

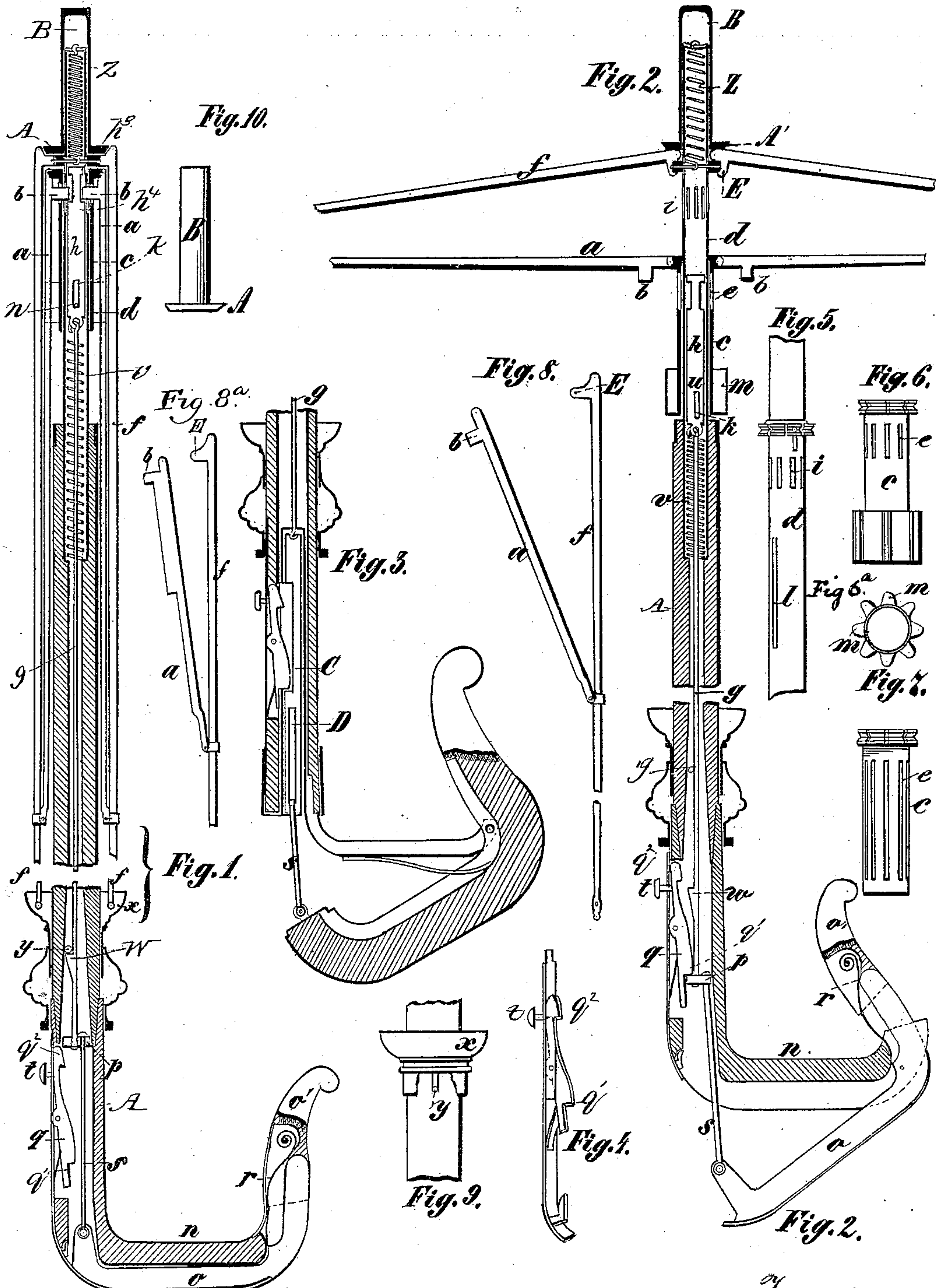
(No Model.)

2 Sheets—Sheet 1.

P. MEYER, Jr.
UMBRELLA.

No. 337,276.

Patented Mar. 2, 1886.



Witnesses:
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Hermann Kass.

Inventor:
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 11.

