

March 13, 1956

E. H. ROGERS

2,737,692

WEB PROTECTING AIR SHIELD ATTACHMENT FOR DRAWING FRAMES

Filed Aug. 17, 1951

2 Sheets-Sheet 1

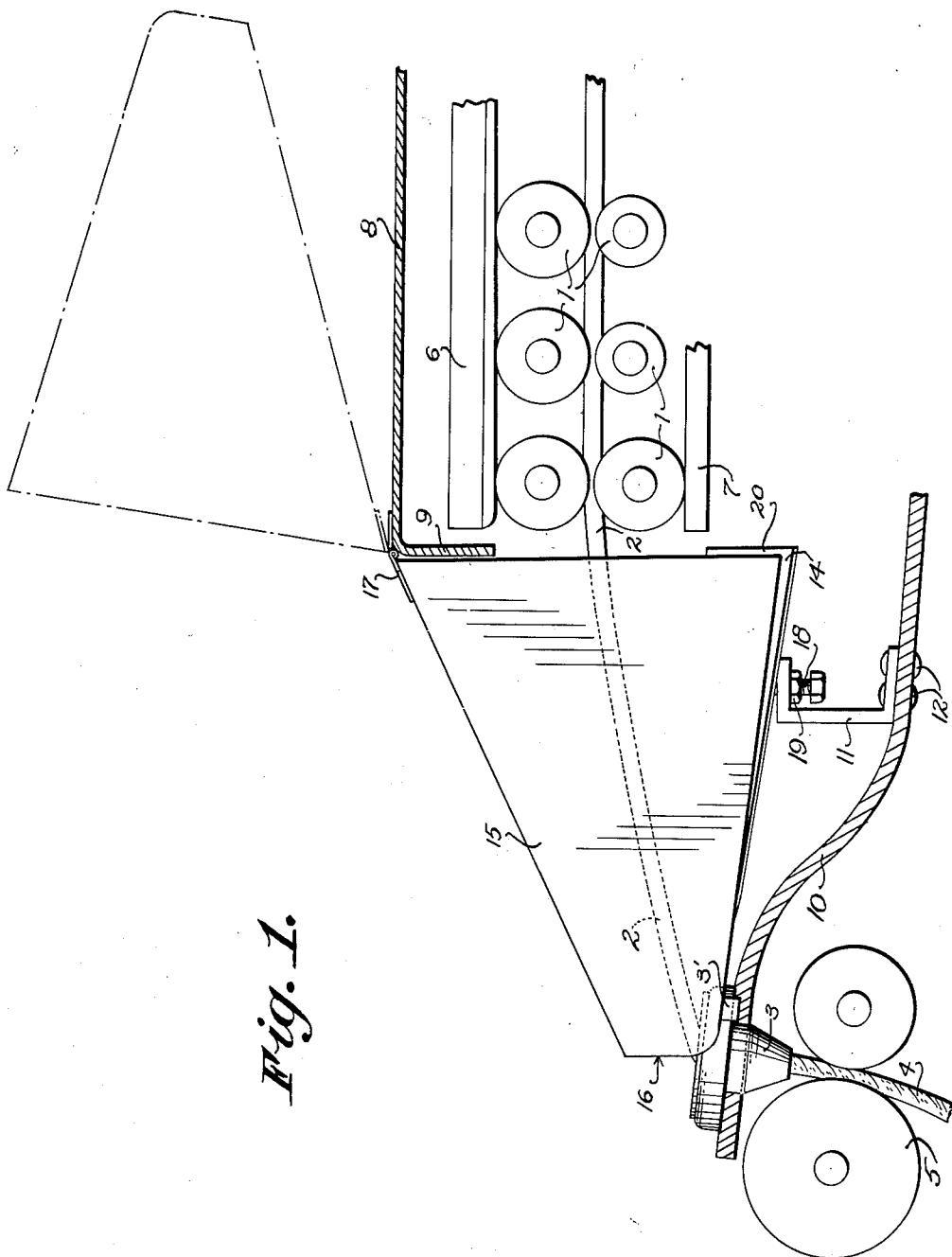


Fig. 1.

