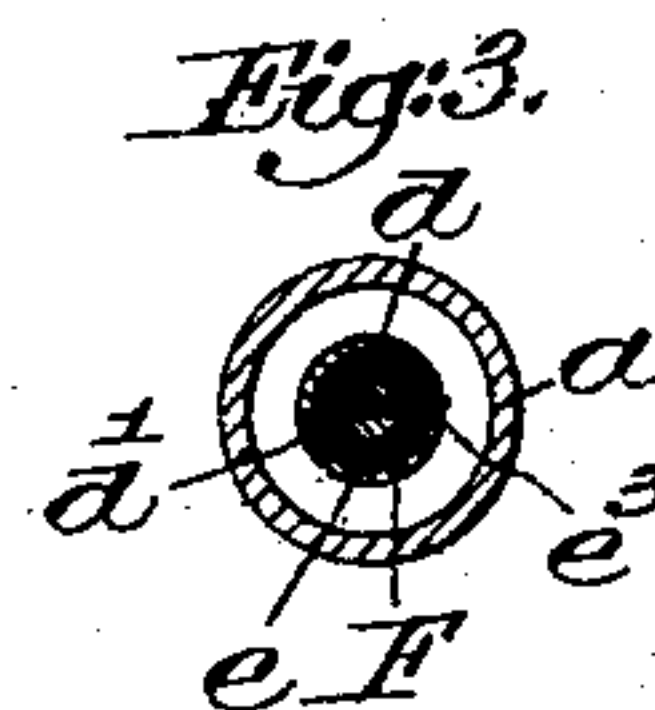
