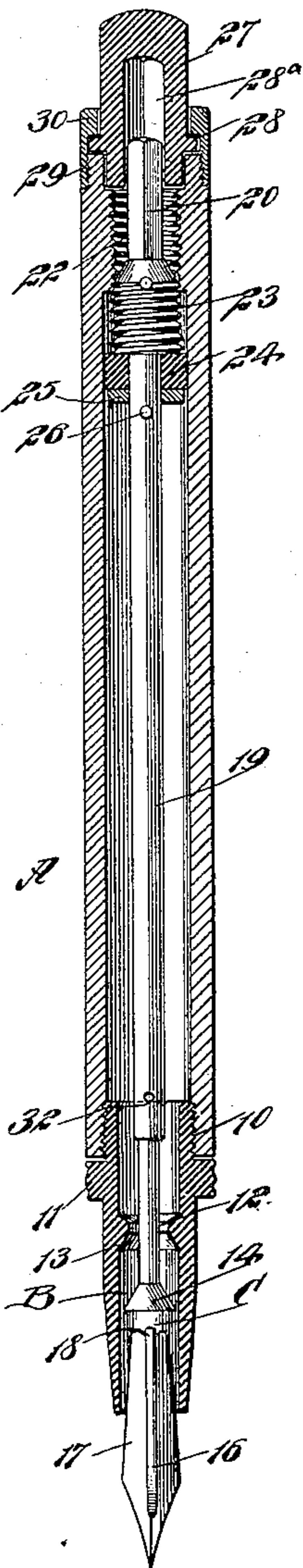
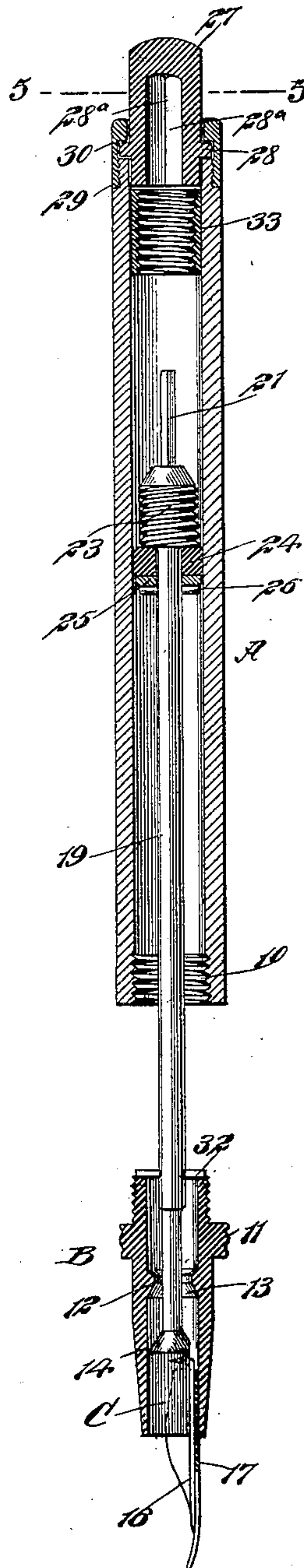


