(No Model.)

2 Sheets—Sheet 1.

W. P. CANNING.

CARDING ENGINE.

No. 485,680. Patented Nov. 8, 1892.

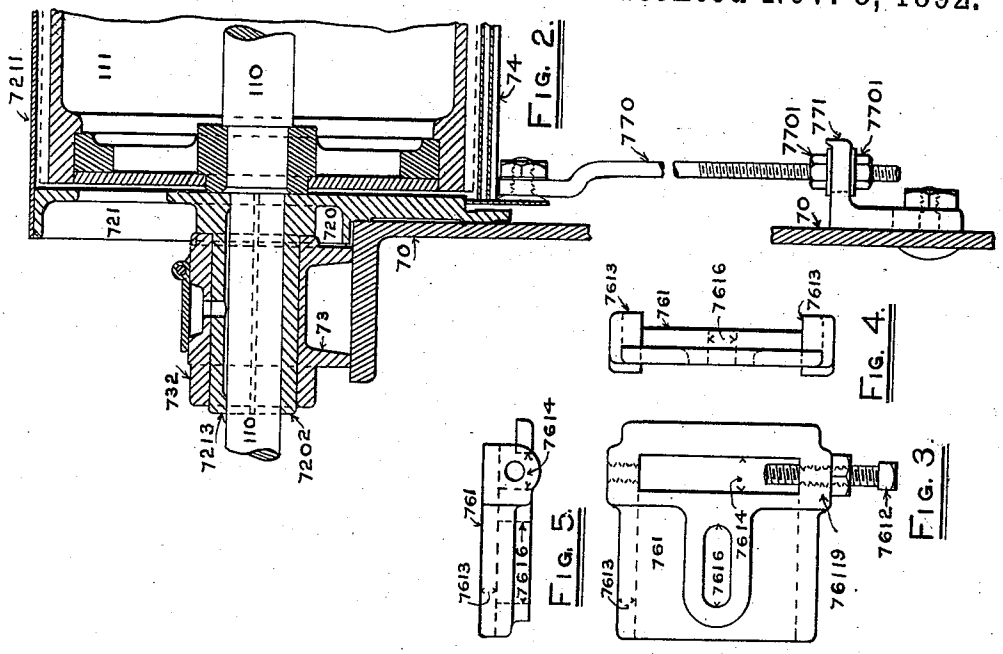


FIG. 2.

FIG. 4.

FIG. 5.

FIG. 3.

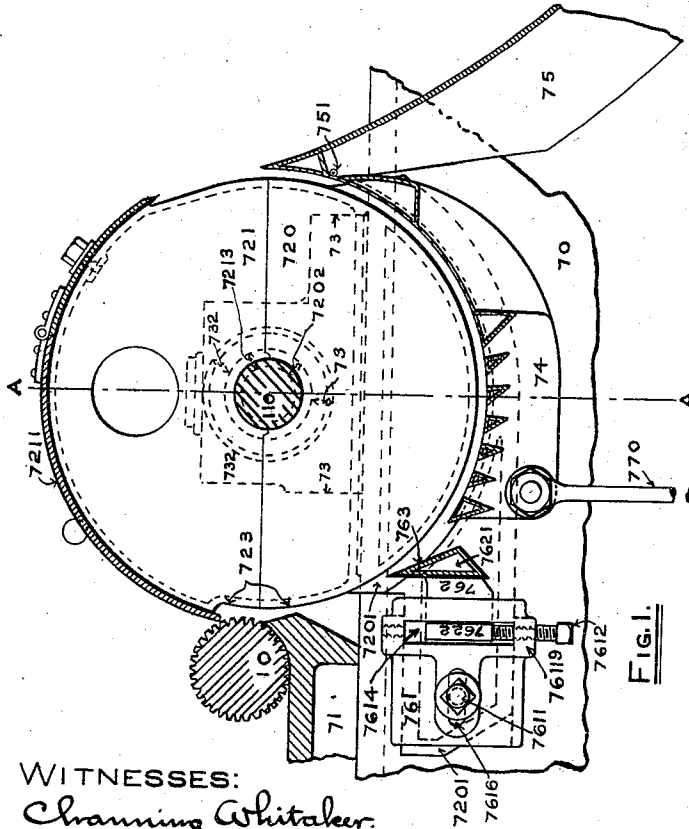


FIG. 1.

