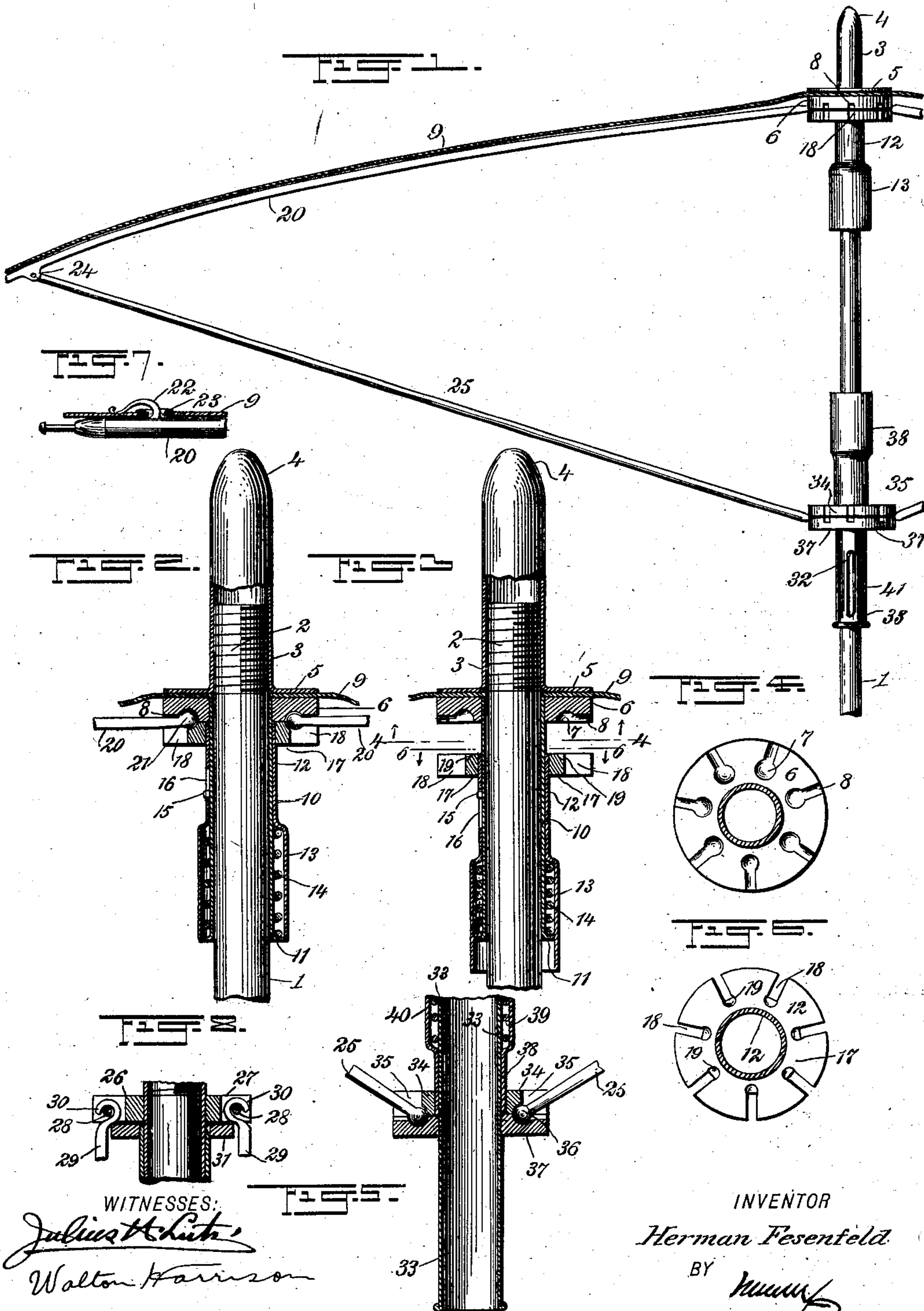


No. 750,178.

