Aug. 7, 1923.

1,464,484

J. H. HOOK

DRAG ROLL FOR LOOMS

Filed Oct. 18, 1922

Fig.1.

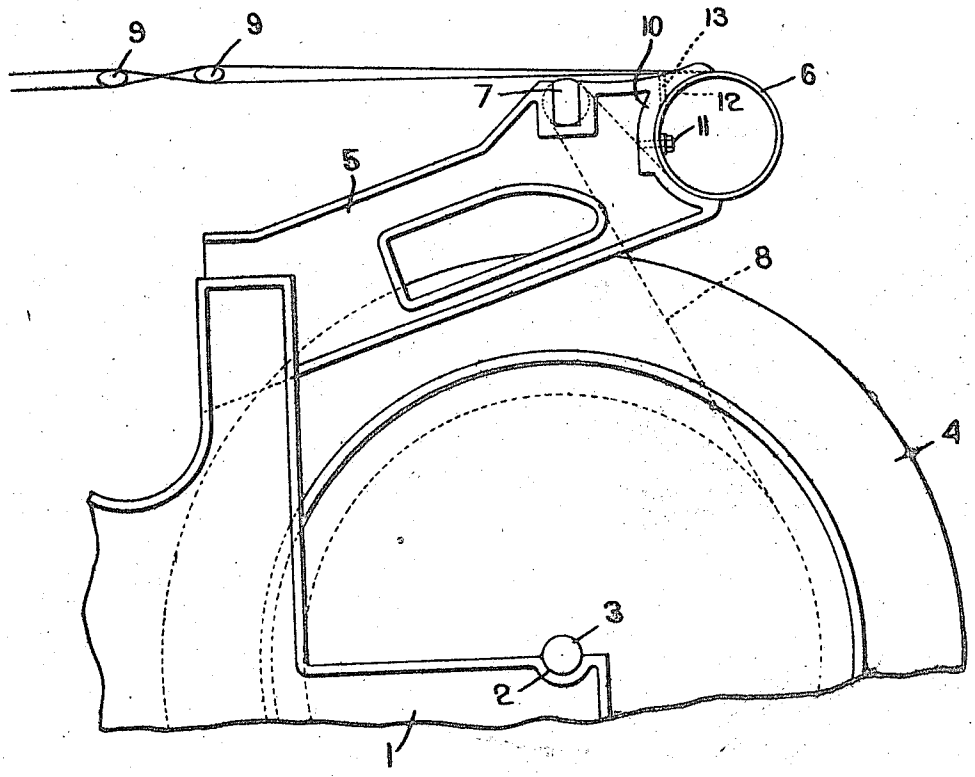
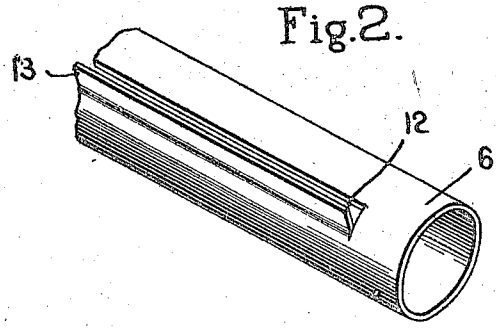


Fig.2.



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Patented Aug. 7, 1923. 1,464,484

UNITED STATES PATENT OFFICE.

JAMES HENRY HOOK, OF CORSICANA, TEXAS, ASSIGNOR TO DRAPER CORPORATION, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

DRAG ROLL FOR LOOMS.

Application filed October 18, 1922. Serial No. 595,275.

To all whom it may concern:

Be it known that I, JAMES H. HOOK, a citizen of the United States, and resident of Corsicana, county of Navarro, State of Texas, have invented an Improvement in Drag Rolls for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to an improved drag roll construction for looms.

The object of the invention is to provide a construction which will take care of the lint, dirt, broken ends and foreign substances shed from the warp sheet after its passage over the drag roll and prevent their deleterious accumulation on the warp or at points in the loom not readily accessible for cleaning.

These and other objects and features of the invention will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claims.

In the drawings:

Fig. 1 is a side elevation of a portion of a loom embodying a preferred form of the present invention;

Fig. 2 is a detail in perspective of a portion of the drag roll shown in Fig. 1.

It is universal in looms for the warp sheet after it leaves the warp beam to pass over a guide, whip, or drag bar or roll on its way to form the shed. This device acts to spread the warp sheet out in proper form and to apply a drag or tension necessary in the weaving operation. There are various forms of these devices but this invention is particularly concerned with that form in which the device is permanently secured in a bracket so that the warp sheet in its passage from the warp beam to the shed is dragged over its peripheral surface.

As the invention relates only to this particular feature of the loom it is necessary to illustrate and describe the construction of the loom only in so far as it is particularly concerned with this feature.

In the construction illustrated the loom sides 1, a portion of one of which is illustrated, support in bearings 2 the journals 3 of the usual warp beam 4. Brackets, one of which 5 is shown, attached to the loom sides 1 serve as supports for the drag roll.

In the construction illustrated two drag rolls are shown, namely the main drag roll 6 and a smaller auxiliary drag roll 7.