Fig. 3



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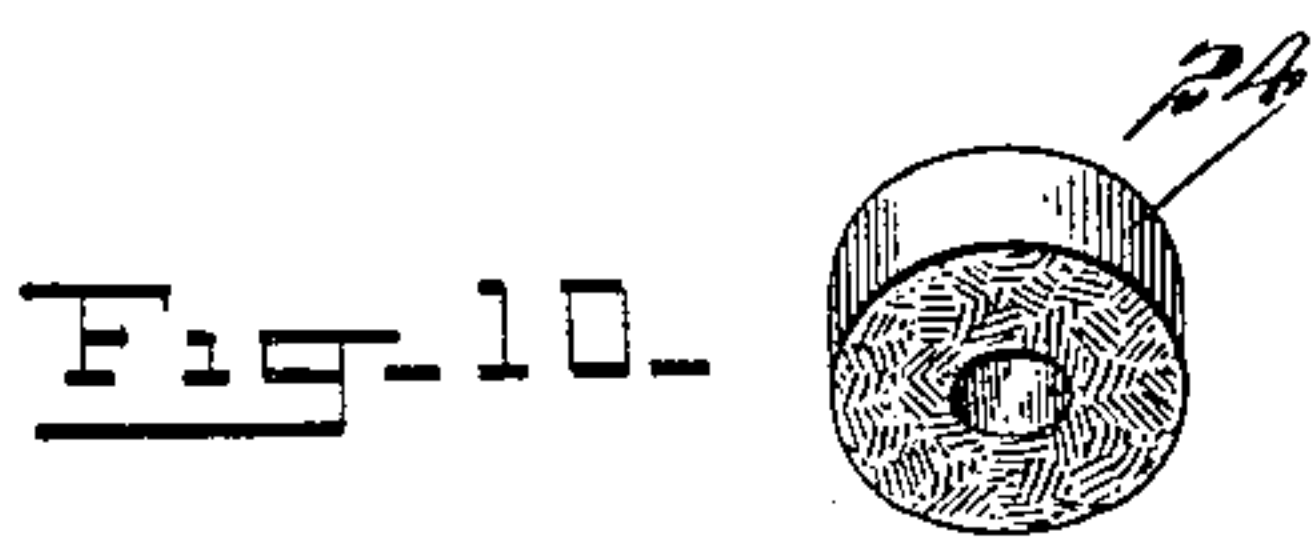