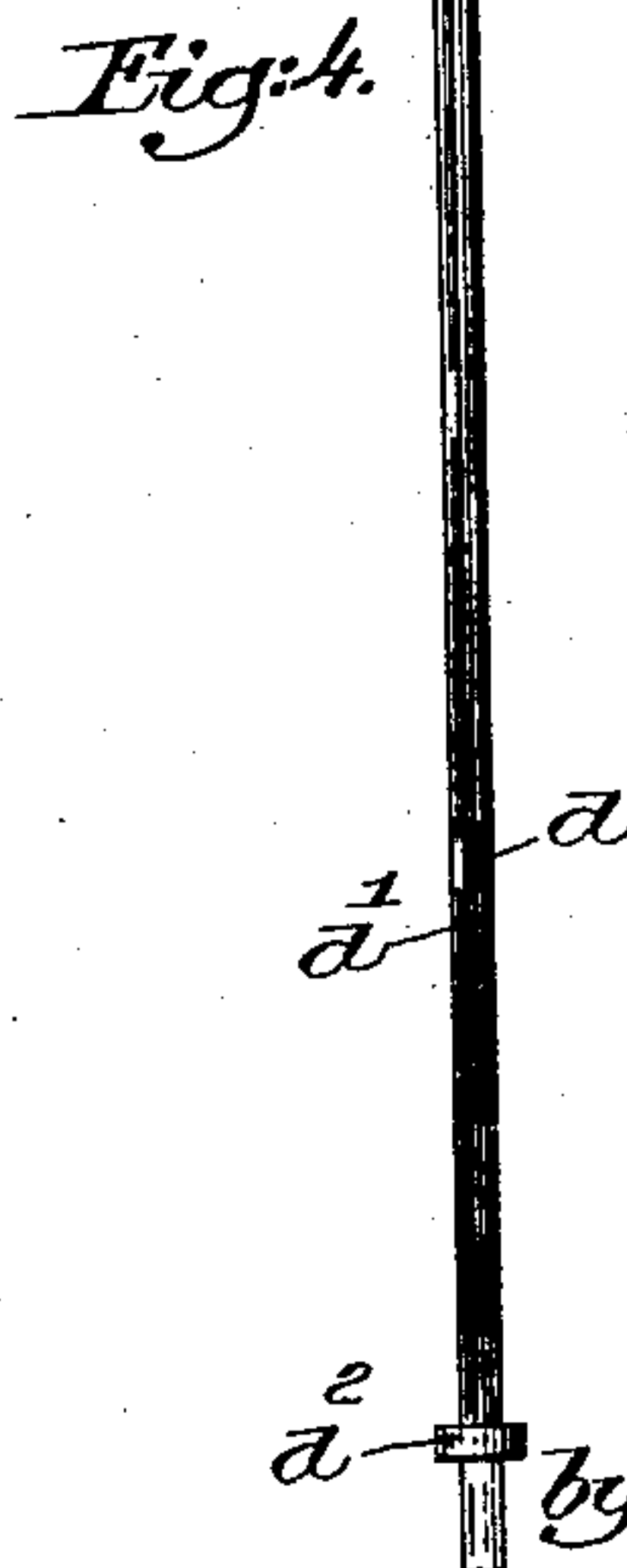
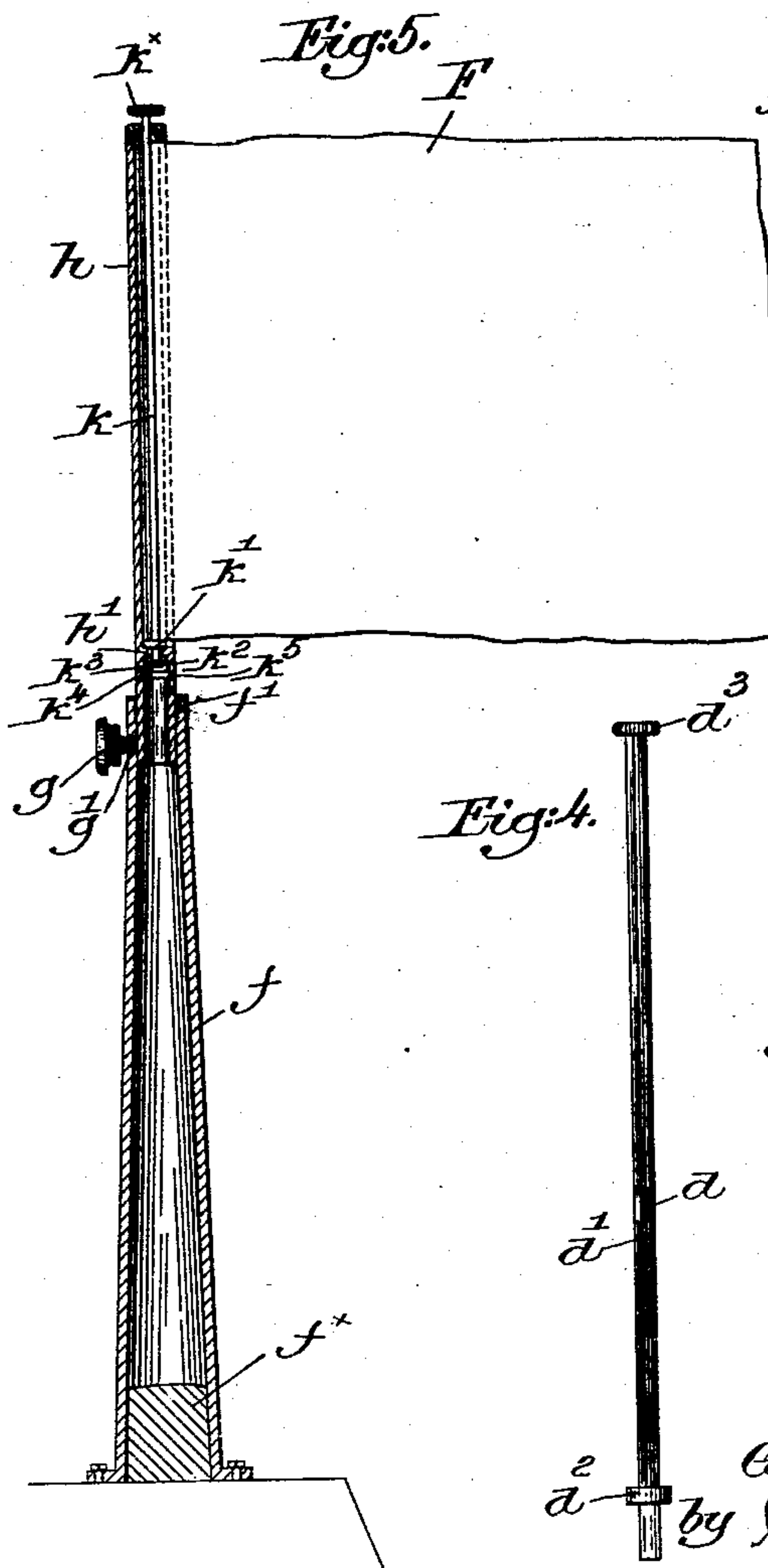
