No. 828,605. PATENTED AUG. 14, 1906.

F. E. HYATT.

FOLDING UMBRELLA.

APPLICATION FILED AUG. 2, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

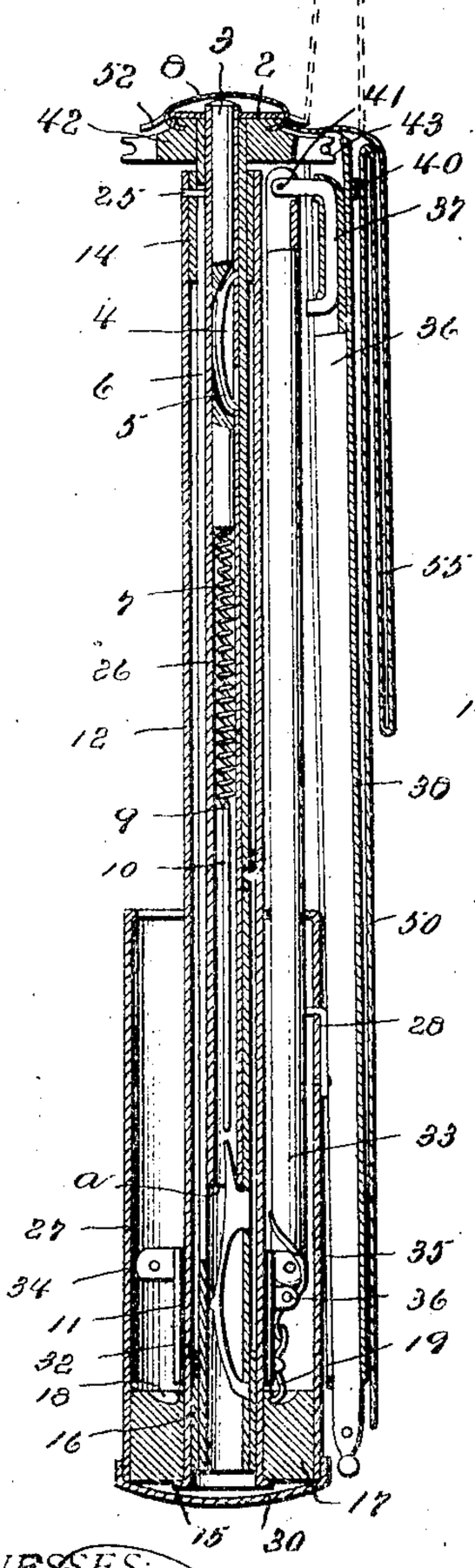


Fig. 2.

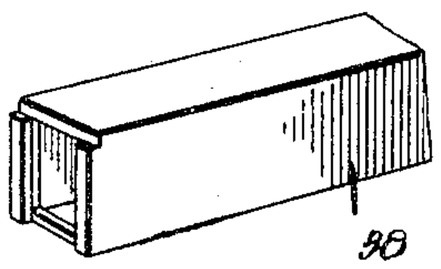
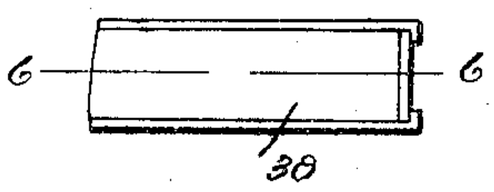


Fig. 5.



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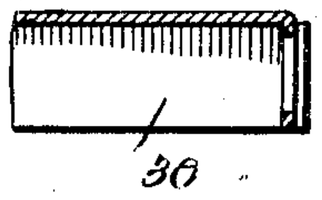


Fig. 7.

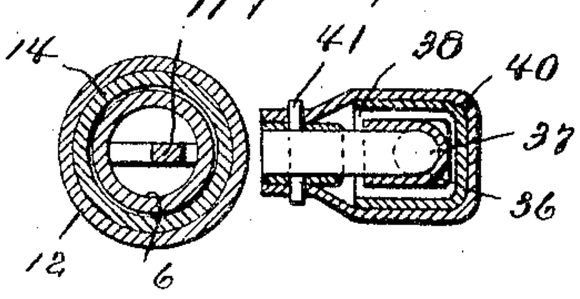


Fig. 8.

