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July 13, 1926. 1,592,723

J. W. CHISM

TELESCOPING UMBRELLA

Filed Feb. 2, 1923 4 Sheets-Sheet 1

FIG. 1

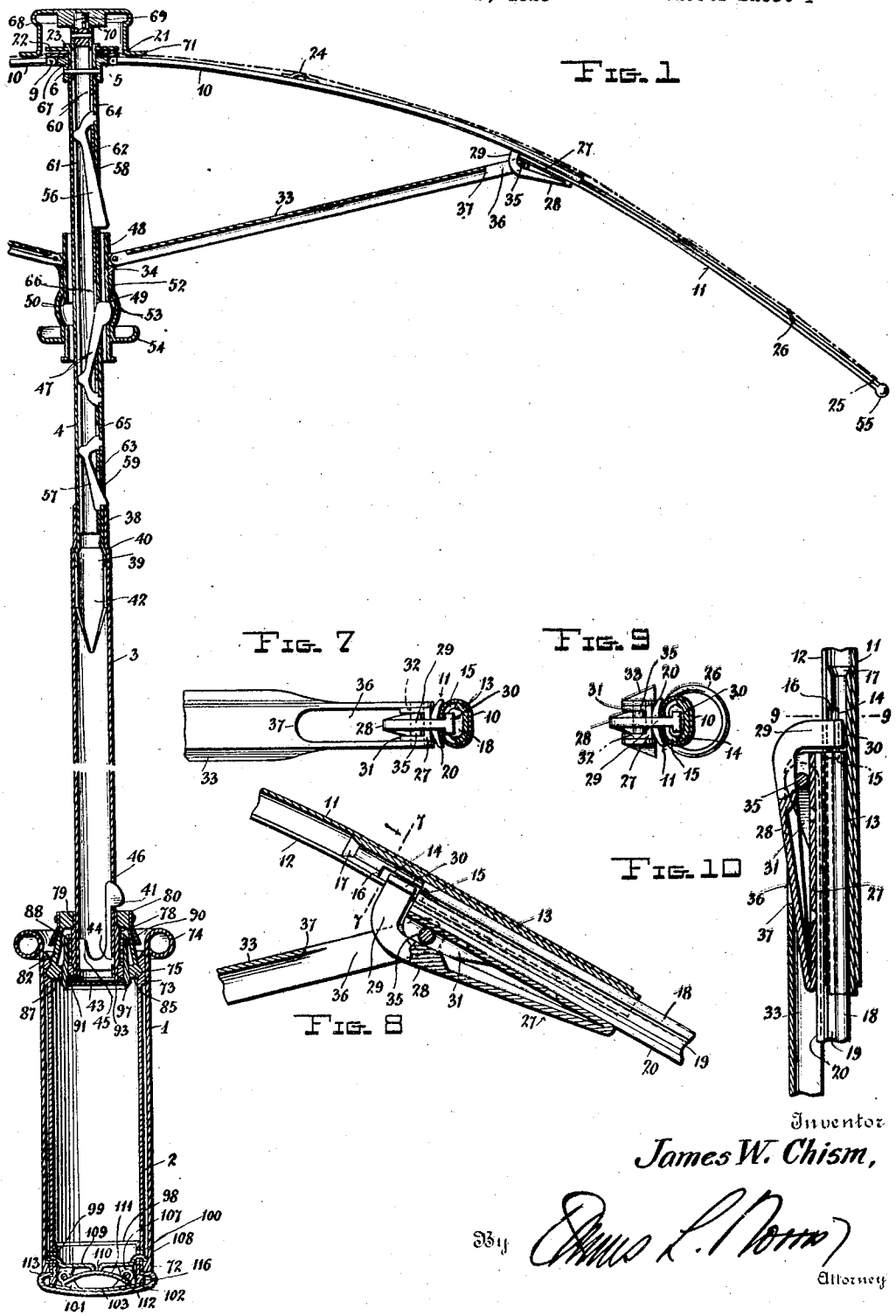

FIG. 7



FIG. 9



FIG. 8



FIG. 10



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FIG. 2

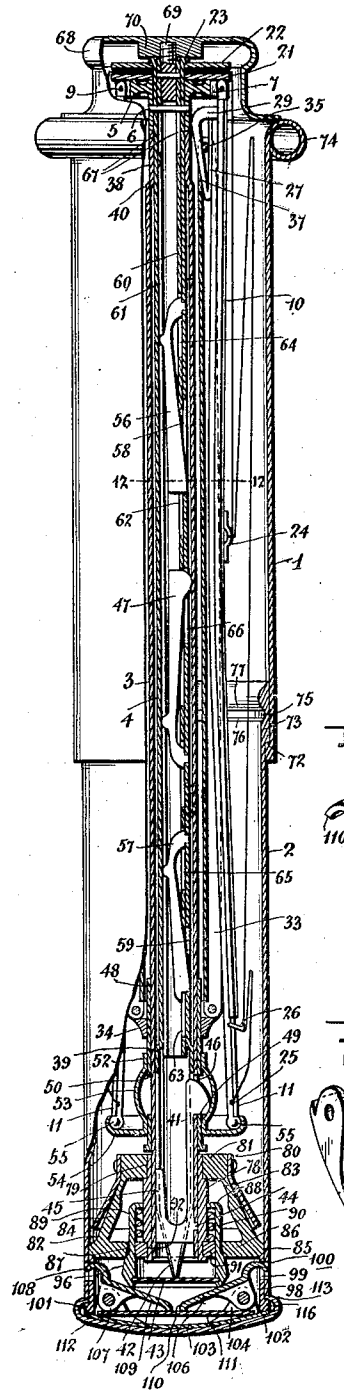


FIG. 3

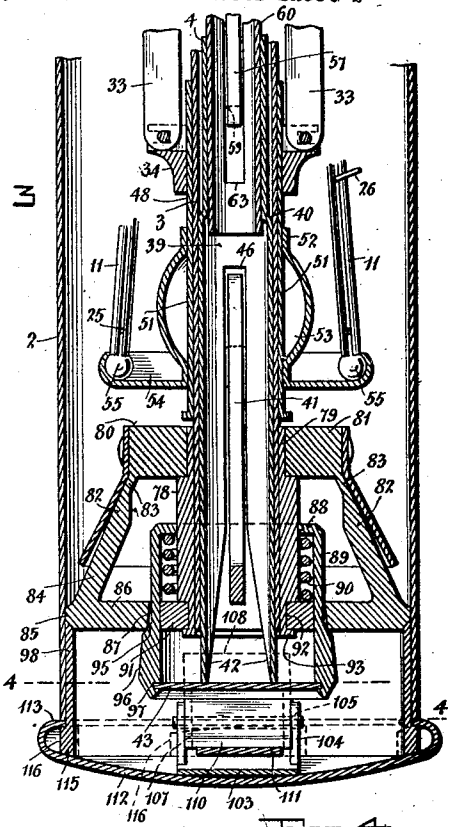


FIG. 5

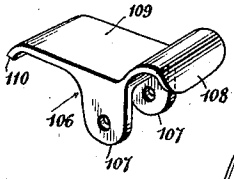


FIG. 6

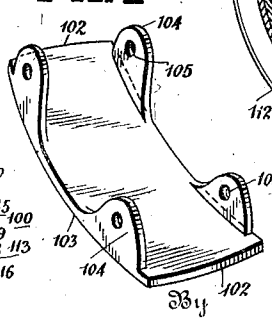
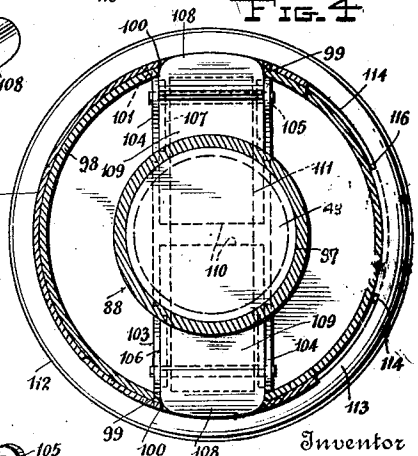


FIG. 4



