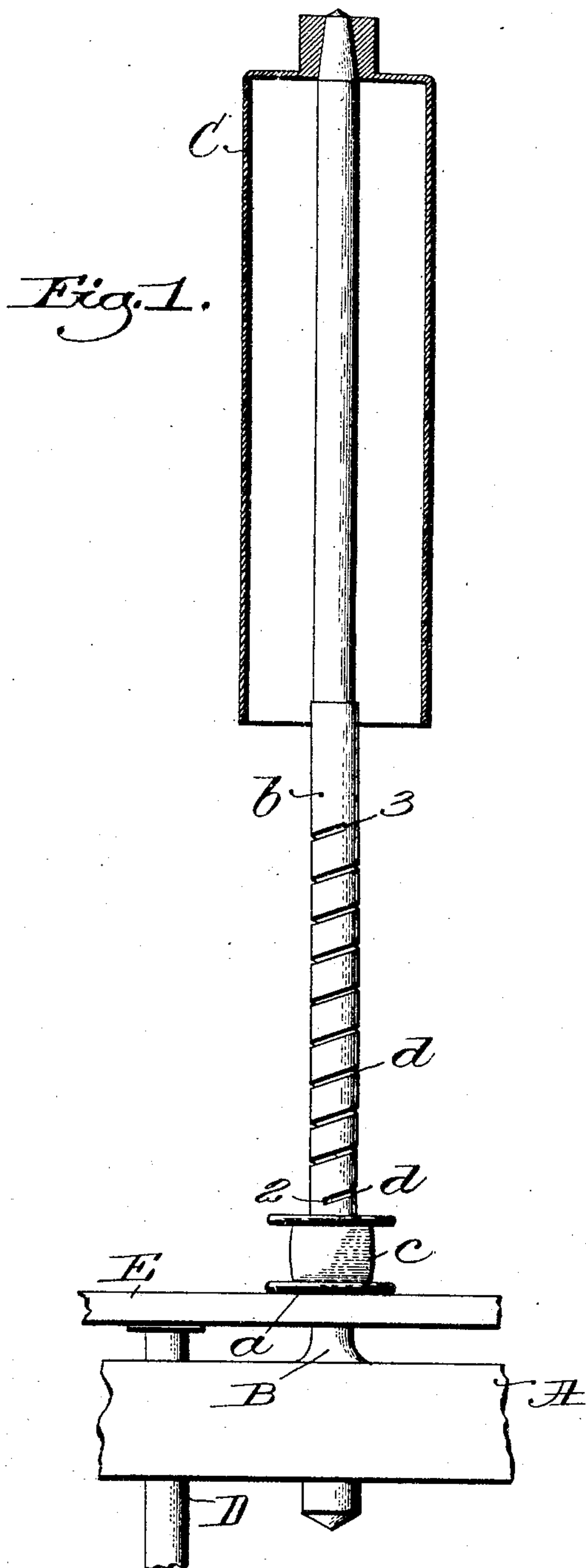


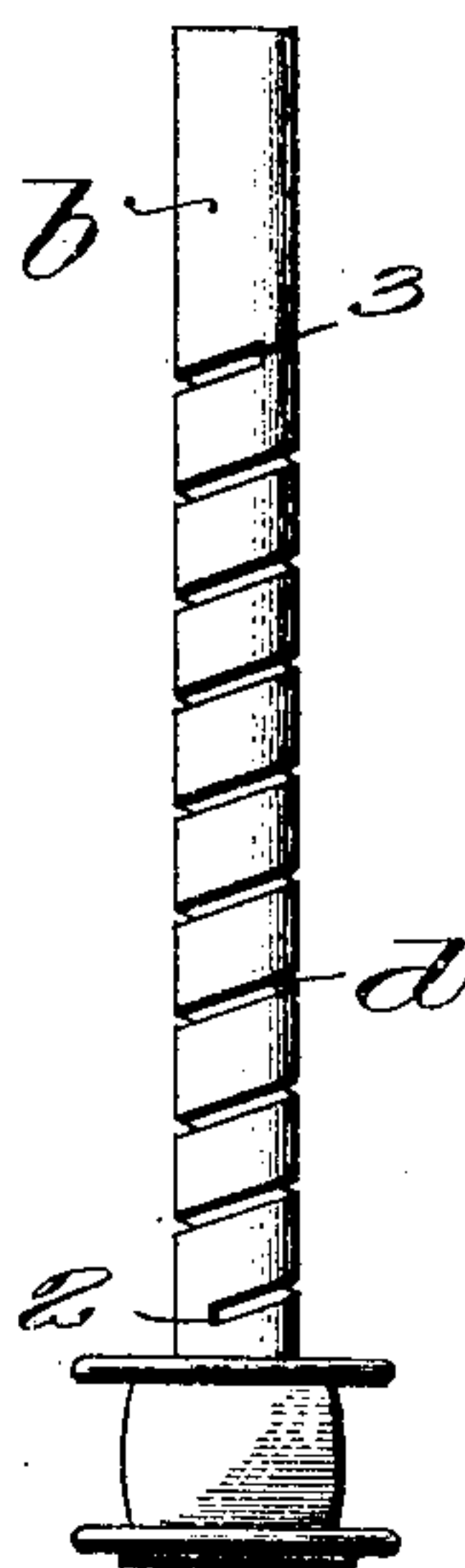
No. 786,528.

