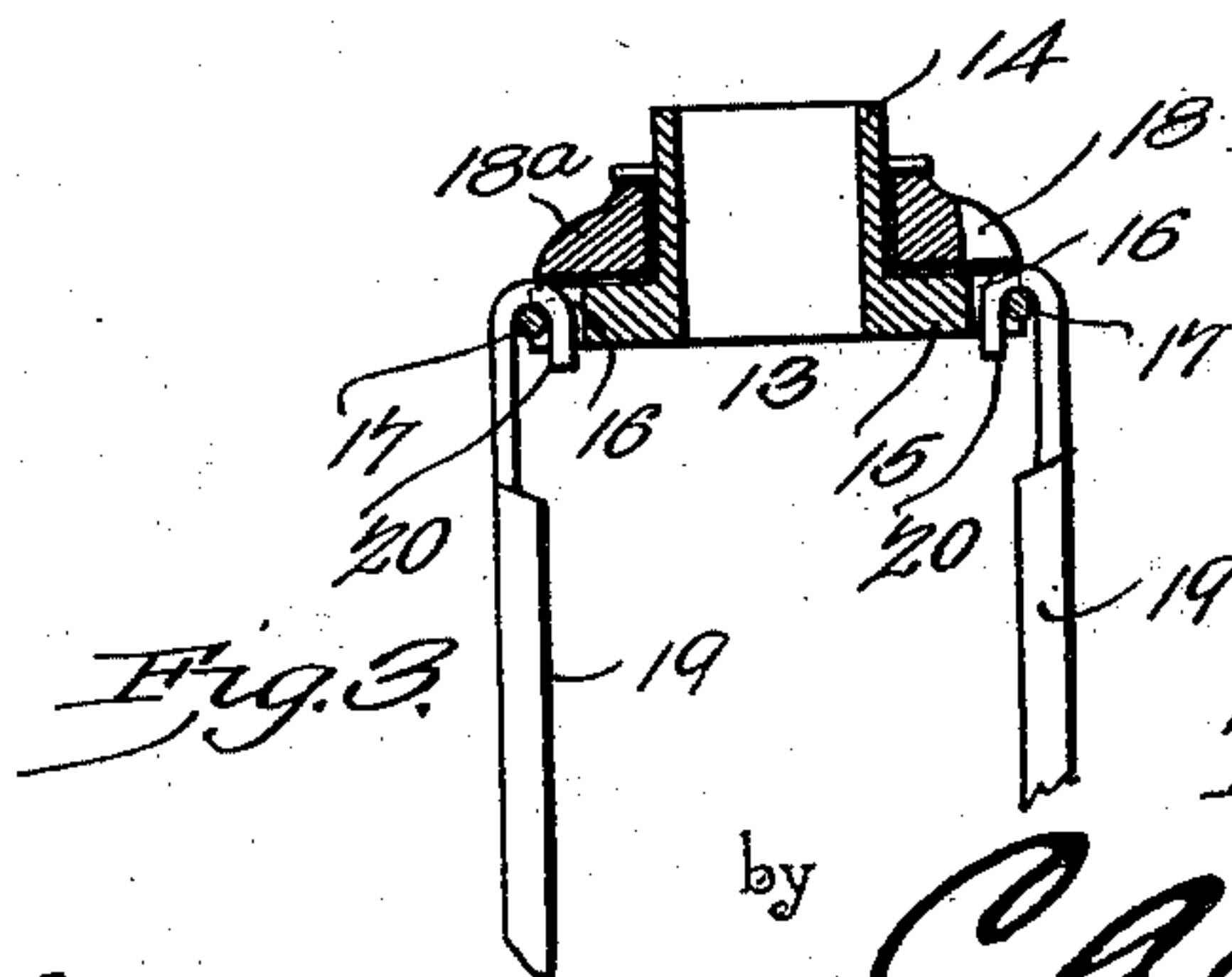