INVENTOR
Ernest H. Rogers

BY *Shreve, Crow & Gordon*

ATTORNEYS

March 13, 1956

E. H. ROGERS

2,737,692

WEB PROTECTING AIR SHIELD ATTACHMENT FOR DRAWING FRAMES

Filed Aug. 17, 1951

2 Sheets-Sheet 2

Fig. 2.

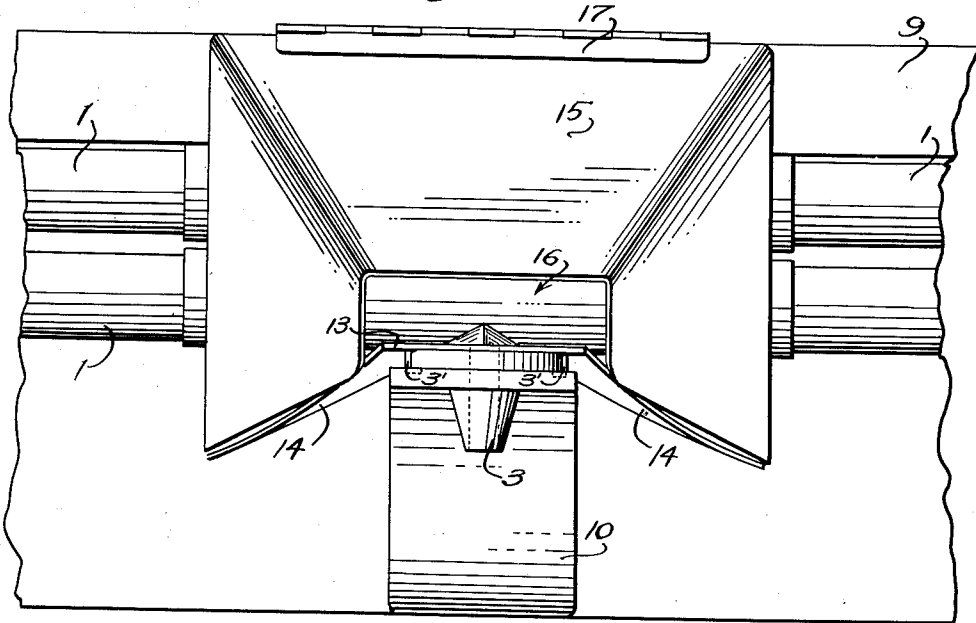
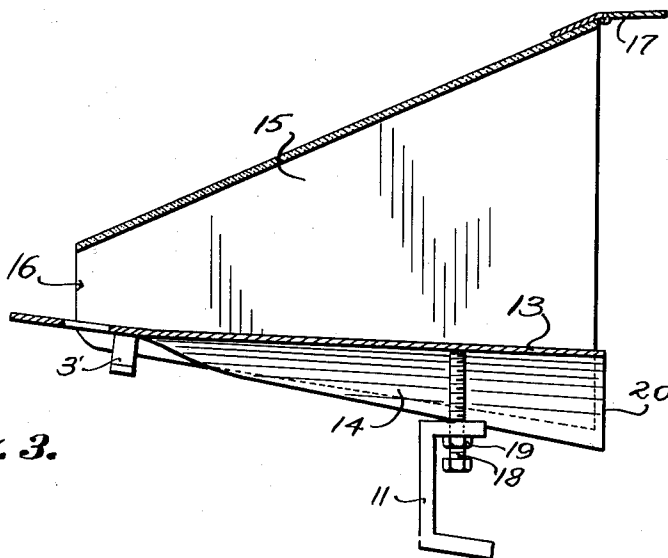


Fig. 3.



INVENTOR

Ernest H. Rogers

BY *Shreve, Crowe & Gordon*

ATTORNEYS

1

2,737,692

WEB PROTECTING AIR SHIELD ATTACHMENT FOR DRAWING FRAMES

Ernest H. Rogers, Atlanta, Ga.

Application August 17, 1951, Serial No. 242,214

3 Claims. (Cl. 19—150)

Generically this invention relates to cotton or other fiber processing machines, but it more especially is directed to attachments for drawing combers, or carders, for protecting the exposed slivers or webs from air currents as they pass from the drawing rolls to the trumpet devices.