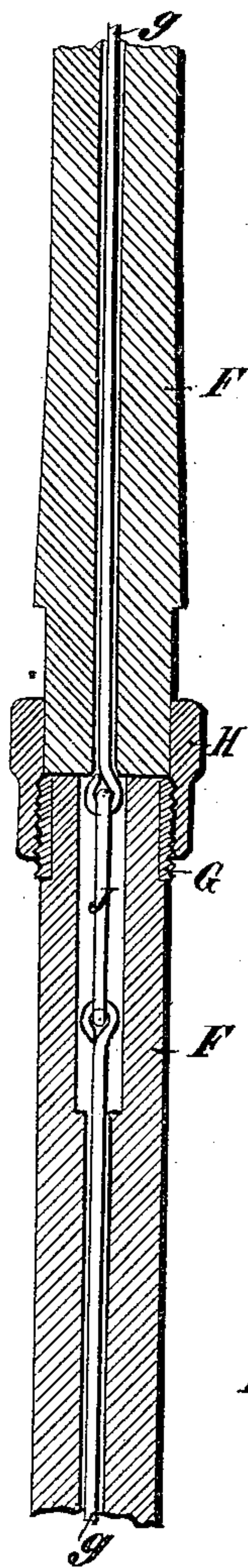


Fig. 13.

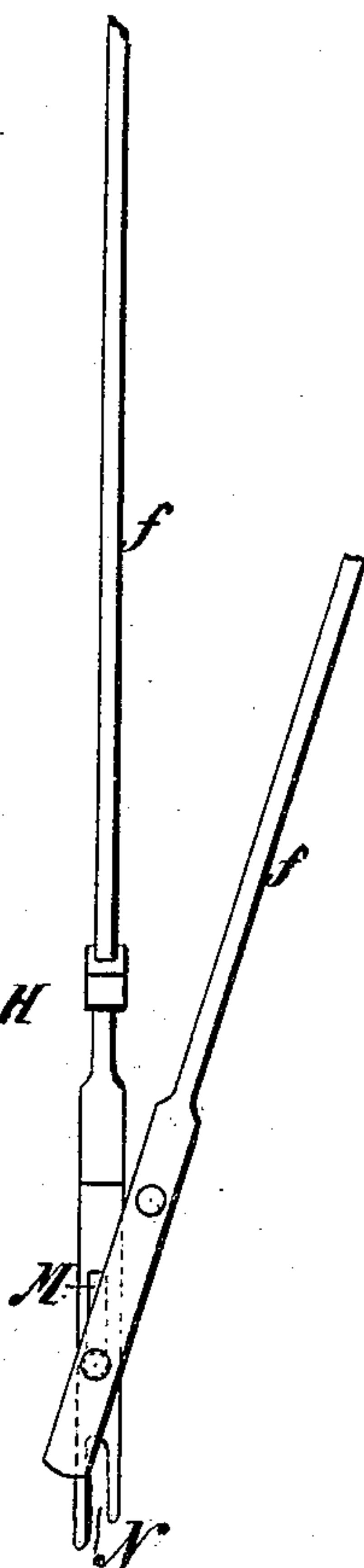


Fig. 14.