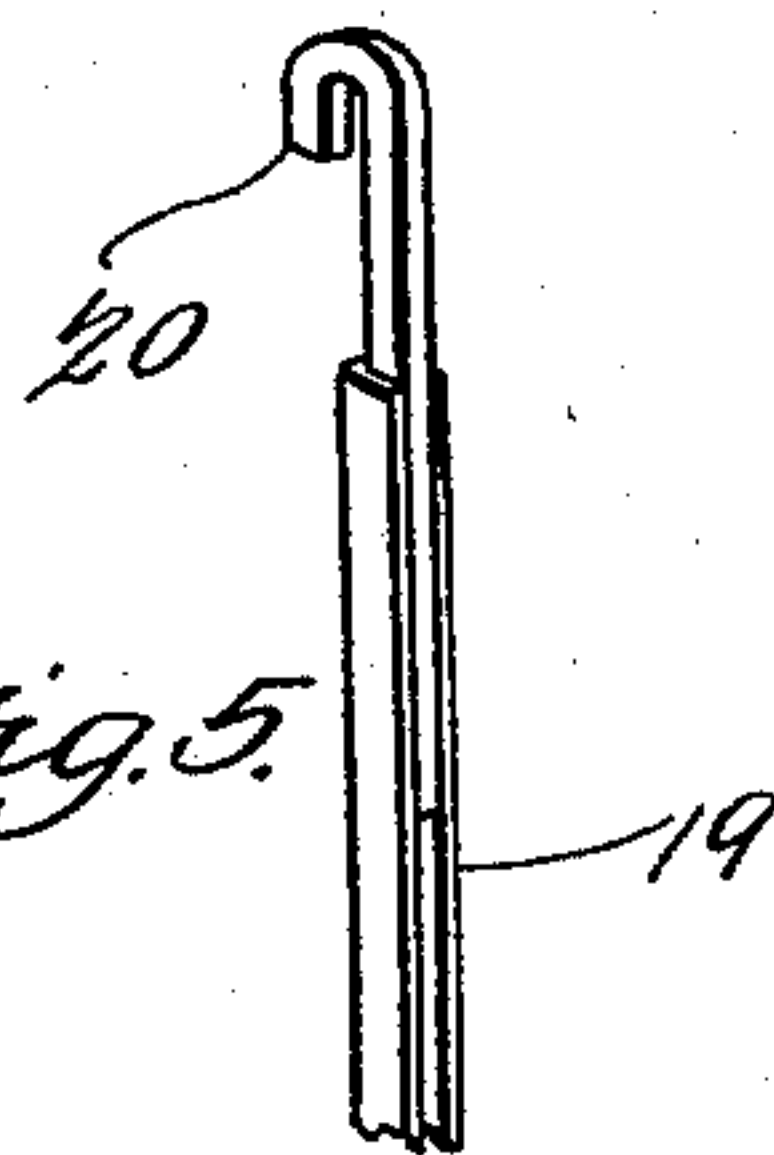