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TELESCOPING UMBRELLA

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Fig. 11

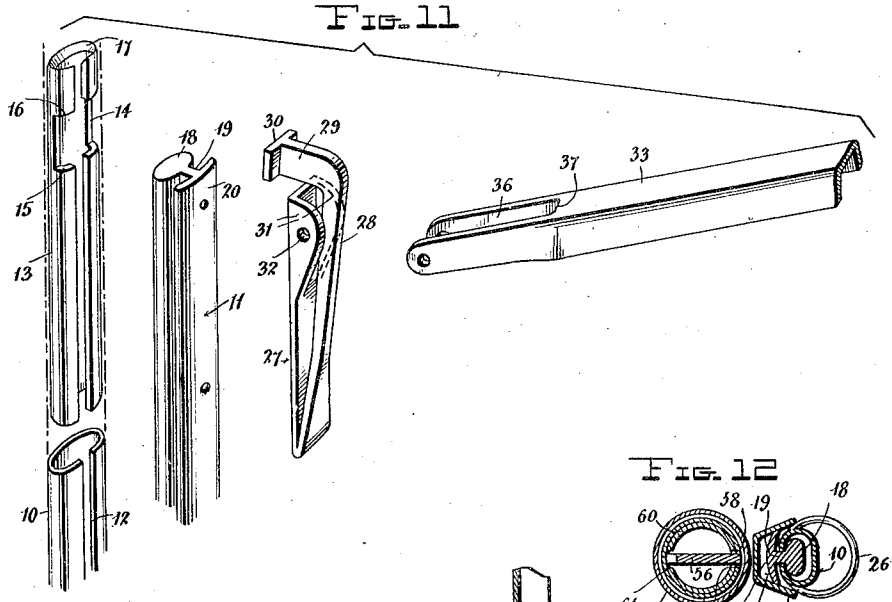



Fig. 12

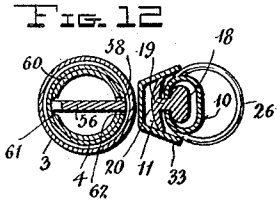



Fig. 13

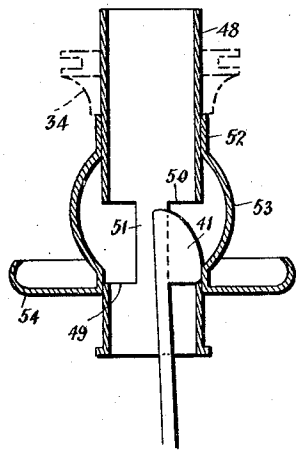
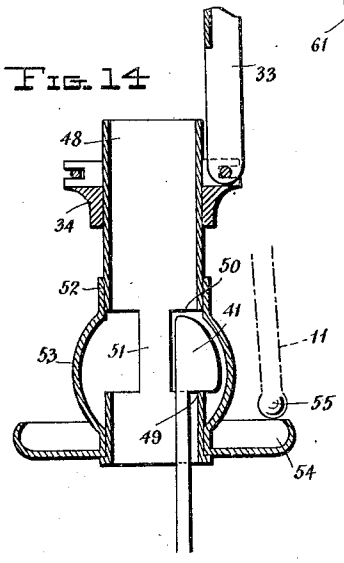



Fig. 14

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TELESCOPING UMBRELLA

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Fig. 15

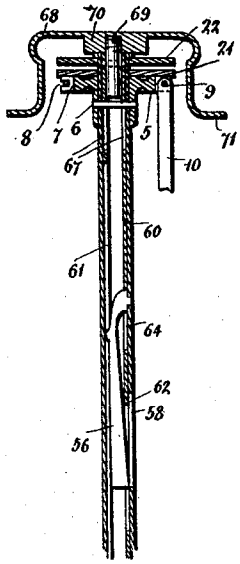
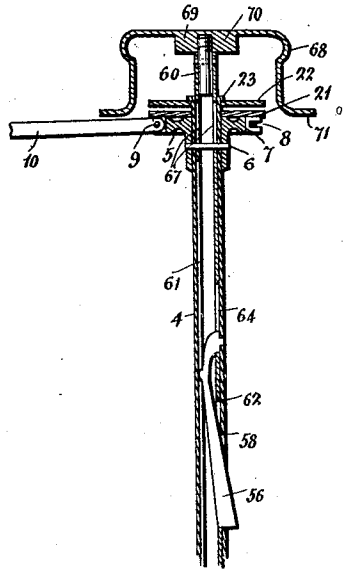



