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ADJUSTABLE TRAVELER CLEANER

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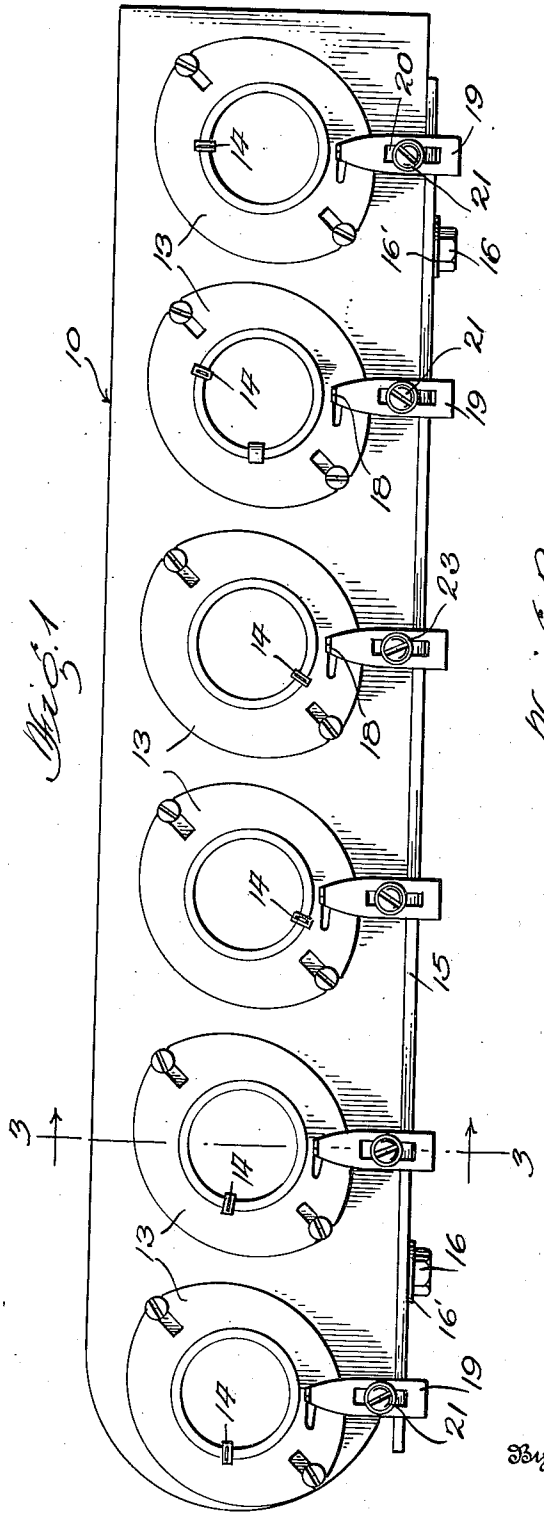


