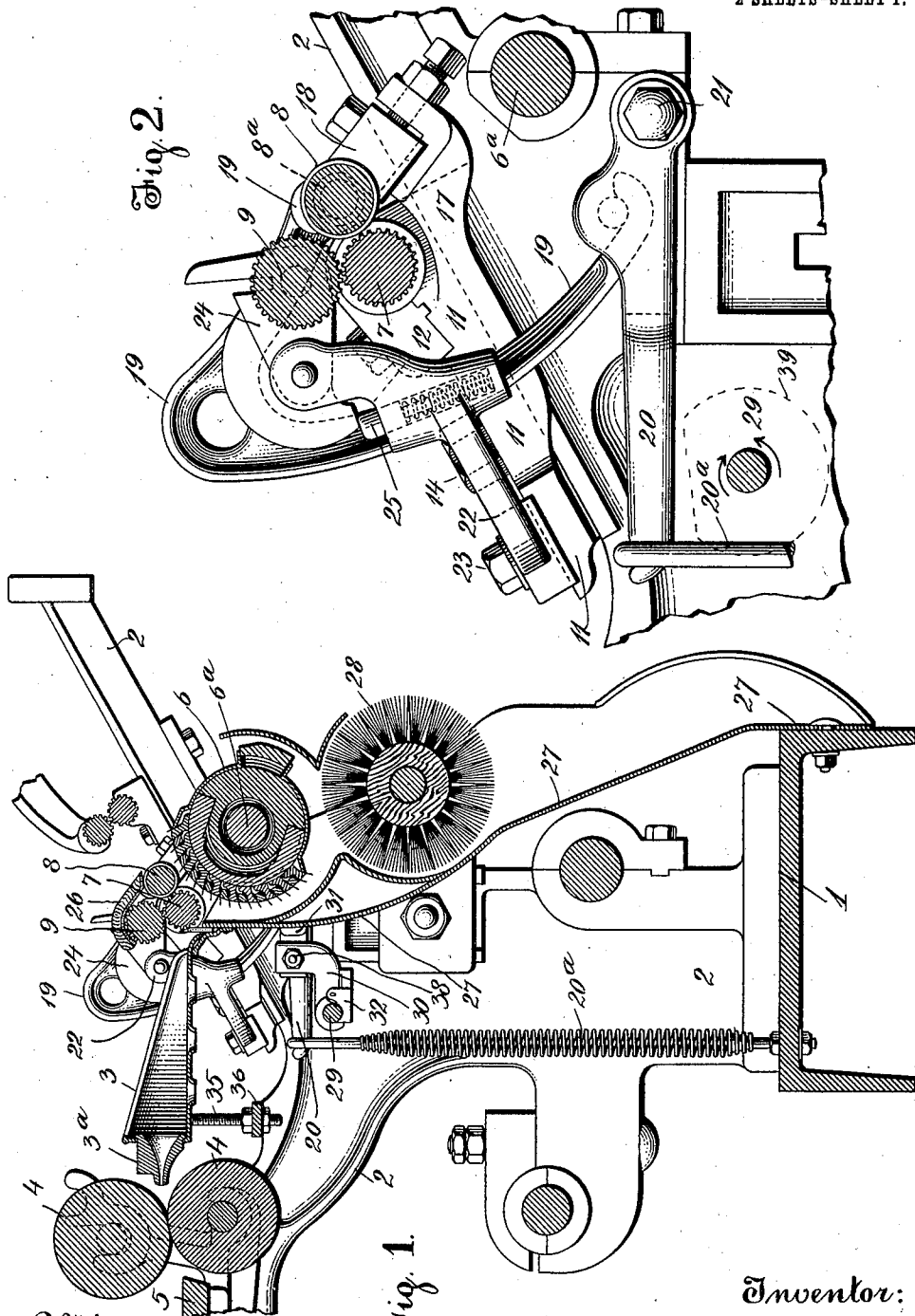


H. JARRY.
HEILMANN COMBER.
APPLICATION FILED DEC. 28, 1911.

1,029,129.

Patented June 11, 1912.

