P. H. KOEPP.

CURTAIN STRETCHER.

APPLICATION FILED JUNE 14, 1918.

1,311,653.

Patented July 29, 1919.

3 SHEETS—SHEET 1.

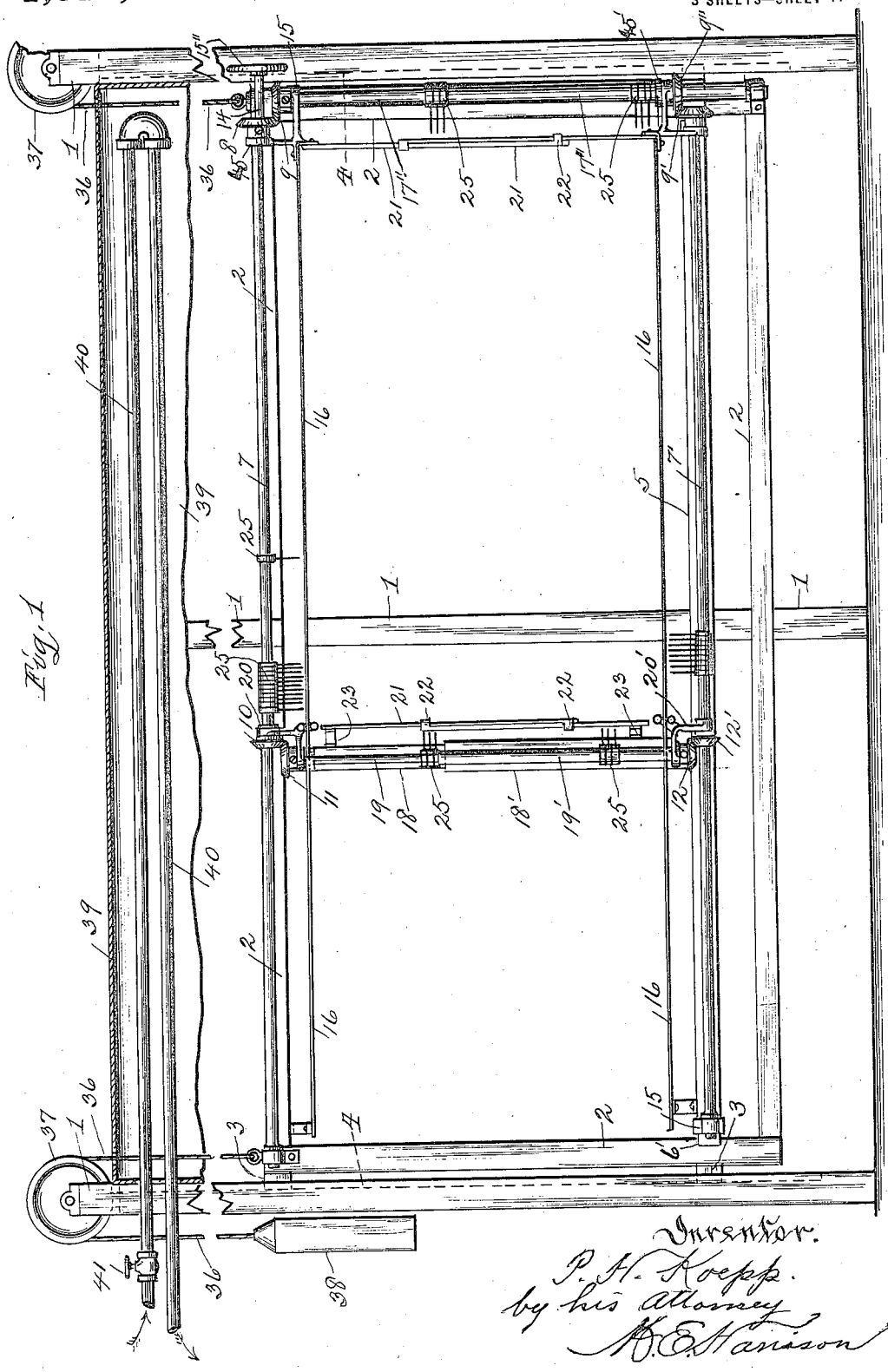


Fig. 1

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3 SHEETS—SHEET 2.