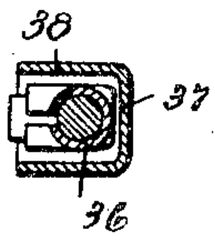
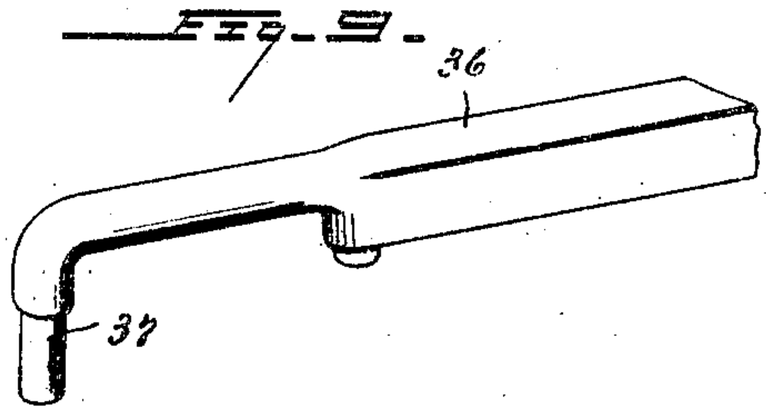


Fig. 9.



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No. 828,605 PATENTED AUG. 14, 1906.

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2 SHEETS—SHEET 2.

Fig. 1.

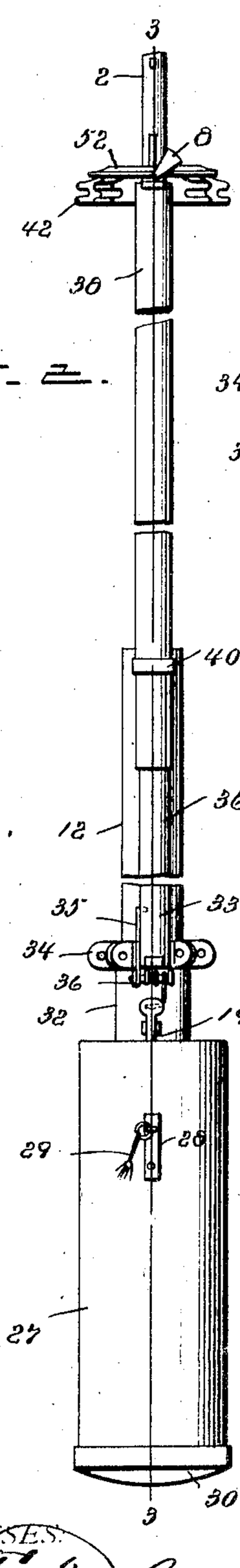


Fig. 2.