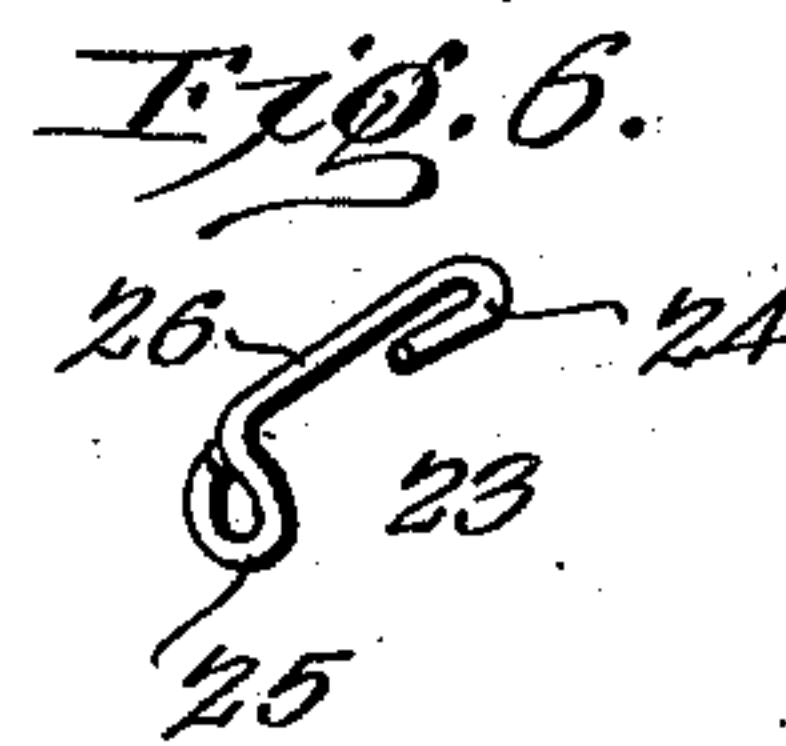
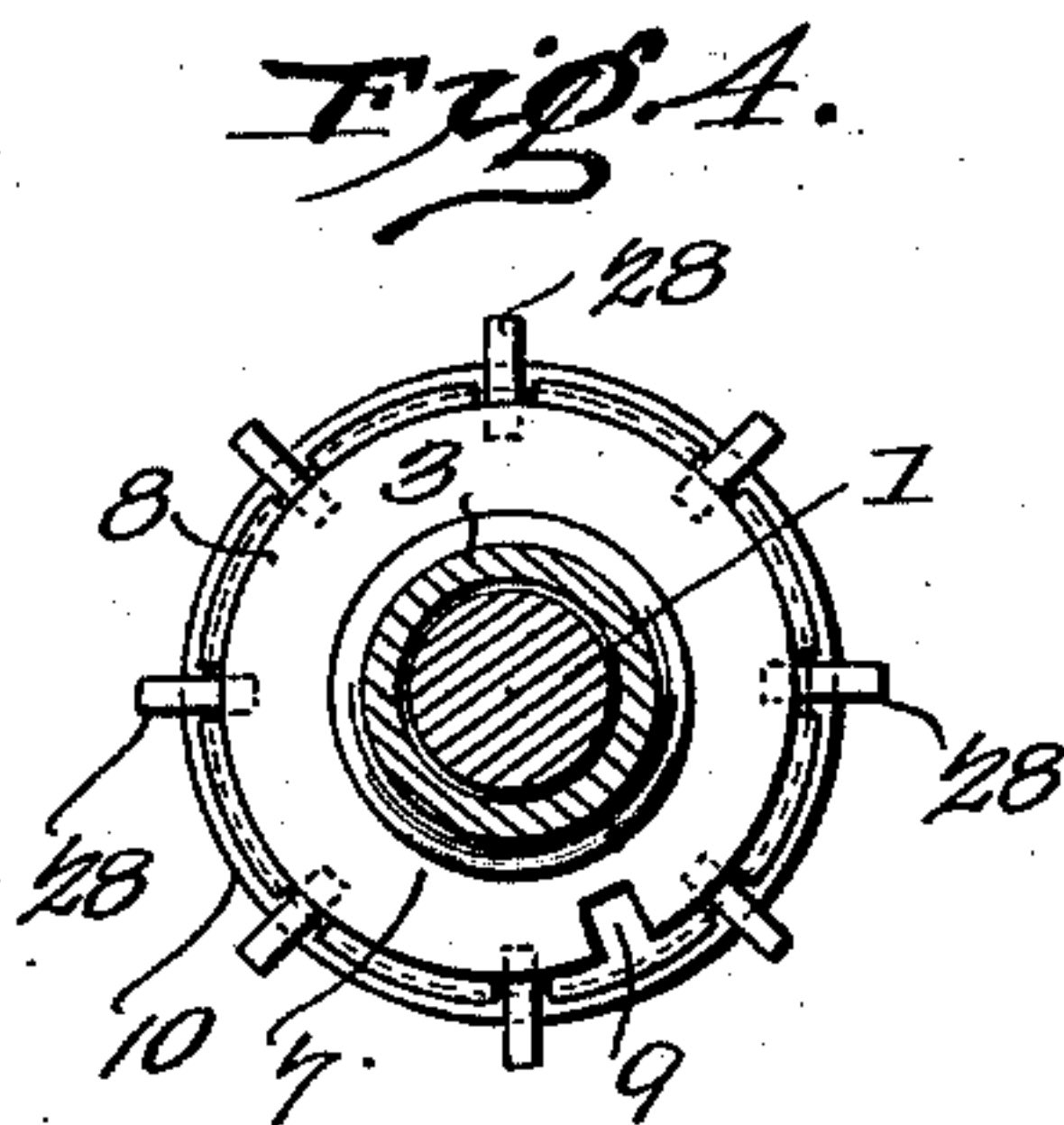