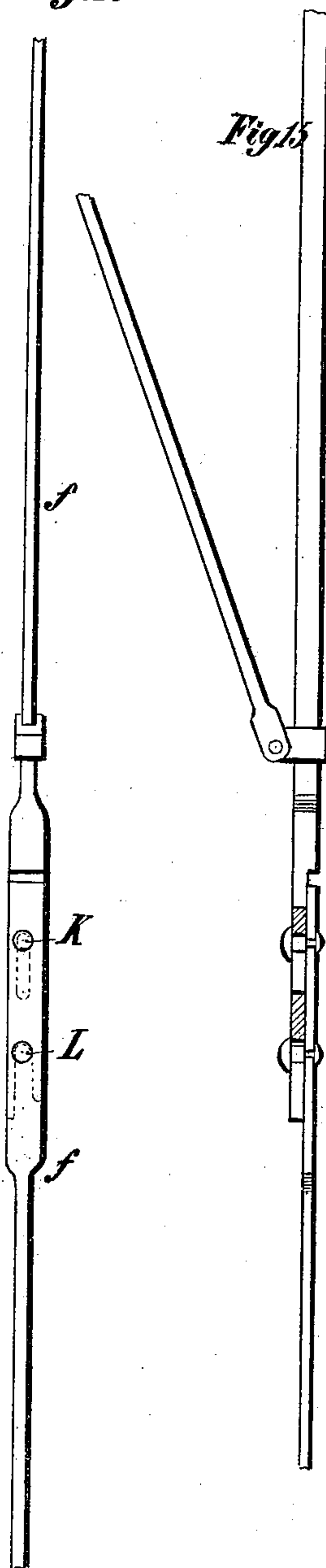
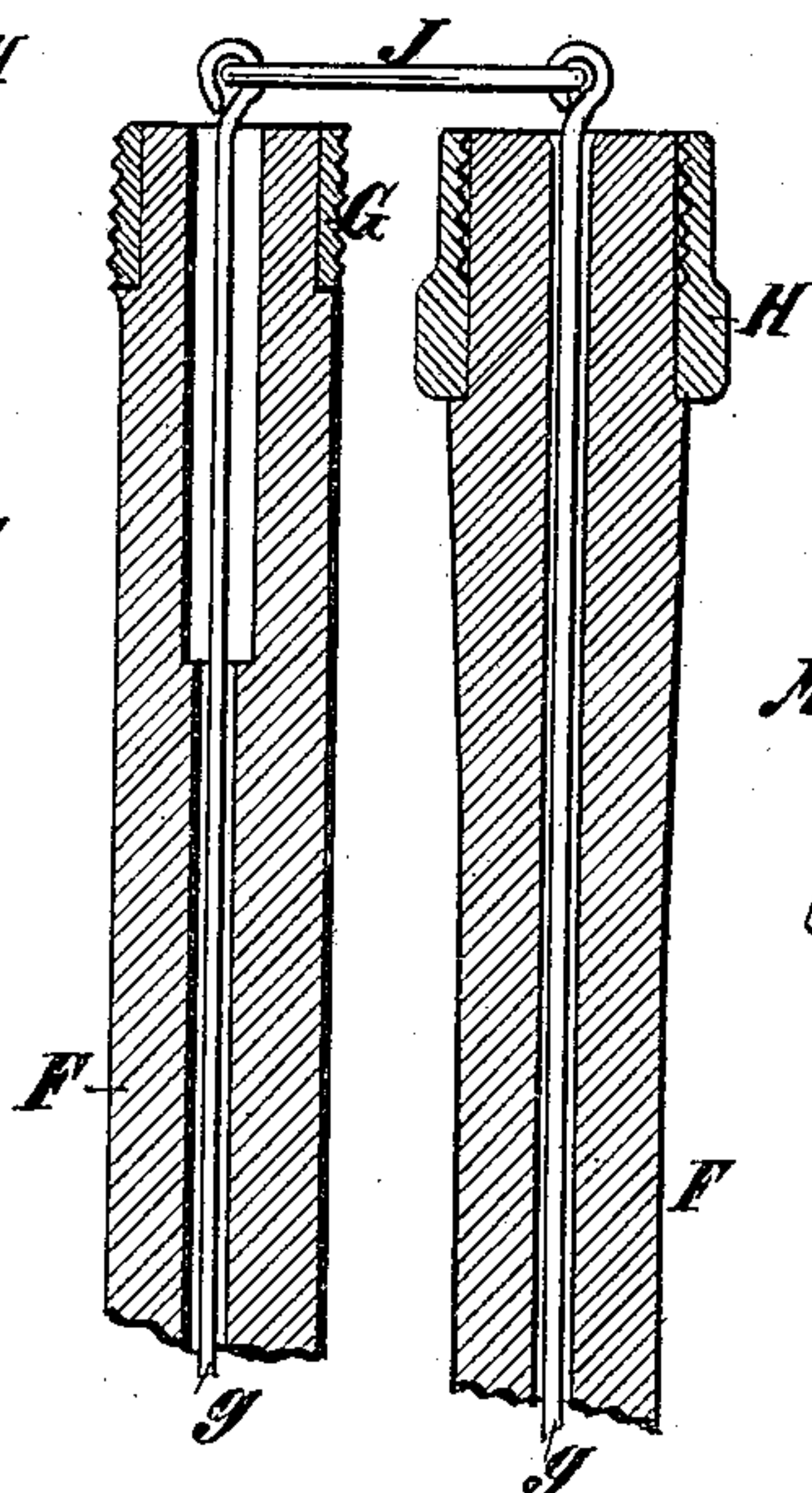


Fig. 12.



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UNITED STATES PATENT OFFICE.

PHILIPP MEYER, JR., OF MAGDEBURG, PRUSSIA, GERMANY.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 337,276, dated March 2, 1886.

Application filed June 15, 1885. Serial No. 168,668. (No model.) Patented in Germany October 29, 1884, No. 31,430.

To all whom it may concern:

Be it known that I, PHILIPP MEYER, Jr., a subject of the King of Prussia, residing at Magdeburg, in the Kingdom of Prussia, and German Empire, have invented certain new and useful Improvements in Umbrella-Frames; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The purpose of the present invention is to be able to open and shut both umbrellas and parasols with one hand only.

The accompanying drawings illustrate the construction by means of which the inventor endeavors to attain his aim.

