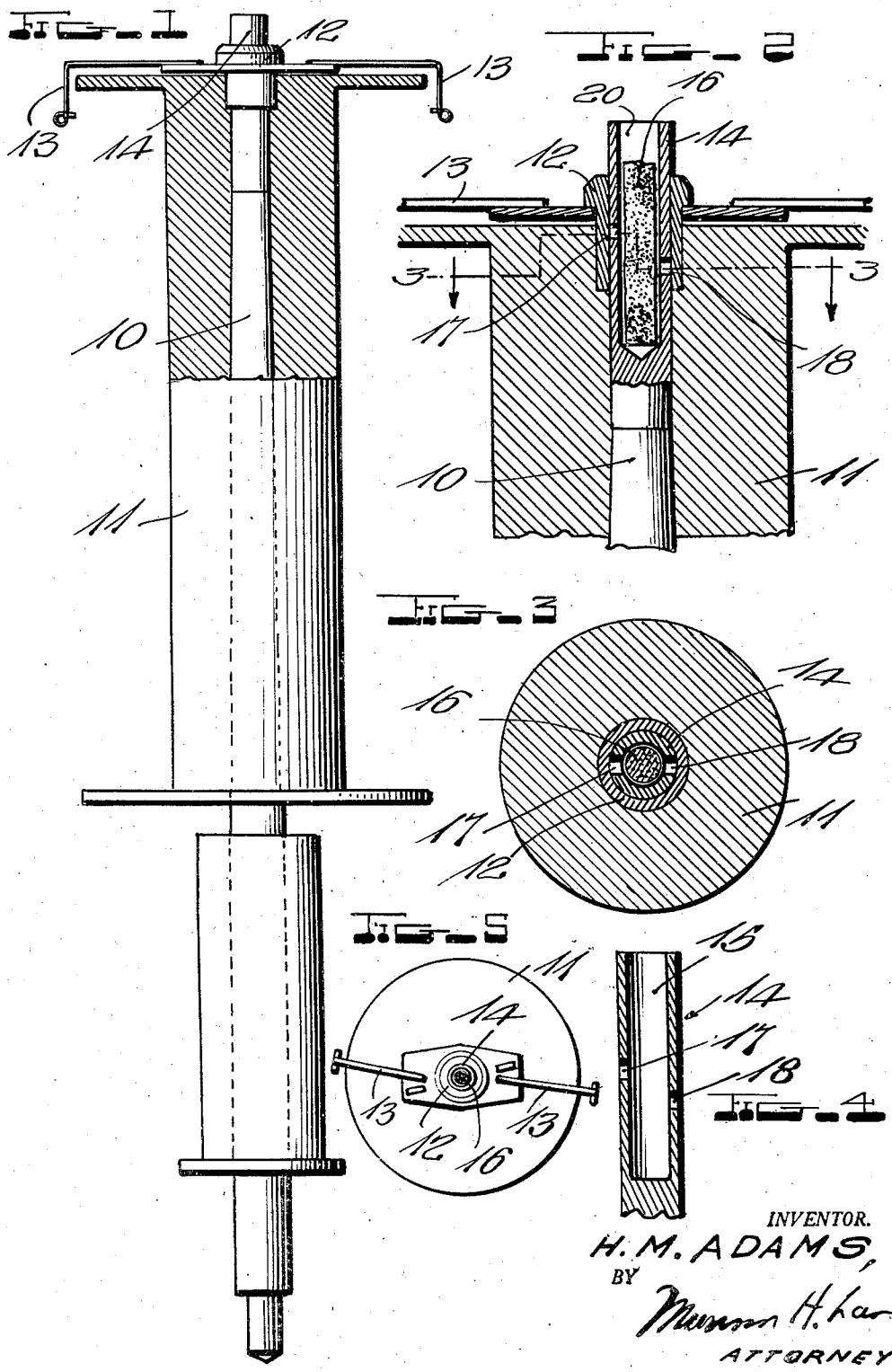
Oct. 15, 1946. H. McC. ADAMS 2,409,523

DEVICE FOR OILING FLYERS

Filed April 7, 1945



INVENTOR.
H. M. ADAMS,
BY
Merriman H. Lane
ATTORNEY

Patented Oct. 15, 1946 2,409,523

UNITED STATES PATENT OFFICE

2,409,523

DEVICE FOR OILING FLIERS

Hal McColman Adams, Lexington, N. C., assignor to Burlington Mills Corporation, Greensboro, N. C.

Application April 7, 1945, Serial No. 587,149

3 Claims. (Cl. 57—116)

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My invention relates to a system of lubricating flier blocks located on the delivery bobbins of an uptwist spinning frame.

A conventional flier consists essentially of a body portion, a foot member adapted to fit into an aperture formed on the end of the bobbin and flier wires supported by the body of the block. The flier is associated with the bobbin from which rayon or other material is to be unwound or spun and is free to rotate on the bobbin spindle; the rayon withdrawn from the bobbin is tensioned and provided with a twist before it is wound on a second or storage bobbin; preparatory to use on fabricating machines.

The spinning machine comprises a plurality of spindles having bobbins mounted thereon, the bobbins upon which the rayon is wound before it is twisted being below the line of bobbins which receive the rayon after it has been properly tensioned and twisted.

When the spinning machine is in motion, the yarn running from the delivery bobbin to the take-up bobbin is tensioned resulting in stretched yarn and broken ends due to the high tension. If the stretched yarn and broken filament yarn are allowed to go through a defect will appear in the goods made from this particular run of rayon or yarn.