2 SHEETS-SHEET 1.



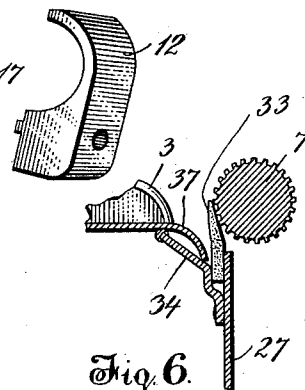
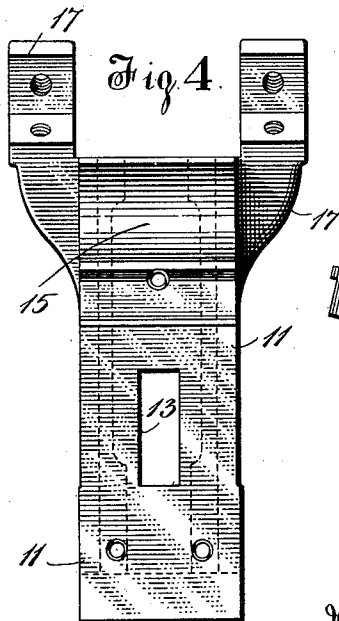
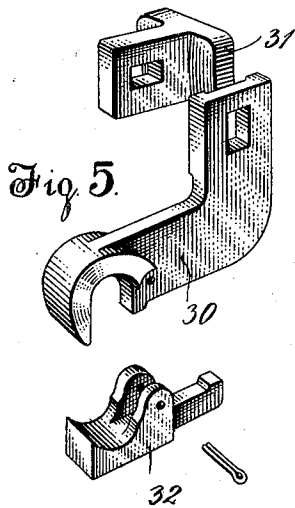
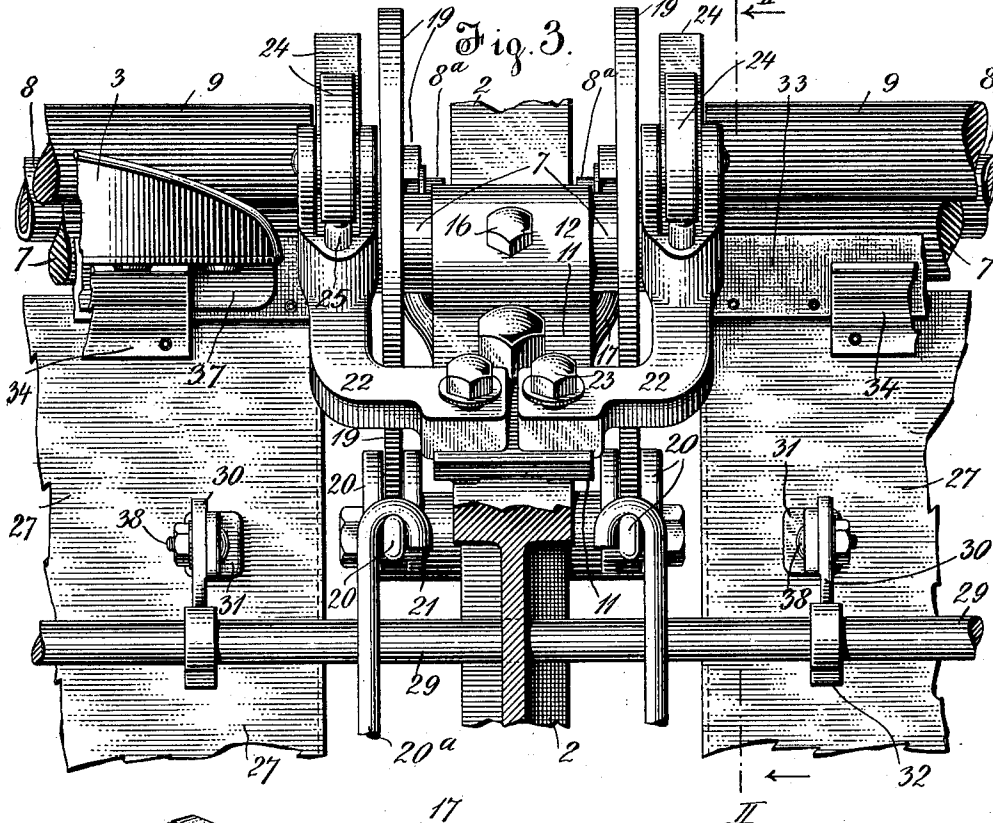
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II² SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

HORMIDAS JARRY, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

HEILMANN COMBER.

1,029,129.

Specification of Letters Patent.

Patented June 11, 1912.

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To all whom it may concern:

Be it known that I, HORMIDAS JARRY, a citizen of the United States, residing in Lawrence, in the county of Essex, State of Massachusetts, have invented the following described new and useful Improvements in Heilmann Combers.