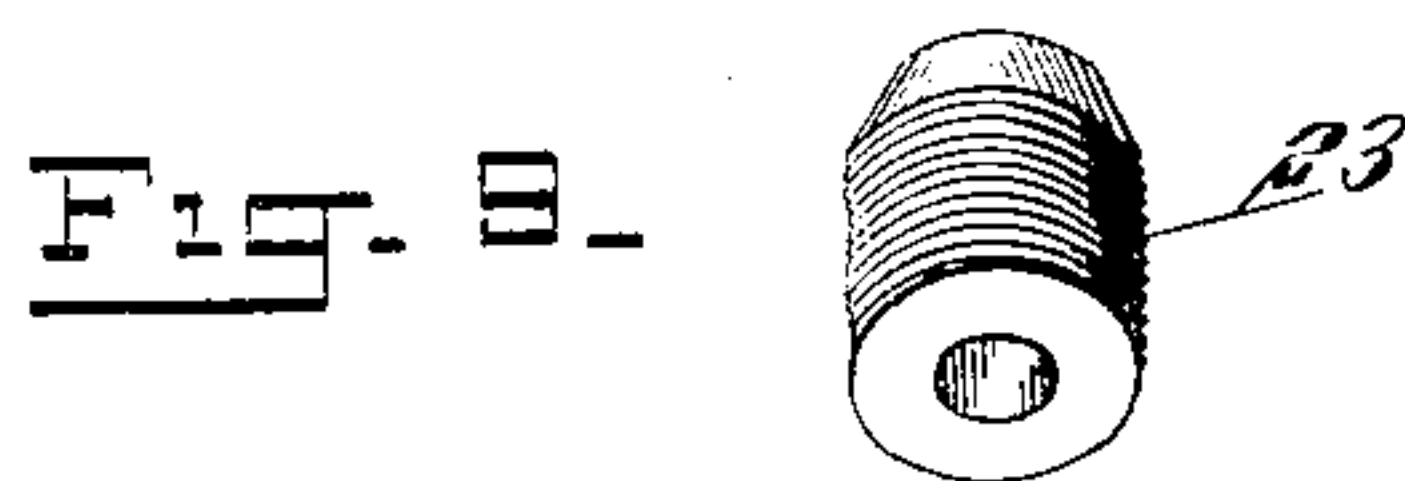
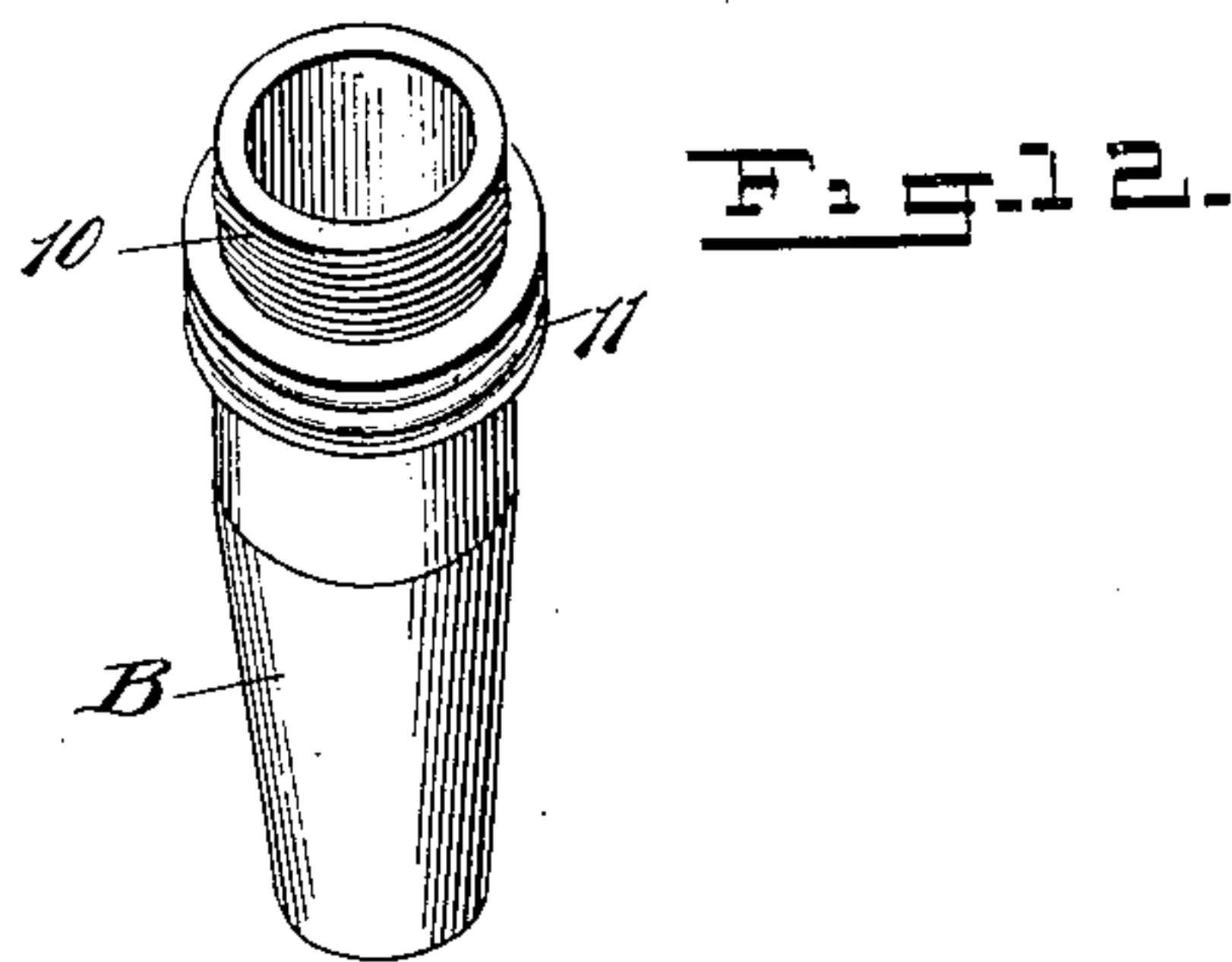