PATENTED JAN. 19, 1904.

H. FESENFELD.
KNOCKDOWN UMBRELLA.
APPLICATION FILED JUNE 3, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

HERMAN FESENFELD, OF HOQUIAM, WASHINGTON.

KNOCKDOWN UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 750,178, dated January 19, 1904.

Application filed June 3, 1902. Serial No. 110,052. (No model.)

To all whom it may concern:

Be it known that I, HERMAN FESENFELD, a citizen of the United States, and a resident of Hoquiam, in the county of Chehalis and State of Washington, have invented new and useful Improvements in Knockdown Umbrellas, of which the following is a full, clear, and exact description.

My invention relates to umbrellas, my object being more particularly to produce an umbrella which can be readily taken apart or put together and which is simple in its action, strong, cheap, and durable.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary section showing my improved umbrella. Fig. 2 is a fragmentary section, somewhat enlarged, showing one end of the central staff and parts appertaining thereto. Fig. 3 is a view somewhat similar to Fig. 2, showing the parts in position for removing the ribs. Fig. 4 is an inverted plan view of the disk 6 shown in Fig. 3. Fig. 5 is a fragmentary section of the device for holding the inner ends of the ribs. Fig. 6 is a plan view of the disk 17 shown in Fig. 3. Fig. 7 is a detail view showing one of the hooks and eyelets whereby the cloth covering is secured upon the outer ends of the ribs, and Fig. 8 is a fragmentary section showing a sliding head from which the stays radiate to the ribs.

A central staff 1 is threaded at its upper end 2, and upon the threaded portion is mounted a ferrule 3, provided with a rounded end 4 and with a flange 5. A disk 6 is provided with apertures consisting of hemispherical portions 7 and the slots 8. The covering, preferably of cloth, is shown at 9. The disk 6 is rigidly secured upon the thimble 10, which is provided at its bottom with an annular flange 11. Concentric to this disk is a bottle-shaped thimble comprising the neck 12 and the enlarged portion 13, and this bottle-shaped thimble is separated from the thimble 10 by the spiral spring 14, as indicated more particularly in Figs. 2 and 3. Upon the thimble 10 is rigidly mounted a boss 15, which engages the slots 16 in the

neck 12. Another disk, 17, is provided with apertures consisting of slots 18 and cavities 19, the shape of these slots and cavities being shown more particularly in Figs. 2, 3, and 6.

The ribs of the umbrella are shown at 20 and may be provided with ball-joints 21, which engage the apertures, as indicated in Fig. 2. By merely forcing the thimble 13 downward, as indicated in Fig. 3, any one or more of the ribs may be removed and, if desired, other ribs placed in the positions vacated by them.

Adjacent to the outer end of each rib 20 is a hook 22, preferably of the shape indicated in Fig. 7. Near the outer edges of the cloth or covering are eyelets 23, which may be brought into engagement with the hooks 22, as indicated more particularly in Fig. 7. When a rib is removed from its mountings, as above described, it may be readily detached from the cloth by merely pulling the eyelet 23 over the hook 22. By means of the pivot 24 the outer ends of the stays 25 are connected with the ribs in the usual manner.

In the modification shown in Fig. 8 the disk 26 takes the place of the disk 6 and the disk 31 is used instead of the disk 17. The disk 26 is provided with radially-disposed slots 27 and with a pivotal ring 28, which serves as a bearing for the ribs 29, which in this instance are provided with hooks 30. The disk 31 is not provided with slots and engages the ribs 29 directly.