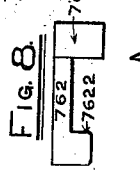
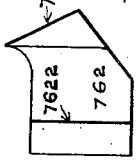


FIG. 8.



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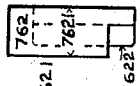

FIG. 7.

WITNESSES:

Channing Whitaker.

Saml. G. Stephens.

INVENTOR.

William Pitt Canning

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. P. CANNING.

CARDING ENGINE.

No. 485,680. Patented Nov. 8, 1892.

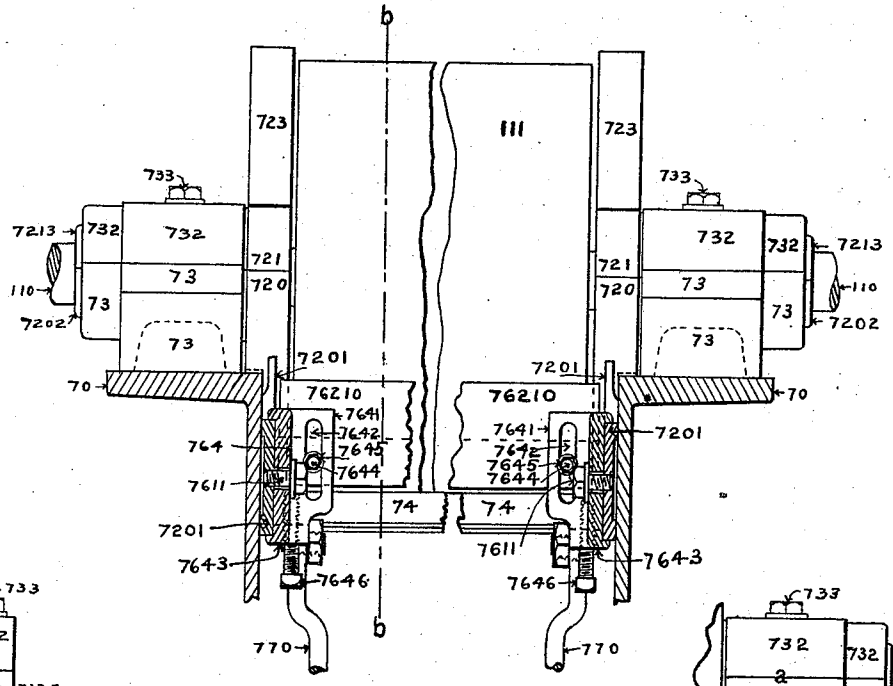

FIG. 9.

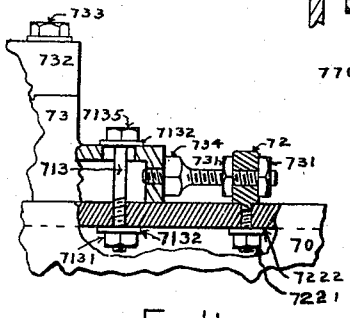

FIG. 11.

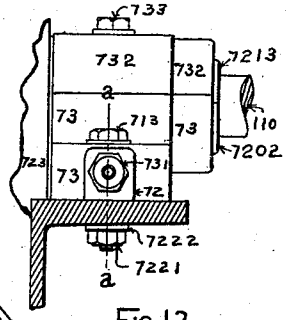

FIG. 12.