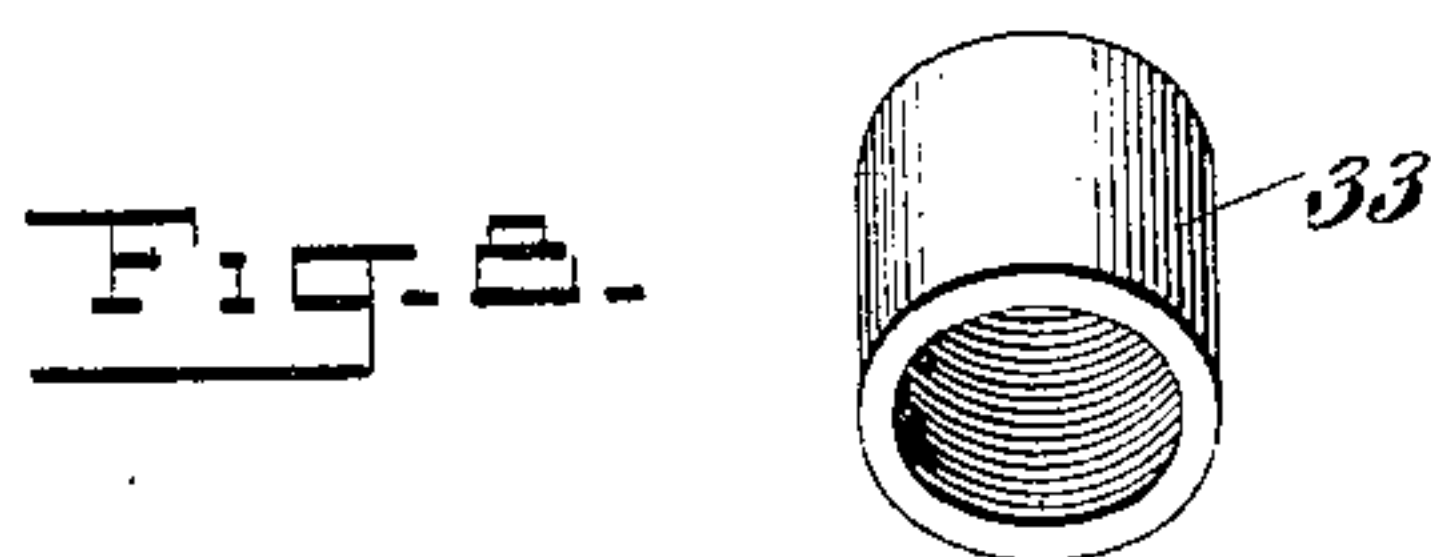
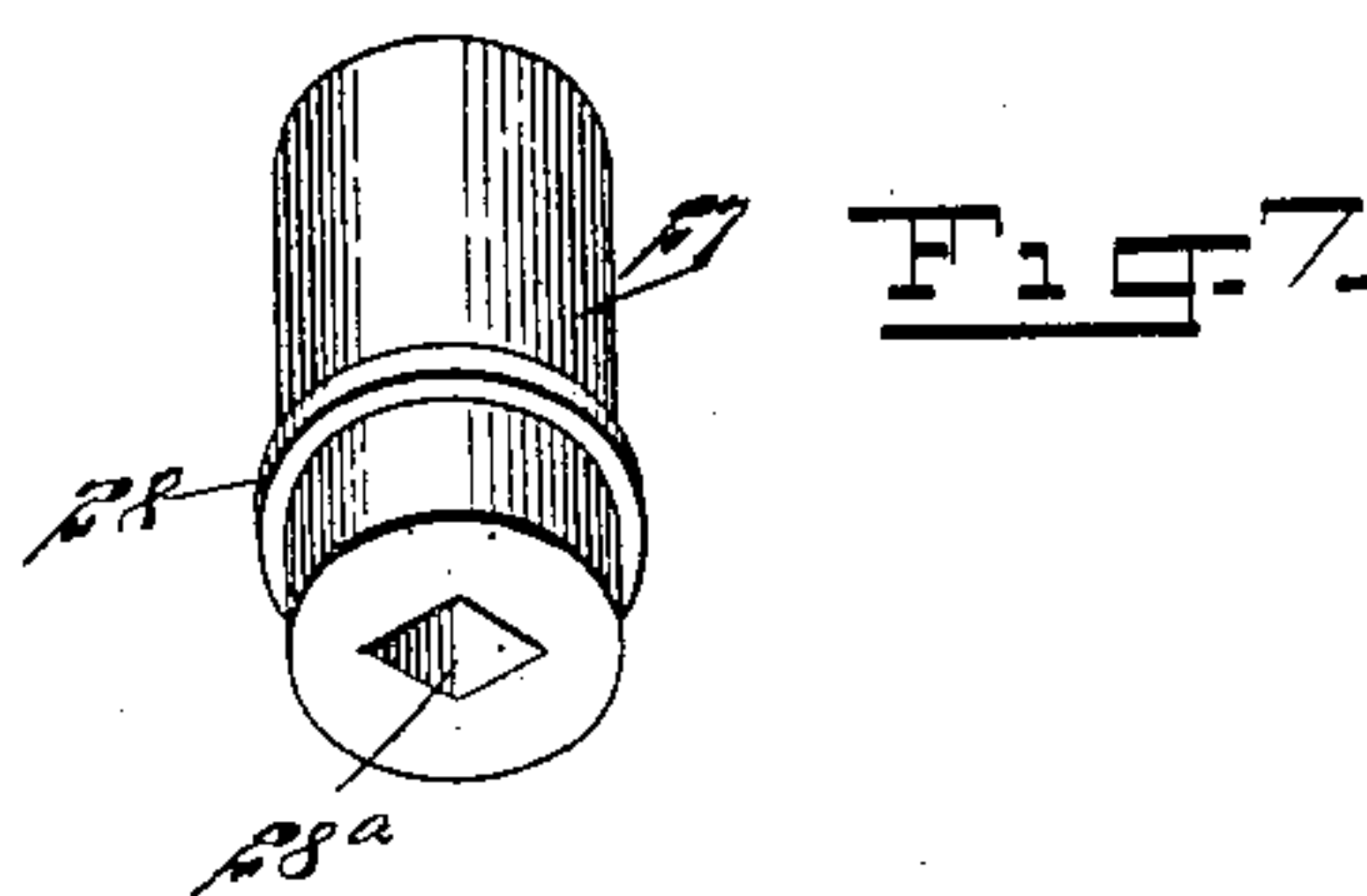