The sheet of warp 8 as it leaves the warp beam 4 passes up and around the drag roll 7 and then down and around the drag roll 6 and then forward to the usual rods 9 on its way to form the shed.

Heretofore in this type of construction both drag rolls have been solid. The warp forming the sheet is generally sized and, owing to the bending and rubbing of the warp as it passes around and over the drag rolls, this size together with short fibres, lint dirt and other foreign substances falls or is shed or drops off in front of the main drag roll and behind the auxiliary drag roll to a very considerable extent. These substances accumulate on the warp sheet directly in front of the main drag roll and are carried around by the warp over the main drag roll. The result is to place an undue strain upon the warp, causing excess breakage to the warp. Often lumps accumulate, become attached to the warp and cause injury to the loom or imperfections in the cloth. The space beneath the warp sheet in front of the main drag roll is not readily accessible and particularly so when an auxiliary drag roll, such as illustrated, is employed. A large amount of time is, therefore, lost in stopping the loom and in cleaning out this accumulation by hand.

Further in some types of looms and in weaving certain forms of fabric it is undesirable to use a warp stop motion. Consequently when a warp breaks the end is, in such cases, frequently caught by the warp sheet and dragged around the drag roll causing a defect in the cloth and requiring the loom to be stopped and the accumulation on the drag roll removed. This is particularly true in the weaving of such cloth as duck where the warps are comparatively short and it is more economical to operate the looms without the drop wires required by a warp stop motion because of the time required to draw the warp through the drop wires.

The present invention avoids all of these difficulties by providing a peculiar type of drag roll, a preferred form of which is illustrated. In the form shown the drag roll 6

comprises a hollow metal cylinder. This cylinder is rigidly secured in place at its ends in seats 10, formed in the ends of the brackets 5, by suitable bolts or screws 11.

The warp sheet 8 is guided around a segment of the periphery of this metal cylinder. The extent of the cylinder periphery engaged by the warp sheet depends upon the guiding devices employed. With the auxiliary drag roll 7 it will be seen that this segment comprises nearly three fourths of the cylinder periphery.

Beneath the warp sheet where it runs horizontally forward from the drag roll to the shed there is formed in the remaining segment of the drag roll a longitudinal opening 12 extending parallel to the axis of the roll and throughout the width of the warp sheet. In front of this opening is located a scraper blade 13 also extending parallel to the axis of the roll and having its upper edge in position to engage and scrape the bottom of the warp sheet.

Preferably the opening 12 and blade 13 are formed, as shown in Figure 2, by striking up the blade from the metal wall of the cylinder and thus leaving the opening 12.

Any size, lint, dirt or other foreign substance falling from the warp sheet as it leaves the drag roll is now directed through the opening 12 into the interior of the roll and in addition the scraper blade acts positively to remove these substances from the warp sheet and direct them through the opening 12 into the roll interior. In addition if a warp end breaks it is forced by this construction to remain on top of the warp sheet where the weaver can readily see it and stop the loom before it causes damage.

The size, lint, dirt or other foreign substance which gradually accumulates in the hollow drag roll interior is readily removable from either end of the roll by the operator because access may freely be had to both ends of the roll.

There is thus presented by this invention a simple and effective construction for eliminating the difficulties heretofore encountered in this feature of the loom.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A drag roll for a loom comprising a hollow metal cylinder having a blade projecting exteriorly from the cylinder periphery parallel to its axis and having a longitudinal opening through the cylinder wall adjacent the base of the blade whereby when the drag roll is placed in the loom with the blade extending transversely of, beneath and in engagement with the warp sheet, lint, dirt and foreign substances falling from or scraped by the blade from the warp sheet are directed through the openings into the roll interior.

2. A drag roll for a loom comprising a hollow metal cylinder having a blade struck up from its wall and projecting exteriorly of the cylinder periphery parallel to its axis and having a longitudinal opening through the cylinder wall adjacent the base of the blade whereby when the drag roll is placed in the loom with the blade extending transversely of, beneath and in engagement with the warp sheet, lint, dirt and foreign substances falling from or scraped by the blade from the warp sheet are directed through the openings into the roll interior.

3. In a loom a hollow drag roll over a segment of which the warp sheet is dragged in its passage from the warp beam to the shed, the said roll presenting beneath the warp sheet in the remaining segment a longitudinal opening to receive lint, dirt and foreign substances.

4. In a loom a hollow drag roll over a segment of which the warp sheet is dragged in its passage from the warp beam to the shed, the said roll presenting beneath the warp sheet in the remaining segment a longitudinal opening, and a scraper blade located in front of the opening with its upper edge in position to engage the warp sheet whereby lint, dirt and foreign substances falling from or scraped by the blade from the warp sheet are directed through the opening into the roll interior.

5. In a loom a hollow drag roll over a segment of which the warp sheet is dragged in its passage from the warp beam to the shed, the said roll having a portion of the remaining segment formed to present beneath the warp sheet a longitudinal opening and a scraper blade, the said blade acting to assist in removing from the warp sheet and in directing through the opening into the roll interior lint, dirt and foreign substances.

In testimony whereof, I have signed my name to this specification.

JAMES HENRY HOOK.