

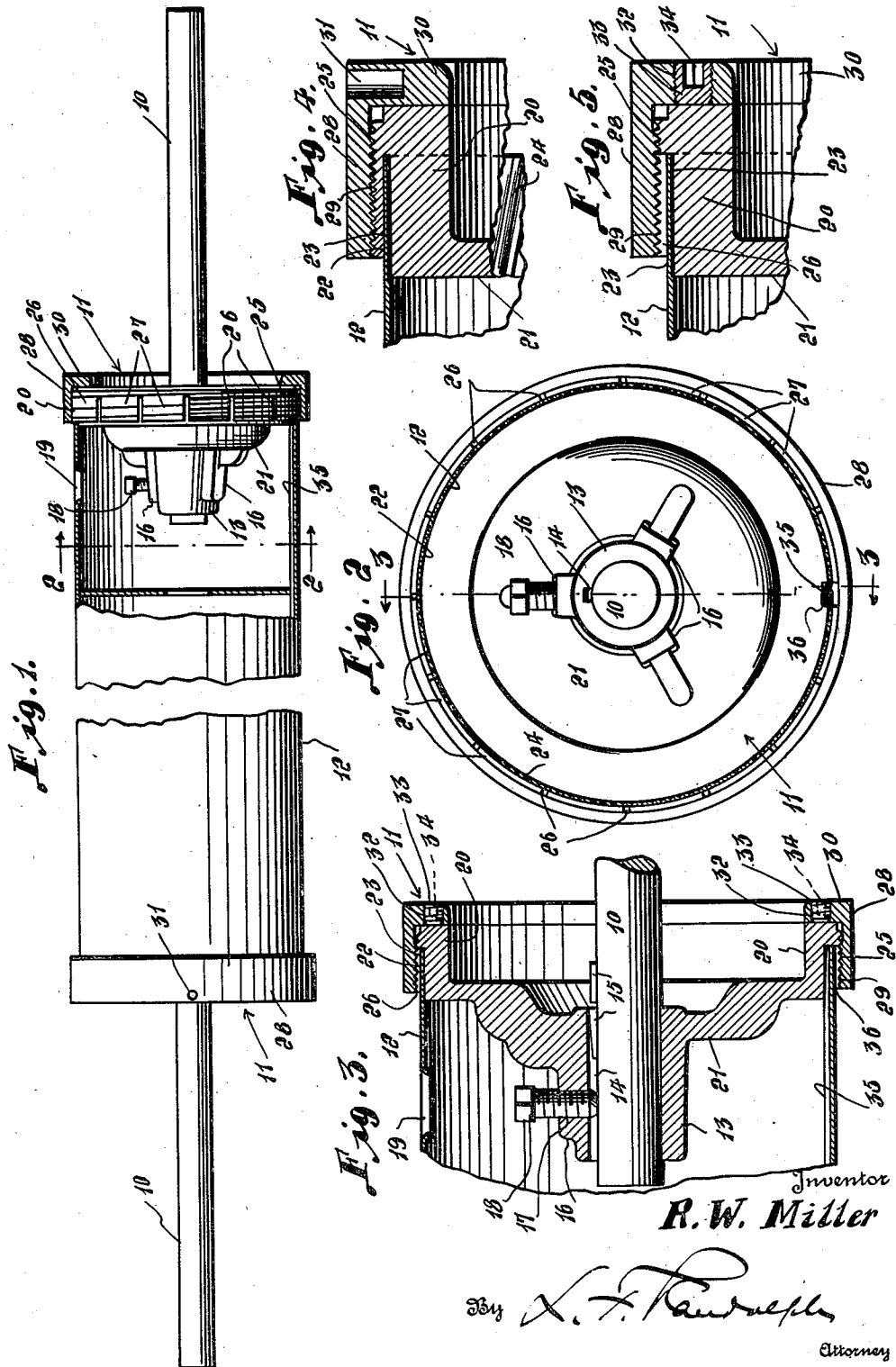
June 9, 1942.