In these drawings, Figure 1 represents the stick and handle of the umbrella, together with the mechanism applied to them in longitudinal section, the umbrella being shut. Fig. 2 gives the same view of the same parts, the umbrella being open, however, in this case. Fig. 3 shows in detail and in longitudinal section the umbrella-handle with a second mechanism differing from the one represented in Figs. 1 and 2. Fig. 4 illustrates in detail the spring, which serves both to shut the umbrella and to keep it open. Fig. 5 is a casing provided with slots and mounted on the umbrella-stick in the manner shown in Fig. 2. Figs. 6 and 6^a represent, respectively, in detail elevation and plan a sleeve or runner made to slide on the casing illustrated in Fig. 5. Fig. 7 is the plan view of Fig. 6. Figs. 8 and 8^a represent in detail the umbrella stretchers and ribs provided with my improved angle ends, the relative position of the parts slightly varying in the two figures. Fig. 9 shows the tip-cup that holds together the lower ends of the umbrella-ribs mentioned in Fig. 8. Fig. 10 shows a casing in detail, which serves as point to the umbrella and its cone to keep the ribs together. The umbrella can likewise be made convertible, and the arrangement by means of which the stick is folded up and brought into a straight position again is illustrated in Figs. 11 and 15. Fig. 11 shows

in longitudinal section the umbrella-stick in a state fit for use, therefore with the parts screwed together. Fig. 12 shows the stick folded up; Fig. 13, the ribs *f*, (folded up,) which will hereinafter be described; Fig. 14, the front view of the latter when stretched; Fig. 15, the side view of the latter when stretched.

The tip *o'* of the umbrella-handle *n* forms one arm of an angle, *o*, which is pivoted to said handle and normally held in position as a part thereof by the pressure of a spring, *r*. The umbrella stick or rod *A* is made hollow, to receive a lower rod, *s*, and an upper rod, *g*, which extends upward through the same, said rods being connected by a nut, *p*. The lower end of rod *s* is attached to the inner end of lever *o*, while the upper end of rod *g* is attached to the lower end of a sliding bar, *h*. This sliding bar is longitudinally slotted at *k*, to receive a stud, *u*, hereinafter referred to. A tubular casing, *d*, extends above the upper end of the umbrella-stick *A* and contains a spring, *v*, which tends to keep said bar *h* in its highest position. The said bar is recessed on both sides, forming a head, *h*³, and a shoulder, *h*⁴, with a long narrow neck between. Into the recess at the side of this neck between this head and shoulder extend lugs *b*, which are formed on the inner sides of stretchers *a*, pivoted to the upper end of runner *c*. Said runner is concentric with runner-casing *d* and movable thereon, and these parts *c d* have registering slots *e i*, through which the lugs *b* extend to reach the recessed part of bar *h*, as stated. When this bar is drawn down, the head *h*³ comes into contact with lugs *b*, and thus causes the stretchers *a* to turn upward on their pivots, spreading the ribs *f*, while at the same time the runner is drawn down by the engagement of said lugs with the material at the lower ends of the slots *e* in runner *c*. The ribs *f* and stretchers *a* are connected by running eyes, as usual, and the upper ends of said ribs are pivoted to a ring or collar on fixed casing *d*. A retracting-spring, *Z*, within the upper end of said casing, is attached to the upper ends of said ribs and tends to hold them folded. A cap, *B'*, having at its lower end a protective annular flange, incloses said spring and the upper end of said casing *d*, and constitutes the umbrella-tip.

From the foregoing description it will be apparent that when the lever *o* is bent by the pressure of the bearer's hand so as to draw on rod *s* and bar *h*, the head *h*³ of the latter will effect the opening of the umbrella. A sliding tip-cup, *x*, is employed, as usual, to cover the tips of the ribs when these last are folded.

When the rod *s* is released from the catch *q*, the springs *v* *Z* draw the shoulder *h*⁴ against the lugs *b*, and thereby draw in the stretchers and ribs and restore the runner to its original position.

The runner *c* is provided at its lower end with radial ribs or lugs *m*, between which the stretchers and ribs lie when the umbrella is folded, to prevent lateral movement. The stud *u* is attached to the inside of the runner *c* and extends through slot *e* of casing *d*. When the bar *h* moves upward, this stud and the runner are carried up with it, closing the umbrella.