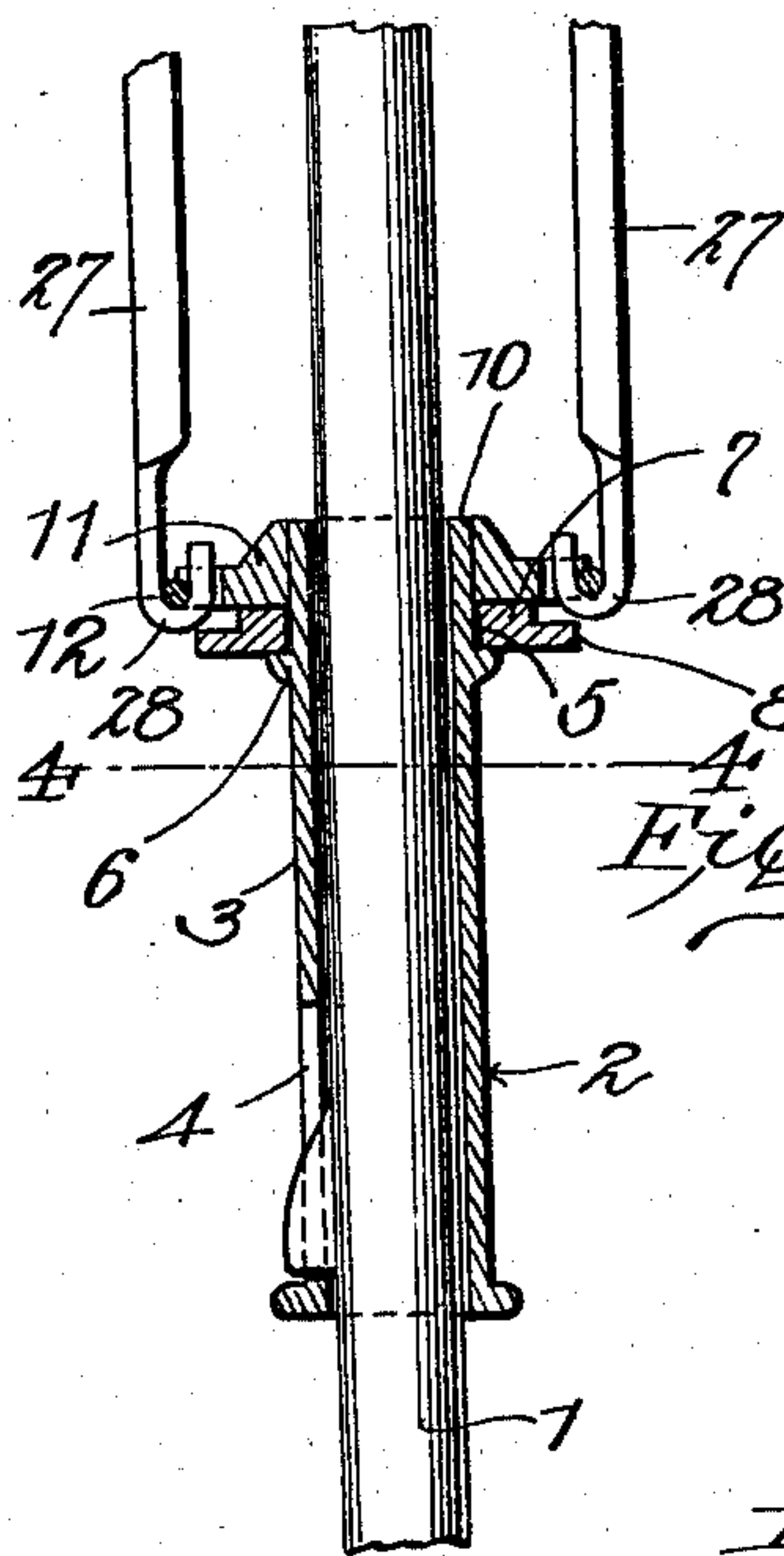