In connection with machines for effecting the transformation of cotton fiber into yarn, and in course of the process the fiber is assembled into a sliver or strand-like formation, and as a plurality thereof are passed through a set of drawing rolls they are combined in a mat-like web or sliver which passes from said rolls to and through a further condensing trumpet element and is delivered therefrom into a can or suitable container for further processing. During this operation there is a continuous accumulation of waste and fly on the contiguous machine and frame parts which is extremely difficult to clean without injury to the very light sliver or web, and consequently it is impossible to clean the machine by an air-cleaning process, since any appreciable air draft causes a breakdown of the sliver or web. Therefore, one of the principal objects of this invention is the provision of housing means for the exposed portion of the web comprising a removable transparent hood or shield element.

Another principal object of this invention is the provision of a hinged or otherwise removable transparent hood-like shield mounted on the drawing head for protecting the portion of the fiber web intermediate the drawing rolls and the trumpet element, and thereby permitting the use of traveling fans and the like for cleaning and preventing the accumulation of waste on the machine parts without danger to the light fiber web.

A further important object of this invention is the provision of a removable transparent hood-like shield overlying the exposed portion of a light fiber and normally traveling web against air currents intermediate the drawing rolls and the trumpet member, wherein the web is visible, said shield being readily removable to inoperative position to permit easy access to the web by a drawing tender or operator.

Another important object of this invention is the provision of a device for protecting the portion of a fiber intermediate the drawing rolls and the trumpet element from damage by air currents, said device comprising a removable hood-like shield member and an underlying tongue-like expanding element secured to and adjustably supported on a frame member of the machine, for preventing rising air drafts reaching said web, by closing the bottom of the shield, said element being formed with sloping side portions adapted to shed the loose fibers or waste falling from the web.

Further objects of the invention will become apparent as the description proceeds and the features of novelty will be pointed out in particularity in the appended claims.

The improvements of the present invention will become more readily understood by reference to the accompanying drawings which are illustrative of an embodiment of

2

the invention that has been found to be satisfactory in actual operation.

Referring more particularly to the drawings,

Fig. 1 is a side elevation of a shield for protecting a fiber web from air drafts showing the supporting machine with supporting machine parts in section, and showing the inoperative position of the shield in dot and dash lines.

Fig. 2 is a front elevation of the shield bottom tongue-like closure with sloping sides for the shield, and machine parts shown in Fig. 1.

Fig. 3 is a vertical sectional view through the shield portion and fixed tongue-like bottom portion of the device of Figs. 1 and 2.

Referring more particularly to the drawings reference numeral 1 indicates a plurality of drawing rolls which are mounted on the frame of a conventional machine drawing head, the rolls 1 being web-forming and delivery rolls which initially form a plurality of cotton fiber strand slivers into a light web or sliver 2 and deliver the said web to a trumpet 3, from which in turn it is delivered as at 4 to the oppositely disposed calendar rolls 5 mounted beneath the trumpet 3. The rolls 1 have upper and lower clearer members 6 and 7, respectively, and a cover member 8 which has a forward downwardly extending flange 9.

The trumpet 3 is spaced in advance of and in a plane slightly lower than that of the rolls 1, it being mounted on a forwardly projecting arm 10 of the machine. Also mounted on arm 10 is a channel member 11 secured by rivets 12 or equivalent attaching means. The channel member 11 serves as a support for a fixed tongue-like shield or bottom closure portion 13 of the device which is designed to protect the sliver or web 2 from rising air currents, and which is supported at its forward end by the trumpet 3 to which it is secured by the clamp members 3'. Said tongue-like member is formed with sloping edges 14 for shedding fibers dropping from the web 2 down onto the machine where such collecting fibers are blown away by a traveling cleaner or fan means (not shown) which while being conventional, could not be used without the instant device since the air currents produced by such cleaning would cause excessive disintegration of the light fragile web 2. Consequently, in accordance with the present invention there is provided a protective housing assembly for the web, which housing assembly is shown as comprising a transparent shield or hood portion 15 which is mounted on the cover member 8, which transparent hood 15 together with the aforesaid bottom tongue member 13 for the transparent hood houses the web 2 through the space intervening between the end rolls 1 and the trumpet 3, a small aperture 16 being left at the point where the hood or shield 15 comes over the trumpet 3, for permitting enough air to pass over the trumpet to keep the latter clean at all times.