The moment the umbrella is completely opened the nut *p* on the lower end of rod *g* comes under the nose *g*' of the spring-catch *q*, Figs. 1 and 2 near the lower end of the latter. When the umbrella is in this state, no further pressure is exercised on lever *o*, which is then forced back into its original position by spring *r*, Fig. 1. The extension piece or rod *s* likewise assumes the position represented in Fig. 1 by moving upward free through the nut *p*. The shutting of the umbrella is caused by pressing on the knob *t*, which brings the nut *p* from under the lower nose of spring-catch *q*, while the slide *h*, and with it the draw-rod *g*, are driven upward by the lower spiral spring, *v*, contained in casing *d*, till the nut *p* strikes against the upper nose or catch of spring *q*. The umbrella is closed thereby. The pressure on button *t* naturally ceases then, too, by which means the nut *p* comes from under the upper nose or catch of *q*, and a further upward motion of the draw-rod *g* is rendered possible. The nose or catch *w* of the draw-rod *g* carries the stud *y*, fastened to tip-cup *x*, Figs. 1 and 2, and the tip-cup itself upward and shoves the latter over the ends of the ribs *f* *f*. On opening the umbrella the tip-cup *x* is, on the contrary, first carried downward by hand, by which means the ends of the ribs are cleared of it. A spring, *Z*, fixed in the upper end of the casing *d*, presses the ribs *f* *f* continually against the cone *A*' of the point *B*, whereby they are made to lie close against the umbrella-stick.

A mechanism differing from the one just described, and intended for the automatic opening of the umbrella, is represented in Fig. 3. In it the nut *p* of the draw-rod *g* is replaced by a metal plate, *C*, and the lower nose of the spring-catch *q* engages, in order to keep the umbrella opened, with a recess of the metal plate *C*. The connecting-piece *s* moves in this construction in slit *D* of the

plate *C*. The lever *o* is formed, in this case, by the handle itself, onto the inner surface of which a steel bow, provided with a hinge, is applied. The spring *r* is in this case replaced by one attached to the bow.

It must be further remarked here that the slanting-piece *E*, Fig. 8, of the ribs *f* always fits onto the cone *A*' of the point *B*, so as to have a counter-rest in opening the umbrella.

The mechanism for folding up the stick of the umbrella and the ribs *f* consists in a screwing appliance, *G* and *H*, fixed to the ends of each half of the stick *F* and *F*. The stick when screwed to pieces and the draw-rod *g*, which in this case likewise consists of two parts connected by the center piece *F*, take up the position indicated in Fig. 12.

The folding up of the umbrella-stick necessitates the folding up of the ribs. For this reason the latter consist likewise of two connected pieces, and the lower half moves by means of studs *K* and *L* in the slots *M* and *N* of the upper half. In order to fold up the ribs the lower halves of them are drawn so far down till the stud *K* reaches the lowest position in the slot *M*, by which means the stud *L* is at the same time clear of the slot *N*, and the folding together of the ribs is thus rendered possible.

Similar letters refer to similar parts throughout the several views.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The pivoted stretchers *a*, provided with lugs *b*, in combination with runner *c*, slotted at *e*, to receive said lugs, and having said stretchers pivoted thereto, a sliding bar, *h*, which engages with said lugs to move them up or down, a lever in the umbrella-handle, and connections between said lever and said sliding bar, for the purpose set forth.

2. The pivoted lever *o* and rods *s* *g*, which connect it with the umbrella opening and closing devices, in combination with the nut *p*, which connects said rods to one another, and the spring-catch *q*, having a nose near each end, substantially as set forth.

3. The runner *c*, provided with slots *e* and lugs *m*, in combination with stretchers *a*, which are pivoted to said runner and provided with lugs *b*, the said lugs *b* on the folding of the umbrella entering said slots, and the said stretchers lying between lugs *m*, substantially as and for the purpose set forth.

4. The fixed casing *d*, provided with slots *i*, in combination with the runner *c*, provided with registering slots *e*, in combination with stretchers *a*, pivoted to said runner, and having lugs *b*, which enter said slots *e* and *i*, the sliding bar *h*, recessed to receive and engage with said lugs, and a lever and connecting-rods for drawing on said bar to open the umbrella, substantially as set forth.

5. The sliding bar *h*, casing *d*, runner *c*, and replacing-springs *Z* *v*, in combination with the

stretchers and ribs operated by said bar, and the lever and connecting-rods for drawing on the latter, substantially as set forth.

5 6. The tip-cup and its inwardly-extending stud *y*, in combination with a rod having a shoulder, *w*, to engage therewith, a spring for forcing said rod upward, a catch which prevents the upward motion of said rod till released by hand, and the ribs which have their

tips protected by said cup when the umbrella is folded, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIPP MEYER, JR.

Witnesses:

WILHELM PATAKY,
B. ROI.