I. R. HAYES & J. SOMERSET.

Umbrella.

No. 162,917. Patented May 4, 1875.

Fig. 1

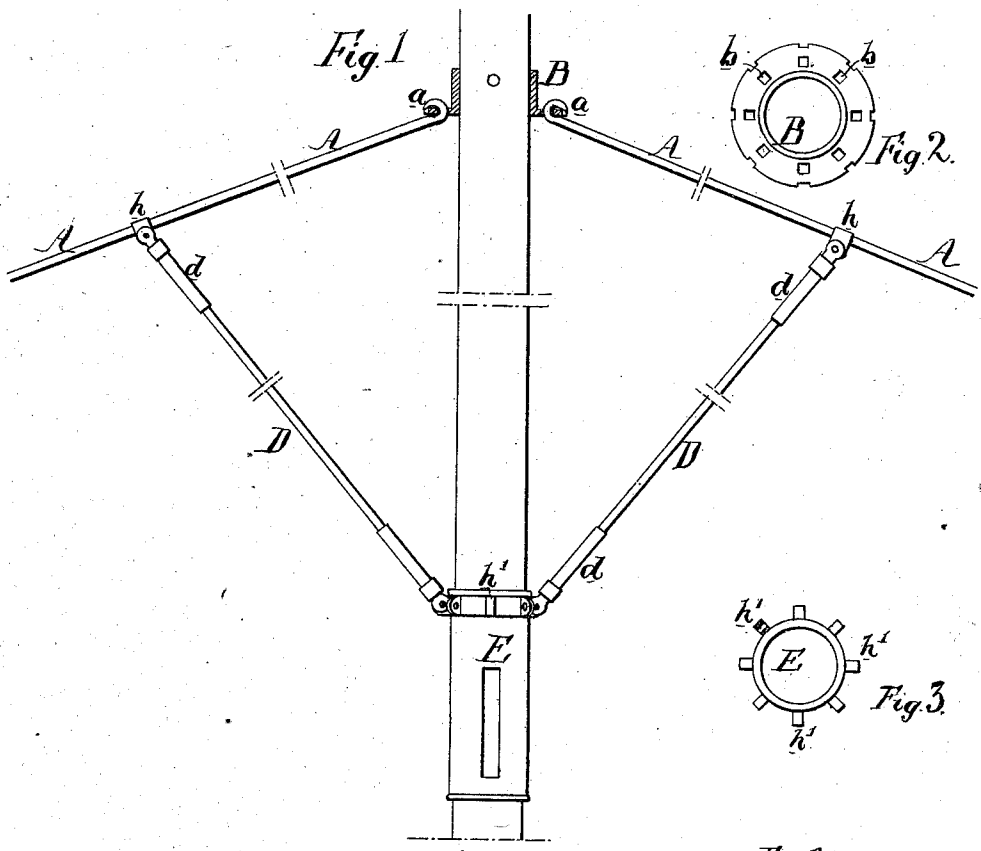


Fig. 2.

Fig. 3.

Fig. 5.

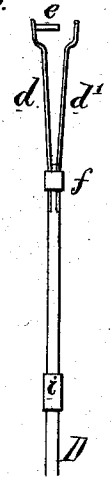


Fig. 4



Fig 6



Witnesses,
Harry Smith
Hubert Howson

Isaac R. Hayes and
John Somerset,
by their Attorneys,
Howson and Son

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UNITED STATES PATENT OFFICE.

ISAAC R. HAYES AND JOHN SOMERSET, OF MANCHESTER, GREAT BRITAIN.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **162,917**, dated May 4, 1875; application filed January 16, 1875.

To all whom it may concern:

Be it known that we, ISAAC R. HAYES and JOHN SOMERSET, both of Manchester, county of Lancaster, England, have invented certain Improvements in Umbrellas, of which the following is a specification:

The object of our invention is to so construct the ribs, stretchers, notches, and runners of an umbrella that the several parts can be readily put together and cheaply repaired, and this object we attain in the manner which we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 shows the several parts of the umbrella connected together. Fig. 2 is a plan view of the notch; Fig. 3 of the runner; and Figs. 4, 5, and 6, views illustrating the mode of connecting the ribs and stretchers.

The ribs are connected to the notch in the manner shown in Fig. 1, where a hook, *a*, on the end of each rib, fits into a corresponding opening in the single flange of the notch B, (see Fig. 2.) As this mode of connection cannot be employed for applying the stretchers to the ribs, we make use of the device shown more particularly in Figs. 4, 5, and 6.

On the end of the stretcher D is attached a pair of spring-jaws, *d d'*, which are either fastened directly onto the stretcher, as shown in Figs. 1 and 4, or through the medium of the ferrule *f*, Figs. 5 and 6. On one of these jaws is formed a pin, *e*, which fits into a corresponding opening in the opposite jaw. This pin is fitted into an opening in a projection, *h*, on the rib, and the connection is made secure by closing the jaws through the medium of the sliding ferrule *f*, Fig. 6.

We prefer to employ this device also for connecting the stretchers to the runner, a number of perforated radiating arms, *h*, serving the purpose of the projections *h* on the rib.

It will be evident that when a rib or stretcher breaks, a new one can be readily made and inserted by simply attaching the jaws *d d'* to the new rib or stretcher in the manner shown in Fig. 4 or in Figs. 5 and 6.

We claim as our invention—

The mode described of connecting the ribs and stretchers of umbrellas, by means of the spring-jaws *d d'*, ferrule *f*, connecting-pin *e*, and perforated projection *h*, combined substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ISAAC RICHARDSON HAYES.
JOHN SOMERSET.

Witnesses:
GEORGE DAVIES,
JOHN HUGHES.