

June 12, 1945.

F. L. CROCKETT

2,377,924

SLIVER PAN

Original Filed Oct. 2, 1940

4 Sheets-Sheet 1

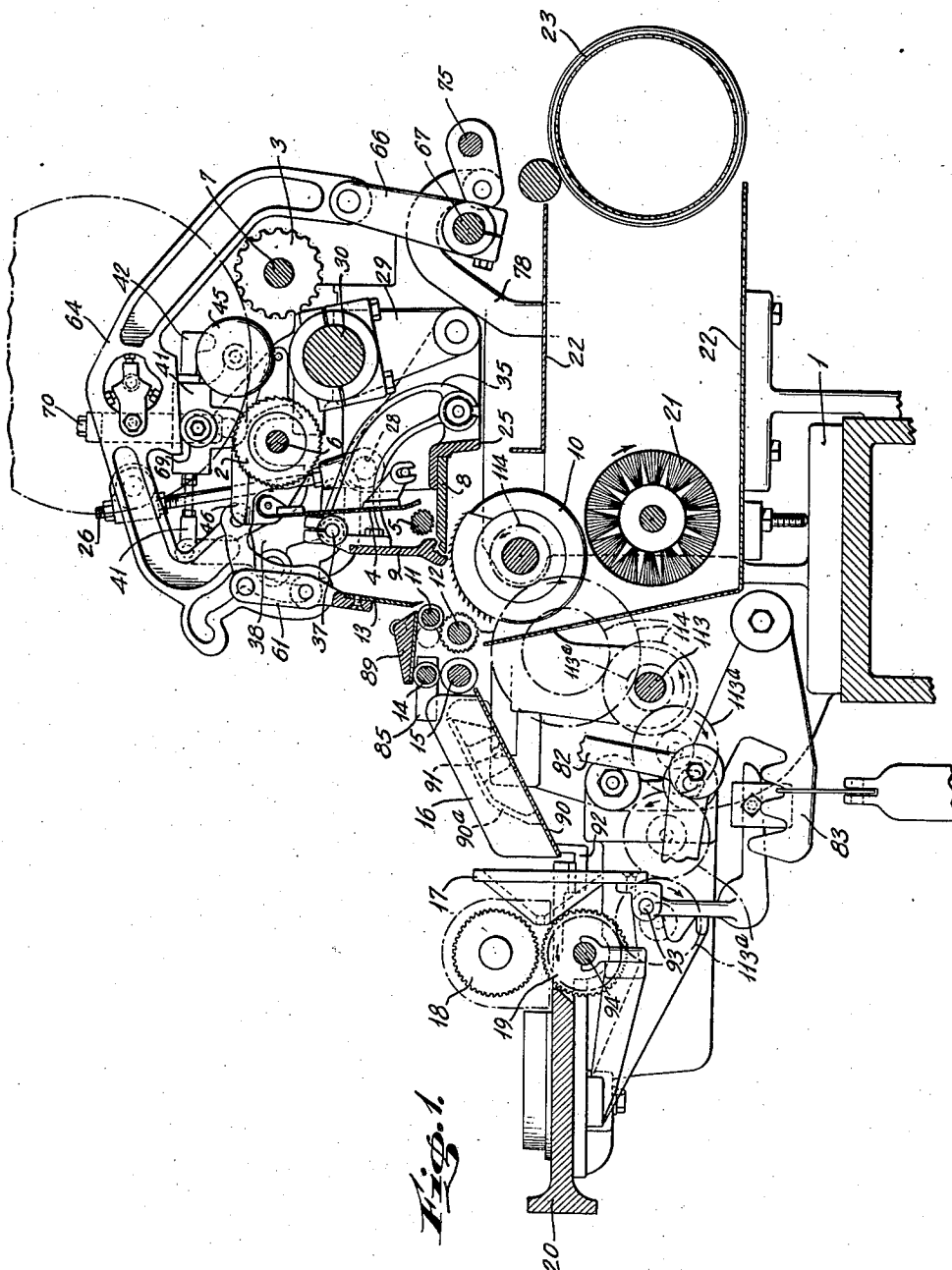
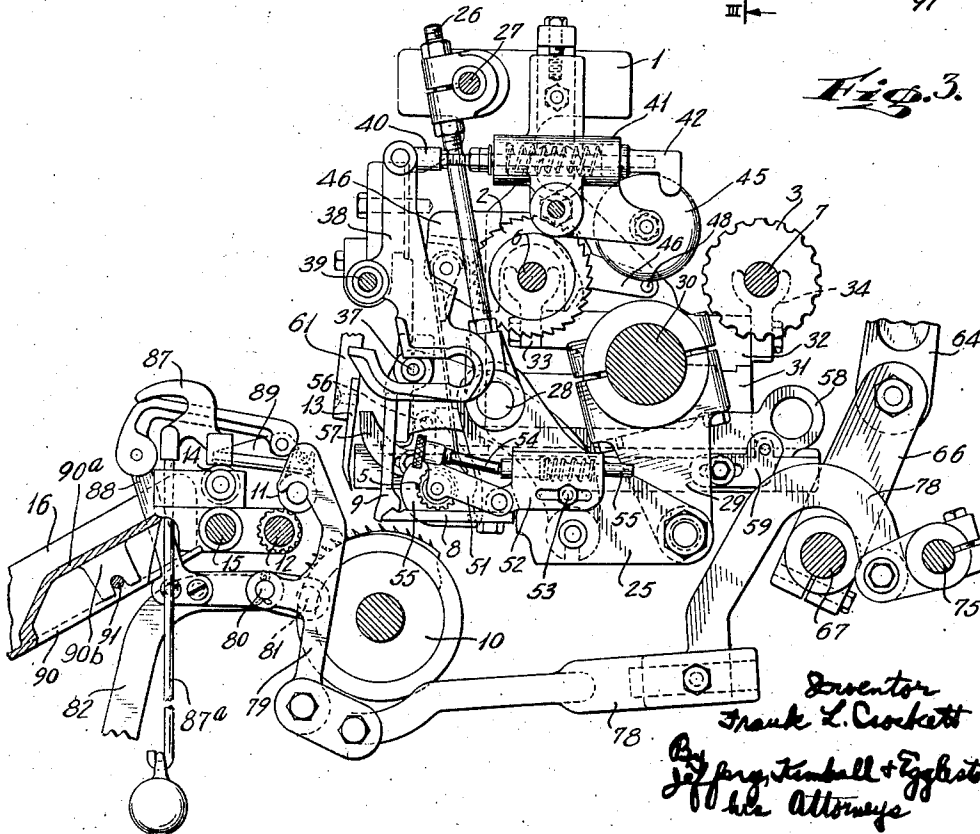