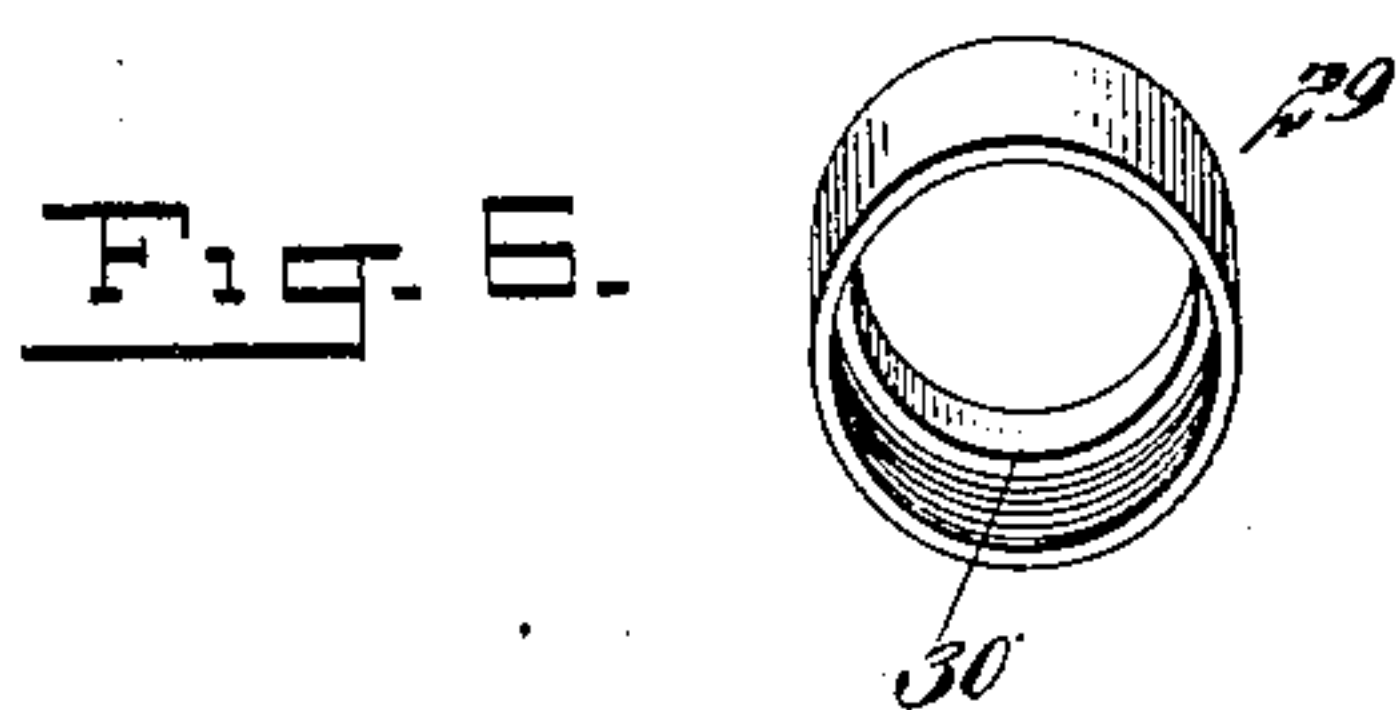
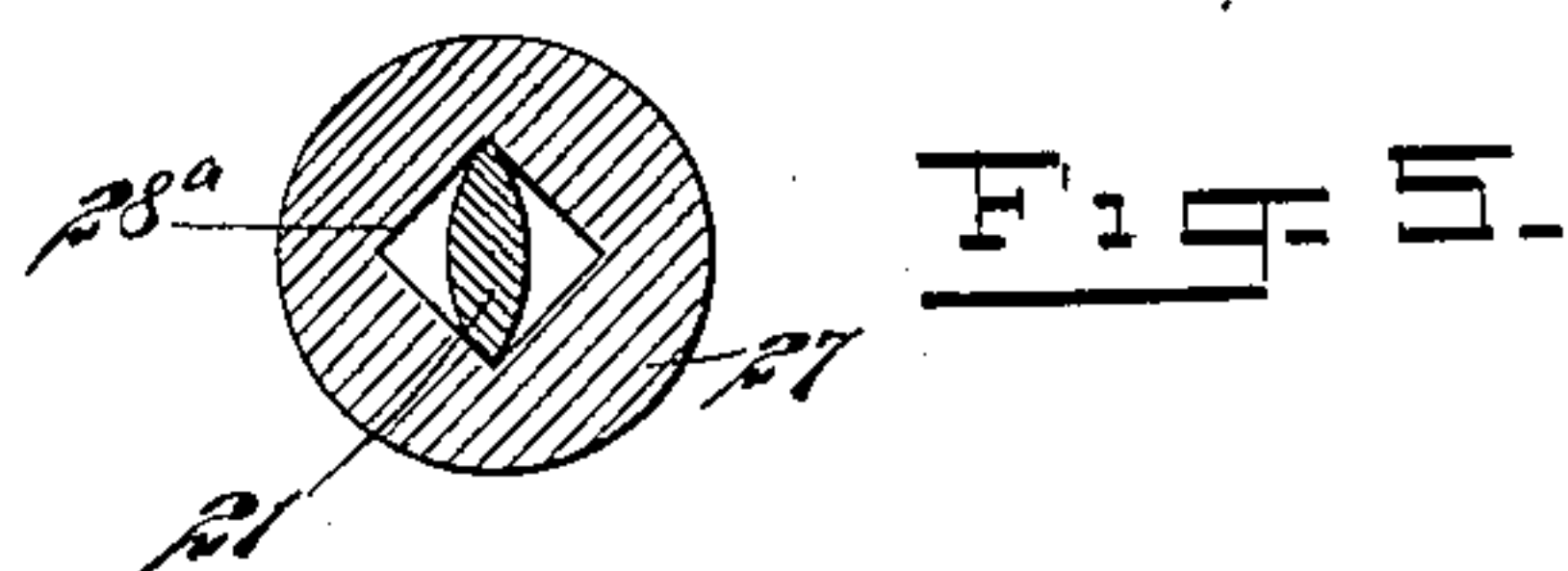
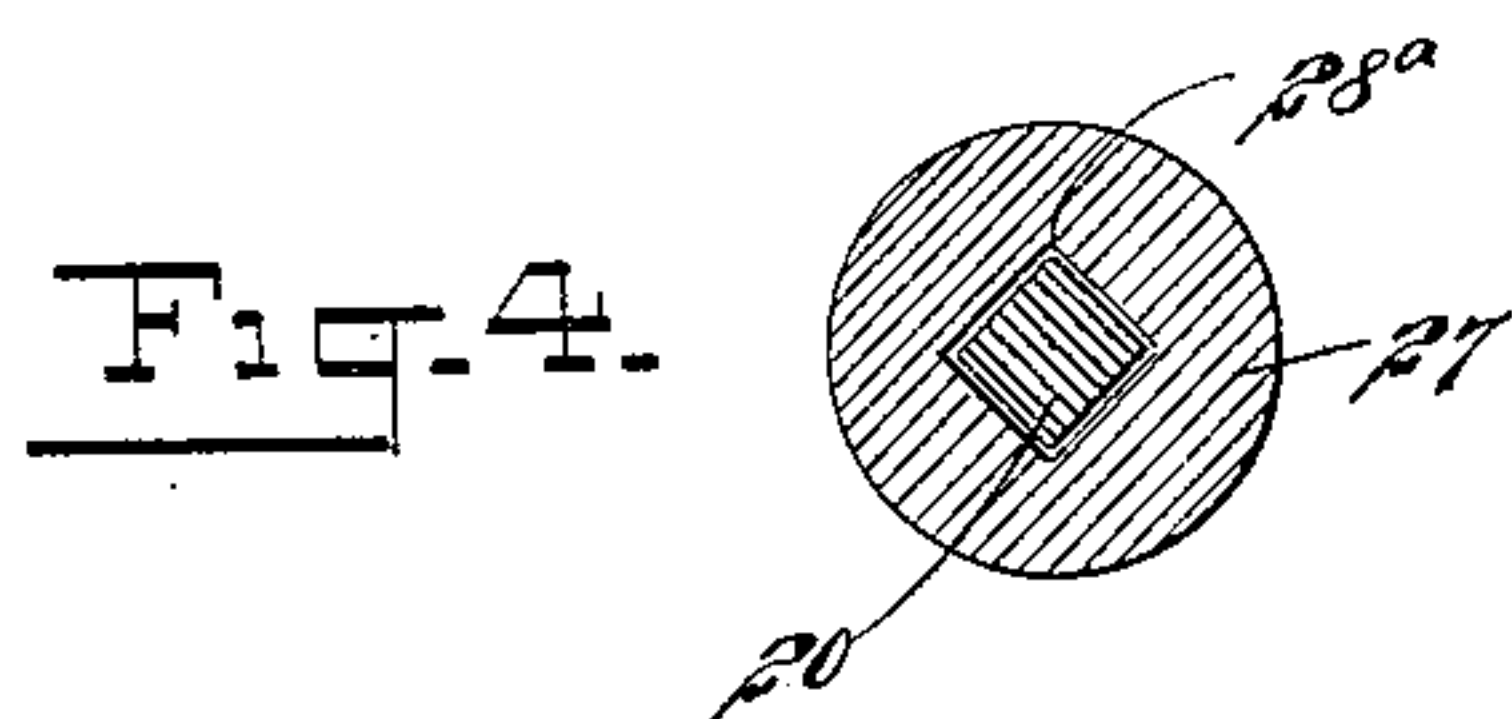