R. W. MILLER

2,286,152

CYLINDER HEAD FOR SPINNING MACHINES

Filed Dec. 5, 1940



UNITED STATES PATENT OFFICE

2,286,152

CYLINDER HEAD FOR SPINNING MACHINES

Raymond W. Miller, Mooresville, N. C.

Application December 5, 1940, Serial No. 368,719

3 Claims. (Cl. 74—230.3)

This invention relates to an improved construction of cylinder head for mounting a driving cylinder of a spinning, twisting, spooling or quilling machine or other machines of the type employing driving cylinders for driving tapes or bands for driving spindles.

Driving cylinders, of the type previously mentioned, are ordinarily sweated to cylinder heads which are attached to rotatable stub shafts so that when for any reason it is necessary to remove either of the cylinder heads from the cylinder the tapes or bands have to be cut and the cylinder head removed and sent to a machine shop so that the old cylinder head can be removed and a new one tinned and soldered, after which the cylinder has to be tinned, after which the head is put in, trued up and the parts are then sweated together.

It is a primary aim of this invention to provide a novel construction of cylinder head having a slot for receiving an end of the driving cylinder so constructed and arranged that the end of the driving cylinder will not fit into the slot until it is straight and when in place in the slot will be absolutely true and ready to be clamped to the head. With this construction, it is possible to remove a driving cylinder and replace another cylinder or head very quickly and without cutting the tapes or bands so that the machine will not be out of use for any long period.

Still another aim of the invention is to provide an improved cylinder head construction which can be manufactured to fit any size driving cylinder and which can be used on driving cylinders already in use as well as on new equipment.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, which illustrates a preferred embodiment thereof, and wherein:

Figure 1 is a plan view, partly in section showing a driving cylinder connected to a pair of cylinder heads, constructed in accordance with the invention,

Figure 2 is a transverse sectional view taken substantially along the plane of the line 2—2 of Figure 1, and on an enlarged scale,

Figure 3 is a longitudinal sectional view taken substantially along the plane of the line 3—3 of Figure 2,

Figure 4 is an enlarged fragmentary longitudinal sectional view showing a portion of the rim or flange of the cylinder head in cross section, and

Figure 5 is a similar view of another portion of the rim or flange of the cylinder head.

Referring more particularly to the drawing, wherein like reference characters designate like or corresponding parts throughout the different views, 10 designates a pair of stub shafts which are adapted to be journaled in suitable bearings, not shown, and driven by suitable means, not shown, of a spinning, twisting, spooling or quilling machine. A cylinder head, designated generally 11, and comprising the invention, is keyed to each of the shafts 10 and the pair of cylinder heads 11 engage the ends of a conventional driving cylinder 12 for mounting the cylinder between the adjacent ends of the shafts 10 to be rotated thereby for driving tapes or bands, not shown, and which are trained over spindles, not shown.

Each of the cylinder heads 11 includes a hub 13 which is provided with a longitudinally disposed inwardly opening groove 14 for receiving the keys 15, which are provided on each of the shafts 10 for keying the head 11 to one of the shafts 10. Hub 13 is provided with reinforcing ribs 16 and with a threaded opening 17 extending through one of the ribs 16 for receiving a bolt 18 which acts as a set screw for engaging the shaft 10 for preventing the head 11 from moving longitudinally thereof and becoming disengaged from the keys 15. The cylinder 12, adjacent each end thereof, is provided with an opening 19 through which the bolts 18 of the cylinder heads 11 may be tightened or loosened.

Each of the cylinder heads 11 is provided with an outwardly offset rim or flange portion 20 which is offset outwardly relatively to the hub 13 and which is connected thereto by the intermediate portion 21. The rim 20 is provided with an annular inwardly opening slot 22 for receiving an end 23 of the cylinder 12. The ends 23 are preferably serrated or ribbed, as seen at 24 in Figure 4, for a purpose which will hereinafter become apparent. The periphery of the rim 20 is threaded at 25 and tapers towards its outer end. The threaded periphery 25 is provided with circumferentially spaced transverse slots 26 which are of substantially the same length as the width of the slot 22 and which open into said slot to form a plurality of arcuately shaped yieldable clamping members or fingers 27.

