

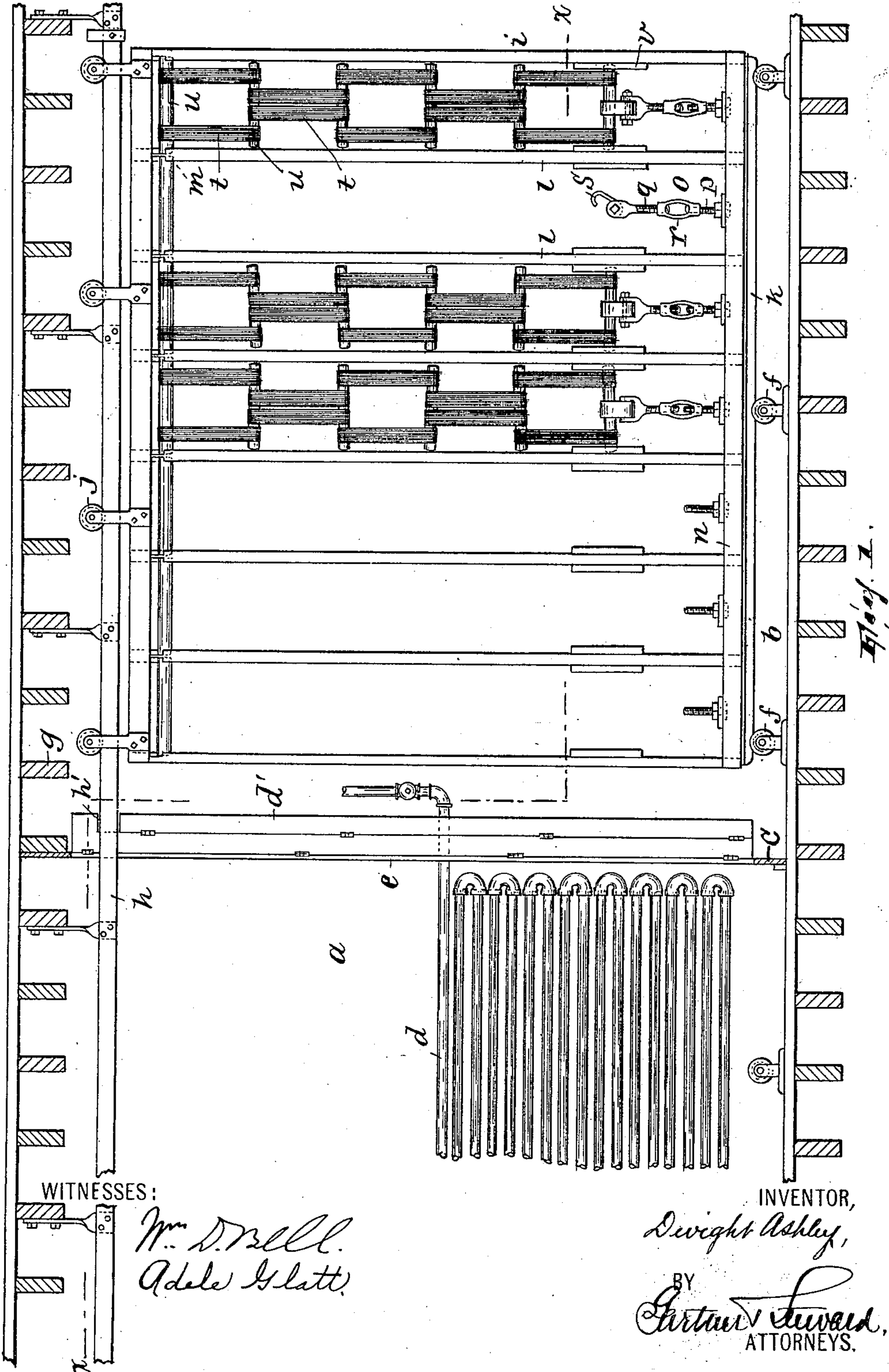
No. 885,968.