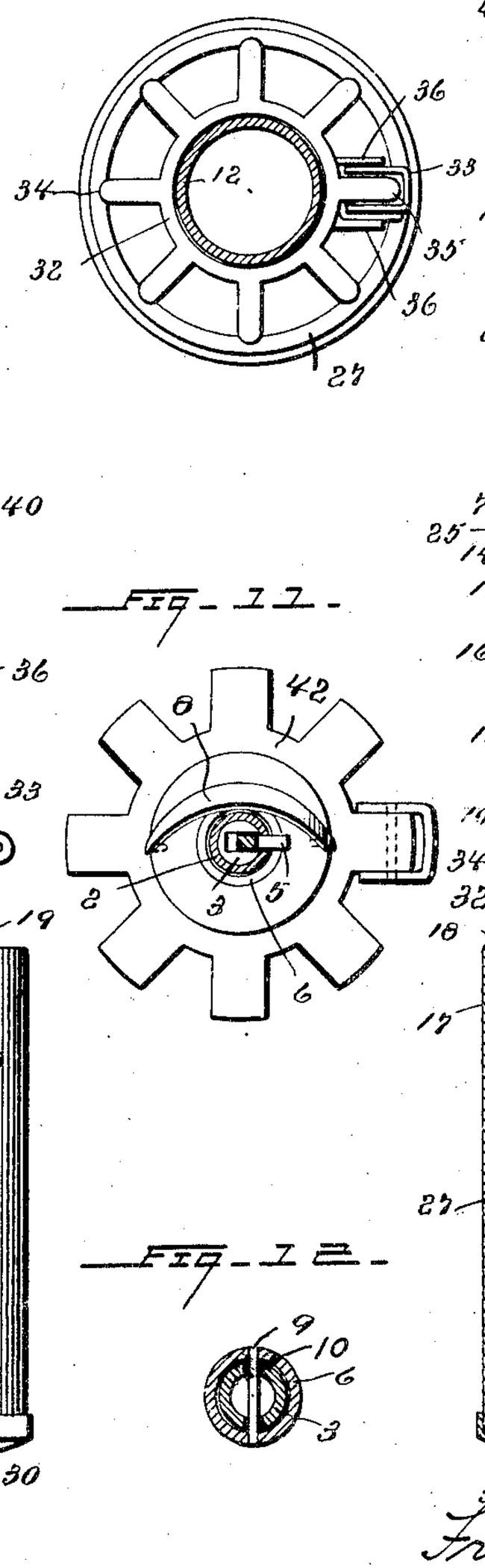
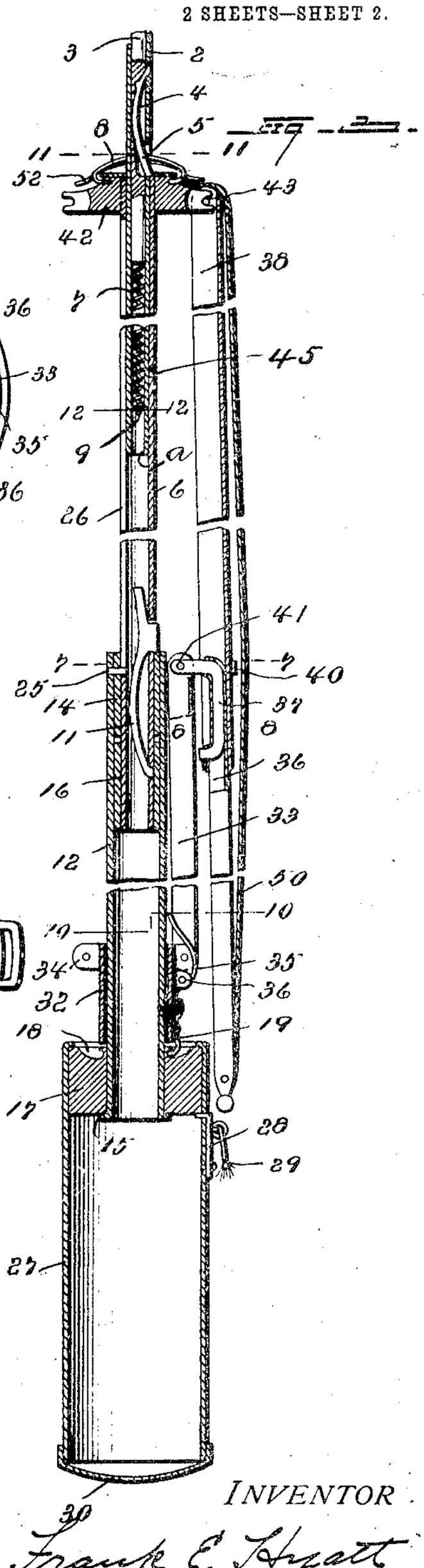


Fig. 10.

Fig. 11.

Fig. 12.



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FRANK E. HYATT, OF JOLIET, ILLINOIS.

FOLDING UMBRELLA.

No. 828,605. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed August 2, 1905. Serial No. 272,334.