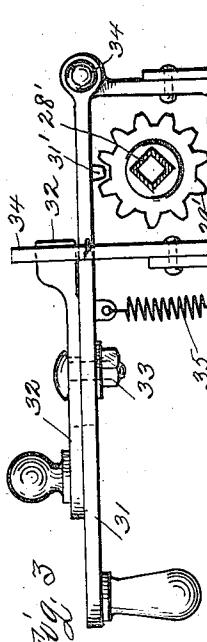


Fig. 3

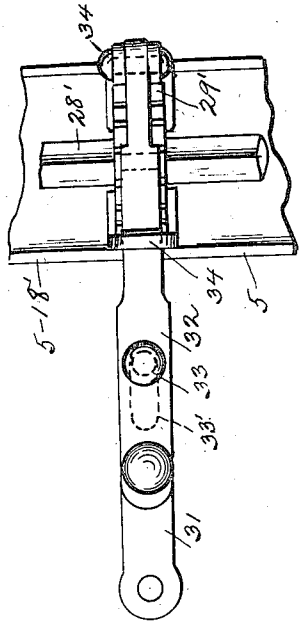


Fig. 4

Fig. 2

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3 SHEETS—SHEET 3.

Fig. 5

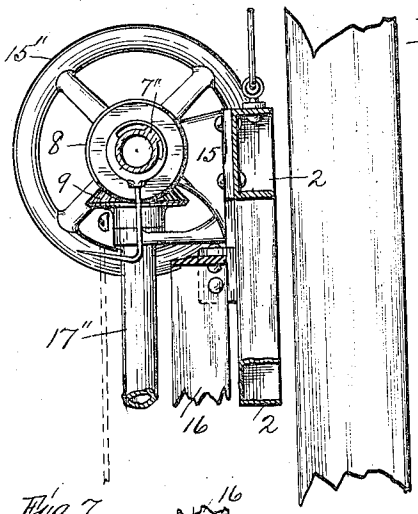


Fig. 6

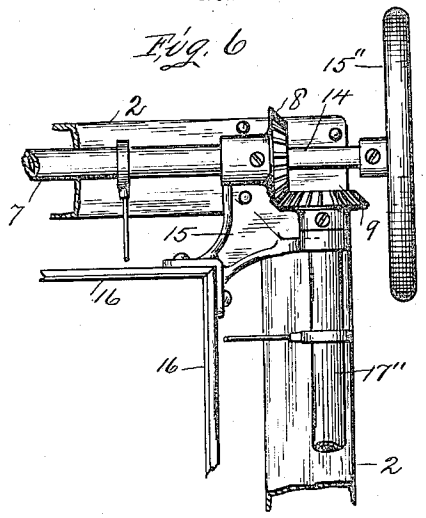


Fig. 7

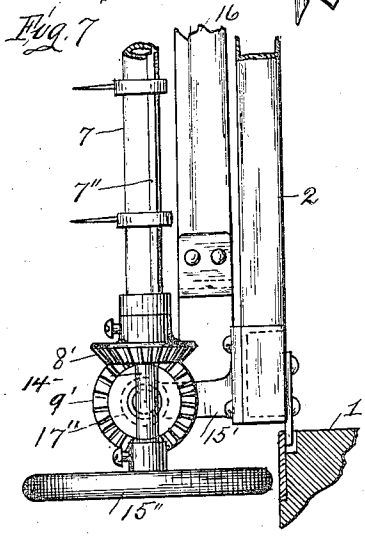


Fig. 9

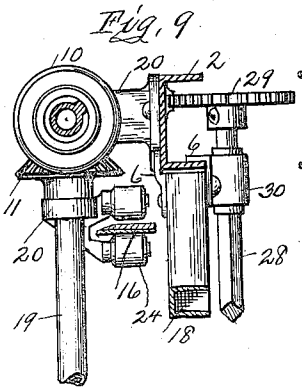


Fig. 8

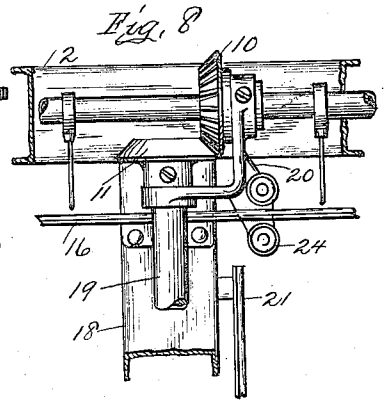


Fig. 10

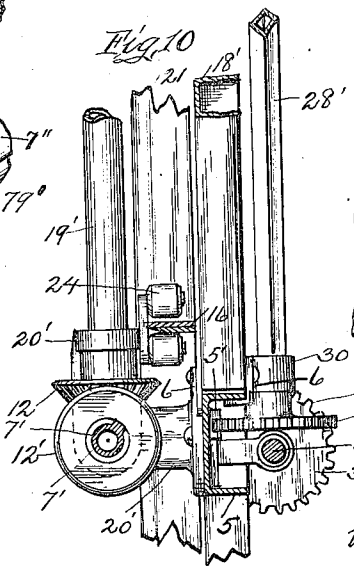


Fig. 11

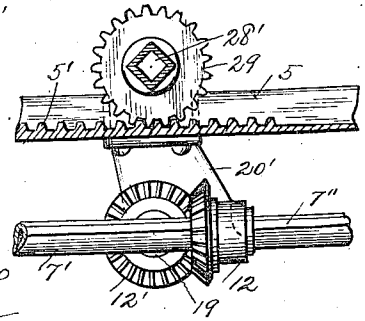


Fig. 12

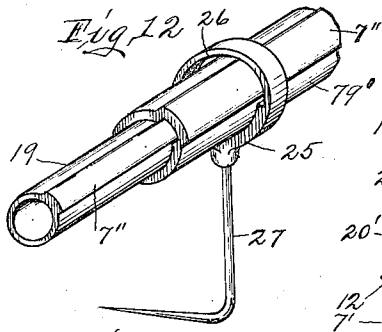
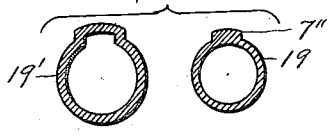


Fig. 13



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UNITED STATES PATENT OFFICE.

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CURTAIN-STRETCHER.

1,311,653. Specification of Letters Patent. Patented July 29, 1919.

Application filed June 14, 1918. Serial No. 239,960.

To all whom it may concern:

Be it known that I, PAUL H. KOEPP, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Curtain-Stretchers; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved stretcher for lace curtains and similar articles. The objects being to provide a stretcher that will permit a rapid and accurate adjustment of the frame-rails to suit curtains of varying widths and lengths. Another object of the invention is to provide means whereby the curtains, when dried, may be released from their connected hooks instantly. A further object of the invention is to afford a simple means for rapidly drying the curtains.

With these and other objects in view, the invention comprises suitable stationary or fixed supports, a rectangular frame arranged thereon, said frame having mounted therein a slidable base rail adjustable to accommodate any width of curtain, and a slidable end rail adjustable to curtains of varying lengths, a means comprising tubes or rods arranged in bearings, said rods carrying slidingly strung hooks, a means for rotating said tubes or rods in unison, whereby the attached curtains may be instantly disconnected, and the invention further consists in an attached canopy and heat supply therefor, whereby the curtains may be quickly dried, and the invention still further consists in the certain details of construction and arrangement of parts, as will be fully described hereinafter.

In the accompanying drawings;—

Figure 1 is a front elevation of my improved stretcher, together with a portion of the connected heater for drying the curtains.