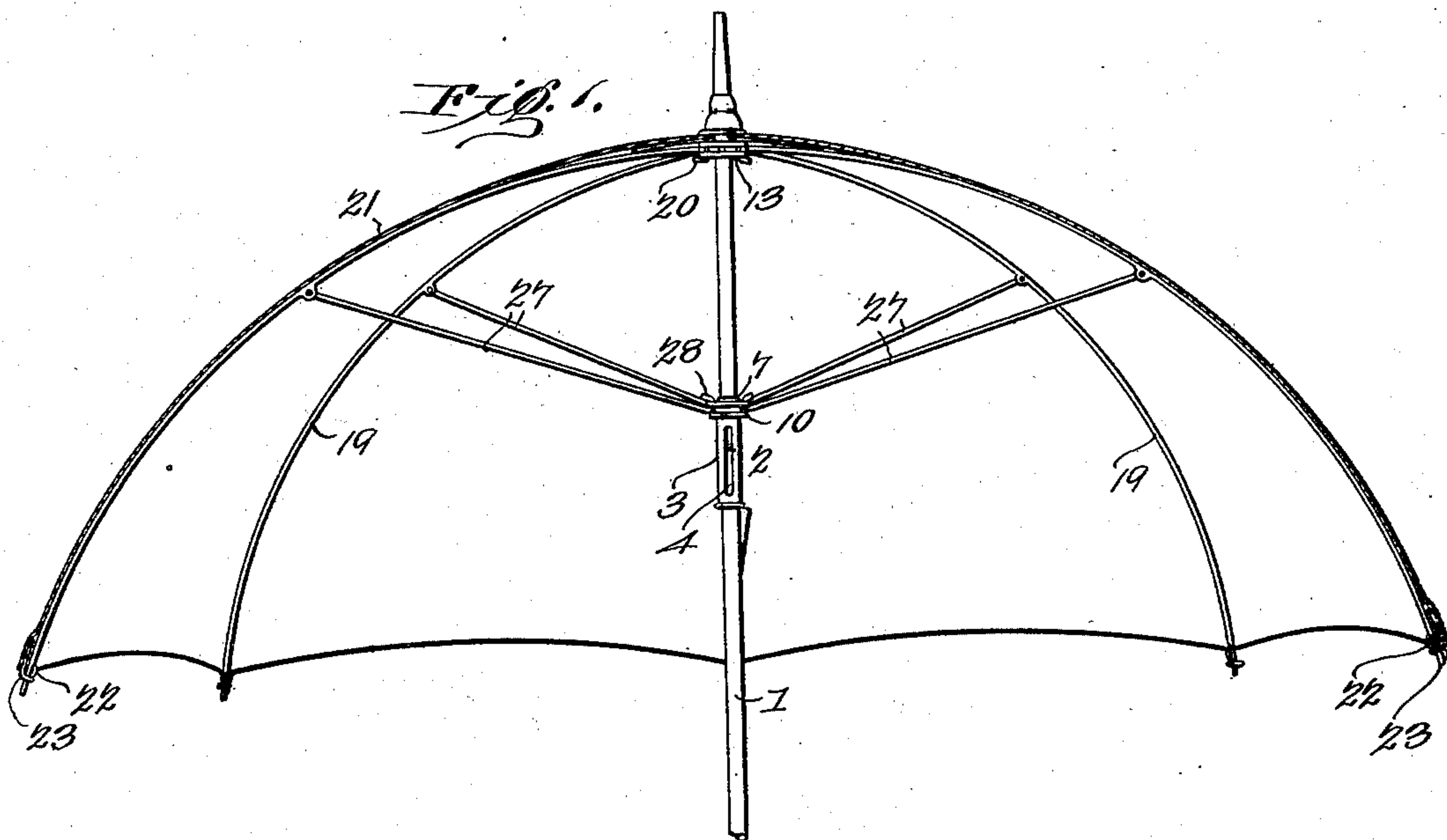