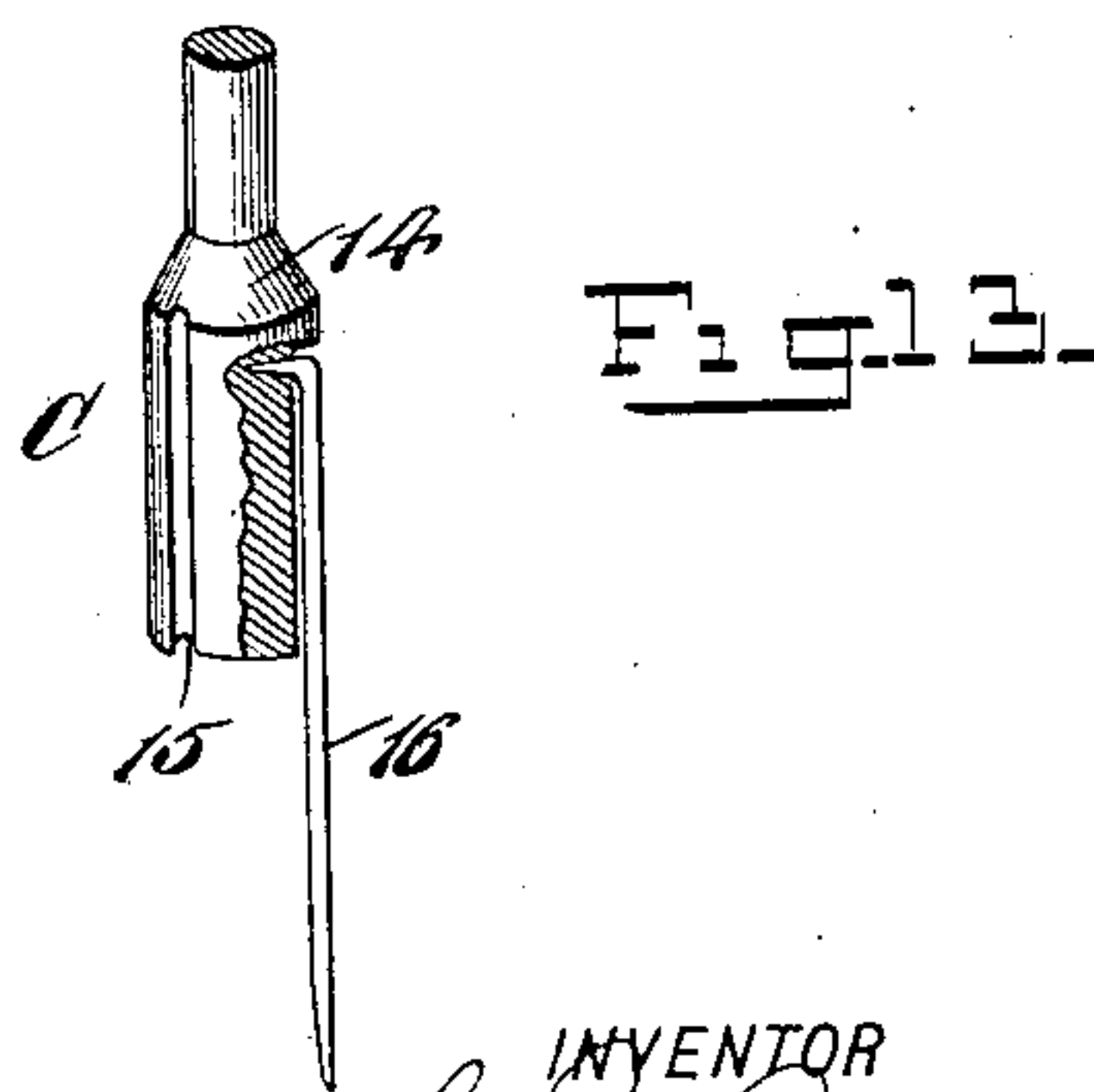
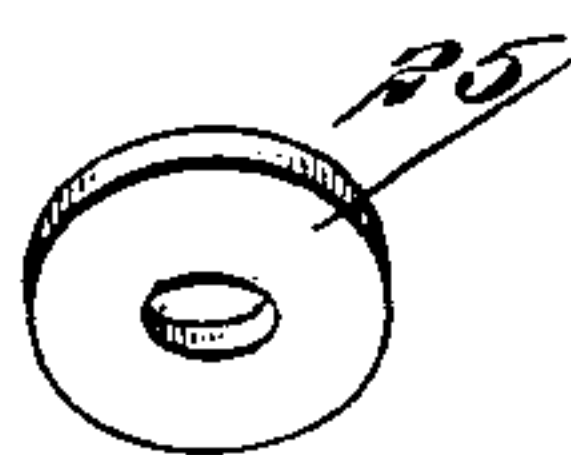