Fig. 1.

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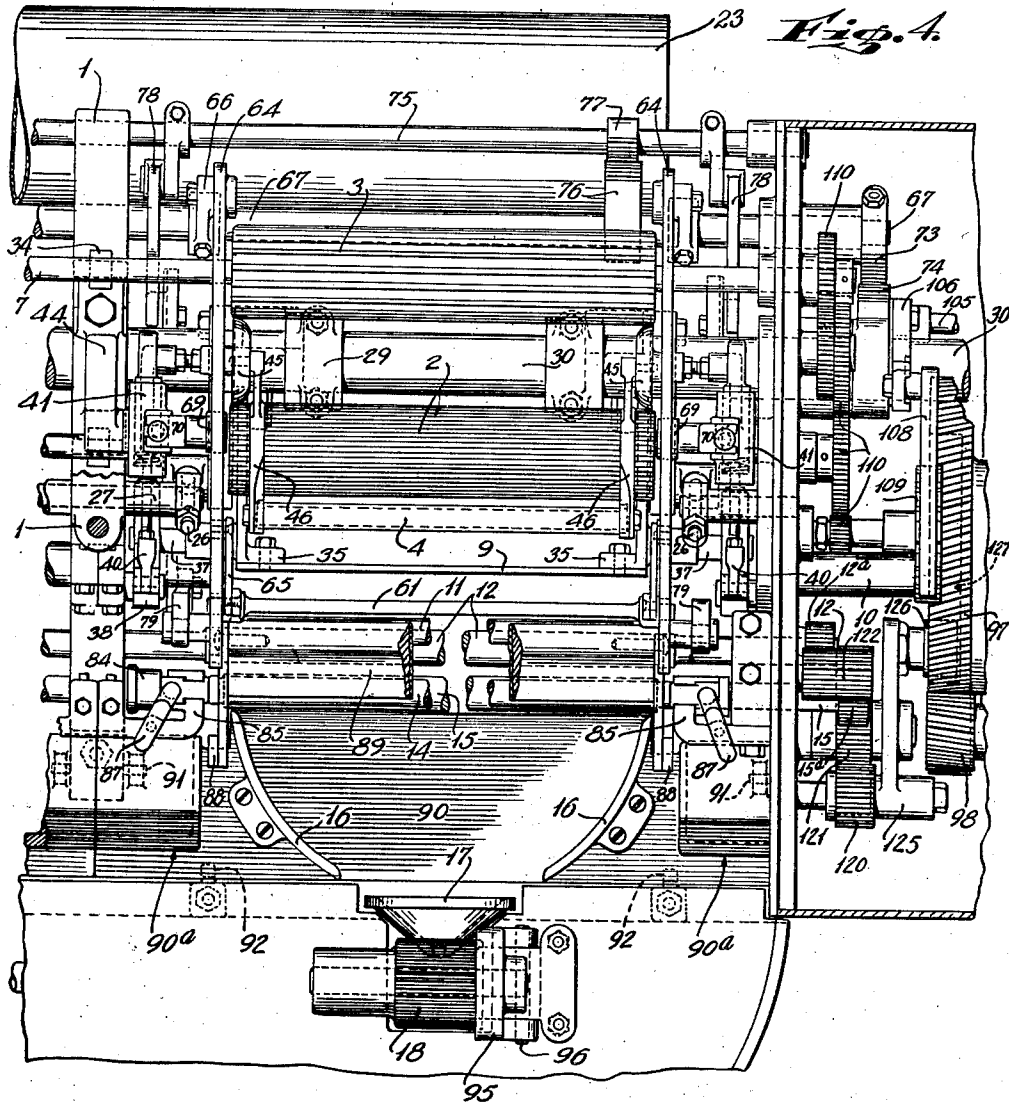
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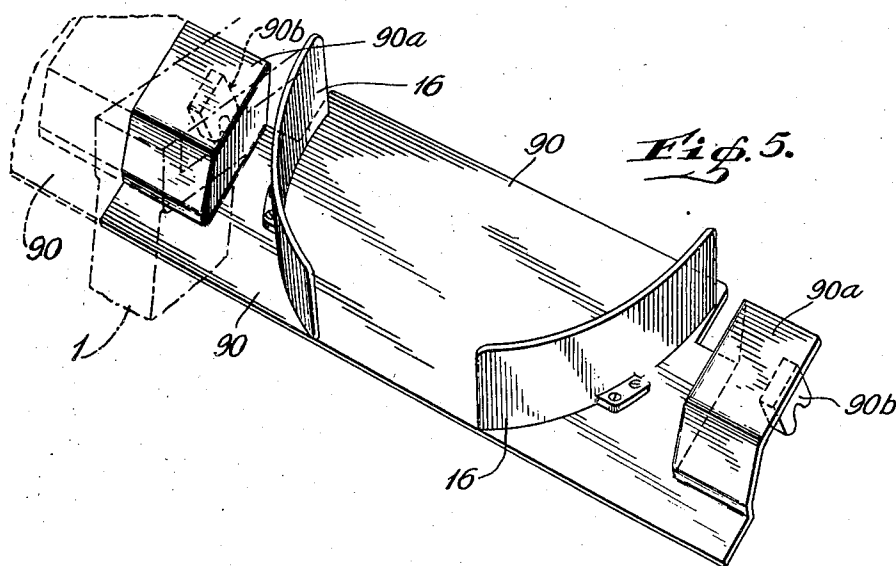
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UNITED STATES PATENT OFFICE