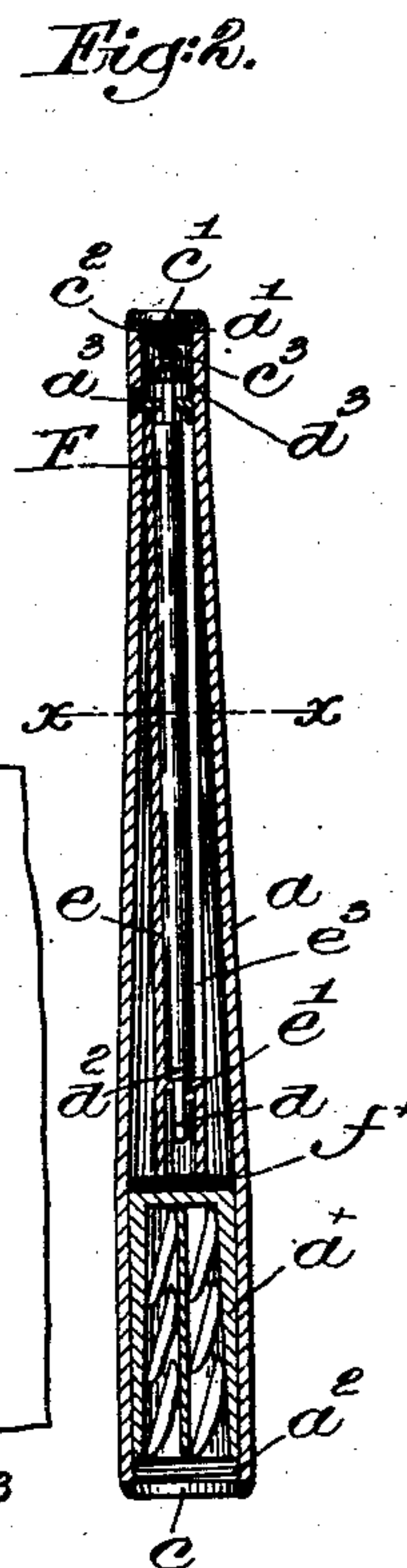