Fig. 11.



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UNITED STATES PATENT OFFICE.

CARL J. RENZ, OF NEW YORK, N. Y.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 659,696, dated October 16, 1900.

Application filed August 24, 1899. Serial No. 728,305. (No model.)

To all whom it may concern:

Be it known that I, CARL J. RENZ, of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Fountain-Pen, of which the following is a full, clear, and exact description.

One object of my invention is to so construct a fountain-pen that the pen may be drawn partially or entirely within the nozzle or carried out therefrom through the medium of a key at one end of the barrel to vary or entirely cut off the flow of ink.

Another object of the invention is to provide a metal feed independent of the pen to which it is applied and which may be used as an upper or an under feed, as desired.

A further object of the invention is to provide the barrel with a piston and stem, the latter having a screw connection with the barrel, and, furthermore, to construct the stem with a pen-carrying head, which serves as a valve for the socket or nozzle, whereby when the piston is moved in one direction the ink is drawn by suction into the barrel from the pen and when moved in another direction the ink is forced from the barrel to the pen.

Another object of the invention is to provide a means whereby the nozzle or socket may be screwed in position in the barrel through the medium of the aforesaid key.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section through the pen with the supply of ink cut off, the pen being drawn partially within the nozzle or socket. Fig. 2 is a view similar to Fig. 1, the cap having been removed and the pen being in position to write, the ink being supplied to the pen. Fig. 3 is a longitudinal vertical section through the improved pen, showing a slight modification in the construction of the barrel and illustrating the nozzle or socket as removed entirely from the barrel. Fig. 4 is a transverse section taken practi-

cally on the line 4 4 of Fig. 1. Fig. 5 is a section taken substantially on the line 5 5 of Fig. 3. Fig. 6 is a perspective view of a locking-sleeve employed in connection with the key. Fig. 7 is a detail perspective view of the key. Fig. 8 is a detail perspective view of a sleeve adapted to be fitted in the barrel. Fig. 9 is a detail perspective view of the adjusting-head of the piston-stem. Fig. 10 is a perspective view of the piston. Fig. 11 is a perspective view of the washer used in connection with the piston. Fig. 12 is a detail perspective view of the pen socket or nozzle; and Fig. 13 is a perspective view, partially in section, of the pen-supporting head of the piston-stem and a feeder in position on the said head.

The barrel A of the pen is provided at its lower end with an interior thread 10, adapted to receive the upper exteriorly-threaded portion of a pen socket or nozzle B, and this pen socket or nozzle is provided with a suitable flange 11, which enables it to be readily removed from the barrel. The said pen socket or nozzle is adapted to receive the usual cap B' when the pen is not in use.

Below the flange 11 the pen-socket B is usually provided with an interior annular rib 12, having beveled upper and lower surfaces 13, the lower beveled surfaces 13 being adapted to receive a correspondingly beveled or conical surface 14, formed at the upper end of the pen-supporting head C, and when the surface 14 of the pen-supporting head engages with the inclined surface 13 in the socket or nozzle the pen-supporting head serves as a valve to effectually prevent any ink gaining access to the lower portion of the said head or the pen or feeder carried thereby. This pen-supporting head C may be provided with one or more air-vents 15, as shown in Fig. 13, if found necessary. The feeder 16 is made of wire of suitable gage, and one of its ends is attached in any desired manner to the pen-supporting head, while the opposite end, which may be slightly flattened and curved and is more or less pointed, extends any desired distance beyond the lower end of the said pen-supporting head. The pen 17, when the feed is to be an overfeed, is passed between the feed and the supporting-head C, as shown in Figs.

1 and 2, the rear end of the pen being provided with a notch 18, which receives the inner end of the feed; but when the feed is an underfeed, as shown in Fig. 3, it engages with the inner surface of the socket or nozzle B. A stem 19 is secured to the said pen-supporting head, and this stem extends up through the barrel and beyond the top thereof. The top portion or outer end of the stem 19 may be made polygonal, as shown at 20 in Figs. 1, 2, and 4, or may be oval or elliptical, as illustrated at 21 in Figs. 3 and 5.

An interior thread 22 is formed in the barrel A, near the upper or outer end thereof, and this threaded surface receives an adjusting-head 23, which is exteriorly threaded and is secured upon the stem 19 by a pin or the equivalent of the same, as shown in Figs. 1 and 2. Immediately below the adjusting-head 23 a piston 24 is located on the stem 19, together with a washer 25, and these parts are held in position by a pin 26 or the like. The upper or outer end of the stem 19 is adapted to enter a polygonal longitudinal chamber 28^a, formed in a key 27, which constitutes the outer end of the finished pen. This key 27 is provided with an annular exterior rib 28, and this rib is received within the inner reduced surface of a sleeve 29, engaging with a shoulder 30 in the sleeve formed by such reduction, and this sleeve 29 is screwed upon the upper end of the barrel, as shown in Figs. 1, 2, and 3. Thus it will be observed that the key 27, while held to the barrel in a simple and effective manner, is free to be turned and that when the key is turned in one direction the adjusting-head 23 will travel down the threaded surface 22 of the barrel, as shown in Fig. 2, to a greater or less extent, and the piston 24 will force the ink to the feeder 16, since the downward movement of the adjusting-head will have carried the pen-carrying head C to the lower portion of the nozzle or socket, thus opening communication between the barrel and the pen and its feeder. By turning the key 27 in a reverse direction the adjusting-head is taken upward, and the piston in withdrawing will suck the ink from the pen as the pen-supporting head is drawn upward, so that by the time the pen-supporting head is seated at the rib portion of the nozzle, as shown in Fig. 1, all the ink, or practically all of it, will have been removed from the pen and its feeder.

It is evident that the adjusting-head may be so constructed that the pen and its supporting-head may be drawn entirely within the nozzle should occasion demand.