Fig. 1

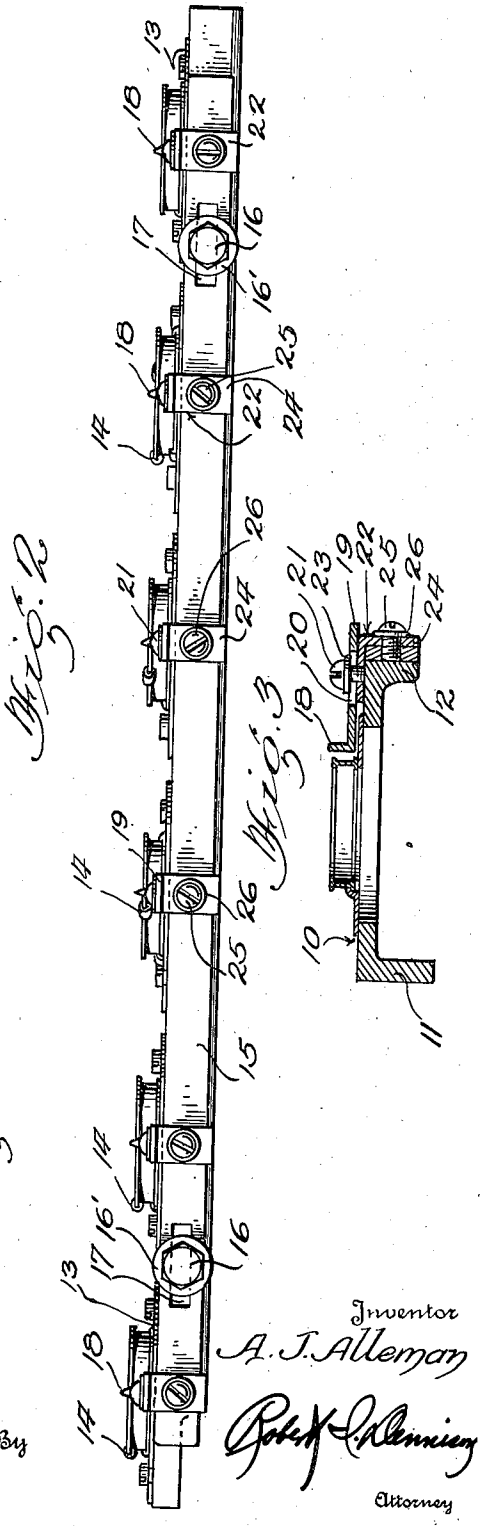


Fig. 2

Fig. 3

Inventor
A. J. Alleman
By Robert C. Clemmens
Attorney

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ADJUSTABLE TRAVELER CLEANER

Allen J. Alleman, Opelika, Ala., assignor of one-half to Mathew R. Gilmer, Opelika, Ala.

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4 Claims. (Cl. 57—57)

This invention relates to cleaning mechanism for travelers of spinning frames and more particularly to a novel mounting and adjusting arrangement therefor.

In spinning machines now generally in use, there are provided ring rails incorporating a plurality of rings usually in a bank supporting travelers. To maintain these travelers free of congestion due to accumulations during the spinning operation, it is the practice to provide a bank of cleaners for removing lint thereby preventing waste from lodging in the travelers and breaking threads. In view of the high speed of operation of the travelers, it is desirable that cleaners be of a character providing adjustments of close limits.

The present customary practice is to employ a bank of cleaning fingers of rigid integral construction usually fixed in relation to the ring rail or frame. Since these fingers, to perform their functions in a satisfactory manner, must extend in close proximity to the rings, and the latter are usually of an adjustable or replaceable nature to be accommodated to variegated thread courseness or fineness characteristics, thus requiring variously sized travelers, the fingers must be capable of alterable disposition so that large, as well as small, travelers will not be interfered with.

Operators, to make the required adjustments of the cleaning fingers, generally resort to bending or twisting of them to obtain the fine relative dispositions or to permit of substitution of rings, and successive manipulation so strains these fingers that they break and require frequent replacement or repair, thus materially impeding the spinning operation or imposing upon the machine user the necessity of maintaining an appreciable replacement stock or supply.

With the above in view, it is the primary object of this invention to provide a mounting or assembly arrangement for cleaning mechanism which will eliminate objectionable features above noted, and in addition incorporate a number of desirable features. Of the latter, the foremost includes an adjustable mounting arrangement allowing a wide variety of fine positioning adjustments.

Another object is directed to relative adjustability of individual cleaning elements whereby independent accurate adjustment or variation of position of these elements may be accomplished relative to the associated travelers.

Another object is calculated to incorporate detachability features of both aforementioned adjustment characteristics whereby any individual cleaning element may be removed or replaced without affecting any other of a bank or the entire back removed or replaced as a unit if desired.

A further object resides in the provision of a mounting arrangement readily lending itself to accommodation of mechanism including the aforementioned improved characteristics to frames of various sizes so that already existing machines may have the same applied thereto as may machines embodying frames involving size variations.

A still further object contemplates the provision of a substantial association of the cleaning mechanism with the carrying or supporting frame with solid mounting thereof providing for utmost rigidity and stability.

Other and further objects will appear from the following detailed description of a preferred embodiment of the invention illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of a ring frame having associated therewith, a mounting arrangement including features above outlined;

Figure 2 is a side elevation of the same viewed from the cleaning mechanism mounting side; and

Figure 3 is a section taken substantially along the line 3—3 of Figure 1.

Referring more specifically to the drawing, a ring carrying frame 10 having downwardly directed reinforcing flanges 11 and 12 has secured thereto on top, a plurality of similar adjustable rings 13 each provided with the usual traveler 14. The number of rings so provided may vary with the number of spinning spindles desired to be accommodated as will be clear to those skilled in the art and the number shown is, therefore, merely exemplary.

In carrying out the features of this invention, a supporting or mounting bar 15 is adapted to be attached preferably to flange 12 and may be secured thereto by removable bolts 16. To provide for adjustment of this bar 15 in a plurality of directions, bolts 16 pass through longitudinal slots 17 which are preferably of a width greater than the thickness of the shanks of bolts 16, so that either end of the bar may have some transverse displacement relative to the frame flange 12 as well as to the other point of securement or both ends may be adjusted in the same or opposite directions concurrently. A suitable plate or lock washer 16' may be employed under the head of each bolt 16.

For association with respective travelers 14, the bar 15 carries individual cleaning elements, each comprising an upwardly directed finger 18 adjacent the ring end of a relatively flat plate 19 having a longitudinally directed slot 20 therein. A removable screw or bolt 21 passes through this slot and into a threaded aperture in the horizontal flange of a supporting bracket 22.