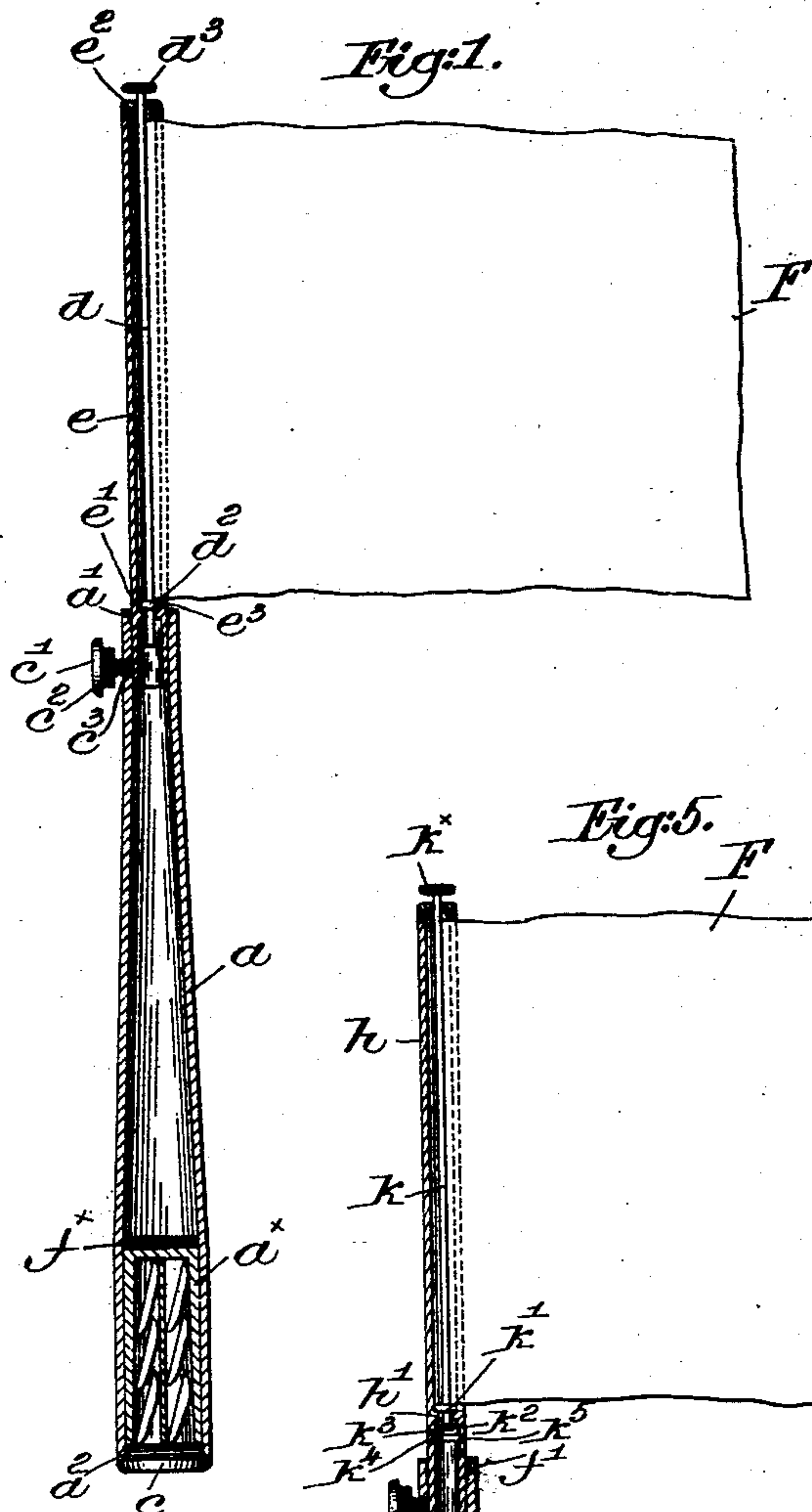