2,377,924

SLIVER PAN

Frank L. Crockett, Tenants Harbor, Maine, assignor to Whitin Machine Works, Whitinsville, Mass., a corporation of Massachusetts

Original application October 2, 1940, Serial No. 359,385, now Patent No. 2,353,812, dated July 18, 1944. Divided and this application August 13, 1942, Serial No. 454,750

3 Claims. (Cl. 19—115)

The invention relates to Heilmann type combers, more especially the sliver delivery part thereof and is a division of my application Serial No. 359, 385, filed October 2, 1940, Patent No. 2,353,812 to which reference may be had for all parts shown in the accompanying drawings, but not herein referred to.

As heretofore found in combing machines of this type, in this country and abroad, the sliver pans have been nothing more than tin trays of triangular or semicircular shape, perched between the piecing-rolls and the sliver table. Their function is to conduct the freshly pieced fleece from the one to the other. The fleece enters the pan with a to-and-fro motion imparted to it by the piecing-rolls and leaves it with a steady motion passing through a trumpet to the calendar rollers which latter deliver it to the sliver table whence it passes to the delivery end of the machine. For the support of such pans the prior combers have been built with at least one, and generally two, longitudinal shafts or rails running lengthwise of the machine, crossing the spaces occupied by the combing heads, and one or both of such shafts or rails have had no other function than merely to support these pans. In some cases only one rail is used for pan support, in which event the pan has to be attached to it, the attachment being on the underside which is inconvenient because it requires unfastening it from under the machine when the pan is to be removed. In all these cases the sliver pan, being but slightly wider than the fleece it handles, leaves open spaces at its sides, between the pan and the adjacent frame-uprights, through which opportunity is afforded for the development of vertical air currents which carry lint onto the journals of the working members. Cleanliness of cotton combers is of primary importance and always difficult, and the work of keeping them clean, and thereby keeping the product clean, is no little part of the duties of the attendant, but the possibility of improvements of this condition has not heretofore been recognized, so far as can be judged by the combers that have been heretofore marketed or patented.

By this invention, which is extremely simple and inexpensive to apply, the comber keeps itself noticeably cleaner and with less attention by the attendant, the longitudinal pan-supporting rails of the prior art, themselves dirt catchers, are unnecessary and eliminated and various other incidental conveniences are also obtained which will presently be apparent.

In the drawings

Fig. 1 represents a vertical section through one of the combing heads of a multiple-head cotton comber and illustrates the location and the relation thereto of the new sliver pan substitute representing this invention.

Fig. 2 is a front elevation of part of Fig. 1.

Fig. 3 is a section of line III—III of Fig. 2.

Fig. 4 is a top plan of Fig. 2 and Fig. 5 is a separate perspective of the sliver panel.

The general construction and mode of operation of the comber head will be recognized from the drawings or can be understood by reference to the above identified patent and will not therefore be herein described.

According to this invention the old style sliver pan is substituted in each combing head by a substantially rectangular panel, as shown at 90, and separately in Fig. 5, which is long enough, i. e. in the direction of the length of the machine, to reach the full distance between each two adjacent frame uprights 1, and has sufficient depthwise dimension, i. e. cross-wise of the machine or fore and aft of the combing head, to reach from the rear edge of the sliver table 20 up to the lower front piecing roll 15, thus forming a barrier across the front part of the head completely blocking any vertical air drafts in the front of the machine. Each such panel is provided with open slotted lugs 90b, or like attachment means, on its underside near its ends by which it is removably engaged to and supported on lateral projections or pins 91 provided on the frame uprights. The front edge of the panel is held flush with the table by resting upon the ends of two brackets 92 (Fig. 1) carried on the underside of the table by which arrangement all the panels are given inclined positions at a common level. Being of cast metal or in any event of stiff construction, the panel requires no support to steady it in front of the piecing rolls, nor indeed any support whatever except on the main framing as described, thereby obviating the need of any special supporting frame rails.

