

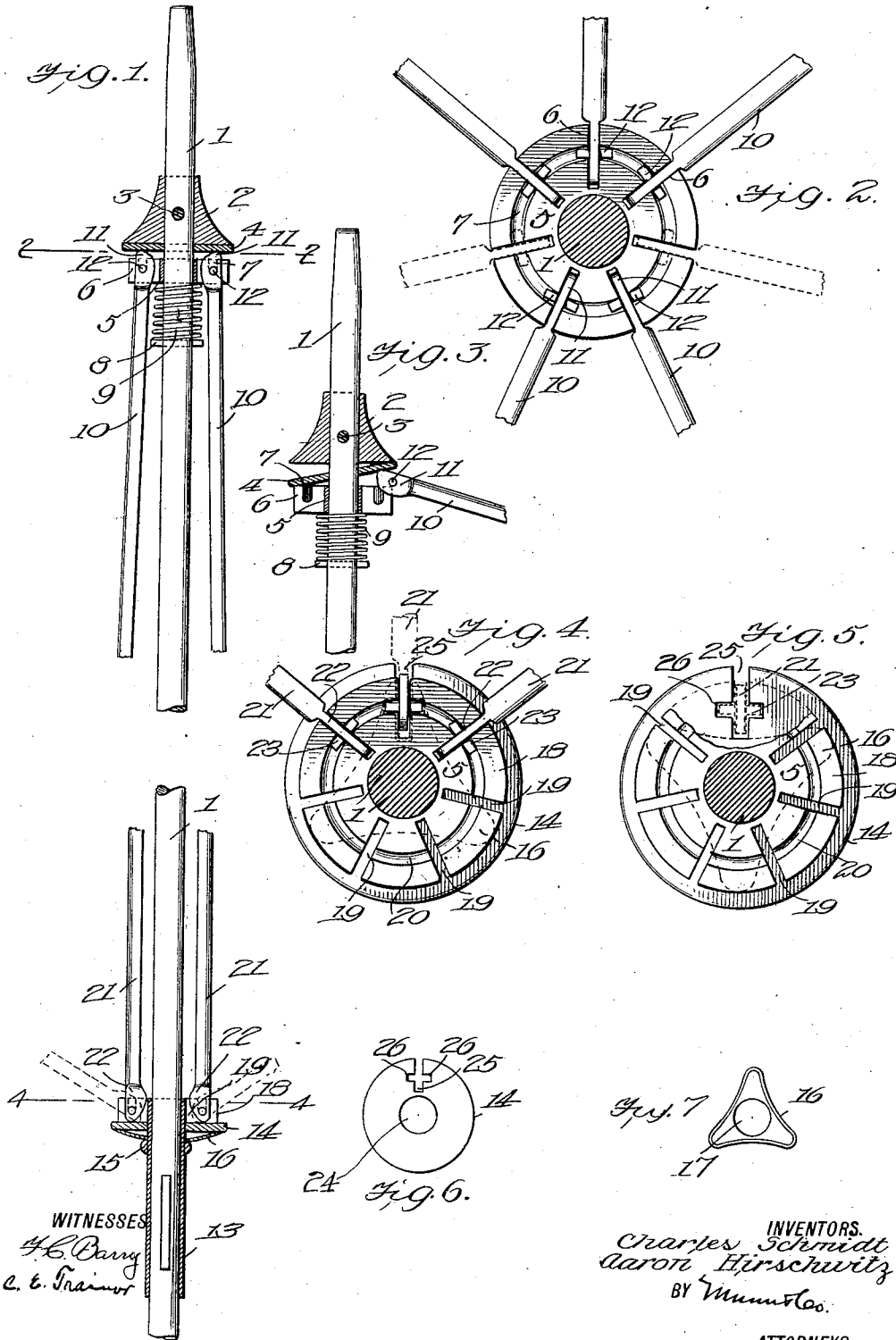
C. SCHMIDT & A. HIRSCHWITZ.

