(No Model.) 4 Sheets—Sheet 1.

C. G. V. SJÖSTRÖM.

APPARATUS FOR DRYING YARN.

No. 581,948. Patented May 4, 1897.

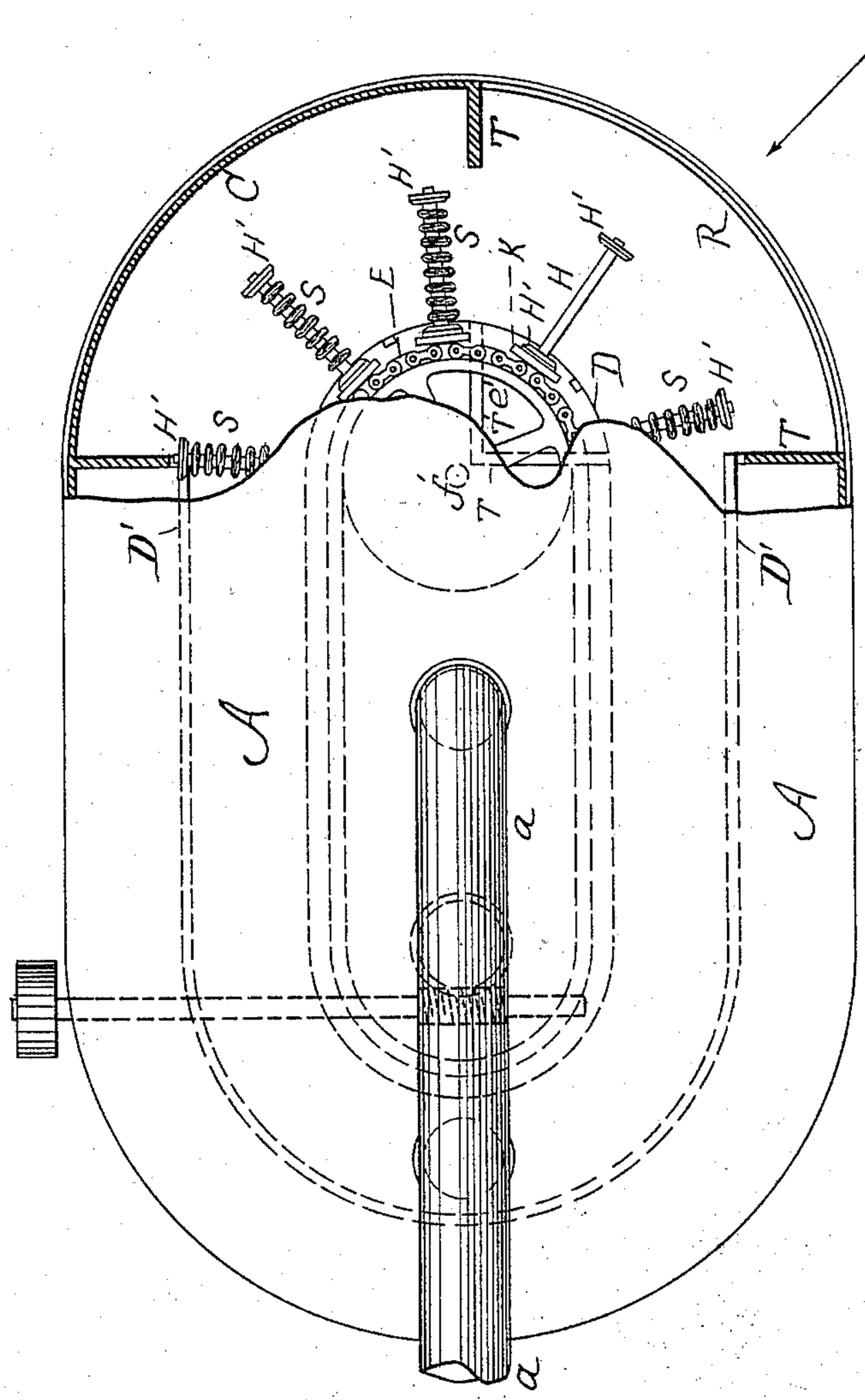

Fig. 1.