The invention is an improvement in construction of the said type of combers with the view of providing better facility for access to, and greater clearance beneath and around the journaled ends of the piecing or detaching rolls thereof and seeks also to reduce the number of places around such parts where dirt and lint can collect, and otherwise aims to simplify and improve the said type of machines.

By reason of the necessary compactness of the operating parts of the piecing and detaching mechanism it has heretofore been a matter requiring much diligence and attention to keep the surplus oil and dirt collecting on and around the roll-journals from working onto the faces of the rolls, where it soils the product. In providing means for alleviating this objection, the present invention, is more particularly an improvement on the invention disclosed in my application filed February 27, 1911, Serial No. 611,118, addressed to the remedy of the same defects, and involves improved methods of supporting the front casing and sliver pan in their proper relation to the rest of the mechanism whereby certain difficultly constructed parts of the former application are eliminated and certain other simplifications are made available, as will more fully appear in the description below and the drawings forming part hereof.

In the drawings Figure 1 is a vertical transverse section through one of the combing heads of a Heilmann comber embodying the improvements of this invention, the section being taken through the central or working portion of the head as will be apparent to those skilled in this art. Fig. 2 is an enlarged section of certain of the parts shown in Fig. 1, being taken on section line II—II of Fig. 3, which latter figure is a front elevation on the same scale as Fig. 2 showing the parts shown therein and illustrating the symmetrical nature of the new construction as applied to the uprights between the combing heads. Fig. 4 is a top

plan of the pillow of the plumber block showing the pillow cap in perspective at one side. Fig. 5 is a separated detail of the casing attachment device, and Fig. 6 is a cross section of the sliver pan seating means.

It will be understood by those versed in this subject that the comber frame comprises a main horizontal girder 1 (Fig. 1) extending the full length of the machine and upon which the series of upright frame standards 2 is mounted. These standards form the end and intermediate frame supports of the several combing heads of the comber, but only one of them appears in the drawings because they are all alike. The standards 2 may be made of any usual or suitable shape to support the lap-feeding devices, the combing mechanism and the other usual parts so that they will operate according to the well-known Heilmann principle, which need not be here described. These parts appear in their usual arrangement in Fig. 1 and it will be understood that they properly cooperate to comb the staple in separate tufts or detachments which are successively overlapped by the piecing mechanism and by it formed into a continuous sliver, which passes thence into the sliver pan 3, through its condensing trumpet 3^a and the calendar-rolls 4 to the apron 5. The piecing mechanism comprises a lower piecing roll 7, an upper piecing or detaching roll 8, usually leather-covered, and an upper fluted piecing roll 9, usually of brass and mounted in the pivoted horse-tails as later explained. The lower roll is formed on, or as a part of, a horizontal shaft common to all the combing heads and is driven from the drive-head of the machine at one end, while the two upper rolls are individual to each combing head and are driven in whole or in part by their contact with the lower roll. By reason of the nature of their support these rolls 8 and 9 are normally removable while the other roll, being part of the longitudinal shaft above referred to is normally fixed in position. The mounting of the shaft of the lower piecing roll is formed by a set of plumber blocks mounted on the inclined top margins of the several frame standards 2, each block comprising a base member or pillow 11, such as shown more clearly by Fig. 4, and a pillow cap 12 also appearing in that figure. The pillow is provided with an oblong slot 13 to receive

a bolt 14 by means of which it is secured to the top of the standard and upon which it is therefore adjustable toward and from the journal 6^a of the combing cylinder shaft. The journal seat 15, formed thereon for the lower piecing roll shaft 7, is located at the rearward end of the block, as also clearly shown in Fig. 4. The cap piece 12 is adapted to be held in place on the pillow and over the journal seat 15 by means of a suitably mortised joint and a bolt 16. At its rearward end the pillow block is also provided with a pair of bracket arms 17 which spring from the sides of the block below the journal seat 15 and extend rearwardly, and also slightly upwardly therefrom, to form the support for the bearing blocks 18 (Fig. 2) upon which the gudgeons of the piecing detaching roll 8 are adapted to rest. One of these gudgeons appears in dotted lines in Fig. 2, where it is marked 8^a and the ends of such gudgeons (of two adjacent combing heads) also appear in the upper portion of Fig. 3, where they are similarly marked.