To all whom it may concern:

Be it known that I, FRANK E. HYATT, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented new and useful Improvements in Folding Umbrellas, of which the following is a specification.

This invention is a folding umbrella involving telescopic features whereby the parts can be collapsed so as to occupy very little space, small enough in fact to be conveniently carried in the pocket. The construction and advantages thereof will appear from the following description, in connection with the accompanying drawings, in which—

Figure 1 is a longitudinal section of the umbrella collapsed. Fig. 2 is an elevation of the umbrella extended, all the ribs except one being removed for the sake of clearness. Fig. 3 is a longitudinal section on the line 3 3 of Fig. 2. Fig. 4 is a detail in perspective of the lower end of the upper rib-section. Fig. 5 is an inside or inverted plan view of the end of the rib-section. Fig. 6 is a section on the line 6 6 of Fig. 5. Fig. 7 is a cross-section on the line 7 7 of Fig. 3. Fig. 8 is a cross-section on the line 8 8 of Fig. 3. Fig. 9 is a perspective view showing the fastening for the brace. Fig. 10 is a cross-section on the line 10 10 of Fig. 3. Fig. 11 is a cross-section on the line 11 11 of Fig. 3. Fig. 12 is a cross-section on the line 12 12 of Fig. 3.

The umbrella-frame has telescoping parts, the main ones being as follows: The tip 2, the upper tube 6, and the lower tube 12 of the stick, the handle-tube 27, and sectional channel-iron ribs to be hereinafter described. The tube 2 at the tip of the umbrella is reinforced by a solid steel rod 3, which has a slot 4, forming a seat for a spring-catch 5, which holds the tip extended. By pushing in the spring the tube 2 can be pushed down into the upper tube 6 of the stick. In so doing the coiled spring 7, located in the lower end of the tube 2, is compressed. The tube is held in this position by a swiveling catch 8. The tube 6 has a cross-pin 9, which extends through slots 10 in the tube 2. This construction allows the tube 2 to slide in and out, the extent or movement, however, being limited by the length of the slot. The cross-pin also serves as a support for the spring. When the catch 8 is moved to one side, the pressure of the spring 7 forces out the tip and the spring 5, catching over the end of the tube 6, locks the tip in position.

Located at the lower end of the tube-section 6 is a spring 11, which has at its upper end a projection engaged by the inner end *a* of the tube 2 when said tube is pushed in. Said end when forced in acts as a wedge to draw in the catch 11 and withdraw same from engagement with the upper end of the lower tube 12. This tube 12 telescopes over the tube 6, which has thereon at its lower end a collar 16. The tube 12 has within the same at its upper end a collar 14, and these collars limit the outward movement of the tubes, so that they cannot be pulled apart. In assembling the parts the tube 6 is inserted in the lower end of the tube 12. Instead of the collars shown the same result may be effected by a pin 25, projecting from the tube 12 into a longitudinal slot 26 in the tube 6. At its lower end the tube 12 is flanged, as at 15, and may be brazed or soldered into an annular block 17, which has a recess 18 receiving a spring-actuated clip 19.

The handle 27 is a hollow tube which is slidable in and out on the block 17 and when in extended position is held by a spring-catch 28, the head of which engages under the block and which may be released by pulling the tassel 29, which lifts the head of the spring out of the tube and allows the handle to slide up on the block. A cap 30 completes the handle.

The sleeve or runner 32 slides upon the tube 12 and receives the braces 33, which are pivoted to ears 34 on the runner. The spring 35 is mounted upon a bracket 36 on the runner and is bent in proper shape to bear outwardly at the upper end against the inner side of the brace 33 and to engage the clip 19 at the lower end, so that when the umbrella is closed the lower ends of the clips 19 engage in the undercut part of the recess 18 and so hold the umbrella closed. When the clips 19 are released, the springs 35, which bear outwardly on the braces 33, will tend to force said braces outwardly and at the same time raise the runner, thus providing an automatic arrangement for opening the umbrella.