WITNESSES

A. N. Bonney.

C. G. Craydon.

INVENTOR

Charles G. V. Sjöström

By his attys.

Thomas W. Williams

(No Model.)

4 Sheets—Sheet 2.

C. G. V. SJÖSTRÖM.

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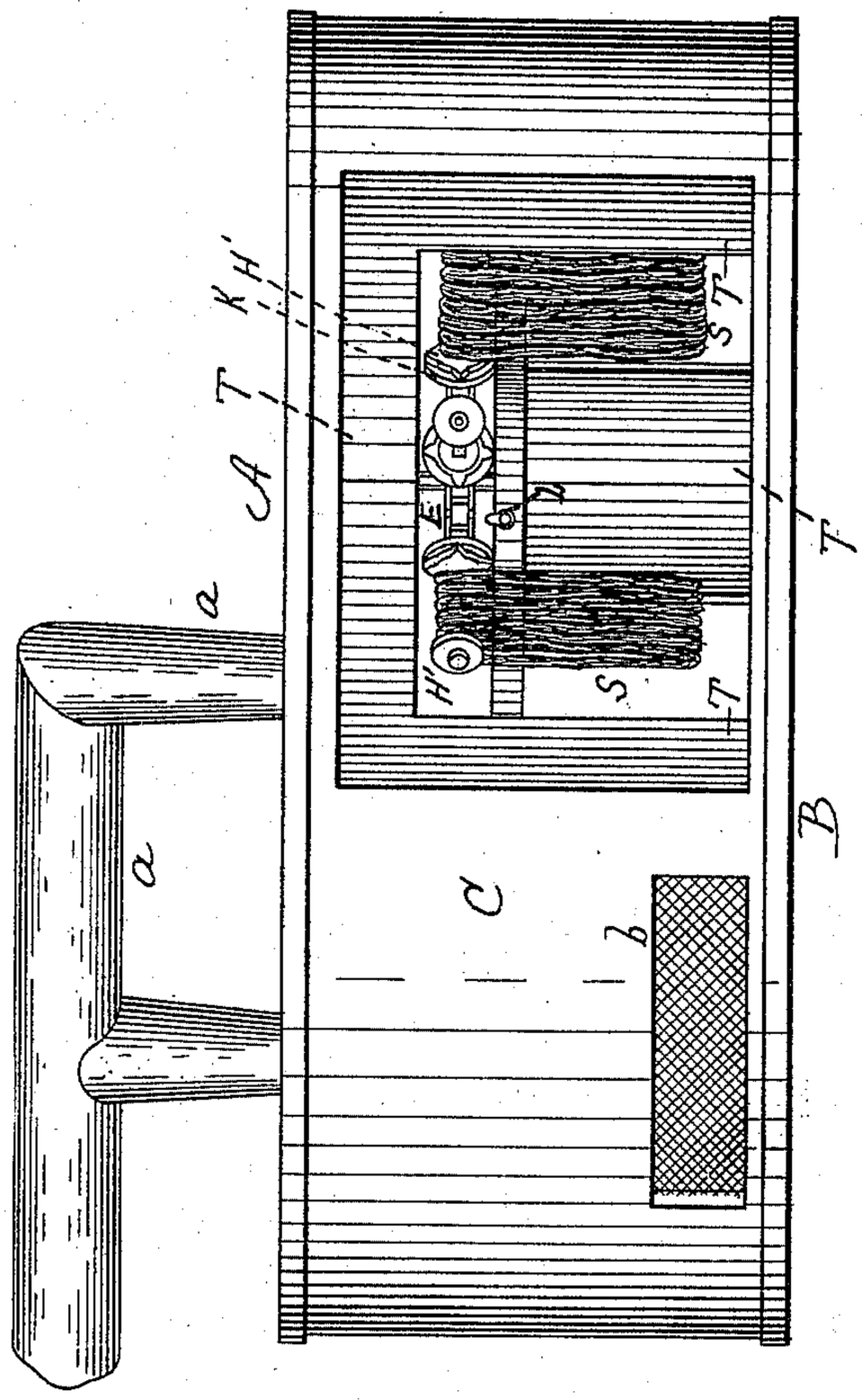

Fig. 2.