PATENTED APR. 28, 1908.

D. ASHLEY.  
APPARATUS FOR LUSTERING SKEINS.

APPLICATION FILED JAN. 31, 1907.

2 SHEETS—SHEET 1.



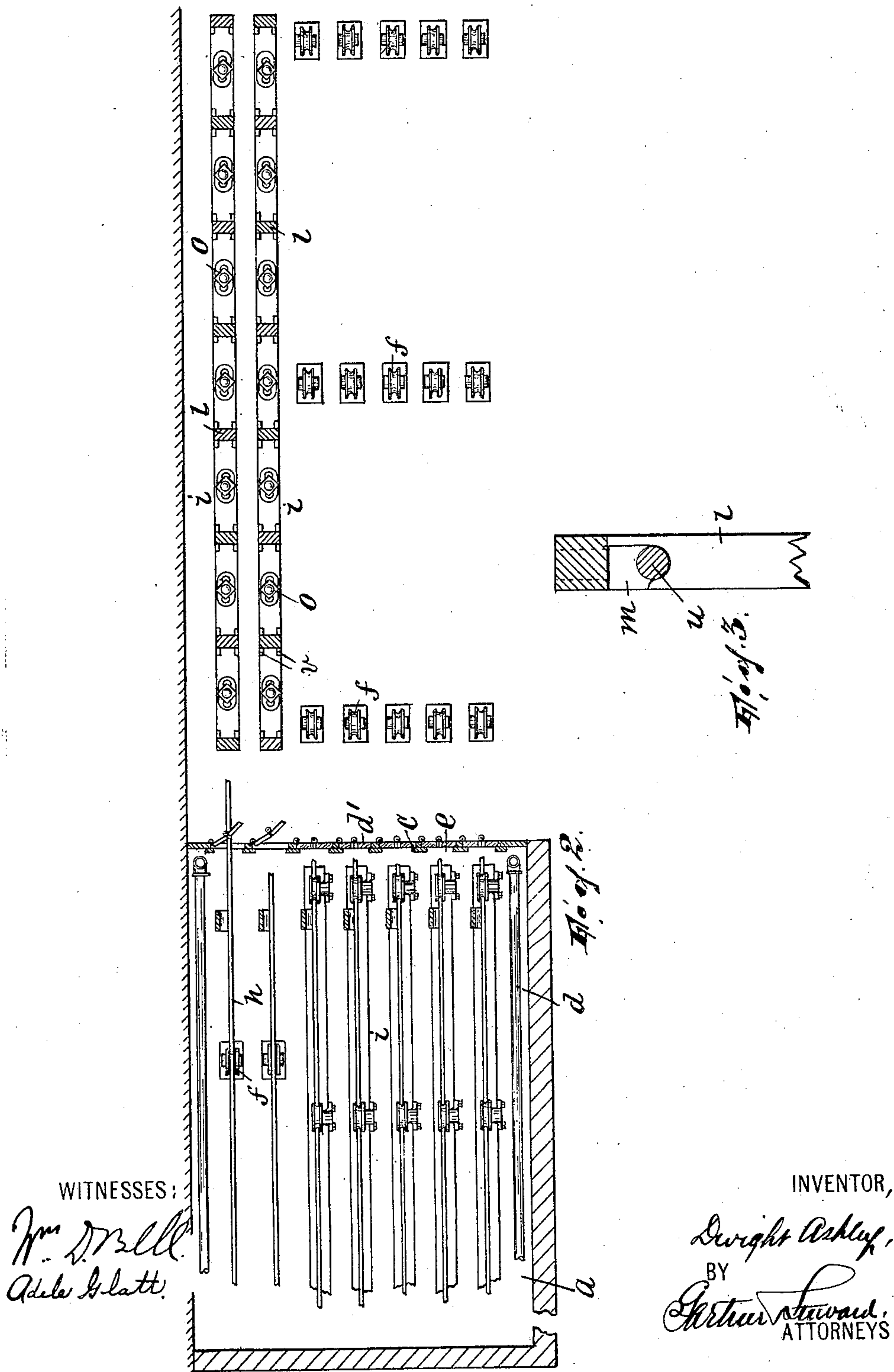
No. 885,968.