Fig. 16



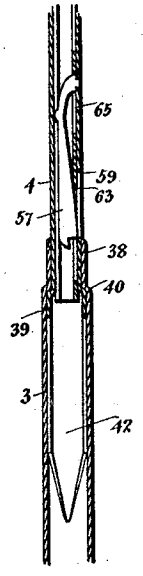
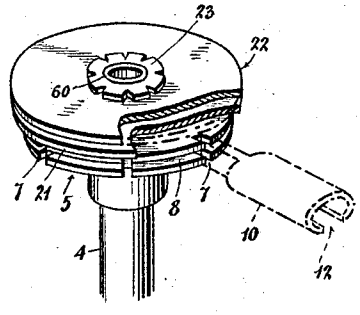
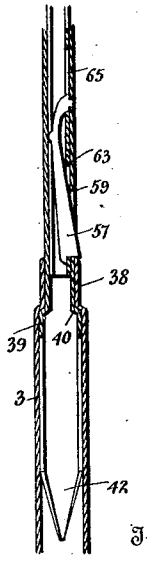




Fig. 17

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Patented July 13, 1926. 1,592,723

# UNITED STATES PATENT OFFICE.

JAMES W. CHISM, OF SCHENECTADY, NEW YORK.

## TELESCOPING UMBRELLA.

Application filed February 2, 1923. Serial No. 616,558.

This invention relates to telescoping umbrellas and proposes the construction of an umbrella in which the fabric cover is stretched over and attached to telescopic ribs supported by a telescopic staff, the whole being contained, when closed, within a handle which may or may not be telescopic according to modified forms of the invention.

One of the objects of the invention is the provision of an umbrella that may be carried in an ordinary novelty bag, that is compact and of pleasing appearance when closed, that may be easily and quickly opened and that is thoroughly reliable both in operation and service when opened.

Another object of the invention is the provision of a telescopic umbrella, contained when closed within a telescopic handle, the latter being extensible to its maximum capacity, through the closing movement of the umbrella and functioning as a casing therefor, and automatically telescoping to its minimum length, to serve merely as a handle when the umbrella is open.

Another object of the invention is the construction of an umbrella having collapsible sectional ribs and a telescopic sectional staff, said ribs and staff being arranged to be brought into parallelism by a closing movement of the umbrella and simultaneously shortened by pressure in a direction axially of the staff, causing the sections of said staff and ribs to slide relatively over one another into a casing secured to the lower end of the staff, further pressure in an axial direction causing the lower end of the staff to co-act with the end of said casing extending the sections thereof to increase the capacity of said casing sufficiently to embrace the umbrella.

Still another object of the invention is the provision of novel means for automatically locking the ribs against collapse when fully extended and for permitting them to telescope when a predetermined stage of the closing movement of the umbrella has been reached.

A further object of the invention is the provision of a telescopic staff with relatively fixed rib attaching ferrule and a slidable rib engaging runner mounted thereupon, and means associated with said staff for retaining the runner in the open or closed position of the umbrella, said means being selectively rendered operative, or released, by a part movable with and relatively to said sliding runner through pressure applied axially to said part in the act of opening or closing the umbrella.

Another object of the invention is the provision of a hollow staff provided with resilient latching members secured therein and normally projecting therefrom, said resilient latching members being formed with portions contacting the opposite wall from that to which said stop members are secured, and a reciprocable key for depressing certain of said latching members provided with a longitudinal slot embracing said contacting portions and affording them lateral support throughout the range of movement of said key.

A still further object of the invention resides in the provision of suitable locks for holding or releasing the staff when in its outermost position relative to the handle, and for locking the sections of the handle casing in collapsed position, said locking means functioning automatically when the umbrella is spread or closed.

With the above and other objects in view, my invention consists in the improved telescoping umbrella illustrated in the accompanying drawings, described in the following specification, and particularly claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which my invention relates.

In the drawings accompanying and forming a part of this specification, and wherein the preferred embodiment of my invention is illustrated:—

Figure 1 is a longitudinal section of the umbrella showing the parts in the position assumed when the umbrella is opened.

Figure 2 is a side elevation partly in section showing the umbrella closed.

Figure 3 is a sectional view of the lower portion of Figure 2 on an enlarged scale.

Figure 4 is a cross section taken along the line 4—4 of Figure 3.

Figure 5 is a perspective view of one of the case lock catches.

Figure 6 is a perspective view of the case lock catch frame.

Figure 7 is a section of the rib lock taken along the line 7—7 of Figure 8.

Figure 8 is a side elevation of the rib lock in locked position.

Figure 9 is a section of the rib lock taken along the line 9—9 of Figure 10.

Figure 10 is a side elevation of the rib lock in released position.

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Figure 11 is an exploded perspective view of the rib lock and its associated parts.

Figure 12 is a sectional view of the staff and rib taken along the line 12—12 of Figure 2.

Figure 13 is a section of the sliding runner and rib retainer showing the spring depressed.

Figure 14 is a similar view to Figure 13 showing the spring extended.

Figure 15 is a longitudinal sectional view through the upper staff section showing the stop members depressed.

Figure 16 is a similar view showing the key out of operative engagement with the stop members 56 and 57.

Figure 17 is a perspective view of the rib attaching ferrule.

Referring now in detail to the several figures, the numerals 1 and 2 represent respectively the telescopic sections of the case, forming the handle of the umbrella, 3 and 4 designating the telescoping sections of the staff. These parts will be described in greater detail as the specification develops. To the upper end of the staff section 4 the rib attaching ferrule 5 is secured by means of the rivet 6 which passes through aligned apertures in said ferrule and staff section. This ferrule is of the construction usually found in umbrellas, comprising a flange furnished with a plurality of radial notches 7 equal in number to the number of ribs of the umbrella and a circumferential groove 8 intersecting the ends of said notches. The ends of the ribs of the umbrella are arranged in the radial slots and secured in place by a wire 9 passing through apertures in said ends and seated in the circumferential groove.

