

S. S. CROCKER,
FOUNTAIN PEN,
APPLICATION FILED FEB. 17, 1913.

1,181,574.

Patented May 2, 1916.

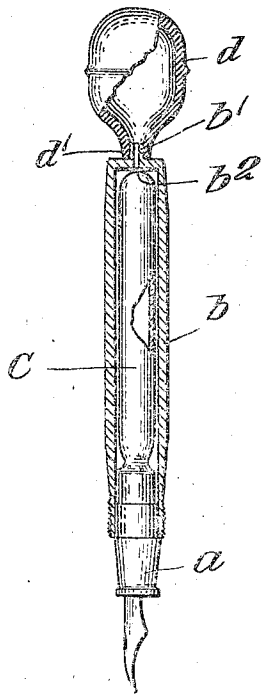


Fig. 1.

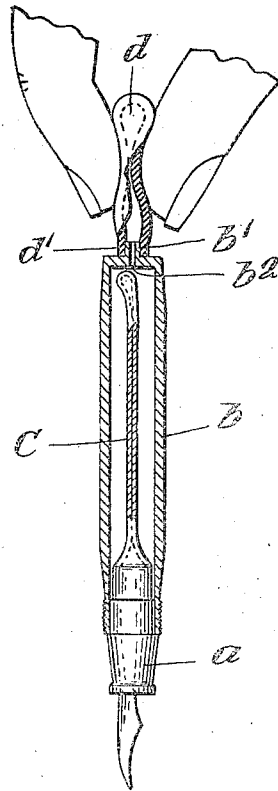


Fig. 2.

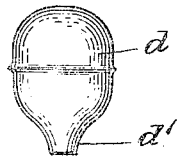


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

SETH S. CROCKER, OF WOLLASTON, MASSACHUSETTS.

FOUNTAIN-PEN.

1,181,574.

Specification of Letters Patent.

Patented May 2, 1916.

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To all whom it may concern:

Be it known that I, SETH S. CROCKER, a citizen of the United States, residing at Wollaston, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Fountain-Pens, of which the following is a specification.

This invention relates to certain improvements in fountain pens of the type in which a rubber sack is arranged in the pen-barrel and connected to the pen-section, and is compressed to expel the air, and then is permitted to expand, while the pen is dipped in the ink, so that it may become filled.

Inasmuch as it is desirable that the capacity of the sack be as great as possible, it is advantageous to make the walls of the sack no thicker than is absolutely essential. As a rule, with the same quality of rubber, the thinner the rubber of which the sack is made, the less its strength to draw up the ink by suction, so that, with prior devices, the limit of thickness of the rubber is determined by the ability of the sack to draw up the ink by suction through its force of expansion.

In collapsing the sack by blowing from the lungs into the barrel, considerable inconvenience is sometimes experienced, especially when the barrel of the pen is short and the sack does not yield readily to the pressure which the person attempting to fill the pen is able to exert.

The object of my invention is to provide a simple and convenient means for filling the pen of the above described character, which may be readily applied thereto, and detached therefrom, and which will enable the sack to be compressed by mechanical force, in lieu of blowing into the barrel from the lungs, and which will act to assist the sack materially in sucking up the ink from the ink-well in which the pen is dipped, so that the sack will become filled. I accomplish this object by the means shown in the accompanying drawing, in which,

Figures 1 and 2 are partial, central longitudinal sections, showing my device in different positions. Fig. 3 is a detail view of the filling-device.

In the drawing *a* indicates the ordinary pen-section, and *b* the barrel in which the

pen-section is fitted, the neck of the rubber sack *c* being connected to the inner end of the pen-section, and arranged loosely in the barrel, as is customary.

The end of the barrel is provided with a short projecting nipple or boss *b'* in the middle line thereof and an aperture *b²* is extended through said nipple, centrally thereof, into the interior of the barrel. A rubber bulb *d* is provided, having a contracted neck *d'* which is adapted to be fitted tightly over the projecting end of the nipple *b'*, so as to connect the bulb to the interior of the barrel, the rubber of which the bulb is made being materially thicker and stronger than that of the sack. Ordinarily the bulb *d* will be detached from the pen barrel, and when it is desired to fill the sack with ink, the bulb is slipped onto the nipple *b'*, as shown in Fig. 1; then the pen is dipped into the ink and the bulb is compressed, so that the air which was contained in the bulb will be forced into the barrel of the pen, causing the sack to be compressed in the manner shown in Fig. 2. The pressure on the bulb is then relieved, so that it is free to expand, and, as the bulb is relatively stronger than the sack, it will tend to exhaust the air from the barrel materially faster than it would be expelled by the unassisted expansion of the sack. That is, the bulb acts to reduce the air pressure in the barrel, so that the air pressure on the surface of the ink will assist in forcing the ink up from the pen-section into the sack. The force of expansion of the sack will also assist in sucking up the ink in the usual manner, but its walls may be made thinner and of less strength than if the bulb were not used.

When the sack has been filled the bulb will be removed, so that the pen will be unobstructed thereby.

I claim:—

In a fountain pen comprising a barrel having a pen-section in one end, and an aperture in the opposite end, a self-expandible rubber sack contained in the barrel and having its neck connected to the pen-section, a self-expandible rubber bulb of substantially greater expansive force than said sack, having its neck removably connected to said opposite end of the barrel about said aper-

ture and arranged to permit the bulb to be manually compressed, to force air into the barrel and collapse the sack, and, when released, automatically to create a partial vacuum about the sack and reduce the air-resistance opposing the expansive force of the latter.

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

SETH S. CROCKER.

Witnesses:

L. H. HARRIMAN,
H. B. DAVIS.