

No. 816,701.

PATENTED APR. 3, 1906.

W. BECKWITH.
SPINNING FLIER.

APPLICATION FILED JUNE 24, 1905.

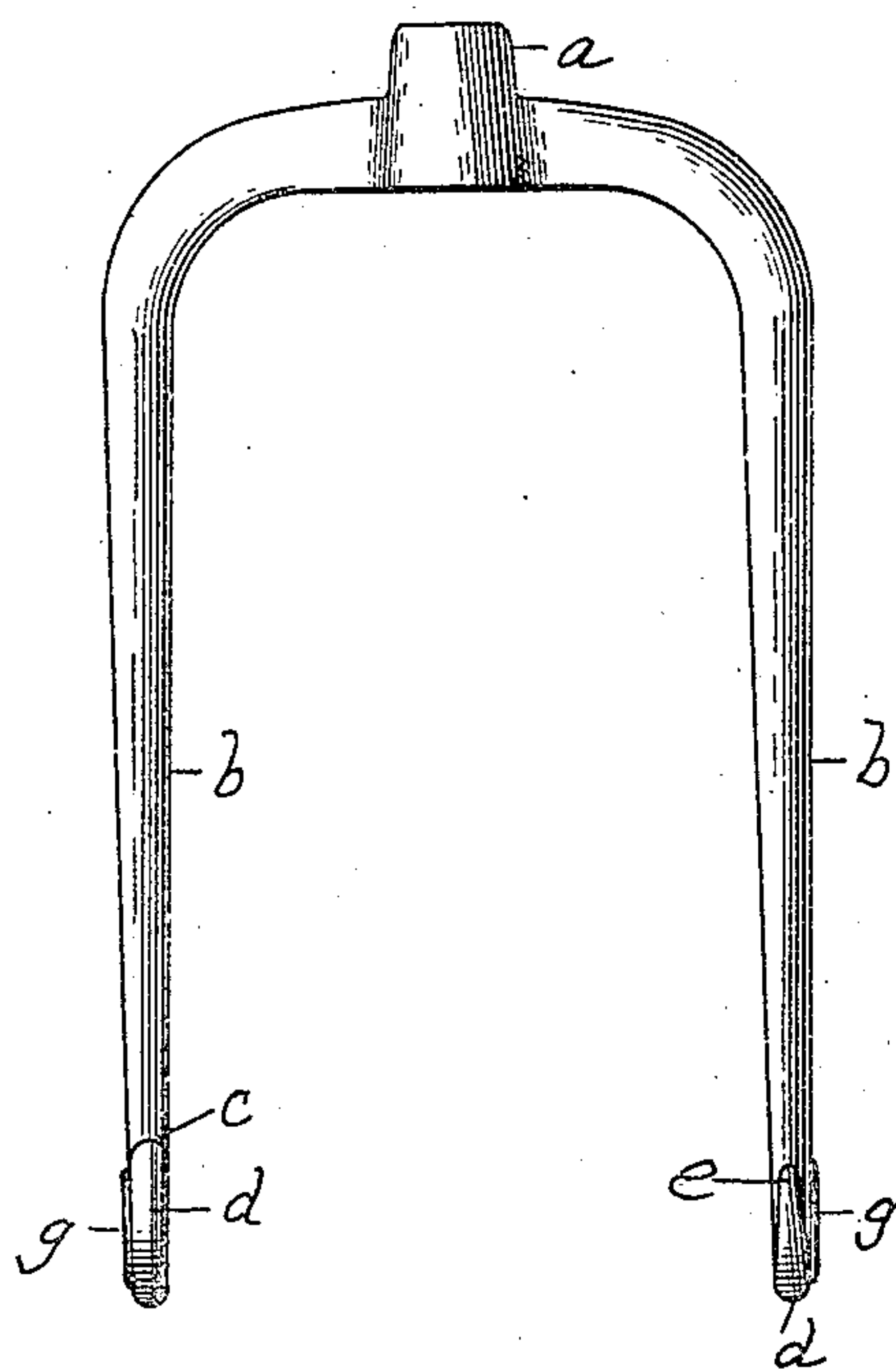


Fig. 1.