Each of the ribs consists of a pair of cooperating and telescoping sections 10 and 11. The shape of the section 10 is best shown in Figure 11, it being formed of an ovally bent metallic strip provided on its lower side with a longitudinal slot 12. A reinforcing piece 13 of similar shape to that of the rib section 10 but sufficiently small to enter the latter, is inserted in the outer end thereof, the under side of said reinforcing piece being formed with a cut-away portion 14 having end walls 15 and 16. The upper end of the reinforcing piece 13 is internally beveled as shown at 17 in Figure 10 to ensure smoothness of operation.

The rib section 11 takes the form of a rod having the shape shown in Figure 11, comprising a bead 18 of a shape and size to smoothly slide within the bore of the rib section 10, having a web 19 slidable longitudinally in the slot 12 in the upper rib section, and arranged with a curved flange 20 adapted to slidably engage the outer surface of said rib section adjacent the sides of the slot 12. These parts are shown in extended position in Figure 1, and when the umbrella is closed so as to bring the ribs thereof into substantial parallelism to the staff, the rib section 11 is arranged to slide partly within and partly without the rib section 10 until the upper end thereof assumes a position adjacent the rib attaching ferrule 5, the effective length of the umbrella rib thus being reduced substantially one-half.

A flexible fabric cover, indicated in Fig. 1 by dot and dash lines, and in Fig. 2 in folded condition as indicated by the reference character 118, of usual construction is adapted to be supported by the ribs of the umbrella and extends over the ferrule 5, a leather washer 21 intervening between said ferrule and the fabric cover for the protection of the latter. A metal washer 22 resides upon the fabric cover above the washer 21 and the upper end of the staff section 4 extends through said washer a slight distance, the extending end being longitudinally split at a number of places forming lugs 23 which are turned down over the washer 22 holding the latter and the fabric cover clamped against the rib attaching ferrule 5. The rib section 10 is provided with a loop 24 to which the fabric cover is secured and the rib section 11 is formed with an aperture 25 and a ring 26 to which also the cover is attached. The ring 26 is split, the ends thereof resting in the grooves formed on the opposite sides of the web 19 by the bead 18 and flange 20 so that the ring is adapted to slide outwardly within said groove as it abuts against the lower end of the rib section 10 when said rib sections are telescoped. When the umbrella is opened, as shown in Figure 1, the cover exerts a tension upon the ribs which would cause the sections thereof to telescope in the absence of appropriate locking means for securing them in extended position. One form of locking means which may be employed for this purpose is shown in detail in Figures 7, 8, 9, 10 and 11 and consists of a clip 27 which is secured by welding or otherwise, at the upper end of the rib section 11, to the under face thereof. This clip is formed with an inclined resilient portion 28 which bends inwardly toward the rib section 10 as shown at 29 and is formed on the end of the bent portion with a head 30, adapted to play within the cut-away portion 14 of the reinforcing piece 13. The sides of the clip 27 are turned up to form flanges 31 on opposite sides thereof, said flanges being apertured as at 32. A brace 33 is furnished for each rib, one end of which is hingedly secured to a runner 34, the other end being apertured and pivotally secured to the clip 27 by means of a pin 35 passing through the aligned apertures in said end and in the flanges 31. The brace is formed with a slot 36 having an end wall 37, said slot being of such length that when the brace

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is folded into parallelism with the rib section 11, in the act of closing the umbrella, the end wall 37 presses against the resilient portion 28, as clearly shown in Figure 10, causing the head 30 to move inwardly of the reinforcing piece 13 so as to clear the end walls 15 and 16 of the latter and to be freely slidable within the bore of the reinforcing piece and the rib section 10. As the clip 27 is secured to the rib section 11, depression of the head 30 in the manner described permits the rib section 11 to slide upwardly along the rib section 10 toward the rib attaching ferrule 5.

When the brace 33 is out of parallelism with the rib section 11 in the position shown in Figure 1, the end wall 37 is out of contact with the resilient portion 28 and the head 30 normally lies in the plane of the end walls 15 and 16 of the cut-away portion 14 preventing material endwise movement of the rib section 11 relative to the rib section 10. The head 30 is, however, made of substantially smaller dimensions than the cut-away portion 14 to allow for distortion of the parts of the umbrella and for structural imperfections in its manufacture and assembly. When the umbrella is closed the clip 27 lies adjacent the rib attaching ferrule 5, the latter being made sufficiently large to permit the ribs to be folded over said clips at the ferrule.

The staff sections 3 and 4 are hollow, the lower staff section being contracted in diameter at its upper end as shown at 38 in Figure 1, through which contracted portion passes the upper staff section 4, the latter being provided at its lower end with an expanded portion 39 fitting the bore of that part of the lower staff section of larger diameter. That part of the staff section 4 which lies within the contracted portion 38 of the staff section 3 is also slightly expanded, making a tight fit within said contracted portion. This construction provides a rigid joint between the two staff sections when extended and the abutting shoulders 40 formed between the parts of different diameters prevents the staff sections from being pulled apart in the opening movement of the umbrella. The expanded portion 39 of the upper staff section 4 is bifurcated for a portion of its length for the purpose of straddling the spring catch 41 which is located within the lower end of the staff section 3 and the function of which will be presently explained. The depending side portions 42, formed by this bifurcation are adapted to engage the plate 43, which forms part of the staff lock in order to release the latter. The depending side portions are shaped into points so that should the upper and lower staff sections be relatively slightly twisted said depending side portions will not catch upon the spring catch 41 but will slide by the same, restoring said staff sections to their original relative position.

The spring catch 41 is secured within the staff section 3 by means of a projection 44 passing through an aperture in the wall of said staff section. Said spring catch has a back support 45 resting against the opposite wall of the staff section and the head of said spring catch normally projects from a slot 46 preferably in longitudinal alignment with the projection 44. This spring catch is for the purpose of latching the runner 34 when the umbrella is closed. A spring catch 47, which is slightly different in shape, but similar to the spring catch 41 in its structural features is secured within the staff section 4, the head of said spring catch projecting through a slot in said staff section which is in alignment with the slot 46. This spring catch latches the runner in the open position of the umbrella.