WITNESSES

A. A. Ronney.

C. G. Graydon.

INVENTOR

Charles G. V. Sjöström

By his atty.,

Henry C. Williams.

(No Model.)

4 Sheets—Sheet 3.

C. G. V. SJÖSTRÖM.

APPARATUS FOR DRYING YARN.

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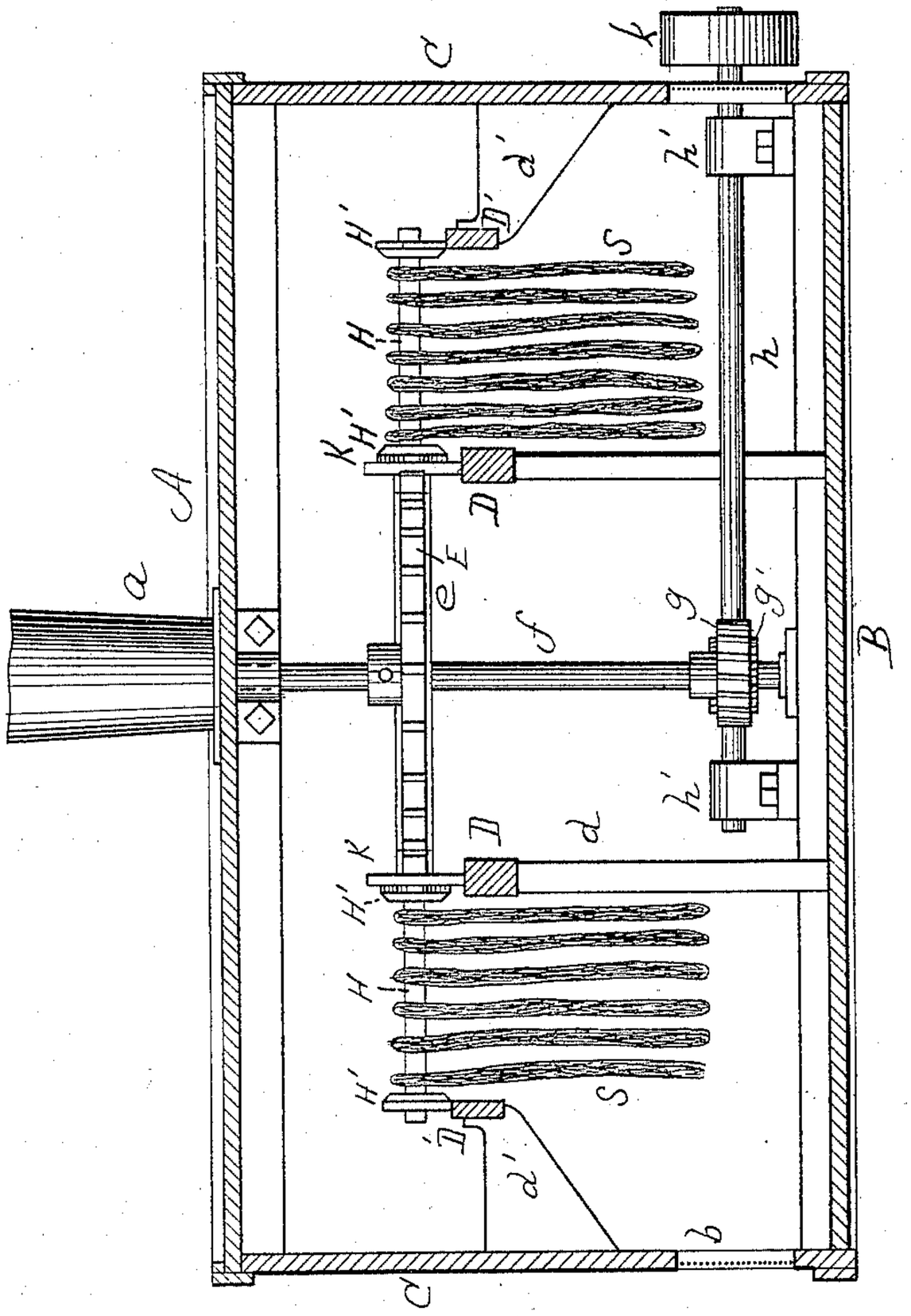

Fig. 2.