The bottom tongue closure member 13 is, in the present instance, formed of sheet metal, though it may be formed of plastic material or the like, and the shield 15 is formed preferably of the transparent material known to the trade as "Plexiglas" this being a transparent synthetic molded plastic material well known to the trade, the transparency of the shield 15 enabling an operator to have unobstructed view of the sliver or web 2 at all times. The shield 15 is mounted on a hinge connecting mounting 17 positioned as shown on the cover 8, thus enabling the hood or shield to be moved to an inoperative position whenever desired as shown by the dot and dash lines in Fig. 1. The shield portion 15 when in protecting position relative to the web 2 effectively protects the web from air currents which otherwise would blow across the web as accumulated fibers and lint are cleaned from the machine and the bottom tongue closure portion 13 likewise pro-

3

fects the web from currents ascending from the underside of the web, the bottom tongue closure portion 13 and the shield portion 15 cooperating to form a substantially completely enclosing housing for the otherwise exposed portion of the web between the trumpet 3 and the delivering rolls 1. The hinge mounting 17 for the shield 15 permits the latter to be shifted at will between operative and inoperative positions.

It will be noted also that the bottom tongue closure member 13 is carried on the channel 11 and through the upper side of the channel there projects an adjusting screw 18 bearing on the central underside portion of the tongue member 13 for effecting adjustment as to elevation of said tongue member as may be desired. A lock nut 19 may be provided for securing the screw 18 in the desired position of adjustment.

It also will be seen from the drawings that the rear end 20 of the bottom tongue closure member 13 which is adjacent to the front drawing rolls 1 extends beyond the shield 15 so that droppings from the web 2 will fall on the machine and be cleared therefrom by the cleaning fans or the like (not shown).

Having thus described the invention, what I desire protected by Letters Patent is as set forth in the following claims:

1. In a machine for producing a fibrous textile web, and including a drawing head provided with drawing rolls for forming a fiber web which is delivered to a trumpet member spaced in front of the rolls, the improvements which comprise a cover member for the rolls spaced above the said rolls and terminating in a forward downwardly extending flange in advance of the rolls, a channel frame beam for the machine positioned below and in advance of the rolls, and housing means for the said fiber web enclosing the web for substantially the entire distance between the rolls and the trumpet member, the housing means including a hood member hingedly mounted on the flange of the cover member for the rolls for enabling the hood member to be shifted vertically between operative and inoperative positions, the said hood having open ends and an open bottom for placement over the web and enclosing the web above and laterally

4

thereof, the said hood extending from the flange to the trumpet member and providing a restricted opening between itself and the trumpet member for permitting sufficient air to pass over the trumpet member for preventing accumulation of loose fibers thereon, a bottom tongue closure member for the hood separable from the hood and positioned beneath the web and extending rearwardly beyond the hood with a rear end intermediate the hood and drawing rolls, while extending forwardly to the trumpet member, the said bottom tongue closure member being a seat for the hood from which the hood is liftable around the hinged mounting for the hood without interruption to the web, the bottom tongue closure member having sloping edges sloping downwardly from the trumpet member to the rear end of the tongue closure member for shedding loose fibers dropping from the web onto the web producing machine, and mounting means carried by the channel frame beam for the bottom tongue closure member.

2. The construction defined by claim 1, wherein means is provided on the channel frame beam cooperating with the bottom tongue closure member for adjusting the slope thereof relative to the drawing rolls, and clamping means for the said bottom tongue closure member clamping it to the trumpet member.

3. The construction defined by claim 1 wherein the hood is composed of a transparent and unbreakable synthetic plastic material, the bottom tongue closure member for the hood extending between the sides of the hood below the web, the said hood and bottom tongue closure member defining an enclosing housing for the web preventing access of air currents to the web from all directions throughout travel of the web from the rolls to the trumpet member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,582,159	Blackwood	Apr. 27, 1926
2,373,411	Pierpont	Apr. 10, 1945
2,377,924	Crockett	June 12, 1945