PATENTED NOV. 10, 1903.

APPLICATION FILED OCT. 16, 1901.

NO MODEL.



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UNITED STATES PATENT OFFICE.

THOMAS WALTER FORD, OF CHATTANOOGA, TENNESSEE.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 743,476, dated November 10, 1903.

Application filed October 16, 1901. Serial No. 78,863. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WALTER FORD, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Umbrella, of which the following is a specification.

This invention relates to umbrellas, and more particularly to removable ribs and stretchers and particular forms of runners and notches; and the object of the same is to permit a rib and stretcher to be detached from the umbrella-frame without necessitating severance or breakage of the remaining parts to facilitate repair or the substitution of one rib and stretcher for other similar devices throughout the whole frame structure, also to permit a worn cover to be readily replaced by a new one, and also to provide an umbrella-frame structure wherein the notch, runner, ribs and spreaders, and cover may be made and assembled at the factory and sold as a complete article of manufacture and capable of having the stick afterward applied thereto.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a transverse vertical section of an umbrella shown open and the stick broken away and embodying the features of the invention. Fig. 2 is an enlarged transverse vertical section of the runner, showing a portion of the stick therein and portions of stretchers connected thereto. Fig. 3 is an enlarged transverse vertical section of the notch, showing portions of the ribs secured thereto. Fig. 4 is a horizontal section on the line 4 4, Fig. 2, looking in the direction of the arrows. Fig. 5 is a detail perspective view of one of the rib or stretcher extremities. Fig. 6 is a detail perspective view of one of the catches carried by the cover for removable engagement by the rib extremities.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a stick of any preferred form, which will be provided with

the usual spring-catches for engaging the runner to respectively hold the umbrella in open and closed condition. As before indicated, the essential feature of the improved umbrella construction is the separable assemblage of the ribs and stretchers in relation to the cover and runner and notch, whereby the parts may be easily disconnected for the purposes of repair or substitution, and the entire structure, which will be presently set forth, contributes to the successful accomplishment of the result sought.

The runner 2 consists of an ordinary elongated sleeve 3, having a longitudinal slot 4 adjacent to one end thereof for engagement by the thumb-catch on the stick 1, located near the handle of said stick. The sleeve 3 is provided near the end opposite to that having the slot 4 with an annular rib or flange 6, forming a seat for a revoluble disk 7, having a peripheral flange 8, which latter is provided with a single radial slot 9. The revoluble disk 7 is held closely in contact with the shoulder formed by the annular rib or flange 6 by means of a collar 10, which is secured upon the end of the sleeve 6 in such a manner as to be retained securely upon said sleeve and at the same time create a degree of friction between the disk 7 and the flange 6 which will prevent said disk from being rotated accidentally or otherwise than at the will of the operator. The collar 10 is provided with a plurality of short radial slots 11, arranged at regular intervals apart, and the outer ends of said slots are closed by a wire 12, preferably engaging said collar. The lower side of the flange 8 of the disk 7 is elevated some distance above the upper side of the collar 10, and said flange projects over the slots 11, so as to prevent the accidental disengagement of the stretcher-hooks placed therein, as will be hereinafter described. The said flange 8 also enables the disk 7, of which it forms a part, to be conveniently rotated or manipulated.

The notch 13, as more clearly shown by Fig. 3, comprises a collar 14, which is immovably secured to the stick 1 in the usual position and has a lower outwardly-projecting flange 15, with a series of radial notches 16 therein closed by a surrounding wire 17,

the said notches being adapted to coincide with a single slot 18 in a disk or ring 18^a. The ribs 19 at the terminals which engage the notch are formed with hooks 20, the hook 5 extremities of the ribs being reduced, so that they may be readily attached to or detached from the notch, and when pursuing either of these operations the rib is drawn inwardly toward the stick until the hooked terminal 10 thereof may be pushed upwardly through the notch or drawn downwardly into the latter, the slots 18 affording a clearance for the said rib-terminals in attaching or detaching the same. The hooks, as clearly shown in Fig. 5, are provided with elongated shanks, which are secured in the groove of the rib. The opposite 15 terminals of the ribs, which are connected to the cover 21, will be of the usual construction or provided with a projection, which may be the usual attaching-eyes 22. The cover 21 at the points where the outer terminals of the ribs engage the same will be provided with catches 23, the detailed construction of which will be understood by reference to Fig. 6 of 25 the drawings, from which it will appear that said catches are constructed of short pieces of wire, the inner ends of which are bent or doubled upon themselves, so as to form hooks 24 and shanks 26, the outer ends of which are 30 bent downwardly at right angles and formed into eyes 25, which are thus disposed at right angles to the shanks 26 and hooks 24. These catches 23, having the hooks 24 and 25, are secured to the cover at suitable distances 35 apart by means of stitching engaging the hooks 24 in such a manner that the eyes 25 shall be exposed beyond the edge of the cover, said eyes being for the reception of the points of the ribs, which may be readily sprung into 40 position in said eyes, as will be readily understood, the inward movement of the eyes 26 upon said ribs being limited by the attaching-eyes 22, which form an enlargement thereof, or by any other suitable engaging 45 devices.