It will be understood that the pillows intended for use on the frame standards at the ends of the machine are, of course, provided with bracket arms 17 on one side only but for the intermediate standards, the pillows have such arms on both sides as in the case illustrated in Fig. 4. The bearing blocks 18 are inclined as shown and, for purposes of adjustment, each is provided with two screws arranged as shown in the drawings or in any suitable way to enable its position to be shifted with respect to the combing cylinder and the other rolls. A pair of stirrups 19 applied upon the gudgeon 8^a at each end of the roll 8 serves to press it against the lower piecing roll 7 and toward the combing cylinder. The stirrups extend upwardly from their respective gudgeons and thence downwardly, passing the side of the pillow block just in front of the bracket arms 17 to a lower point where they are hooked to the weighted or spring-pulled levers 20. The latter are pivoted to the frame standards at the points marked 21. The springs for the levers are marked 20^a.

At a point toward its forward end and in front of the stirrups 19 the pillow block is drilled with two holes which represent the points of attachment thereto of the bases 22 of the pivoted horse-tails 24, on which the upper fluted rolls 9 are journaled. These horse-tail bases are made in pairs of rights and lefts and the end surface of each base is formed with a depending liner lip and is suitably machined so as to adapt it to fit truly upon the top surface and corner of the pillow and so as to be adjustable thereon in a direction parallel with the plane of the frame standard. For this purpose the base is provided with an oblong bolt slot

through which its holding bolt 23 is inserted, the said bolt being screwed into the bolt hole in the pillow above mentioned. From its point of attachment to the pillow each horse-tail base extends, like a bracket arm, first laterally away from the block and then turns at about a right angle and extends rearwardly toward the piecing rolls, reaching past the stirrup 19, and forming a space for the latter between arms 17 and 22 and the side of the pillow. At its rearmost extremity the horse-tail base turns upwardly in the form of a fork to carry the pivot of the horse-tail 24. The latter, which may be of any suitable type, is formed to receive the gudgeons of the upper fluted piecing roll 9 and also the clearer cover 26 thereof (Fig. 1) and is further adapted to hold the said piecing roll so that it will normally rest upon the top of the lower roll as indicated in the drawing, and so that the said roll can also be removed from this position by swinging the horse tails upwardly and backwardly in the usual manner. The horse-tail base 22 also carries and includes the spring-pressed plunger 25 which acts upon the horse-tail sector to maintain the roll either in pressing engagement with the lower roll or in its uplifted position, as the case may be and as will also be readily understood. It will be observed that the mounting of the horse-tail base as above described provides ample space beneath it and above the stirrup lever 20 to afford access to the latter and, also, when the stirrup has been unhooked, to the front side of the combing shaft bearing 6^a.

The front casing 27 which closes in and protects the front of the combing cylinder 6 and its rotary brush 28, and other parts of the doffing system not shown in the drawings, is secured at its lower end to the side of the girder 1 by means of a suitable bolt, as shown, or other suitable form of attachment. At its upper end it is supported by an adjustable holder upon a rod 29, which spans the combing space between two of the upright frame standards. This rod may, if desired, be a fixed rod having no other purpose than to support the casing 27, but it is preferably adapted to serve also other purposes, as, for example, to relieve the weight or pressure on the stirrup levers or to turn the power on and off, in either of which cases it is made as a continuous rod or shaft running the full length of the machine and journaled in the intermediate frame standards. Whether fixed or movable, this rod or shaft 29 is mounted at such a level below the level of the piecing mechanism as not to obstruct access to the under side of the latter, and the means whereby it is connected to support the front casing is also set in a corresponding low-down position. As indicated in the draw-

ings, it will be seen that there is sufficient space above the rod and below the piecing mechanism in which the operator can insert his hand when necessary.

5 The attachment of the casing to the rod is formed by a hook-shaped arm 30 adjustably bolted to a bracket base 31, the latter being soldered or otherwise secured to the front of the casing at a point well within the vertical edges thereof. The hooked-arm seats 10 over the rod 29 and has a keeper 32 to hold it in that position without liability of displacement when the rod itself is moved or rotated in its bearings. The several parts 15 of the attachment for the casing are shown separated in Fig. 5 where an ordinary linch pin is also shown for fastening the keeper to the hook. The casing is preferably provided with two attachment devices such as 20 just described, and which are symmetrically disposed thereon as indicated by Fig. 2, but at some distance from the vertical margins of the casing. The latter is thus held rigidly in position and is thereby available to 25 support the sliver pan, an additional function not heretofore assigned to the front casing; and one that promotes greatly the objects of this invention first above referred to in as much as the sliver pan can be there- 30 by supported without the aid of members extending laterally from the frame standards or downwardly from parts above. The upper margin of the casing may serve as formerly to support the flexible clearer blade 35 33 that cleans the lower piecing roll 7, and when such a clearer blade is employed, the means to support the sliver pan may be mounted in front of it and indeed may assist in holding it in place, if desired. The 40 construction of the upper portion of this casing is shown more clearly in the section view of Fig. 6 wherein it will be observed that the sliver pan seat consists of a short strip of metal 34 soldered or otherwise fastened to the face of the casing and extends 45 forwardly and upwardly therefrom, terminating preferably in a rounded bead or rim.