UMBRELLA.

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1,097,191.

Patented May 19, 1914.



# UNITED STATES PATENT OFFICE.

CHARLES SCHMIDT AND AARON HIRSCHWITZ, OF NEW ORLEANS, LOUISIANA.

## UMBRELLA.

1,097,191.

Specification of Letters Patent.

Patented May 19, 1914.

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*To all whom it may concern:*

Be it known that we, CHARLES SCHMIDT and AARON HIRSCHWITZ, citizens of the United States, and residents of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Umbrellas, of which the following is a specification.

Our invention is an improvement in umbrellas, and has for its object the provision of simple, inexpensive means for connecting the ribs and stretchers to the stick in such manner that the said ribs and stretchers may be easily detached and removed for the purpose of repairing or for any other purpose without necessitating the removal of the cover or the disassembling of the elements of the umbrella.

In the drawings:—Figure 1 is a vertical section of the connection between the ribs, the stretchers and the stick, Figs. 2 and 4 are sections on the line 2—2 and 4—4 respectively of Fig. 1, Fig. 4 being enlarged, Fig. 3 is a view similar to Fig. 1 showing the parts in another position, Fig. 5 is a plan view of a portion of the runner with the ribs removed and partly in section, Fig. 6 is a top plan view of the disk, and Fig. 7 is a similar view of the spring washer.

In the present embodiment of the invention, the stick 1 is of the usual construction and near the upper end thereof, a collet 2 encircles the stick, the said collet being secured in place by a rivet 3 or the like. A washer 4 encircles the stick below the collet, the said washer fitting against the large end or base of the collet. The collet is of brass or other suitable material and a notch 5 of brass or like material encircles the stick below the washer. The said notch is provided with a plurality of radial slots or recesses 6 and with an annular groove 7 on the upper face of the notch, the said groove intersecting all of the slots. A pin 8 is arranged transversely of the stick below the notch and in spaced relation with respect thereto and a coil spring 9 encircles the stick between the pin and the notch, the spring acting normally to press the notch toward the washer 4 and toward the collet. The ribs 10 are of usual construction, as for instance of channel material, and the inner end of each rib is flattened to form a head 11 and the head is provided with oppositely arranged lateral extending lugs 12,

the said lugs being formed in the present instance by passing a pin transversely of the head. The head 11 of each rib is received in one of the radial slots 6 of the notch with the pin thereof seated in the groove 7 of the notch. The head 11 is of such length that it will fit the notch when the umbrella is raised or opened as indicated in Fig. 2, and the head 11 of each rib is cam shaped as shown in Figs. 1 and 3, the outer edge of the head being flush or in alinement with the outer edge of the rib, while the inner edge of the head is enlarged laterally as shown.

When the umbrella is in closed position as shown in Fig. 1, the free ends of the heads 11 of the ribs bear against the washer 4, and any or all of the ribs may be disengaged from the notch by depressing the notch against the resistance of the spring as indicated in Fig. 3 and lifting the inner end of the rib or ribs until the pin is free from the groove 7. When in this position, the rib may be moved radially away from the stick, and may then be replaced by another.

The runner comprises a sleeve 13 slidable on the stick and provided with an external annular rib 15 near its upper end. Any suitable holding mechanism may be used in connection with the sleeve to hold the runner in adjusted position. A disk 14 is arranged on the sleeve above the rib and a spring washer 16 is arranged between the disk and the rib. The said washer is of triangular shape as shown in Fig. 7 and has a central opening 17 for receiving the sleeve. The apices or points of the washer bear against the under face of the disk near the periphery thereof and act normally to press the disk upwardly. The upper end of the sleeve 13 is provided with an enlargement or annular rib 18, and the said rib is provided with a plurality of spaced radial slots 19, and with an annular groove 20 on its under face intersecting each of the slots. The braces or stretchers 21 are of the usual channel material and the inner end of each of the said stretchers is flattened to form a head 22 and the head of each stretcher is provided with oppositely arranged laterally extending lugs 23 formed in the present instance by passing a pin transversely of the head of each stretcher, and the head 22 is shaped like the head 11 of a rib. The

heads of the ribs are received in the slots 19 with the pins seated in the groove 20.