Fig. 2 is a rear view of a portion of the stretcher.

Fig. 3 is a detached full-sized plan view of one of the latches.

Fig. 4 is a front elevation of the same.

Fig. 5 is an enlarged side view of the upper right-hand corner of the stretcher frame.

Fig. 6 is a front view of the same.

Fig. 7 is a plan view of said corner.

Fig. 8 is an enlarged detailed view of the upper end of the adjustable center rail.

Fig. 9 is a side sectional view of the same.

Fig. 10 is a detailed side elevation of the lower end of the center rail.

Fig. 11 is a sectional plan view of the same.

Fig. 12 is a perspective view of a portion of the telescopic tubes, showing one of the slidable curtain hooks in position, and

Fig. 13 are end sectional views of the two different sized tubes used.

To construct a curtain stretcher in accordance with my invention, I first fix in a suitable position vertically-arranged supports 1, of any desired number, the two outer of which are provided on their inner faces with grooves 4, which act as slides or guides. Slidably mounted between the two outer standards and loosely connected thereto by means of guide plates 3, is a frame 2, rectangular in form, and capable of being elevated above or lowered to the floor. Longitudinally placed and parallel with the lower brace of the frame 2, is a curtain carrying rail 5, capable of being moved vertically and slidably connected to one of the end rails by guide plates 6′. Perpendicular to this curtain rail 5, and parallel to the end rails of the frame 2, is an adjustable curtain-carrying rail 18 18′, in two parts, the one telescoping within the other, whereby said rail may be lengthened or shortened, to correspond with and conform to the position of the curtain-carrying rail 5. This vertically disposed rail 18 18′, is loosely connected to the top rail of the frame 2, by suitable cleats 6, (see Figs. 9 and 10) in a manner that will permit said slidable rail 18 18′, to move freely toward either end of the frame 2. Carried by the top rail of the frame 2, and extending its entire length is a tubular shaft 7, having a spline 7″, said shaft being mounted at either end in bearings 15 45, attached to said frame 2. At one end of this shaft 7, and attached thereto, is a bevel pinion 8, which is in mesh with a similar pinion 9, attached to a vertically-arranged tubular shaft 17″, and mounted in bearings 15 attached to one of the end rails of the frame 2. A similar tubular shaft 7′, with spline 7″, is mounted in bearings 15′ 45′,