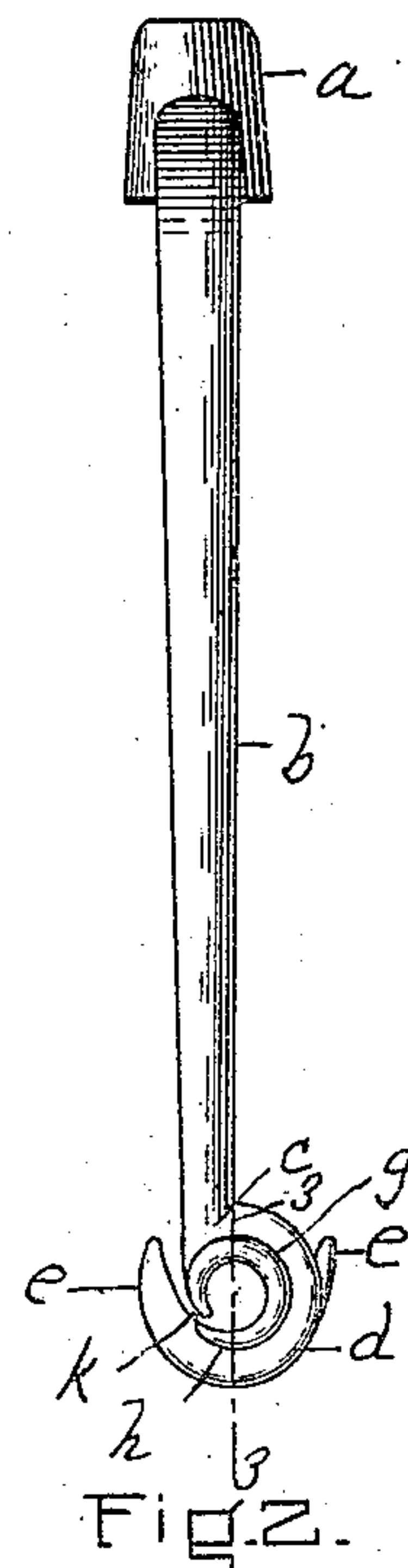


Fig. 2.

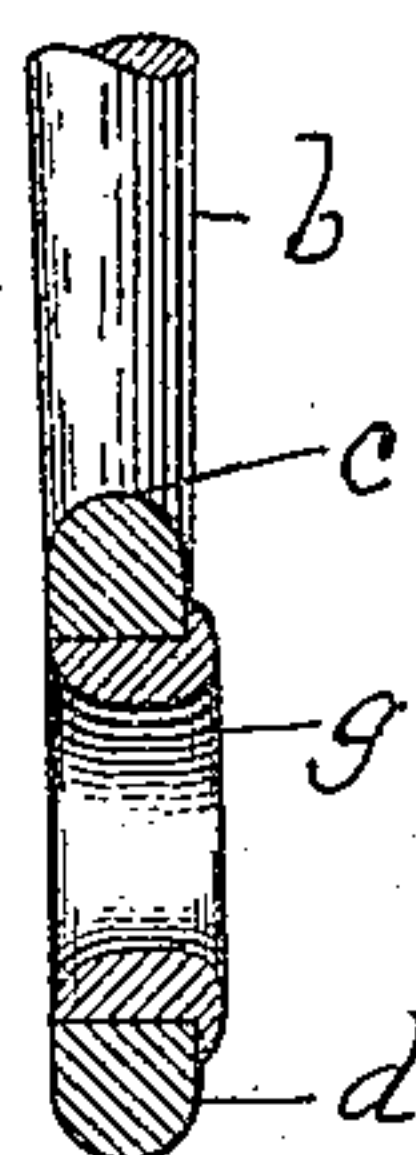


Fig. 3.

WITNESSES
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WILLIAM BECKWITH, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO BERTIE E. DAVIS, OF LOWELL, MASSACHUSETTS.