A pin 32 is passed through the piston-stem 19 near its lower end, and this pin extends beyond opposite sides of the stem, as shown in Fig. 3, and is adapted to contact with the end of the nozzle B when the parts are in the position shown in Fig. 2 and limit the outward movement of the pin-head C. The pin 32 is also adapted, when it is desired to replace the parts after they have been moved

to the position shown in Fig. 3, to be engaged by the end of the nozzle B to force the parts into position in the barrel.

I desire it to be understood that although I prefer the metal single feed shown in the drawings any other preferred form of feed may be substituted if found desirable.

In the form of the device shown in Fig. 3 it will be observed that the thread adapted to receive the adjustable head is made in a sleeve 33; but the thread adapted to receive the adjusting-head may be made directly in the barrel or at any portion of the same.

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

1. In a fountain-pen, an internally-threaded barrel, an externally-threaded piston-stem, a piston on said stem, and a key mounted to rotate on the barrel and with which the end of the piston-stem has a sliding engagement, substantially as and for the purpose set forth.

2. The combination, with an internally-threaded barrel, of an exteriorly-threaded piston-stem, a piston on the stem, a pen-support carried by the stem, a key for operating the stem, mounted upon the barrel, and a detachable connection between the key and stem.

3. A pen barrel and nozzle, a piston having rotary and end movement in the barrel, means whereby the piston may be moved and a pen-support connected with the said piston and moving in the nozzle when the piston is operated.

4. In a fountain-pen, a barrel, a piston therein, a pen-support connected with the piston, a key forming a portion of the barrel and mounted to rotate thereon, means for connecting the key loosely with the piston to rotate the same, and means for causing the piston to advance as a result of its rotation.

5. In a fountain-pen, a barrel, a pen-support movably mounted in one end of the barrel, an ink-controlling mechanism connected with the pen-support, a key mounted to rotate on the barrel and loosely connected with the ink-controlling mechanism for rotating the same, and means whereby the ink-controlling mechanism will be advanced when rotated, substantially as described.

6. In a fountain-pen, a barrel, a stem provided with a plunger longitudinally adjustable in the said barrel, a pen-support connected with the stem, a surface of the pen-support being arranged to close the said nozzle, a key constituting a portion of the barrel, a connection between the key and the stem and means whereby the plunger is adjusted when the key is operated.

7. In a fountain-pen, the combination, with a barrel interiorly threaded, a pen nozzle or socket, and a socketed key constituting one end of the barrel and mounted to turn on the body of the barrel, of a stem one end of which is capable of entering said key, the said stem

being provided with an exteriorly-threaded surface adapted for engagement with the interiorly-threaded surface of the barrel, a piston carried by said stem, and a pen-support 5 connected with said stem, and having movement in said pen socket or nozzle, a surface of the pen-support being adapted to close said nozzle.

8. In a fountain-pen, a barrel, a removable 10 pen socket or nozzle at one end of the barrel, a pen-support movable in the socket or nozzle, a piston having a screw-threaded connection with the barrel, a stem connecting the piston and pen-support, and provided with 15 lateral projections for engaging the end of the socket or nozzle, and a key mounted to rotate on the barrel and detachably connected with the said stem, substantially as described.

9. The combination with a pen-support, of 20 a metal feed consisting of a wire rod of suitable gage secured at one of its ends to the outer surface of the said support and projecting beyond the outer end of the said support, said wire rod having its outer end curved 25 to engage with the pen, the body of the rod or feed lying approximately parallel with and adjacent to one face of the pen, as described.

10. In a fountain-pen, a screw-threaded barrel, a screw-threaded piston in the barrel, a 30 key for operating the piston, said key consisting of a body held to turn on the barrel and having a chamber polygonal in cross-section and an exterior annular flange, and a sleeve having an internal shoulder adapted 35 to bear against the upper surface of the flange of the body of the key, and an interior thread below the said shoulder, whereby the said sleeve may be screwed upon the barrel to hold 40 the body of the key in place and at the same time permit the said key to be readily turned in its seat, as set forth.

11. In a fountain-pen, the combination with

a screw-threaded barrel, of a screw-threaded 45 piston in the barrel, a stem, to which the piston is secured, the upper end of the stem being polygonal; and a key mounted to turn on the barrel and provided with a socket corresponding in shape to the shape of the end of 50 the piston-stem and in which the end of the stem loosely fits, substantially as described.

12. In a fountain-pen, the combination with a barrel, and a socket or nozzle formed with a valve-seat, of a pen-supporting head adapted to be seated on said seat, a piston, a piston-stem on which the piston is secured, one 55 end of the piston-stem being secured to the pen-head, and means whereby the piston and pen-head may be moved, substantially as described. 60

13. A fountain-pen, comprising a barrel, a socket or nozzle at one end of the barrel and formed with a valve-seat, a pen-supporting head formed with a conical surface and adapted to be seated on said seat, a piston-stem secured to the pen-head, a piston secured on 65 the stem, and means whereby the piston-stem may be moved longitudinally, substantially as described.

14. A fountain-pen, comprising a barrel, a 70 nozzle at one end of the barrel and having a valve-seat, a pen-supporting head formed with a valve, a piston-stem secured to the pen-head, a piston secured on the stem, means whereby the stem will be moved longitudinally when turned, and a key mounted to 75 turn on the barrel and provided with a socket to receive an end of the piston-stem, substantially as described.

In testimony whereof I have signed my 80 name to this specification in the presence of two subscribing witnesses.

CARL J. RENZ.

Witnesses:

J. FRED. ACKER,
JNO. M. RITTER.