The stretchers 27 are pivoted at their outer terminals to the ribs 19, as usual, and have their inner terminals reduced and formed with hooks 28 to engage the slot 11 of the 50 collar 10 of the runner, the said inner hook-terminals of the stretchers being readily removable from and applicable to the collar by turning or rotating the disk 7 so that the slot 9 thereof will come over or aline with 55 the slot 11 of the collar 10 from which the stretcher-terminal is to be detached or to which said terminal is to be applied and afterward rotating the said disk so as to move the slot 9 out of engagement or alinement 60 with either of the slots 11, and when all stretchers are connected up to the runner the disk 7 will be in such position that the slot 9 thereof will stand in a plane between two of the slots 11, and thereby the stretcher-terminals will be prevented from becoming 65 disengaged from the collar 10. The disk 7

is not exceptionally loose, so that it will be affected by vibration and have self-movement; but it will retain its position until forcefully turned by manual operation. It 70 will be seen that as long as the stretchers are connected to the collar 10 the ribs 19 will be held in connected relation with the notch 13, and in disconnecting the ribs from the catches 23 they are slightly sprung until the outer 75 terminals thereof are withdrawn from the eyes 25, and as the distance between the notch and the several eyes 25 is of less length than the length of the ribs the latter cannot become accidentally disengaged from said 80 eyes. The disk or ring 18^a of the notch is also operated similar to the disk 7.

The improved construction is very simple and can be manufactured at a small cost. In making the rib and stretcher terminals in the 85 manner set forth no additional material is employed and the ordinary form of ribs and stretchers now found in the market is used. There are only two pieces added to the ordinary umbrella construction aside from the 90 catches 23, and these pieces consist of the disk 7 and the locking-ring on the notch 13. It is proposed to use various limiting or stop devices on the outer terminals of the ribs to contact with the eyes 25, as heretofore set 95 forth, and in the entire construction of umbrella in accordance with the invention care has been taken to avoid the use of unnecessary parts or to increase the cost of manufacture by utilizing the structural features 100 now found in umbrellas, with the exceptions heretofore noted, and changing the several parts to accommodate the improved construction. The hook-terminals of the ribs and stretchers are a great deal more effective in 105 their connected relation to the parts which they engage than are the usual balls, ellipsoidal enlargements, and pins usually found in umbrella structures, and said hooks or hook-terminals of the ribs or stretchers are 110 considerably less expensive in the cost of production, because the ordinary ribs and stretchers can be quickly and cheaply reduced and drawn to form the hooks. The hook-terminals of the ribs and stretchers also 115 permit expedition in the application and removal of the ribs and stretchers in relation to the notch and runner.

While the preferred form of the several parts has been shown and described, it will 120 be understood that changes in the dimensions, proportions, and minor details may be resorted to without departing from the principle of the invention.

Having thus described the invention, what 125 is claimed as new is—

In an umbrella, a runner consisting of a tubular member having a slot near one end and provided near its opposite end with an annular flange, a collar mounted revolubly 130 upon said tubular member in frictional contact with the flange and having a single open

radial recess formed in the edge thereof, and
an outer flange-collar securely mounted upon
the end of the tubular member and also in
frictional contact with the revoluble collar,
5 said flange-collar being provided with a plu-
rality of radial recesses.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

THOS. WALTER FORD.

Witnesses:

W. H. PAYNE, Jr.,

J. L. FAUST.