SPINNING-FLIER.

No. 816,701.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed June 24, 1905. Serial No. 266,807.

To all whom it may concern:

Be it known that I, WILLIAM BECKWITH, a citizen of the United States, residing in Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Spinning-Fliers, of which the following is a specification.

This invention relates to certain new and useful improvements in fliers for spinning spindles; and it has particular reference to the curled ends of the arms of the flier and to the construction of the said curled ends with relation to the eyes which are held therein.

The invention has for its principal objects to reduce the thickness of the curled ends, which is usually considerably greater at those points than the thickness of the arms, and to enable the eye to be protected and made very hard, thus greatly increasing the length of its service.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my improved flier. Fig. 2 is an end view of the same. Fig. 3 is an enlarged section taken on line 3 3, Fig. 2.

Similar letters of reference indicate corresponding parts.

a represents the neck, and *b b* the arms of the frame, the thread being passed through the neck in the ordinary manner.

In most fliers the ends of the arms are curled up into a small coil which extends outside the arm—that is to say, beyond the vertical plane of said arm—leaving only about a quarter of an inch between the adjacent flier ends, and as the “doffers” do not always screw the fliers down tightly when the frame starts they vibrate and cause the ends to interfere and break off. In this device the ends of the arms *b* are curled in the path of revolution of the arm without projecting on either side. In other words, the curl is simple (not spiral) on a single plane and does not project sidewise or laterally. In this curl the end extends at *c* almost horizontally outward and continues in nearly a true circle at *d* to a point on the opposite side of the arm *b*, and thence extends upward to its bluntly-pointed end *e*, all the parts of the curl being in a single plane and no thicker than the lower or thinnest end of the arm from which it extends. Thus about three-eighths of an

inch more space is provided between the adjacent flier ends than when the curl is spiral.

g represents the eyes. Each eye is held by a very tight fit inside the curl and projects but very slightly beyond the sides thereof, and the arms of the flier have a spring temper or may be hardened within an inch or two of the top, whereby said arms will hold the hard metallic eyes tightly and firmly. Thus a very hard and durable eye may be applied, which is removable by pliers or other suitable instrument. Each eye comprises the main portion which I have lettered *g*, which is practically on an arc of a true circle and is concentric with the portion *d* of the curled ends, but at the outer end the eye leaves the arc of the circle, so that its end *h* projects somewhat tangentially and extends snugly against and slightly into the inner edge of the curl at the point where said curl leaves its true arc shape and the end *e* begins. The opposite end *k* of the eye extends inward next the end portion *e* of the curl and in an opposite direction therefrom, whereby a clear passage to the interior of the eye is left between the parts *e* and *k*. Thus the wear of the thread is on the eye, which can be easily removed and replaced when it becomes worn, while where the thread acts directly on the curl and wears it out a new end must be welded on, involving expense and loss of time.

The thread is quickly applied by simply slipping it down the side of the arm *b* behind the flaring or tangential end *e*, when it is quickly passed between said end and the end *k* into the eye.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described improvement in spinning-fliers, comprising the downwardly-extending arms *b* of the frame, the curled lower ends thereof, said curls being in the form of substantially circular coils extending in the path of revolution of the arm, the outer ends *e* of the curls extending upward for a short distance along the side of the arm but flaring somewhat therefrom; and eyes held friction-tight within the curl, each eye consisting of the main portion *g* which is concentric with the corresponding portion of the curl, the end portion *h* extending along the lower portion of the inner surface of the curl toward the outer end thereof and the opposite end por-

tion *k* which extends from the main portion of the curl under the end of the arm and inward from the line of the side of said arm above and in the opposite direction from the
5 end portion *h* of the eye and in the opposite direction from the end portion *e* of the curl, whereby the thread may slip easily along the arm behind the upturned end of the curl and between said upturned end and the down-

turned end *k* of the eye into said eye, for the purpose set forth. 10

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

WILLIAM BECKWITH.

Witnesses:

MICHEAL COURTNEY,
JOHN J. HOGAN.