In order to eliminate the excessive tension, broken filaments and stretched yarn, according to present practice, it is necessary to oil the hole in the flier block which fits around the spindle. It will be appreciated that in the average rayon throwing plant, comprising fifteen thousand to twenty-five thousand spindles, considerable time is required by the operators in oiling the flier blocks when full bobbins are put on the spindle as well as removing bobbins from the spindles which have broken ends in order that the hole in the flier block may be oiled.

It is the purpose of the present invention to prevent stretched yarn and broken ends in the rayon as it is taken off the lower bobbin and wound on the upper one, thus eliminating the necessity of operators oiling the flier block hole when full bobbins are put on or when removing bobbins having broken ends in order that the flier block hole may be oiled. This is accomplished by providing the spindle holding the delivery bobbin and flier block with an oil supply compartment which by means of a wick and oil lines keeps the flier block oiled.

The object of my invention is to provide an improved method of oiling the flier block, adapted to prevent stretched yarn and broken filaments due

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to high tension when the machine is in motion.

The invention will be more readily understood by reference to the accompanying drawing and the following detailed description in which a specific embodiment of the inventive thought is set forth by way of illustration rather than by way of limitation.

In the drawing:

Fig. 1 is an elevation partly in section showing the cooperating parts of the spinning machine to which the oiling device is to be applied;

Fig. 2 is a vertical sectional view on a larger scale of the upper part of Fig. 1 showing the lubricating features in detail;

Fig. 3 is a horizontal section on the line 3—3 of Fig. 2;

Fig. 4 is a detail vertical section showing the oil supply compartment at the top of the spindle; and

Fig. 5 is a plan view of the machine on a smaller scale than Fig. 1.

Referring in detail to the drawing, reference numeral 10 denotes a conventional spindle having a bobbin 11 mounted thereon. The numeral 12 denotes the flier block which carries flier arms 13, 13. These elements may be of conventional design. For the purpose of lubricating the flier block the upper portion 14 of the spindle is made hollow to provide a compartment 15 therein which serves as a reservoir for the oil supply. A cylindrical wick 16 is inserted in the oil supply compartment, the wick being slightly shorter than the compartment so that when the wick is forced to the bottom of the compartment there is left a space between the wick and the top of the spindle. This space is provided to facilitate the introduction of oil to the wick and compartment when the spinning machine is in motion.

In the hollow upper portion 14 of the spindle two oil supply holes or lines 17 and 18 are provided extending from the outside of the spindle wall to the oil supply compartment, these openings being at a position where the flier block revolves. It will be noted that the oil lines 17 and 18 are at different levels, the distance apart varying with the size of the flier block. By so spacing the oil openings a more efficient lubrication of the flier block is obtained. While two openings are shown it will be obvious that the invention in its broadest aspects is not limited to this number, as one or more openings may be provided depending on the extent of lubrication desired. Similarly the size of the openings may be varied as desired.

The wick 16 may be supplied with oil when the

spindles are not in motion, a light grade of oil being preferably employed. The space 20 between the top of the wick 16 and the top of the oil supply compartment 15 makes it possible to supply sufficient light grade oil to last for several weeks, depending on the speed of the spinning machine. The wick 16 soon absorbs the oil, leaving the oil space 20 above the wick empty. The oil which has been absorbed by the wick travels along the wick by capillary action, and when the machine is in motion centrifugal force throws the oil out through the oil lines 17 and 18 against the inside of the flier block 12. This block revolves slightly faster than the spindle 10 or delivery bobbin 11, causing friction between the inside of the flier block and the outside of the spindle and producing a high tension on the end running from the delivery bobbin to the take-up bobbin (not shown). This high tension makes it necessary to lubricate the interior of the flier block in order that a minimum and more even tension may be secured, thus enabling high quality rayon and other types of quality yarn to be produced. The upper oil line 17 is in such position that the bobbin barrel 11 would have to become worn to such an extent that it would be worthless before the top of the aperture 17 would be in such position that it would come out of the top of the flier block 12.

My improved lubricating device results in the supplying of an even film of oil on the inside of the flier block 12 and constitutes a marked improvement over the old method of lubrication by which it was necessary to periodically remove the flier block from the spindle and oil it by means of a brush or oil can.

The invention has been described in detail for the purpose of illustration, but it will be obvious that numerous modifications and variations may be resorted to without departing from the spirit of the invention.

I claim:

1. In a spinning machine, comprising a spindle having a delivery bobbin mounted thereon, and a flier block fitting over the upper portion of the spindle and in direct rotary contact therewith, the improvement wherein the upper portion of the spindle comprises an oil compartment having one or more apertures communicating with the interior surface of the flier block.

2. In a spinning machine, comprising a spindle having a delivery bobbin mounted thereon, and a flier block fitting over the upper portion of the spindle and in direct rotary contact therewith, the improvement wherein the upper portion of the spindle comprises an oil compartment having one or more apertures communicating with the interior surface of the flier block, and a wick within said oil compartment.

3. In a spinning machine, comprising a spindle having a delivery bobbin mounted thereon, and a flier block fitting over the upper portion of the spindle and in direct rotary contact therewith, the improvement wherein the upper portion of the spindle comprises an oil compartment having one or more apertures communicating with the interior surface of the flier block, and a wick within said oil compartment terminating short of the top of the compartment to provide an oiling space.

HAL McCOLMAN ADAMS.