A nut 28 is provided with an internally threaded portion 29, which is of the same diameter throughout, and which is adapted to engage the threads 25 so that when the nut 28 is screwed down on the rim 20 the spring fingers or clamp-

ing members 27 will be compressed for clamping the end 23 in the slot 22. The nut 28 is provided with an annular inwardly projecting flange 30 at its outer end which is adapted to abut against the outer end of the rim 20 and which is provided with spaced outwardly opening recesses 31, one of which is seen in Figure 4, for receiving a spanner wrench, not shown, for applying the nut 28 to or removing it from the rim 20. The flange 30 is also provided with threaded openings 32 for receiving threaded members 33 which are provided with outwardly opening recesses 34, which are polygonal shaped in cross section, for receiving a suitable tool, not shown, for advancing the threaded members 33 into the openings 32 or for removing them therefrom. The threaded members 33 are adapted to be screwed tight against the outer end of the rim 20 for locking the nut 28 thereto to prevent the nut from being turned relatively to the rim 20 without loosening the threaded members 33.

Referring particularly to Figure 2, the cylinder 12 is provided with an internal seam 35 which extends from end to end thereof and the rims 20 are provided with grooves 36 which open outwardly into the slots 22 for receiving the ends of the seam 35.

From the foregoing it will be obvious that the cylinder 12 can be readily detached by loosening the threaded members 33, removing the nuts 28, and then loosening the bolts 13 so that the heads 11 can be moved toward the remote ends of the shafts 10 to permit the cylinder 12 to be removed for either replacing the cylinder or for replacing one of the cylinder heads 11. The cylinder 12 can likewise be applied by positioning it between the cylinder heads 11 and then moving said cylinder heads toward one another until the grooves 14 are in engagement with the keys 15 and the ends 23 of the cylinder 12 are disposed in the slots 22. The nuts 28 are then applied and screwed down tight on the threads 25 for clamping the cylinder ends 23 after which the threaded members or set screws 33 are tightened to lock the nuts 28 on the rims 20. The serrated portions 24 prevent the cylinder heads 11 from turn-

ing relatively to the cylinder 12 to prevent damage to the seam 35 and would also prevent the parts from turning relatively to one another if the cylinder 12 was not provided with a seam.

Various modifications and changes are contemplated and may obviously be resorted to as only a preferred embodiment of the invention has been disclosed.

I claim as my invention:

1. A cylinder head, for spinning machines and the like, having a hub portion, an annular flanged portion connected thereto and offset outwardly therefrom, the periphery of said flanged portion being threaded and tapered outwardly, said flanged portion having an annular inwardly opening slot for receiving an end of a driving cylinder, said threaded periphery having transverse slots opening into said annular slot and combining therewith to form a plurality of yieldable clamping members, said yieldable clamping members forming a part of the threaded periphery, and a nut for engaging said threaded periphery for compressing said yieldable clamping members to clamp the aforementioned end of the cylinder in the annular slot.

2. A cylinder head, for spinning, twisting, spooling or quilling frames, having an annular rim portion provided with an annular slot opening outwardly of one side thereof for receiving an end of a driving cylinder, said rim portion having a periphery including a plurality of circumferentially spaced yieldable clamping members, said clamping members being externally threaded and transversely tapered in corresponding directions, and a clamping nut for engaging the threads of said clamping members for compressing them for clamping said end of the cylinder in said annular slot.

3. A cylinder head construction as in claim 2, said clamping nut including an annular inwardly extending flange for engaging one end of said rim portion, and set screws mounted in said flange for engaging said rim portion for locking the nut thereon.

RAYMOND W. MILLER.