PATENTED APR. 28, 1908.

D. ASHLEY.  
APPARATUS FOR LUSTERING SKEINS.

APPLICATION FILED JAN. 31, 1907.

2 SHEETS—SHEET 2.





# UNITED STATES PATENT OFFICE.

DWIGHT ASHLEY, OF PATERSON, NEW JERSEY.

## APPARATUS FOR LUSTERING SKEINS.

No. 885,968.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed January 31, 1907. Serial No. 355,029.

*To all whom it may concern:*

Be it known that I, DWIGHT ASHLEY, a citizen of the United States, residing in Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Apparatus for Lustering Skeins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The present invention relates to the stretching and lustering of textile fibers (particularly silk) in the skein and it consists in an improved apparatus whereby the skeins are conveniently first put under the desired tension and then introduced into a chamber which is supplied with the heat found necessary to produce the required lustering effect and whereby the skeins may be so arranged that when the same are subjected to the stretching action, the strain will be exerted substantially uniformly on all the skeins although their lengths may vary somewhat, thus avoiding the loss of time and labor required to sort the skeins, as is necessary according to present methods, in the effort to secure a uniform stretching thereof and overcoming the non-uniformity of stretching which must more or less accompany the present method of arranging the skeins owing to the impossibility, in practice, of securing a sufficiently accurate sorting.

The invention will be found fully illustrated in the accompanying drawings, wherein,

Figure 1 is a view of the apparatus in vertical section, showing the heating chamber and one of the stretching frames removed therefrom. Fig. 2 is a view partly in horizontal section and partly in elevation of what is shown in Fig. 1 substantially on the line  $x-x$  thereof; and, Fig. 3 shows a detail of one of the frames.

In the drawings,  $a$  is a chamber set apart from the apartment  $b$  in which it is located by a wall  $c$  in such manner as to form a space which may be closed off from the rest of the apartment in the manner to be described and the temperature of said space or chamber quickly and economically raised to the degree found necessary. As shown, this cham-

ber is provided with steam coils  $d$ , or other heating medium, arranged preferably along the side walls of the same.

The wall  $c$  has a series of vertical slits or openings  $e$ , each of which may be closed by a door  $d'$  comprising two or more hinged leaves so that, if desired, the door may be manipulated in such manner as to expose only a limited portion of the opening, as when it is desired to determine from the outside the progress of the lustering process.

Parallel series of grooved rollers  $f$  are arranged in the apartment  $b$  on the floor thereof, and, correspondingly, above each series of rollers there is suspended from the floor beams  $g$  above, a rail  $h$ . Each series of rollers  $f$  and the corresponding rail  $h$  extend into the chamber  $a$ , as shown in the drawing, and in order to accommodate the closing of each door, the same may be formed with an opening  $h'$  where the rail extends through the opening  $c$ , said rollers and rails forming a guide-way for a rectangular frame  $i$  having rollers  $j$  running on the rail  $h$  and a shoe  $k$ , formed of an angle iron, running on the rollers  $f$ .

The uprights  $l$  of the frame  $i$  are formed at the top and on the faces thereof adjacent the other uprights with pockets  $m$ . To the lower side  $n$  of the frame are attached the tension devices  $o$ . Each tension device consists of reversely threaded parts  $p$  and  $q$ , a turn-buckle  $r$  connecting said parts, and a hook  $s$  pivoted to the part  $q$ , the part  $p$  being directly attached to the side  $n$  of the frame.

The skeins  $t$  are strung or linked together in the manner shown in Fig. 1, where  $u$  designates rods passed through the skeins, the uppermost rod in each series resting in the pockets  $m$  and the lowermost rod being engaged by the hook  $s$  of the corresponding tension device and having its ends disposed between guides  $v$  attached to uprights  $l$ ; when the tension is put on the series of skeins, the tendency for the latter to twist or turn while the turn-buckle is being manipulated is resisted by the guides  $v$ .