The runner is secured to a quill 48 which is of sufficient length to have a substantial bearing surface upon the staff and of sufficient width to permit it to slide freely upon the larger portion of the staff section 3. Said quill is formed, intermediate its ends with a pair of oppositely located slots 49 and 50, said slots extending circumferentially through a wide angle, leaving between them a rib of metal 51 wide enough to afford proper support for the two ends of the quill 48. Slidably mounted upon said quill beneath the runner 34 is a sleeve 52 having an expanded central portion 53 which is adapted to bridge the slots 49 and 50 without depressing whichever of the spring catch 41 or 47 may be projecting therethrough. Above and below said expanded portion the sleeve is contracted in such a manner that when either of the contracted portions is moved across the zone of the slots 49 and 50, whichever stop member is projecting through said slots will be depressed flush with the surface of the staff. Said sleeve, then, is for the purpose of releasing the runner 34 from either its upper or lower latched positions. Said sleeve is formed with a transversely extending flange 54 turned up at the edge to provide a rib retainer for surrounding the balls 55 at the ends of the ribs, retaining the latter compactly together when the umbrella is closed.

A pair of spring stops 56 and 57 are secured within the upper staff section 4 in a manner similar to that of the spring catches previously described, the former of said spring catches projecting through a slot 58 in the wall of said upper staff section and forming a shoulder against which the upper end of the quill 48 is adapted to abut, thus affording a stop for limiting the upward movement of the runner 34 beyond its nor-

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mally open latched position. The spring stop 57 projects through a slot 59, adjacent the lower end of the upper staff section and functions to latch the two staff sections in their extended position. The object of making the stop 56 resilient instead of in the form of a fixed projection is to permit its withdrawal within the upper staff section, to permit the latter to slide within the lower staff section. It is essential also in closing the umbrella that the spring stop 57 which holds the staff sections against collapse be withdrawn. For simultaneously effecting the depression of both these spring stops I have provided releasing means which in the present instance comprises a tubular key 60 which is slotted longitudinally along its back portion as shown at 61 for the purpose of affording lateral support to the back ends of the spring stops 47, 56 and 57 which rest against the rear wall of the upper staff section. The side of said key opposite said longitudinal slot is formed with a pair of slots 62 and 63 the walls of which are adapted when the key is depressed axially of the upper staff section, to engage the sloping edges of the spring stops 56, 57 depressing said spring stops below the surface of said staff section. The key 60 is also provided with slots 64 and 65 which allow said key to pass the bases of support of said spring stops 56 and 57, and with a relatively long slot 66 which prevents the movement of the key from interfering in any way with the position of the spring stop 47. The reciprocatory movement of said key is limited by the length of oppositely arranged slots 67 through which the rivet 6 passes. The upper end of the key 60 projects from the outer end of the upper staff section and is secured in any suitable manner to a manually operable knob 68 which is manipulated in the opening and closing operation of the umbrella. In the present instance a stud 69 having a threaded outer end is riveted in the end of the key 60, said outer end being screwed to a boss 70 on the inner side of the knob 68. Said knob is otherwise hollow, and when in its depressed position encloses the washer 22 and the outer end of the upper staff section in a weather-tight manner. The peripheral flange 71 of said knob makes close contact with the fabric cover of the umbrella, when the latter is spread, excluding moisture from the mechanism associated with the top of the staff. Engagement of said flange with the ribs, in the spread position of the umbrella, prevents accidental depression of the key to which would permit collapse of the umbrella.

The case sections 1 and 2 telescope one within the other, the upper case section being contracted at its lower end forming a shoulder 72. The lower case section 2 is formed at its upper end with a part 73 of larger diameter which abuts against the shoulder 72 when the case sections are extended preventing them being drawn apart when the umbrella is closed. The upper end of the outer case section is provided with a flared outwardly rolled flange 74 which presents a funnel shaped opening for the easy entrance of the fabric of the umbrella and also affords a smooth surface which avoids injury to other articles with which the folded umbrella may be packed. Said outer section is preferably formed of metal but may if desired be of non-metallic material and finished in any desired manner to effect the ornamentation to the umbrella. When the latter is opened the outer case section 1 forms the handle of the umbrella.

The inner case section 2 is provided near its upper end with a peripheral groove 75 having beveled sides 76 and 77, the end of said case section above said groove being reduced in internal diameter and curved into an outwardly flaring lip through which the folded cover of the umbrella may enter without impediment. The tapered walls of the groove 75 are designed to cooperate with a staff lock on the lower end of the lower staff section 3 by means of which the latter is retained in the upper end of the case section 2 in the extended position of the umbrella.

The lower end of the staff section 3 is surrounded by a quill 78 which tightly fits said staff section and is formed with a reduced upper end 79 affording a seat for the staff lock frame 80 which includes an annular hub 81 having three or more inclined arms 82 extending therefrom at spaced intervals, each of said arms being formed with a thin resilient portion 83 and an integral rigid portion 84 having a beveled projection 85 capable in certain positions of the staff of spreading, through the resiliency of the portion 83 and seating itself in the groove 75 in the inner case section. The lower portion 86 of each arm are formed to extend radially toward the axis of the staff, the ends thereof being beveled as shown at 87 in Figure 3.

The quill 78 is, in turn, surrounded by a sliding sleeve 88, the cylindrical wall 89 of which is spaced from the quill 78, and affords a chamber surrounding said quill in which is located the helical spring 90. Said spring bears at one end against the top flange of the sleeve 88, and at its lower end against a ring 91 which is located upon a reduced portion 92 of said quill and retained in place by a flange 93, the latter being formed by riveting the lower edge of the reduced portion 92 over said ring.

The lower end of the cylindrical portion 89 of the sleeve 88 is formed with a wedge portion which has two degrees of taper, a very steep taper 95 and a gradual taper 96.

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The surface of said wedge portion may be continuous but the sleeve is here shown as split longitudinally so as to provide a certain but very slight degree of resiliency in the parts to compensate for any lack of trueness in size or fit of the cooperating elements. A peripheral groove 97 is formed within the lower end of the cylindrical portion of the sleeve 88 in which is sprung or otherwise seated the plate 43 against which the lower end of the upper staff section 4 abuts as has hereinbefore been described.