The joints between the braces and the ribs comprise a bent rod or piece 37, which is inserted at one end into the rib-section 36. The said rib-section is formed of channel metal, the flanges of which are shaped in to completely envelop the rod and so hold the same firmly, preventing any sidewise movement or turn thereof. The brace is pivoted to the upper end of the rod at 41. This rod

also acts as a stop to prevent the rib-section 36 from pulling out of the upper rib-section 38, into which it telescopes. The clip 40 extends around the rib-sections at the joint and is fastened at its ends by the pivot-pin 41 and acts as a guide for the respective movements of the rib-sections and prevents the separation thereof.

The rib-section 36 works through the open lower end (shown in Figs. 4, 5, and 6) of the rib-section 38, sliding in and out thereof to contract or extend the ribs. The sections 38 are fastened to pivot-lugs on the upper collar 42 by means of the usual wire 43. The construction is such that when the umbrella is opened the braces support the ribs, the tension being particularly against the pieces 37, to which the braces are pivoted, and when the umbrella is up the head of the catch 19 enters the hole 45 in the rod 6, and so holds the runner that it cannot move either up or down. To collapse the umbrella, the catch 28 is pulled out and the catch 5 pushed in. Then by inward thrust on both ends the handle telescopes over the block 17 and the braces 33, and the tube 2 slides down in the tube 6 and releases the catch 11, which allows the tube 6 to slide down into the tube 12, and at the same time the rib-sections 36 and 38 telescope, the former into the latter. When the handle telescopes over the braces, it acts as a retainer therefor and keeps them closely confined. The umbrella-cloth is indicated at 50, fastened to the end of the rib-sections 36 and to the collar 42 at the top, where it is preferably covered by a metal ring 52. When the umbrella is closed, the cover is doubled upon itself, as indicated in dotted line 53 in Fig. 1, and this part is stripped back over the end of the frame, as shown at 55 in said figure. It may then be conveniently carried in the pocket or bag or hung to the belt or conveniently stored in any small place.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an umbrella, in combination, a stick formed of upper and lower telescoping tubular sections having a spring-catch therein, a tip slidable into and out of the upper section and engageable with said catch to release the same when pushed in, and catches engageable between the tip and upper section to hold the tip in extended or retracted position.

2. In an umbrella, in combination, a stick formed of upper and lower telescoping tubular sections with a catch therebetween to hold them in extended position, a tip slidable in and out of the upper section and having a spring thereunder tending to force the tip out, and catches engageable with the said section to hold the tip in or out, and a tubular handle which telescopes over the lower section.

3. An umbrella-rib comprising two sections of channel metal which telescope with each other, a joint-piece fastened within the end of one section and projecting out of the channel of the other section, and a clip secured at its ends to said piece and extending around outside the sections, at the joint.

4. A folding umbrella having a stick, a runner thereon, rib-braces connected to the runner, and a tubular handle into which the inner ends of the stick and braces telescope when folded.

5. An umbrella having a stick, a block at the inner end thereof having an undercut recess, a runner on the stick and rib-braces pivoted thereto, a catch engageable in the recess to hold the umbrella closed, and a spring mounted on the runner and bearing against a rib-brace and tending to force the same out and open the umbrella and also having a projecting part engageable with the catch to hold the same in engagement in the recess.

6. An umbrella having a stick formed of upper and lower tubular telescoping sections, a tip slidable in and out of the upper section, and having longitudinal slots, a pin extending across the upper section and through said slots, a coiled spring within the tip and supported at one end on the pin, and tending to extend the tip, and catches engageable between the tip and upper section, to hold the tip in or out.

7. A folding-umbrella frame comprising a stick formed of telescoping tubular sections having a runner thereon, a tubular handle of enlarged diameter into which the inner ends of the stick-sections telescope, telescoping rib-sections pivoted to the upper stick-sections, and braces connected to the runner and the rib-sections and slidable beside the stick into the tubular handle.

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

FRANK E. HYATT.

Witnesses:

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H. G. BATCHELOR.