The arrangement of the skeins above referred to is accomplished substantially as follows: The operator first places what is to be the uppermost rod  $u$  in each series in the pockets  $m$ , having previously looped the two skeins over the same. The second rod  $u$  is then passed through these skeins, which are spaced from each other as shown, and also



two other skeins disposed between the first two skeins. The third rod is now passed through the second skeins and also through two other skeins in such manner that the second and two stand between the third two, which latter are spaced like the first. This arrangement of the rods and skeins is continued, two skeins being alternately spaced and arranged close together, until what is to be the bottom-most rod is reached, when the hook is engaged with said rod and tension applied to the whole series of skeins by manipulating the turn buckle. When the frame *i* has been filled with skeins in this manner, the same is run into the chamber *a*, as are also all the other frames when the operation of filling them with skeins has been completed. The doors *d'* are then closed and the steam or other heating medium admitted and allowed to remain until the combined effect of the heat and tension has produced the desired luster on the skeins. The heat is then turned off, the doors opened and the frames run out so that the skeins may be removed from the frames.

According to the present method of preparing skeins for stretching and lustering, several skeins are arranged on two rods, whereupon means is applied to draw the rods apart and put tension on the skeins. This obviously requires the skeins to be carefully assorted so that they shall have very approximately the same length; and it further requires that the inherent adaptability of each skein to stretch shall be taken into consideration (a matter practically impossible of calculation) since some skeins are known to yield more readily to stretching than others. According to my arrangement it has been demonstrated in practice that practically no assorting of the skeins previously to arranging them for stretching is necessary and that when the tension is applied to them it operates substantially uniformly on all the skeins in the series. This of course is the result of disposing the skeins alternately in "open" and "closed" disposition, connected by the rods *u*; the effect of putting the tension on the skeins after they have been so arranged is best shown in Fig. 1 (the two left hand series) where the rods are shown as having accommodated themselves to the varying lengths or other conditions in the skeins. It will be further observed that by my arrangement of the skeins in substantially flat groups, it is possible to run them in and out of the drying chamber a number at a time without opening but a small portion of one side of the chamber, whereby an economy in heat is attained.

Having thus fully described my invention,

what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus for lustering skeins, the combination, with a chamber having vertical elongated openings leading thereto, and means for heating said chamber, of guide-ways extending through the openings into said chamber, substantially flat frames arranged to move in said guide-ways, and means for securing the skeins, under tension, in the frames in substantially flat series, each series with its own plane substantially coincident with that of the corresponding frame, substantially as described.

2. In an apparatus for lustering skeins, the combination, with a chamber having vertical elongated openings leading thereto, and means for heating said chamber, of guide-ways extending through the openings into said chamber, substantially flat frames arranged to move in said guideways and having parallel members, and means for securing the skeins, under tension, in the frames in substantially flat series, each series with its own plane substantially coincident with that of the corresponding frame, said series alternating with said parallel members, substantially as described.

3. In a means for stretching skeins connected in series by means of rods, the combination, with the rods, of a substantially flat frame, means for holding each end rod in the series in substantially the plane of the frame, and means for subjecting the skeins to tension, substantially as described.

4. In a means for stretching skeins connected in series by means of rods, the combination, with the rods, of a substantially flat frame, and means for holding each end rod in the series in substantially the plane of the frame, substantially as described.

5. In a means for stretching skeins connected in series by means of rods, the combination, with the rods, of a suitable frame, parallel members arranged in said frame, said members being adapted to support one end rod in the series between them in the plane of the frame, means, connected with the frame and adapted to be connected with the other end rod, for subjecting the skeins to tension, and guides on said members for maintaining the other end rod also in the plane of the frame, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this eighth day of January, 1907.

DWIGHT ASHLEY.

Witnesses:

S. LONGBOTHAM,  
J. STAPLETON.