The spring washer 16 normally presses the disk 14 toward the rib 18, thus preventing the disengagement of the pins from the groove 20. The disk 14 is provided with a central opening 24 for receiving the sleeve 13 and at one point in its periphery the said disk is provided with a radial slot 25, the said slot having a lateral recess or slot 26, in each of its side walls. The shape of the slot 25—26 resembles the end of the stretcher and the said slot is adapted to permit the passage of the end of the stretcher, the head fitting the portion 25 of the slot and the lugs fitting the portions 26.

To disengage a stretcher from the runner, the disk 14, which is rotatable on the sleeve, is turned until the slot 25—26 is in register with the slot 19 with which the stretcher is engaged. The end of the stretcher is then moved downwardly through the slot 25—26. The normal position of the disk 14 is with the slot 25—26 out of register with any of the slots 19.

Normally the improved umbrella is the same as any other umbrella, operating and capable of use in the same manner. Should however, a rib or stretcher become broken or should for any reason it be desired to remove a rib or stretcher, the end of the rib is disengaged from the notch in the manner before mentioned, and indicated in Fig. 3, after which the stretcher or brace is disengaged from the runner in practically the same manner. The rib is then slipped out of the loops 28 and the new rib is replaced by reversing the above process. To detach a brace or stretcher, it is first necessary to turn the disk 14 to bring the slot 25—26 in register with the slot 19 with which the said brace or stretcher is engaged. The disk rotates freely on the sleeve 13 and the free edge thereof may be milled to facilitate turning the same. The washer 16 holds the disk normally from rotation and also holds the disk firmly in contact with the under face of the rib 18. It is obvious that the disk 14 which corresponds to the washer 21 at the upper end of the stick is yieldingly pressed toward the notch, the rib 18 corresponding to the notch 5 at the upper end of the stick. The

rib 15 of the sleeve 13 corresponds to the collet.

We claim:—

1. In an umbrella, a stick, a collet rigid with the stick near the upper end thereof, a washer encircling the stick below the collet, a notch on the stick below the washer, said notch having spaced radial slots and an annular groove on its upper face intersecting the slots and arranged coaxial with the stick, ribs each having its inner end flattened laterally to form a head for engaging a radial slot and having oppositely arranged laterally extending lugs engaging the annular groove, and a spring pressing the notch toward the collet, said head being cam shaped to force the notch away from the washer when the ribs are moved toward the stick and to permit the notch to move toward the washer when the ribs are in closed position.

2. In an umbrella, a runner provided with an external annular rib near one end, a washer encircling the runner, a notch encircling the runner, said notch having spaced radial slots and an annular groove on the face adjacent to the washer, braces fitting at one end within the slots and having lateral lugs engaging the annular groove, and a spring between the rib and the washer, each of the braces having a cam shaped head at the lugs for moving the washer away from the notch as the braces begin to close and for permitting the washer to move toward the notch when the umbrella is closed.

3. In an umbrella, a stick, notches having radial slots and an annular groove on one face intersecting the slots, ribs and braces having at one end a head for engaging the slots and lateral lugs received in the grooves, a washer adjacent to the face of each notch provided with the groove, yielding means pressing each washer and notch toward each other, each of the ribs and braces having heads thereof beveled on the inner corner for engagement by the face of the washer to normally hold the braces and the ribs in closed position.

CHARLES SCHMIDT.  
AARON HIRSCHWITZ.

Witnesses:

EMILE CHARLES JANSEN,  
AUGUST CHARLES JANSEN.