(No Model.)

G. P. KOCH.
RAILWAY SIGNAL FLAGSTAFF.

No. 569,024.

Patented Oct. 6, 1896.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE P. KOCH, OF BOSTON, MASSACHUSETTS.

RAILWAY-SIGNAL FLAGSTAFF.

SPECIFICATION forming part of Letters Patent No. 569,024, dated October 6, 1896.

Application filed July 31, 1896. Serial No. 601,159. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. KOCH, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Signal Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of an improved signal apparatus particularly adapted for use on railroads whereby a flag can be readily set or furled and protected when not in use. I have also provided a convenient receptacle in the portable signal apparatus wherein the usual track-torpedoes may be kept, so that they will be at hand when needed.

Various features of my invention will be hereinafter described in the specification and particularly pointed out in the claims.

Figure 1 is a longitudinal sectional view of one form of signal apparatus with the flag displayed. Fig. 2 is a similar view with the flag furled and protected. Fig. 3 is a transverse sectional view thereof on the line xx , Fig. 2. Fig. 4 is an enlarged view in elevation of the flag-roller, and Fig. 5 is a longitudinal sectional view of a slightly-modified form of my invention to be described.

Referring to Figs. 1, 2, and 3, I have shown a hollow slightly-tapering holder a , of wood or metal, preferably the latter, threaded at its ends at a' and a^2 , respectively, the base of the holder being provided with a torpedo-chamber a^x , preferably lined with felt, cotton, rubber, or any other soft material. A screw-cap c is adapted to engage the threads a^2 of the holder, closing that end thereof, removal of the cap permitting access to the torpedo-chamber. By having the torpedoes thus protected the clamps thereof are preserved intact instead of being broken off, as is frequently the case at present, and the torpedoes are kept in a place convenient for the operator when they are required for use.

The flag F is secured at its inner edge in a longitudinal slot d' of a staff or roll d , having a shoulder d^2 near its lower end and a preferably milled head d^3 at its upper end.

A hollow case e , having a bearing e' therein near its lower end, receives the flag-roll, the shoulder d^2 thereof resting on the bearing

and permitting the roll to be rotated, the top of the roll extending through the closed top e^2 of the case, while the flag is passed through a longitudinal slot e^3 in the case.

By grasping the projecting outer edge of the flag it may be pulled out through the slot e^3 of the case, while it may be wound upon the roll d by rotating the latter with the head d^3 , drawing the flag into the case, as shown in Figs. 2 and 3.

When it is desired to use the flag, a cap c' , Fig. 2, having a threaded base c^2 , is unscrewed from the threaded end a' of the holder a , and the flag-case e is run out by tipping the holder. The case is drawn out until it is in the position shown in Fig. 1, and then the threaded shank c^3 of the cap c' is inserted in the threaded hole a^3 in the holder to bear against the adjacent part of the case e as a set-screw, firmly holding it in place. It will thus be seen that the cap c' serves the double purpose of a closure for the end of the holder a when the flag is not in use, and as a set or retaining screw to hold the flag-case in operative position.

On the pilots and tenders of locomotives, and also on the ends of cars, flagstaff-holders are usually secured to receive the end of the staff and display a flag, and in Fig. 5 I have shown a modification of my invention adapted for such form of fixed holder. The hollow holder f , rigidly secured in place in any suitable manner, is threaded at its outer end at f' to receive a combined cap and set-screw g g' , the closure being shown in Fig. 5 acting as a set-screw. The flag-case h has a bearing h' therein for the shoulder k' of the flag-roll k , the latter having a small bevel-gear k^2 fast thereon in mesh with a similar gear k^3 , mounted on a shaft k^4 in the case h , one end of the shaft having a squared or polygonal end k^5 to fit a correspondingly-shaped recess in the screw-shank g' . When the case h is extended, it will generally happen that the head k^x of the flag-roll will be out of the operator's reach, and he then applies the shank of the cap g , using it as a key to rotate the shaft k^4 and through the gears roll the flag up. After this the shank is inserted in the holder to act as a set-screw, as shown, preventing accidental displacement of the flag-case due to vibration. When the flag is not

in use, the cap *g* is applied to the top of the holder to prevent the entrance of moisture and dirt.

5 A cushion *f*^x of some yielding material may be inserted in the lower part of the holder to support the flag-case when not in use.

While I have herein shown the holder as adapted to receive a single flag and its case, it will be obvious that the holder may be made
10 of sufficient diameter to receive a plurality of the cases without departing from the scope of my invention.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—
15

1. In a signal apparatus, a hollow holder, a flag-case adapted to slide thereinto, and a combined closure and set-screw to close the end of the holder and to retain the flag-case
20 in extended, operative position, substantially as described.

2. In a signal apparatus, a hollow holder threaded at its upper end and having a thread-

ed hole in its side, a tubular flag-case adapted to slide thereinto, means to furl and spread
25 the flag, and a threaded closure for the holder, having a threaded shank to enter the hole in said holder and retain the flag-case in extended position, substantially as described.

3. In a signal apparatus, a longitudinally-
30 slotted tubular flag-case, a rotatable rod therein to which the flag is secured, a holder in which the case is adapted to enter when not in use, a chamber in the lower end of the holder, a closure therefor, and a combined
35 cap and set-screw, to close the other end of the holder and also to serve as a retaining device for the flag-case when extended in operative position, substantially as described.

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

GEORGE P. KOCH.

Witnesses:

JOHN C. EDWARDS,

ALEX. C. PROUDFIT.