When the staff of the umbrella is drawn outwardly in the act of raising it the frame 80 travels with it until the upper end of the inner case section 2 is reached at which point the projections 85 of the arms 82 spring into the peripheral groove 75. This permits the tapered portion of the sleeve 88 to enter the space between the ring 91 and the ends 87 of said arms, said tapered portion being impelled by the expansion of the helical spring 90 firmly forcing the projections 85 into contact with the tapered walls 76 and 77 of the groove 75 and holding the staff in rigid position relatively to the inner case section 2. Further outward pull upon the staff causes said inner case section to travel outwardly with said staff telescoping it within the outer case section 1.

The inner case section 2 is provided adjacent its outer end with an annular reinforcing plate 98 having slots 99 formed on opposite sides thereof and registering with slots 100 formed in the wall of the inner case section. Said reinforcing plate is also provided at its lower edge with depressions 101. These depressions afford seats for the extended edges 102 of the case lock frame 103, the latter being a plate preferably slightly convexed on its lower side and having adjacent each end pairs of upstanding lugs 104 provided with the aligned apertures 105. These apertures are for the purpose of pivotally mounting the catches 106 which have pairs of depending lugs 107 hingedly cooperating with the pairs of lugs 104. Each of said catches is also provided with a nose 108 which is adapted to be projected through one of the openings formed by the aligned slots 99 and 100 in the inner case section. Said catches are each provided with a back plate 109 and are preferably formed with downturned flanges 110 which engage with a leaf spring 111 seated within the case lock frame 103. Said spring normally urging the noses 108 of the catches outwardly to a position in which they project slightly beyond the wall of the inner case section. When said inner case section is drawn inwardly by pulling upon the staff of the umbrella after the staff lock engages the groove 75 the projecting noses of said catches are depressed by contact with the lower end of the outer case section 1 and immediately spring over the shoulder 72 formed within the lower end of the outer case section firmly and positively locking said case sections in fully telescoped relation. When in this position said case sections serve as a handle for the umbrella the latter then being open.

In the lowering of the umbrella the inward thrust of the staff first forces the wedge shaped portion 96 of the staff lock outwardly against the tension of the spring 90 from between the ends of the arms 82 and the ring 91 permitting the projections 85 of said arms to ride over the inclined wall 76 of the groove 75 so that the lower end of the staff may slide downwardly toward the lower end of the inner case section, where the ends of the wedge shaped portions 96 engage the back plates 109 of the catches opposing the tension of the spring 111 and causing the withdrawal of the noses 108 of said catches from the shoulder 72. This permits extension of the inner case section 2 in a downward direction upon further pressure on the staff. When the staff is at the limit of its downward movement within the lower case section the steeply tapered surfaces 95 of said wedge shaped portions forcibly engage the ends of the arms 82 spreading them against the inner wall of the inner case section with sufficient force so that they will surely enter slot 75 when brought opposite to it, but at the same time will slide within the case without undue friction or distortion of the case; also, the action of the steep taper in reversibly permitting the arms 82 to move back nearer the staff to ride over any inequalities in the case.

The lower end of the case section 2 is closed by a cap 112 which may be secured thereto in any desired way but is here shown as being formed with a flange 113 having cut away portions 114 forming one element of a breech block arrangement. The reinforcing plate 98 is provided with an outwardly extending flange 115 which is furnished with arcuate projecting portions 116 the latter being adapted to register with the cut-away portions 113 of the cap flange. The upper shoulder of the flange 115 of the reinforcing plate lies in an inclined plane forming a shoulder slightly spaced apart from the bottom end of the inner case section 2. When the complementary breech block parts of the cap and flange 115 are placed into registration the cap is given a partial turn causing it to tighten against the lower edge of the flange 115 by virtue of said inclined shoulder.

In the operation of the umbrella the outer section of the case is grasped with one hand while the other hand engages the cap 68 on the outer end of the staff. The latter is drawn outwardly until the ribs and fabric

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have emerged entirely from the case and the staff lock has become firmly seated in the peripheral groove 75. The hand which manipulated the knob 68 now engages the rib retainer 54, drawing it back sufficiently to release the ribs. The folds of the fabric cover are then shaken out if necessary and the rib retainer pushed forwardly with the sleeve 53 and runner 34 along the staff as far as it will go. This completes the opening operation. The mechanical operation during the opening movement of the umbrella is as follows. When the cap 68 is drawn out with the attached key 60 the spring stops 56 and 57 are released so that the former will be in position to serve as a stop to limit the forward movement of the runner and that the latter may spring over the upper edge of the staff section 3 to prevent telescoping of the staff. Next when the ends of the slots 67 come into contact with the pin 6, limiting the relative movement between the key 60 and the upper staff section, further movement of said key brings with it the upper staff section with the rib attaching ferrule 5 and the rib sections 10, thus withdrawing the latter from their telescoped relation to the rib sections 11. It will be understood that at this time the ribs of the umbrella lie substantially parallel to the staff. Relative extension of the rib sections causes the fabric cover to unfold as it is withdrawn from the case. The outer section of the case now slides over the inner section until stopped by the projecting flange 113 of the cap 112 abutting against the lower end of the outer case section. When the staff and ribs are nearly extended the tension of the cover acting through the rib sections 11, braces 33, runner 34 and spring 47, sets the lower staff section 3 and staff lock in motion thereby releasing the case lock catches which project through the slots 99 and 100 and seat themselves on the shoulder 72 holding the case sections in closed position. Continued drawing out of the cap and staff brings the projections on the arms 82 of the staff lock opposite the peripheral groove 75, the helical spring 90 acting through the wedged shaped portions of the sleeve 88 to force said projections into the groove where they seat firmly on the tapered sides of the groove thus locking the staff securely in the handle. The staff is now brought to the limit of its extension permitting the spring stop 57 to project past the end of the lower staff section 3 to prevent the staff from closing.

At this time the head 30 of the clip 27 is opposite the center of the slot 14 in the reinforcing piece 13 and pressing back the rib retainer allows the ribs to open out a short distance from the staff, permitting the head 30 of the clip 27 to settle into the slot 14 in the walls 15 and 16 thereof, locking the ribs in extended position. Pushing the rib retainer 54 with the sleeve 53 outwardly now depresses the spring catch 41 and permits the runner to move out along the staff and acting through the braces 33 to spread out the ribs and attached fabric cover in the usual manner. When the ribs are sufficiently spread the quill 48 bearing the runner comes into contact with the stop 56 preventing further motion, and the spring catch 47 enters the opening in the quill 48, thereby holding the runner 34 in raised position and the ribs out spread.