the one bearing 15′ attached to the vertically-adjustable rail 5, and by a sliding connection with the shaft 17″, and the other bearing 15′, to the other end of said adjustable rail. The said shaft 7′, extending the entire length of the rail 5. This shaft 7′ may be rotated by means of a fixed bevel pinion 9′, in mesh with a floating pinion 9″, carried by the bearing 15′, the latter mentioned pinion capable of being slid along the length of the shaft 17″. Mounted in bearings 20 20′, (see Figs. 8, 9, 10 and 11) is a telescoping tubular shaft 19 19′, fitted at the top with a fixed bevel pinion 11, and at the bottom with a fixed pinion 12. These two fixed pinions 11 and 12, are in mesh with two floating pinions 10 and 12′, which may be moved freely along the length of the shafts 7 and 7′, and rotate therewith. Rigidly connected to the top shaft 7, is a short shaft 14, fitted with a hand wheel 15″, which when turned or revolved the motion will be transmitted to each of the four shafts 7, 7′, 17″ and 19 19′, said motion or rotation being either inward toward the frame 2, or outward away from the same. Each of these last mentioned shafts are fitted with a number of slidable curtain-attaching hooks, each of which comprising a metal ring 25, having a semi-enlarged bore 26, (see Figs. 12 and 13) forming shoulders to engage with the splines 7″, formed with each of the said shafts, and an outwardly-extending, attached pointed hook 27, to engage with the curtain. Arranged at the rear of these hooks 27, and their carrying shafts and free from contact with said hooks when rotated or turned backward, are thin strips of wood, the upper and lower horizontally-arranged strips 16, being rigidly attached to the top rail of the frame 2, and to the vertical movable rail 5. The end strip 21, and that attached by brackets 23, to the center rail 19 19′, are formed in two pieces, the one piece connected (22) slidably to the other, to elongate or shorten by reason of the movement of the vertically movable rail 5.

At the rear of the frame 2, also the moving rail 5, and central rail 19, 19′, all of which are made preferably in channel form, are racks 5′, which extend along a portion of their lengths. A shaft 30, mounted in bearings and extending the length of the vertically-movable rail 5, is fitted at either end with small toothed wheels 31′, which are in mesh with the racks carried by the end rails of the frame 2. This arrangement will cause the rail 5, when moved upward or downward to maintain true parallel relation with the frame 2. Similar toothed wheels 29, are carried by and fixed to either end of a telescopic shaft 28 28′, in bearings attached to the two sections 18 18′, of the center rail. These several toothed wheels when in mesh with their respective racks 5′, will insure parallel relations between the center rail and the end rails of the frame. To lock the vertically-moving rail 5, at any desired position, a latch is provided, (see Figs. 3 and 4) which comprises a lever 31″, hinged (34′) at one end to said rail, a guide and keeper 34, and a single tooth 31′, adapted to engage with a toothed wheel 29′, fixed to the shaft 30, (and in another instance to the shaft 28′, for similar use) to lock the rack wheels 31″. To lock the latch bar tooth 31′, with its toothed wheel 29′, a supplemental bolt 32, is provided. This bolt 32, is slidably connected to the latch bar 31, by means of a short bolt 33 operating through a slot 33′, formed in said bar, and entering the keeper or guide 34.

A similar latch is used for locking the telescopic shaft 28 28′, carrying the rack gear wheels 29, and if desired, the lock bolt 32, may be omitted, and a tension spring 35 substituted.

To provide a means whereby the curtains may be dried quickly, a canopy 39, is arranged immediately above the frame 2, and large enough to contain the same. This canopy 39, is fitted with steam-heating pipes 40, with regulating valve 41, to keep the interior at a comparatively high temperature. The canopy is supported upon the uprights 1, which also support sheaves 37, over which ropes 36, are passed, said ropes being attached to the ends of the frame 2, and to balance weights 38, this arrangement will permit the frame 2, to be elevated within the canopy and withdrawn from the same.