As in the case of the main supporting bar 15 and its securing bolts 16, slot 20 is preferably somewhat wider than the shank of the associated bolt 21, thus allowing for lateral as well as longitudinal adjustment relative to bracket 22. If desired, a suitable flat or lock washer 23 may be interposed between the head of bolt 21 and the adjacent upper surface of plate 19. Bracket 22 has a depending flange 24 adapted to rest against the outer face of bar 15 and held rigidly thereagainst by a removable bolt 25. While it is preferable that this fastening or anchoring be of a non-adjustable nature as shown to lend greater stability to the cleaning finger mounting relative to the bar, this may also be made adjustable if additional adjustment requirements so demand. As in the case of bolt 21, a suitable flat or lock washer 26 may be interposed between the head of bolt 24 and the bracket.

It will be readily apparent that any one or all of the cleaning fingers 18 may have their positions readily varied with respect to the bar 15 and thus relative to the attendant traveler and ring in a plurality of lateral directions. Thus, any one of the fingers may have its position changed without disturbing any or all of the remaining fingers. Should a situation present itself requiring shifting of the entire bank or a fractional part thereof as a unit radially or tangentially of the rings, this may be readily accomplished by loosening one or more of the bolts 16, shifting of one or both ends of the bar 15, and subsequent retightening of bolts 16.

Inasmuch as all bolts employed are of a removable character, any one of the finger parts, that is, the finger or bracket, or both, may be removed from the bar 15 while should the occasion arise, the entire bar may be readily removed from the frame 10 as a unit.

Furthermore, with the slots 17 allowing of vertical shift of the bar 15, the latter may be readily assembled to frame flanges similar to 12, but varying somewhat in width. Thus, the mounting arrangement may be accommodated to existing machines embodying perhaps some variation in flange size.

Although the fingers and supporting members are shown as formed of plate or bar stock, these may be formed of castings, forgings, wire, etc.

While a preferred embodiment of the invention has been illustrated, it is desired that the invention be not limited thereto, as variations may be made therein without departing from the spirit or scope thereof as defined by the appended claims.

What is claimed and is desired to be secured by Letters Patent is:

1. In combination, a ring rail having a web and a depending longitudinal flange, a carrier bar adapted for attachment to said flange and having a longitudinal slot therein, removable means securing said bar to said flange through said slot, cleaning fingers adapted to be attached to said bar to extend over said web and means adjustably securing said fingers to said bar, said slot being larger than the securing means passing therethrough so that said bar may be simultaneously adjusted in a plurality of directions for shifting said fingers relative to said web in a plurality of directions, said finger securing means including a longitudinal slot in each finger providing for relative shift of any finger relative to said bar whereby any finger may be individually adjusted relative to said web or the entire bar adjusted to shift said fingers together as a unit.

2. In combination with a ring rail having a web, a plurality of removable spaced rings in said web and a longitudinal depending flange, a carrier bar adapted for attachment to said flange having a plurality of longitudinal slots therein, removable securing means passing through said slots and engaging said flange, said slots being wider than the securing means whereby the bar may have adjustment in a plurality of directions on said flange, a plurality of cleaning fingers extending toward said rings over said web, means removably securing said fingers to said bar each including a slot whereby said fingers may be individually adjusted relative to said rings in a plurality of directions, so that each finger may be independently adjusted relative to its associated ring or all the fingers adjusted relative to all the rings as a unit, said removable bar and finger securing means also permitting removal of any one finger for replacement of any one finger or any ring and the finger adjustably replaced to suitably accommodate itself to its ring or the entire bar removed.

3. A cleaner device for a ring-rail for spinning mechanism comprising a removable supporting member, means engaging said member to said ring-rail including means affording adjustment in a plurality of directions both longitudinal and lateral, cleaning means, and means connecting said cleaning means to said supporting member and including means providing for both lateral and longitudinal adjustment whereby the position of said cleaning means may be individually varied in a plurality of directions to be accommodated to variously sized and positioned rings and said supporting member may be adjusted relative to said ring-rail and rings, as a unit.

4. A traveler cleaner for a spinning frame comprising a carrier, means adjustably mounting said carrier to said frame comprising means providing a wide latitude of repositioning of said carrier with respect to the frame in both lateral and longitudinal directions, a plurality of cleaning devices, and adjustable means mounting each of said devices to said carrier including means whereby each of said devices may be repositioned in both lateral and longitudinal directions whereby each of said devices may be variably repositioned individually or pre-set in its individual capacity or all of the devices repositioned as a unit thereby providing for adjustment of any one or all of said devices as desired.

ALLEN J. ALLEMAN.