In closing the umbrella, the handle is grasped with one hand and the rib retainer 54 with the other, the latter being drawn down with the sleeve and runner until the ribs are completely closed and the spring catch 41 snaps into place holding the runner down. If the cover is wet, the umbrella should not be closed further than this but should be carried as an ordinary umbrella until dry. When dry the closing process is continued as follows. With one hand all of the ribs are pressed close to the staff and with the other hand the rib retainer is slipped over the balls on the ends of the ribs. The cap 68 is then depressed until the ribs have completely telescoped and the frame and cover has commenced to enter the case. The folds of the fabric are then arranged if necessary and pressure on the cap 68 is continued until the frame and cover are entirely enclosed within the case and the cap 68 closes the end of the outer case section 1. The mechanical action of the umbrella during the closing movement is as follows: Drawing down the rib retainer 54 with the attached sleeve 53 has depressed the spring catch 47 thereby permitting the quill and runner to be drawn down the staff, and acting through the braces 33 to close the ribs in the usual manner. When the quill 48 passes over the spring catch 41 it depresses the latter, but when the ribs are approximately parallel to the staff said spring catch snaps into one of the openings in the quill and holds it and the runner down. When the ribs are held close to the staff the end 37 of the slot 36 presses upon the resilient portion 28 of the clip 27 so that the head 30 of said clip is raised out of the plane of the walls 15 and 16 of the slot so that the rib section 11 is free to slide longitudinally with respect to the rib section 10.

Pressure on the cap 68 moves the key 60 down within the upper staff section thereby depressing the spring stops 56 and 57 below the surface of said staff section, permitting the latter to slide within the lower staff section 3. The purpose of depressing the spring 56 has already been explained. When the cap 68 comes in contact with the end of the upper staff section, continued

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pressure causes the latter to slide within the lower staff section and at the same time causes the rib sections 11 to telescope over the rib sections 10, thus shortening the umbrella. When the telescoping of the ribs is nearly complete the outer ends of the rib sections 10, come into contact with the split rings 26 and forces them along through the grooves in the rib sections 11 toward the outer ends of said rib sections so that when the operation is complete the folding of the fabric cover is as shown at 118 in Figure 2. Continued pressure on the cap 68 brings the lower end of the upper staff section into contact with plate 43 and acting through said plate and the sleeve 88 compresses the helical spring 90 forcing down the wedge shaped portions of said sleeve, permitting the projections 85 to ride out of the peripheral groove 75 and so to release the staff lock causing the entire frame to move within the inner case section 2. When the spring 90 is sufficiently compressed to release the staff lock, the rib attaching sleeve 5 rests on the upper end of the lower staff section, thus relieving the spring, the plate 43 and the sleeve 88 of any further strain.

When the wedge shaped portion of the sleeve 88 approaches the lower end of the inner case section it comes in contact with the catches of the case lock and by compressing the spring 111 draws said catches out from their seat on the shoulder 72 thus releasing the case lock and permitting the inner and outer case sections to slide one without the other, extending the case to its full length, permitting the entire frame and cover of the umbrella to enter the case the upper end of the outer case section being closed by the flange 71 of the cap 68 as is clearly shown in Figure 2. This completes the operation of closing. It will be observed that the cover was first forced into one of the case sections and then into the other as a sequential operation, thus requiring only about one-half as much strain on the cover and parts as would be required to force the cover into a one-piece case of the same dimensions.

It is, however, within the scope of the invention to substitute a one-piece case for the telescopic sectional case herein described, said substitution effecting a simplification in the mechanism by omitting the elements of the case lock and the case parts with which it cooperates. It would of course be obviously impossible to make a one-piece case as short as a two-piece casing which in most instances might militate against its appearance as a handle and render it somewhat inconvenient to pack or carry.

While I have above described what I have found to be a very practical embodiment of my invention, it is nevertheless to be understood that the telescopic umbrella may also be exemplified in numerous other alternative constructions and I accordingly reserve the right of adopting all such legitimate changes as may be fairly embodied within the spirit and scope of the invention as claimed.

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

1. A telescopic umbrella comprising a handle formed of sections slidable one within the other, a staff comprising telescopic sections slidable within said handle, cooperating means on one of said staff sections and the inner handle section for latching said staff in the upper end of said handle section, and means carried by the inner end of the other of said staff sections for releasing said latching means to permit the descent of said staff within said handle.

2. A telescopic umbrella comprising a handle formed of sections slidable one within the other, a staff comprising telescopic sections slidable within said handle, cooperating means on one of said staff sections and the inner handle section for latching said staff in the upper end of said handle section, means carried by the inner end of the other of said staff sections for releasing said latching means to permit descent of said staff within said handle, cooperating means positioned adjacent the outer ends of said handle sections for normally latching said sections in telescopic relation, said cooperating means being engageable by said staff upon its descent in said handle to release said telescopic handle sections and permit their extension about said staff upon further inward movement of the latter.

3. A telescopic umbrella rib comprising an inner channel section and an outer grooved section slidable relative thereto, a flexible cover supported by said rib, means slidable along said grooved section independently of the channel section to which said cover is attached, said means being displaceable toward the outer end of said grooved rib section by the engagement therewith of the end of the channel section in the course of the telescopic movement of said sections.

4. In a telescoping umbrella, a hollow staff having slots therein, resilient members functioning with elements slidable along said staff, comprising flat pieces each having a base engaging the wall of said staff on the same side as the slots and having the portion projecting through the slots, and being formed with a back support engaging the wall on the opposite side of the staff, a tubular member having slots and reciprocable within said staff, surrounding said resilient members, the walls of certain of said slots being arranged to engage and depress the projecting portions of certain of said resili-

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ent members, said tubular member being formed on the side opposite said slots with an elongated slot flanking the back supports of said resilient members to prevent lateral displacement thereof.

5. In a telescoping umbrella, a hollow staff having slots therein, resilient members functioning with elements slidable along said staff, comprising flat pieces each having a base engaging the wall of said staff on the same side as the slots and having a portion projecting through the said slots, and being formed with a back support engaging the opposite wall of the staff, a tubular member having slots and reciprocable within said staff, surrounding said resilient members, the walls of certain of said slots being arranged to engage and depress the projecting portions of certain of said resilient members, said tubular member being formed on the side opposite said slots with an elongated slot flanking the back supports of said resilient members to prevent lateral displacement thereof and means for limiting the reciprocatory movement of said tubular member.