In the case illustrated as well as in the ordinary Heilmann comber the sliver pan 50 forms a part of an electric stop-motion circuit and for this purpose requires to be so mounted that it will normally maintain itself in a position out of contact with the upper calendar roll 4, which forms the other 55 terminal of the circuit. When the sliver jams in the condensing trumpet 3^a the pan is thereby drawn forwardly until the nose of the trumpet encounters the roll and thus closes the circuit, but in normal running the 60 sliver pan should encounter sufficient resistance to forward movement to prevent its accidental operation in this manner. In the present case such normal resistance is provided by the downwardly turned lip 37 at 65 the rear of the pan, which laps over and

rests on the pan seat 34 engaging the latter in a plane of contact represented generally by the upper surface of the pan seat and which is so inclined that the gravity of the pan itself tends to cause it to assume and 70 maintain its rearward position under normal conditions of sliver tension, but allows it to ride forwardly and upwardly against gravity when the sliver tension on the trumpet becomes abnormal. It will be 75 understood that the pan seat is formed of such extent of forward projection as to meet this condition, and cooperate accordingly. The nature of the support, however, that is provided by the pan seat, is such that it is 80 not necessary for it to extend horizontally the full width of the pan and it is consequently terminated at a point several inches remote from the intermediate frame standard, as indicated more clearly in the left 85 hand side of Fig. 3, from which arrangement it will be observed that the entire mechanism for supporting the sliver pan is separate from the region around the roll journals. The sliver pan adjustment means 90 also are isolated from this region, such means being the hooked arm devices 30 and 31 above described.

Adjustment of the sliver pan, toward and from the calendar rolls as well as in a vertical 95 direction may be accomplished by adjusting the front casing 27 forward or back by the appropriate manipulation of the bolt 38 that holds the hook 30 on the base-bracket 31. By releasing the other connection of 100 the casing to the frame, the casing and hence the pan seat, may be raised or lowered without shifting it laterally. When the rod 29 is employed as a means for relieving the pressure on the stirrup levers 20 105 it is provided with a suitable cam fast thereon, as indicated by the dotted line 39 in Fig. 2 so that by the rotation of the shaft the levers 20 may be lifted and the pressure thereby relieved from the stirrups and the 110 detaching rolls 8.

Claims.

1. In a Heilmann comber, the combination of the upright frame standards forming a 115 combing head space between them, a casing mounted therein, and a sliver pan seated on the casing.

2. In a Heilmann comber, the combination of the frame standards and piecing rolls, a front casing, a support for the 120 casing below the level of the piecing rolls and a sliver pan seated on the casing above such support.

3. In a Heilmann comber, the combination of the frame standards forming a combing 125 head space, a piecing-roll shaft, a horsetail base supported at a point in front of the shaft and extending rearwardly toward the shaft, a sliver pan, and independent means confined to the central region of the comb- 130

ing head space for supporting one end of the sliver pan.

4. In a Heilmann comber, the combination of the frame standards forming a combing head space, a piecing roll shaft, a horsetail base supported in front of and extending rearwardly toward the said shaft, a front casing below the level of the shaft and a sliver pan seat on the casing.

5. In a Heilmann comber, frame standards forming a combing head space between them, piecing rolls and a combing cylinder mounted in the combing head space, a casing in front of the cylinder having a projecting seat carried thereon, and a sliver-pan supported on the seat in front of the piecing-rolls.

6. In a Heilmann comber, frame standards having piecing-rolls, a combing cylinder and a front casing for the latter, mounted between them in combination with a projecting horizontal seat on the front casing of less length than the distance between the standards to provide access to the piecing rolls at the end of the seat and a sliver pan supported on the seat.