In operation, the latch 31, locking the vertically-moving rail 5, is released and said rail lifted up or lowered down, to correspond to the width of the curtains to be operated upon and relocked in the desired position. The latch 31, locking the shaft 28 28′, is released, which will permit the center rail to be moved horizontally and adjusted to suit the length of the curtains, and locked in such adjusted position. The curtains are now attached about their four edges to the hooks 27. Several curtains, if of the same dimensions, are superimposed, the one over the other, and the entire frame and its attached curtains elevated to and inclosed within the drying chamber above and permitted to remain there until the curtains are thoroughly dried, after which the frame is drawn down to its former level.

To remove the curtains from their multiplicity of hooks 27, it is only necessary to give the hand wheel 15″ a slight turn, which by reason of the shouldered rings 25, and engaging splines, withdraw all hooks simultaneously, releasing the finished curtains.

The advantages of this improved stretcher are many and obvious. The edges of the curtains operated upon must necessarily be

in straight lines with the corners perfect right-angles. The easy adjustment of the frame to the varying widths and lengths of curtains and the instant disconnection of the large number of hooks, together with the means of rapidly drying the curtains.

Various slight modifications and changes may be made in the details of construction, without altering the spirit of the invention.

Having thus described my invention, I claim;—

1. A stretcher for lace curtains and similar articles, comprising a rectangular frame, a vertically adjustable curtain-carrying rail mounted thereon, a means for locking the same, a longitudinally adjustable telescopic rail intermediate of the top rail of the frame and said curtain carrying rail, a means for locking the same, separate shafts or rods mounted on each of said carrying rails, shafts or rods mounted upon the top rail of said frame and upon one of the end rails of the same, a series of rings threaded on each of said shafts, and a pointed hook attached to each of said rings for engagement with a curtain.

2. In a lace curtain stretcher, the combination with a carrying shaft having a spline extending in the direction of its length, of rings strung on said shaft, shoulders formed with said rings to engage with said spline to limit the rotatable movement about the shaft, and a pointed hook carried by each of the rings for engagement with the curtains.

3. A stretcher for lace curtains and similar articles, comprising a rectangular frame, a vertically adjustable curtain-carrying rail mounted thereon, a means for locking the same, a means for keeping said rail in parallel relation with the top rail of said frame, a longitudinally adjustable telescopic rail intermediate of the top rail of the frame and said curtain carrying rail, a means for locking the same, a means for keeping said telescopic rail in parallel relation with the end rails of the frame, and means for attaching curtains or similar articles about said frame.

4. A stretcher for lace curtains and similar articles, comprising a frame rectangular in form, a vertically adjustable curtain carrying rail mounted thereon, a means for locking the same, a means for keeping said rail in parallel relation with the top rail of said frame, means for attaching the curtains comprising a shaft extending the length of the rail and slidable hooks, a longitudinally adjustable telescopic rail intermediate of the top rail of the frame and said vertically adjustable rail, a means for locking the same, a telescopic shaft with slidable hooks mounted on said rail, a shaft carried along the length of the top rail, a shaft mounted on the end rail opposite the telescopic rail, and slidable hooks strung on each of the two latter mentioned shafts.

5. A stretcher for lace curtains and similar articles, the combination of a curtain carrying frame, rectangular in form and mounted in slides, whereby said frame may be lowered to, or elevated above the floor level, means comprising counterweights for suspending said frame at the desired position, a heat retaining canopy located above and capable of containing said frame, and a means whereby the frame may be adjusted to suit curtains of varying lengths and widths.

6. In a stretcher for lace curtains and similar articles, a curtain-carrying shaft mounted in bearings, means comprising hooks for engaging the curtain carried by said shaft, and a means whereby said shaft and hooks may be rotated to disengage all of said hooks from the curtain simultaneously.

7. In a stretcher for lace curtains and similar articles, a curtain-carrying shaft journaled in bearings, means comprising slidably-strung hooks mounted upon said shaft for engaging the curtain, and a means whereby said shaft and hooks may be rotated in unison.

8. In a stretcher for lace curtains and similar articles, a suitable frame, curtain-carrying shafts mounted in bearings carried by said frame, gears connecting said shafts to rotate the same in unison and in specified directions, means comprising hooks carried by each of said shafts for engaging the curtains, and a means whereby the one set of shafts may be adjusted toward and away from each other.

9. In a stretcher for lace curtains and similar articles, a sectional curtain-carrying shaft, the one section telescoping within the other, bearings for carrying said sectional shaft, means comprising slidably-strung hooks carried by said shaft for engagement with the curtains, and a means whereby said shaft and hooks may be rotated in unison and in a specified direction.

In testimony whereof I affix my signaaure in presence of two witnesses.

PAUL H. KOEPP.

Witnesses:
M. E. HARRISON,
RUTH R. HARRISON.