6. In a telescoping umbrella, a hollow staff having slots therein, resilient members functioning with elements slidable along said staff, comprising flat pieces each having a base engaging the wall of said staff on the same side as the slots and having a portion projecting through the slots on the same side, and being formed with a back support engaging the opposite wall of the staff, a tubular member having slots and reciprocable within said staff, surrounding said resilient members, the walls of certain of said slots being arranged to engage and depress the projecting portions of certain of said resilient members, said tubular member being formed on the side opposite said slots with an elongated slot flanking the back supports of said resilient members to prevent lateral displacement thereof, means for limiting the reciprocatory movement of said tubular member, and operating means for said tubular member positioned exteriorly of the staff of the umbrella.

7. In a telescoping umbrella, a hollow staff comprising telescoping sections having slots therein, a spring stop projectable from said slot in one section over the edge of the other section to prevent telescoping of said sections when extended, a tubular key reciprocably arranged in one of said staff sections and projecting from one end thereof, said key having an aperture through which the latch projects and being manipulatable for releasing said spring stop to permit telescoping of said sections.

8. In a telescoping umbrella, a hollow staff comprising telescoping sections one of said sections having a slot in the side thereof, ribs therefor and a runner for spreading said ribs sliding along said staff, a spring stop projectable from said slot in one staff section over the edge of the other staff section to prevent telescoping of said sections when extended, a resilient limit stop projecting from said staff at the upper limit of movement of said runner, a tubular key reciprocably arranged in one of said staff sections and projecting from one end thereof and having slots to receive one end of said spring latch and stop, said key being manipulatable for simultaneously releasing said limit stop and spring latch.

9. In a telescoping umbrella, a telescopic staff comprising a hollow lower section and an upper section slidable therewithin, a case section, a staff lock for locking the lower end of said hollow staff section in the upper end of said case section, comprising the walls of a groove in said case section, spring arms carried by said staff and engageable with said walls, a wedge re-acting between said arms and the end of the staff for forcing said arms into said groove, resilient means for actuating said wedge and means on the lower end of the upper staff section engageable with said wedge against the tension of said resilient means for moving said wedge to release said arms, permitting automatic retraction of the latter from said groove under axial pressure upon said staff.

10. In a telescoping umbrella, a telescopic staff comprising a hollow lower section and an upper section slidable therewithin, a case section, a staff lock for locking the lower end of said hollow staff section in the upper end of said case section, comprising the walls of a groove in said case section, spring arms carried by said staff and engageable with said walls, a wedge having a portion of steep taper and a portion of gradual taper, the latter re-acting between said arms and the ends of said staff with relatively great pressure for forcing said arms into said groove, resilient means for actuating said wedge, means on the lower end of the upper staff section engageable with said wedge against the tension of said resilient means for moving said wedge to release said arms, permitting automatic retraction of the latter from said groove under axial pressure upon said staff, said wedge co-acting with means within the lower end of said inner case section for driving the portion of steep taper between said arms and staff, thereby urging said arms outwardly against the wall of said inner case section with relatively light pressure.

11. In a telescoping umbrella, a handle comprising inner and outer telescopic sections forming a casing, said outer section being formed with an internal shoulder at its lower end, a catch in the lower end of the inner section engageable with said shoulder to lock said sections in telescoped posi-

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tion, a staff slidable into said handle and engageable with said catch to release the latter permitting extension of the sections of said casing.

12. In a telescoping umbrella, a handle comprising inner and outer telescopic sections forming a casing, said outer casing being formed with an internal shoulder at its lower end, a catch in the lower end of the inner section comprising a pivoted spring member having a nose engageable with said shoulder, a spring normally urging said nose into the path traversed by said shoulder when the casing sections are telescoped, a staff slidable into said handle and engageable with a portion of said catch to release the latter against tension of said spring causing a withdrawal of said nose from the path of said shoulder to permit the extension of said casing.

13. In a telescoping umbrella, a hollow staff comprising telescoping upper and lower sections one of said sections having a slot formed therein, ribs secured to said upper section, a spring stop projectable from said slot in one section over the other section to prevent telescoping of said sections when extended, a tubular, apertured key reciprocably arranged in one of said staff sections and projecting from the upper end of the upper staff section, said key being depressible for releasing said spring stop to permit telescoping of said sections, and means on the projecting portion of said key engageable with said ribs when the umbrella is spread to prevent depression of said key.

14. A telescoping umbrella comprising telescoping staff sections and telescoping ribs secured thereto, a telescoping sectional casing for housing said staff sections and ribs, said casing being extensible to surround said staff sections and ribs when the latter are telescoped, and being itself telescoped when said staff sections and ribs are extended, said several elements being constructed to perform co-ordinately their several functions aforesaid, by a simple rectilinear motion, and means for locking said staff sections in extended position, and means for locking said casing sections in collapsed position.

15. A telescopic umbrella comprising telescopic staff sections and telescopic rib sections, one of the latter being channelled, said rib sections being adapted, in a closing position of the umbrella to lie substantially parallel to one another and to be telescoped by pressure axially of said staff, locking means automatically operative when said rib sections are moved away from the position of substantial parallelism with the staff, for locking said rib sections against relative sliding movement, said means including a member having the locking end thereof lying continually within the channel of said channelled member throughout the range of relative travel of said telescopic sections.

16. A telescopic umbrella comprising telescopic staff sections and telescopic rib sections, one of the latter being channelled, said rib sections being adapted, in a closing position of the umbrella to lie substantially parallel to one another and to be telescoped by pressure axially of said staff, locking means automatically operative when said rib sections are moved away from the position of substantial parallelism with the staff, for locking said rib sections against relative sliding movement, said means including a member having the locking end thereof lying continually within the channel of said channelled member throughout the range of relative travel of said telescopic sections, and means operable when said rib sections assume a position of parallelism to said staff to remove said locking means from locking position.

In testimony whereof I have hereunto set my hand.

JAMES W. CHISM.