WITNESSES

A. A. Ronney

C. G. Graydon

INVENTOR

Charles G. V. Sjöström

By his atty.

Henry W. Williams

(No Model.)

4 Sheets—Sheet 4.

C. G. V. SJÖSTRÖM.

APPARATUS FOR DRYING YARN.

No. 581,948. Patented May 4, 1897.

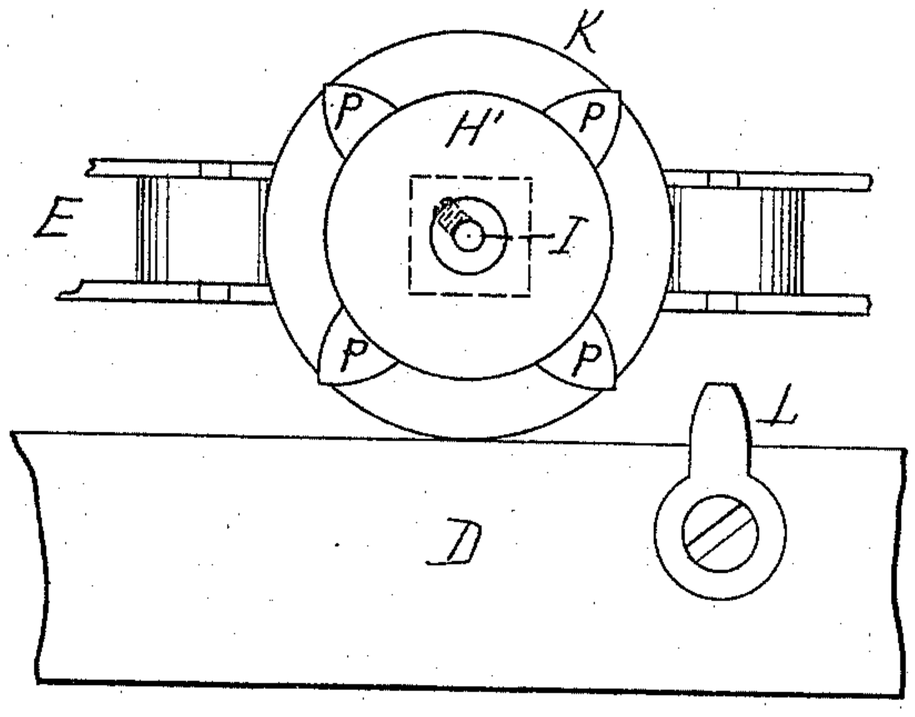

Fig. 4.

