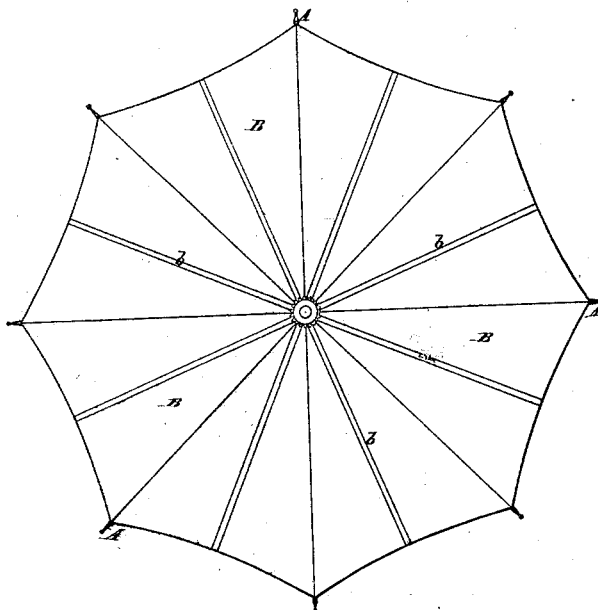


*Johnson & Hatchman,  
Umbrella.*

*No. 108151.*

*Patented Oct 11 1870*



*Witnesses:*

*W. Morris Smith  
J. C. Smith*

*Inventors:*

*Frederick Johnson & H. Hatchman  
By Brown, Scamlett & Co.  
Attorneys.*

# United States Patent Office.

FREDERICK JOHNSON, AND WILLIAM HATCHMAN, OF LONDON, ENGLAND,  
ASSIGNORS TO THOMAS C. MORTON PATON, OF NEW YORK.

Letters Patent No. 108,151, dated October 11, 1870.

## IMPROVEMENT IN UMBRELLAS.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern:*

Be it known that we, FREDERICK JOHNSON, of Wood Street, and WILLIAM HATCHMAN, of Little Love Lane, in the city of London, England, have invented certain new and useful Improvements in "Umbrellas;" and we hereby declare that the following is a full, clear, and exact description thereof.

Silk umbrellas are particularly liable to wear at the folds between the ribs; and, with a view to prevent this inconvenience, the fabric has sometimes been made thicker where the folds come than elsewhere. This, however, does not materially increase the durability of the umbrella, for the silk, even when thick, forms a sharp crease, which, by concentrating the wear to a single line, causes the fabric to be rapidly worn through.

According to our invention we prevent this undue wear, and increase the durability of the article by employing as a thickening material, at certain parts of the fabric, a fiber having the property of resisting the formation of sharp, well-defined creases.

Cotton and linen are fibers very suitable for this purpose, and by their use in this manner the durability of the umbrella is much increased.

As respects the remainder of the fabric, we prefer to make it entirely of silk, as other fibers do not so well retain their colors, and umbrellas made from them soon become shabby.

The silk may, however, be mixed with other fibers, but in all cases we use, in the manufacture of umbrellas, a fabric made thicker where the folds come than in other parts; and these thicker parts consist partly of silk, and partly of some vegetable fiber having the property of resisting the formation of the sharp creases or folds found in silk umbrellas.

The invention is illustrated in the accompanying drawing, which represents a top view of an umbrella.

A A indicate the ribs, and

B B, the gores of silk, of which the covering is composed.

The dark stripes *b b* represent the portions of the fabric extending along the middle of each gore or por-

tion of the covering between two ribs where the folding takes place, and which are strengthened by the introduction of the web of cotton or other vegetable fiber.

In carrying our invention into effect, we set up the loom for weaving the covering fabric, with which our umbrellas are made with a silk warp, just as for weaving a plain silk fabric, and for the width of somewhat more than an inch; where the creases are to come, we double the web by using two shuttles, one carrying a silk shoot, and the other a cotton shoot or web, both threads being of about the same substance, and with the ordinary silk warp and these combined webs the fabric is woven.

In place of cotton, flax and other vegetable fibers may be used as the additional web in precisely the same manner.

In place of using a warp composed entirely of silk yarns we sometimes use yarns made of cotton covered with silk, as is well known. Yarns of cotton or other vegetable fiber covered with silk may also be used for the web; but, as a general rule, it is preferable to use silk yarns for the warp.

What we claim as our invention, as a new article of manufacture, is—

An umbrella, with a covering of a silken fabric, in which, at the parts where the gores or portions between the several ribs are folded, the silken fabric is made stronger by the introduction of a web of cotton or other vegetable fiber, as herein set forth.

In witness whereof, we, the said FREDERICK JOHNSON and WILLIAM HATCHMAN, have hereunto set our hands this third day of June, in the year of our Lord one thousand eight hundred and seventy.

FREDERICK JOHNSON.  
WILLIAM HATCHMAN.

Witnesses:

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