PATENTED APR. 4, 1905.

H. SPENCE.  
COP TUBE FOR SPINNING.  
APPLICATION FILED MAY 19, 1904.



*Fig. 2.*



Witnesses:  
Fred. S. Grunkaf.  
S. Wm. Lutton.

Inventor.  
Harry Spence,  
by Stanley Sigmond  
Attys.

# UNITED STATES PATENT OFFICE.

HARRY SPENCE, OF SANFORD, MAINE, ASSIGNOR OF ONE-FOURTH TO  
GEORGE B. GOODALL, ONE-FOURTH TO LOUIS B. GOODALL, AND  
ONE-FOURTH TO JOSEPH HOLLINRAKE, OF SANFORD, MAINE.

## COP-TUBE FOR SPINNING.

SPECIFICATION forming part of Letters Patent No. 786,528, dated April 4, 1905.

Application filed May 19, 1904. Serial No. 208,697.

*To all whom it may concern:*

Be it known that I, HARRY SPENCE, a citizen of the United States, residing at Sanford, in the county of York and State of Maine, have  
5 invented an Improvement in Cop-Tubes for Spinning, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention relates to a novel cop-tube adapted to be fitted to a spindle and to be revolved thereon.

Ordinarily cop-tubes are made from brass or other metal tubes, and in handling the same  
15 and when off the spindle they are apt to be sprung somewhat out of a straight line by rough usage, and thereafter they cannot be readily applied to the spindle to be rotated thereabout. These cop-tubes are commonly  
20 used on dead-spindles of what is known as "cap-spinning machines."

My improved cop-tube comprises a tube, of metal, having a spiral slot extended from near one end toward and near the opposite end  
25 thereof, and should the same become bent in handling or due to being dropped upon the floor it is sufficiently flexible to readily adapt itself to the spindle, and it may be properly revolved about the spindle in the winding of  
30 the yarn being spun.

Figure 1 in side elevation represents a sufficient portion of a cap-spinning machine with which my improved cop-tube is illustrated to enable my invention to be understood. Fig.  
35 2 shows the cop-tube detached.

In the drawings, A represents a spindle-rail in which is mounted the foot of a dead-spindle B, provided at its upper end with a cap C. The rail A receives one or more usual guide-  
40 rods D, the upper ends of which sustain a lifting-rail E. The lifting-rail about the dead-spindle is provided with a drag or washer *a*, which may be felt or leather. This spindle sustains revolvably the cop-tube to be described,  
45 comprising, essentially, a barrel *b* and a connected head *c*, the head being made as a pulley to receive a belt driven in any usual way

by which to rotate the cop-tube about the spindle.

Usually, as stated, the barrel of a cop-tube 50 is unslotted, and consequently stiff, and when bent or distorted it is very difficult, if not quite impossible, to again restore it to its normal position.

In accordance with my invention I start at 55 2 near the pulley or head *c* a spiral slot *d* and terminate the same at about the point 3 a short distance below the upper end of the barrel of the tube, the tube by reason of this spiral slot being made sufficiently flexible 60 throughout the greater portion of its length, and consequently should the barrel thereof be bent by rough handling when off the spindle it will readily adapt itself to the configuration of the exterior of the spindle when the 65 cop-tube is again applied to the spindle.

A cop-tube slotted, as herein described, possesses far greater durability than the ordinary unslotted cop-tube, and so, also, the slotted cop-tube will readily adapt itself to any 70 lack of truth in the spindles themselves, it being well understood that the spindles and cap-spinning frames are subjected to much rough usage and are liable to be bent out of true, and an ordinary unslotted tube cannot be ap- 75 plied to a spindle under such conditions and be used, for the reason that the lack of truth in the spindle retards the speed of the cop-tube, so that the same cannot be run evenly, and variations in the speed or a loss of speed 80 results in what is commonly designated as "soft-twisted yarn," which renders the same of low quality.

The slot *d* shown is represented as cut from the left hand, this being necessary when the 85 tube is run to the right; but should the tube be run to the left the spiral can be cut from the right.

Having described my invention, what I claim as new, and desire to secure by Letters 90 Patent, is—

1. A cop-tube having a spiral slot extending between and terminating within the ends of the barrel of the tube.

2. A cop-tube comprising a barrel and a head, the barrel having a spiral slot between and terminating within the head and the outer end of the tube.

5 3. The combination with a spindle, of a cop-tube having a spiral slot the ends of which terminate within the ends of the barrel of said tube.

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

HARRY SPENCE.

Witnesses:

JESSIE PERKINS,  
FRED J. ALLEN.