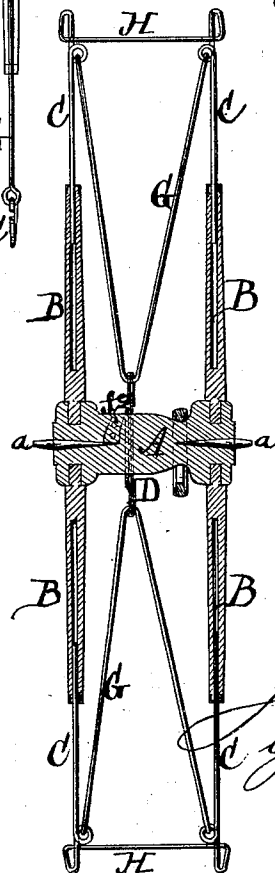
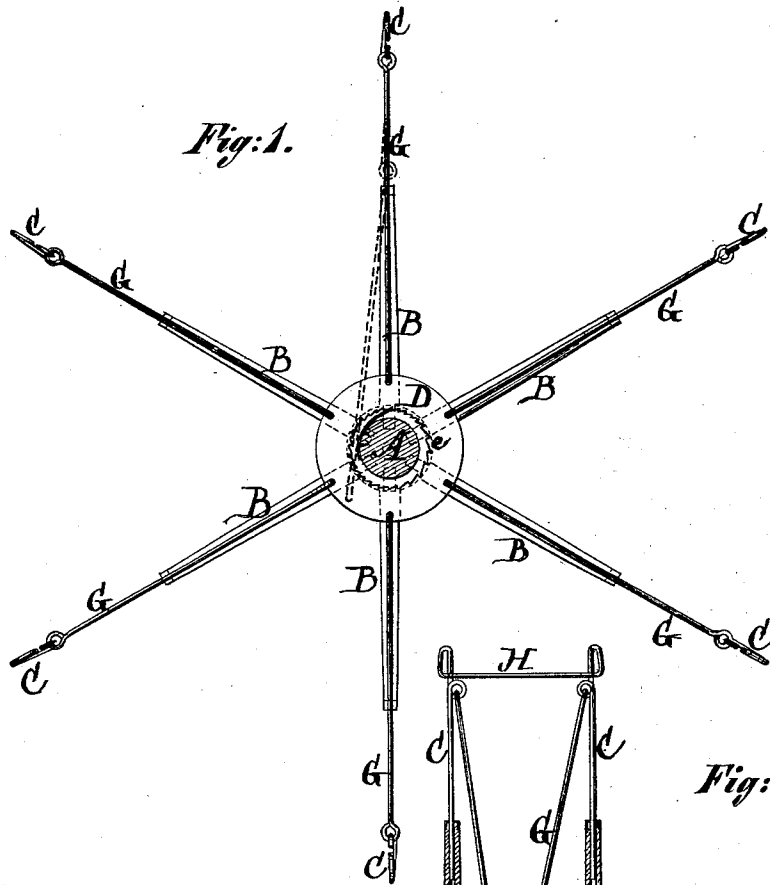


J. CHASE.
Swifts.

No. 156,135.

Patented Oct. 20, 1874.



Witnesses:

Henry Eichling.
Fred. Hays.

John Chase
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

JOHN CHASE, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN SWIFTS.

Specification forming part of Letters Patent No. **156,135**, dated October 20, 1874; application filed March 17, 1874.

To all whom it may concern:

Be it known that I, JOHN CHASE, of Paterson, in the county of Passaic and State of New Jersey, have invented an Improved Swift, of which the following is a specification:

The invention relates to certain improvements whereby the dimensions of the swift may be readily increased or diminished to correspond with the size of the skein.

The invention consists in the combination, with a series of telescopic spokes arranged in pairs, of a series of bars, connecting with a disk surrounding the hub, so that, by turning the disk, the spokes may be lengthened or shortened simultaneously, the disk being provided with a ratchet, for engagement with a pawl on the hub, to hold it in desired positions.

In the accompanying drawing, Figure 1 is a section parallel with the plane of revolution of the wheel. Fig. 2 is a central transverse section.

A represents the hub provided with gudgeons *a a*, upon which it revolves. Extending from the hub are radial spokes or arms B, which are tubular, and in which slide rods C. The spokes B are arranged in pairs; and the rods C are bent so that the ends of each rod enter the spokes of each pair. The bent portion of the rod C forms a cross-head, H, for the reception of the skein; and near this cross-

head is attached one end of a connecting-bar, G, the other end of which is attached to a disk, D, arranged to rotate on the hub A.

The bar G may, if desired, be simply a straight piece of metal: but I prefer to make it of *V* shape, as shown, with the ends connected to the cross-head, and the apex to the disk, as in that case it serves as a diagonal brace.

The disk D is provided with a ratchet, *e*, for engagement with a pawl, *f*, attached to the hub.

When the disk is rotated upon the hub the connecting-bars G are caused to assume a position either radial or tangential to the hub. When in a radial position they force the rods C outward from the hub, and increase the dimensions of the swift; and when in a tangential position the dimensions are diminished.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the hub A, having the tubular spokes B B arranged thereon in pairs, as described, with the rods C, cross-heads H, connecting-bars G, disk D, and ratchet and pawl *e f*, substantially as herein shown.

JOHN CHASE.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.