7. In a Heilmann comber, frame standards having combing and piecing mechanism supported upon and between them, and a casing for the combing mechanism extended upwardly toward the piecing mechanism, and combined with a clearer for the piecing mechanism supported by the casing, and a sliver pan also supported by the casing.

8. In a Heilmann comber, two supporting frame standards having a combing cylinder and piecing mechanism disposed in the combing head space between them, a longitudinal shaft supported on the standards at a point below the axis of the combing cylinder and a casing in the combing head space supported by the shaft.

9. In a Heilmann comber, the combination with the parts forming a combing head space, of an adjustable casing in said space, and a sliver pan seated on the casing, and partaking of the adjustment thereof.

10. In a Heilmann comber, the combination with the combing mechanism, piecing rolls and pressure means therefor, of a shaft operable for relieving the pressure on the piecing rolls, and a casing supported by such shaft.

11. In a Heilmann comber, the combination with the combing mechanism, piecing rolls and pressure means for the latter, comprising stirrups and levers and means for pressing the levers, of a shaft operative upon the levers for raising them against such pressure and a casing for the combing mechanism supported by the shaft.

12. In a Heilmann comber, the combination with the frame standards having the piecing rolls, and combing cylinders mounted thereon and in the space between them,

of a rotary shaft spanning the said space, and a casing provided with means for supporting the same upon the said rotary shaft.

13. In a Heilmann comber, the combination of the combing cylinder and piecing rolls mounted in the combing head space, a rotary shaft spanning such space, a front casing supported on the shaft and a sliver pan supported on the casing.

14. In a Heilmann comber, the combination of the combing and piecing mechanism disposed in a combing head space, a shaft spanning the said space and a casing therein having a bracket arm secured thereto adapted to engage the shaft and a keeper for the arm adapted to confine the same upon the shaft.

15. In a Heilmann comber, the combination with the upright standards having the combing and piecing mechanism therebetween, and a shaft spanning the space between the standards, of a casing suitably supported at its lower end and means for connecting the casing to the shaft comprising a bracket secured to the casing and adjustably secured to a part engaging the said shaft.

16. In a Heilmann comber, the combination with the upright standards having combing and piecing mechanism between them and a shaft spanning the standards, of a casing suitably supported at its lower end and having means for attaching it to the shaft near its upper end, said means being adjustable to vary the position of the casing, and a sliver-pan supported on the casing.

17. In a Heilmann comber, a front casing adapted for inclosing the combing mechanism and provided with a seating surface, in combination with a sliver pan seated on said surface, the engagement of the pan therewith taking place in an inclined direction adapted to resist forward movement of the pan.

18. In a Heilmann comber, a front casing provided with a forwardly and upwardly extended member, a sliver pan having a downwardly inclined lip to engage the member and adjustable means for supporting the forward portion of the sliver pan.

19. In a Heilmann comber, frame standards having pillows thereon, a piecing roll shaft and horsetail bases carried by the pillows, a sliver pan in front of the piecing roll shaft and means independent of the pillows for supporting the pan in the said position.

20. In a Heilmann comber in combination with the combing head space between two frame standards, and the piecing rolls in said space, of a pillow on the standard having a laterally and rearwardly projecting arm and a stirrup adapted to hold one of the piecing rolls thereupon, a horsetail base mounted on the pillow in front of the stirrup and consisting of a bracket arm pro-

jecting laterally and rearwardly from the pillow and reaching past the stirrup, a sliver pan in front of the piecing rolls and means independent of the pillow for supporting the pan.

21. In a Heilmann comber, a frame standard, a pillow thereon, a piecing-roll shaft journaled on the pillow, and a roll-supporting member mounted on the pillow and consisting of a one-piece bracket arm extending laterally from the pillow and then rearwardly toward the piecing roll shaft, in combination with a stirrup member occupying the space between the pillow and the said roll-supporting bracket arm.

22. In a Heilmann comber, a frame standard, a pillow adjustably mounted thereon, a

piecing-roll shaft journaled on the pillow and a horsetail base adjustably mounted on the pillow in front of the shaft, the said base consisting of a one-piece bracket arm provided with a liner lip on its under side adapting it to fit the top corner of the pillow, and extending laterally therefrom and rearwardly and upwardly toward the said piecing-roll shaft, in combination with a stirrup member occupying the space between the bracket arm and the pillow.

In testimony whereof, I have signed this specification in the presence of two witnesses.

HORMIDAS JARRY.

Witnesses:

FRANCIS G. BRAINERD,
OSCAR L. OWEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."