In Fig. 5 are shown the connections for the inner ends of the stays 25. The sleeve 33 is of substantially the same form as the sleeve 10, already described. The disk 34 is of the form indicated in Fig. 5, being provided with slots 35 and with hemispherical apertures into which the ball ends or joints 36 of the stays 25 are fitted, so as to form bearings for the same. The disk 37 fits snugly against the disk 34 and is provided with apertures somewhat analogous to those of the disk 6, so that the two disks 34 and 37, taken together, constitute inner socket-joints for the balls 36. The disk 37 is rigidly mounted upon the sleeve 38, so that the entire structure shown in Fig. 5 is quite analogous to that shown in Figs. 2 and 3, with the exception that the stays 25 radiate upward, whereas the ribs 20 radiate horizon-

tally and downward. The sleeve 33 is secured rigidly to the disk 37 and is provided with a slot 32, which engages a spring-catch 41 in the usual manner.

5 The operation of my device is as follows: The parts being in the position indicated in Fig. 1, suppose that the owner of the umbrella desires to remove one of the ribs which has been accidentally broken. He pulls the sleeve
10 13 downward, whereupon the parts adjacent to the sleeve assume the position indicated in Fig. 3. He then removes the inner end of the rib. He next pulls the sleeve 38 upward, thereby separating the disks 34 and 37, thus
15 removing the inner end of the stay 25. He next disengages the hook 22 at the extreme outer end of the rib, thus leaving the rib and stay completely separate from the other parts of the umbrella. In inserting a new rib and
20 stay he merely slips the eyelet 23 over the hook 22 and connects the inner end of the rib with the disks 6 and 17 and connects the free end of stay 25 with the disks 34 and 37. If the ball-joint is used, as indicated in Fig. 2, it
25 is merely inserted between the disks, which are then forced together automatically by the action of the spring 14. If the ribs are provided with hooks, as indicated in Fig. 8, the hooks are simply connected with the pivot-
30 ring 28, while the disks are held asunder. The sleeve 40 contains spring mechanism 39 identical with that already illustrated in Figs. 2 and 3 and is arranged as shown generally in Fig. 1. A second description of the spring is
35 therefore unnecessary.

It will be noted that the disks 6 and 17 constitute a central head practically stationary, while the disks 34 and 37, together with their immediate connections, constitute a sliding
40 head normally free to travel along the staff.

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

45 1. In an umbrella, the combination with a stick, of a thimble mounted upon the stick and having a flange at one end, a disk secured to one end of the thimble and provided with bearings, a second thimble mounted to slide on the first thimble and having one end enlarged to form an annular space between it and the first

thimble, a coiled spring in the space between 50 the thimbles and having its ends bearing on the flange of the first thimble and the shoulder formed by the enlargement of the second thimble, and a disk secured to the second thimble and engaging the first disk, as set forth. 55

2. In an umbrella, the combination with a stick, of a thimble mounted upon the stick and having a flange at one end, a disk secured to one end of the thimble and provided in one face with recesses having hemispherical inner 60 portions, a second thimble mounted to slide on the first thimble and having one end enlarged to form an annular space between it and the first thimble, a coiled spring in the space between the said thimbles, and having its 65 ends bearing on the flange of the first thimble and the shoulder formed by the enlargement of the second thimble, and a disk secured to the end of the second thimble and provided with radial slots terminating at their inner ends in 70 cavities, as set forth.

3. In an umbrella, the combination with a stick, of a thimble mounted upon the stick and provided with an outwardly-projecting flange at its lower end and with a stud intermediate 75 its ends, a disk secured to the upper end of the thimble and provided on its under face with recesses having hemispherical inner portions, a second thimble mounted to slide on the first thimble and having its lower end enlarged 80 to form an annular space between it and the first thimble, said thimble being provided with a longitudinal slot to receive the stud of the first thimble, a coiled spring in the space between the said thimbles, and having its ends 85 bearing on the flange of the thimble and the shoulder formed by the enlargement of the second thimble, and a disk secured to the upper end of the second thimble and provided with radial slots terminating at their inner ends in 90 cavities, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMAN FESENFELD.

Witnesses:

C. W. HODGDON,
M. E. CARROLL.