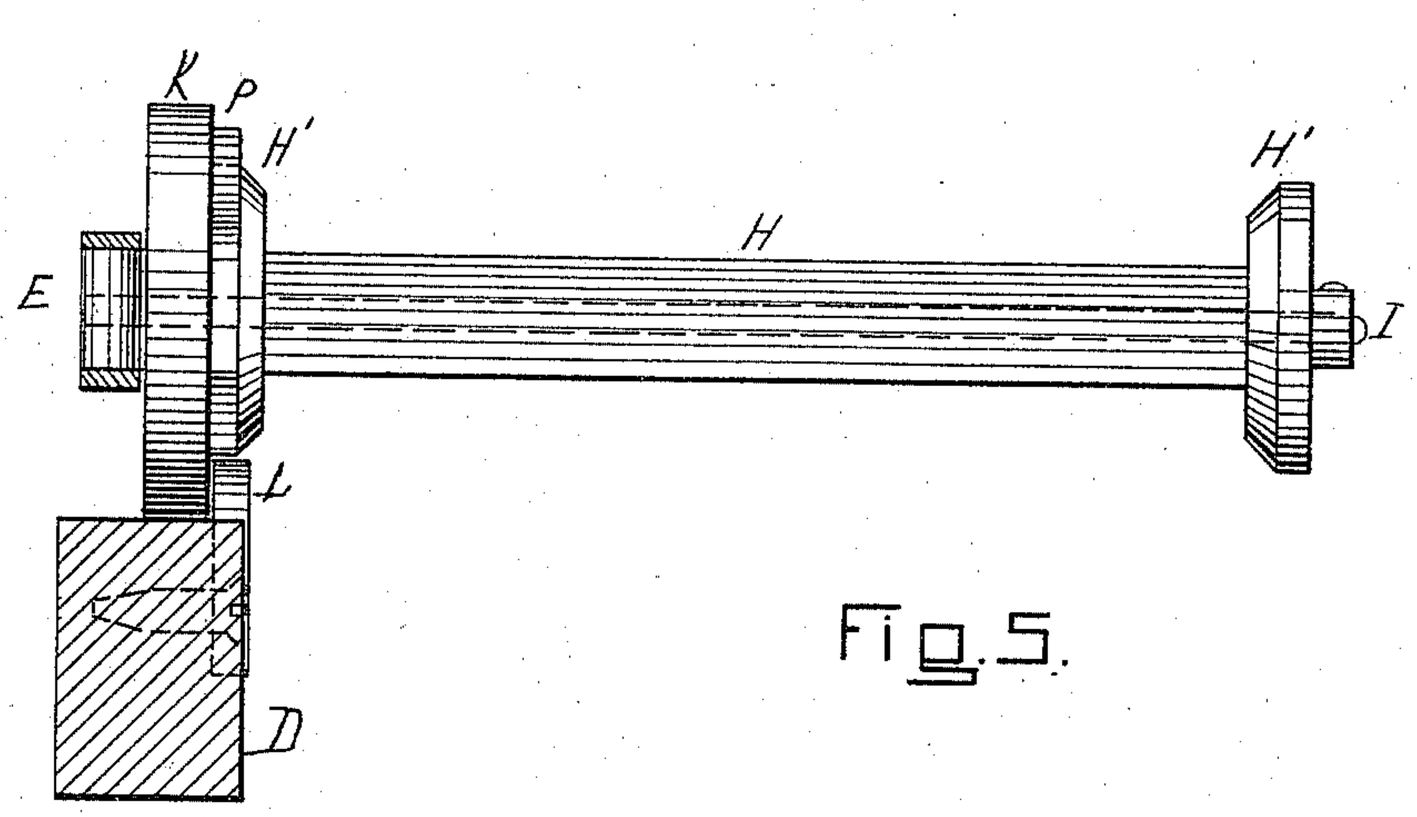

Fig. 5.

WITNESSES

A. A. Ronney.

C. G. Graydon.

INVENTOR

Charles G. V. Sjoström

By his atty;

Henry W. Williams

UNITED STATES PATENT OFFICE.

CHARLES G. V. SJOSTROM, OF NEWTON, MASSACHUSETTS.

APPARATUS FOR DRYING YARN.

SPECIFICATION forming part of Letters Patent No. 581,948, dated May 4, 1897.

Application filed July 14, 1896. Serial No. 599,078. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. V. SJOSTROM, a citizen of the United States, residing in Newton, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Apparatus for Drying Yarns, &c., of which the following is a specification.

This device is intended for drying cotton, woolen, or worsted yarns, braids, slubbing, or anything which is formed in hanks.

In carrying out my invention I employ a case or receptacle, preferably in the form of an ellipse, into which hot air is let in at the top and out at the sides near the bottom, and within this receptacle are elliptical tracks upon which horizontal spools are carried around the interior of the receptacle by an endless chain. Upon these spools are hung the hanks of yarn, and mechanism is arranged to impart partial rotation to the spools at intervals in order to prevent any portion of the yarn from being permanently in contact with the spool, and hence out of contact with the hot air. An opening in the side of the receptacle is made in the path of the spools by means of which the hanks are placed upon and removed from the spools.