For the protection of the delicate vibrating fleece, the panel is completed by two upstanding fences 16, which are convergently arranged thereon to gather and deliver the fleece to the trumpet 17, and which take the part of the side walls of the old style sliver pan, but these fences are separate from the trumpet 17, and the panel is removable without disturbing it. The trumpet is pivoted at 93 (Fig. 1) to a separate support. These fences also form convenient handles for lifting the panel when it is necessary to gain

access to the underside of the piecing rolls or their journals, very free access being provided on such removal by reason of the absence of any cross-rails.

According to the design of comber to which it is applied, the new sliver panel can be flat throughout or it can be contoured as circumstances require, but will in any event occupy the full width and depth of the combing head space in front of the detaching mechanism. In the present case it is provided with box formations such as indicated at 90a to accommodate the projecting corners of the frame uprights 1, the slotted lugs 90b above, referred to, being located on the undersides of these boxes. It is preferred to make all the panels long enough to reach over the tops of their respective frame uprights so that each then abuts flush with its neighbor in the next adjacent combing head, as indicated in Fig. 2, also in Fig. 5. In this case the box portions 90a are also flush with each other giving the whole machine a neat and pleasing appearance and greatly facilitating the wiping of it.

The other parts of the delivery system, with which the above described construction is particularly related, include the calender roll mechanism 18, 19, 95 and 96, which takes the condensed fleece from the trumpet 17 and delivers it to the sliver table. These rolls are appropriately driven by shaft 94, gear-train 113a and shaft 113, journaled within the enclosure 115, the gear-train 113a being driven by shaft 113 in turn driven by gear-train 114 from the comb cylinder shaft 10. The detaching and piecing system includes, besides the detaching rolls 11, 12, 14 and 15, the several parts marked 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 87a, 88 and 89. The other parts not directly related to the present invention, but indicated in the drawings by reference numerals, include the following: The nipper system includes the parts marked 8, 9, 25, 26, 27, 28, 29, 30, 35, 37, 38, 39, 40, 41 and 42. The creel system includes the two rollers 2, 3 on shafts 6 and 7, journaled in 33 and 34 on block 32, and associated parts marked 4, 31, 45, 46, 48 and 49. The lap feed-roll in the nipper frame is marked 5, held in supporting mechanism marked 51, 52, 53, 54, 55, 55a, 56, 57, 58 and 59. The top comb system, so far as shown, includes top comb arms 64, hinged to 66 on shaft 67, the arm supporting

stud 69, 70; top comb 13 supported by parts 44, 61, 62 and 65. The scavenger system includes the parts 21, 22 and 23. In the drive-head the operating mechanism includes the gear-train 110 and the gears 12a, 15a, 97, 98, 105, 106, 108, 109, 119, 120, 121, 122, 125, 126, 127 and 128, also quadrant gears 73, 74.

I claim:

1. In a multiple-head comber the combination with the sliver table and the combing heads containing detaching mechanisms delivering to said table, of means in each head for conducting the fleece from said mechanism to the sliver table comprising a removable substantially flat rectangular panel occupying substantially the full distance between said mechanism and said table and the full distance of the width of the combing head between frame uprights, each of said panels being supported by its ends on said uprights so as to prevent vertical air flow adjacent to said uprights and being normally fixed in position with its front edge substantially flush with said table, and all of them being provided with upstanding fences for protecting their respective fleeces.

2. The combination of claim 1, in which the panels of adjacent combing heads meet flush with each other over the tops of the intermediate frame uprights between the combing heads.

3. In a multiple-head comber the combination with the sliver table and the combing heads supported on frame uprights and containing detaching and piecing mechanism delivering the fleeces to said table, of means in each head for conducting the fleece from said mechanism to the sliver table including a trumpet and comprising a removable panel occupying substantially the full distance between said detaching and piecing mechanism and said table and the full distance of the width of the combing head between said frame uprights so as to constitute a barrier to vertical air flow adjacent to said uprights, all of said panels being supported in normally fixed positions at a common level for conducting the fleeces to said table and all being provided with means whereby they may be lifted out of the comber and said trumpets being movable with respect to said panels.

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