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

Figure 1 is a plan view of the device, a portion of the top or roof of the receptacle being represented as broken out. Fig. 2 is an elevation looking toward the structure in the direction of the arrow in Fig. 1. Fig. 3 is a cross vertical section of the same. Fig. 4 is an enlarged elevation in detail, showing the means for imparting partial rotation to the spool. Fig. 5 is a cross vertical section of the rail on which the wheel which supports the spool travels, illustrating the same feature which is shown in Fig. 4.

Similar letters of reference indicate corresponding parts.

A represents the top, B the bottom, and C the sides, of a receptacle or structure made preferably in substantially the shape of an ellipse. Hot air is forced into this receptacle through a suitable opening in the top by means of a flue *a* and is let out by means of suitable openings *b*, Fig. 2, in the lower portion of the side. Within the receptacle, at a convenient distance above the floor, is an elliptical track consisting of the inner rails D, supported by suitable posts *d*, and the outer rails D′, supported by brackets *d*′, extending from the side or wall C. The shape of this track is well illustrated by broken lines in Fig. 1.

E is an endless horizontal drive-chain engaged by the sprocket-wheels *e* and *e*′, the latter being supported on a suitable vertical spindle *f*′, sustained by the case, and the former being fast on the vertical shaft *f*, having its bearings in the receptacle and having fast thereon the gear *g*, which is engaged by a worm *g*′ on the horizontal shaft *h*, supported at *h*′ by the case and having fast thereon the driving-pulley *k*′. (See Fig. 3.) By this means the drive-chain E, which is located next inside the track D, is driven in an elliptical path within the receptacle next said track. The spools H are sustained loosely upon horizontal spindles or rods I, which extend outwardly from the drive-chain E, to which they are rigidly secured. Wheels K are also placed loosely upon said spindles between the inner of the flanges H′ and the chain E. These wheels run on the inner rail D, and thus support the spools in a horizontal position. To the outer side of the rail D are secured at intervals dogs or projections L, Figs. 4 and 5, and from the peripheries of the inner flanges H′ radial spurs P extend. As the spools are carried over the elliptical track by the drive-chain these spurs strike in succession the dogs or projections L, and thus a partial rotation is imparted to each spool, so that the portion of the hanks S which is in contact with the spool is moved out of such contact and is rendered accessible to the hot air. This receptacle or drier is provided with a doorway or opening R, Figs. 1 and 2, in order that the yarn may be hung upon and removed from the spools as they pass the doorway by an attendant, and in order that no more cold air than is necessary may enter the receptacle by means of said doorway vertical partitions T extend from the bottom to the top of the case on each side of the opening and above and on both sides of the path of the spindle, as shown in Fig. 1. Thus the yarn is passed through the hot air within the drying apparatus, is kept constantly in mo-

tion, and is shifted upon the spools, and the spools present themselves successively to the attendant at the doorway to be loaded with or relieved from the yarn.

With regard to the mechanism for shifting the position of the hanks by partially rotating the spools, I am aware that a mechanism for such a purpose is not broadly new, it having been used in connection with dyeing apparatus.

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

1. In a drying apparatus of the character described, a suitable receptacle or case provided with means for admitting and discharging hot air; a raised track within said receptacle; an endless horizontal chain supported within the receptacle next and following the line of the track; spools extending horizontally from said chain over the track, and mechanism for imparting horizontal motion to said chain, substantially as set forth.

2. The herein-described improved drying apparatus, comprising the receptacle A, B, C, provided with the doorway R; the raised track D, D′ conforming to the shape of the side of the receptacle at a distance therefrom; a drive-chain supported next and following the direction of said track; spindles extending horizontally from the drive-chain over the track; the vertical partition T extending from the wall of the receptacle next the opposite sides of the doorway on both sides of and above the path of the spindles; and mechanism for imparting horizontal motion to the drive-chain, substantially as set forth.

CHARLES G. V. SJOSTROM.

Witnesses:
HENRY W. WILLIAMS,
C. G. GRAYDON.