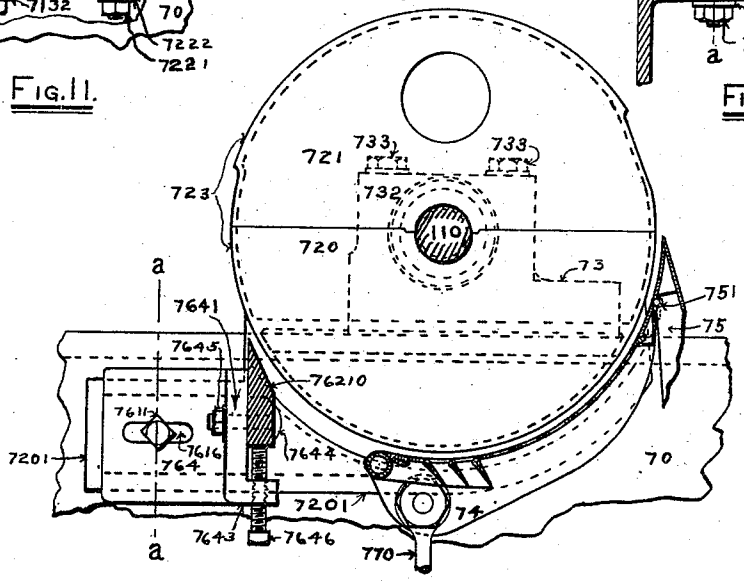

FIG. 10.

WITNESSES.

Channing Whitaker.

Saml. G. Stephens.

INVENTOR.

William Pitt Canning

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM PITT CANNING, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE LOWELL MACHINE SHOP, OF SAME PLACE.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 485,680, dated November 8, 1892.

Application filed July 19, 1892. Serial No. 440,465. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PITT CANNING, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Carding-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to carding-engines, and in particular to the shrouds and bearings for the licker-in, and also the means whereby in such machines the blade or knife which co-operates with the licker-in at a point below and in proximity to the feed-rolls is supported adjacent to the surface of the said licker-in.

My invention consists, first, in an improved construction of the licker-in shrouds and the bearings and boxes for the licker-in shaft or journals, and, secondly, in an improved, simple, and convenient construction of the means of supporting the licker-in blade, whereby not only may the said blade be adjusted relatively to the licker-in, but after having been adjusted once, it will be maintained in fixed relation with respect to the licker-in, notwithstanding the licker-in may be moved or adjusted to bring it into the desired relation to the main cylinder. Endeavors have been made heretofore to accomplish the same ends in connection with the said blade, and various arrangements have been devised which in practice have proved more or less satisfactory.

My improvement in the supports for the licker-in blade possesses various advantages in construction and operation over the other arrangements which heretofore have been devised or used and with which I have become acquainted.

The invention will first be described with reference to the accompanying drawings, forming a part of this specification, and then will be particularly pointed out and defined in the claims at the close hereof.

In the drawings, Figure 1 is a view, partly in vertical section, showing part of one of the side framings of a carding-engine, one of the shrouds of the licker-in or leader of a carding-engine, and representing it formed with the wing with which it is provided in accordance with my invention, the adjacent box for the shaft of the licker-in, one form of the licker-in blade, and the means for supporting the same on the said wing, the licker-in cover and screen or undercasing, part of the main-cylinder screen or undercasing, one of the adjusting devices for the licker-in screen or undercasing, the feed-roll, and the shell or plate coacting with the said roll. Fig. 2 is a vertical section on the line A A in Fig. 1. Fig. 3 is a view in side elevation of the blade-supporting stand or bracket shown applied to the wing in Fig. 1. Fig. 4 is a view thereof in end elevation. Fig. 5 is a view thereof in plan. Fig. 6 is a view in side elevation of the knife end. Fig. 7 is a view thereof in end elevation. Fig. 8 is a view thereof in plan. Fig. 9 is a view showing the licker-in or leader of a carding-engine, the main portions of the shrouds thereof, the boxes for the shaft of the licker-in, and another form of the licker-in blade, all in elevation, as seen from the left-hand side in Fig. 10, the said figure also showing the wings which I form on the shrouds, a modified construction of the blade-supporting stands or brackets which I mount on the said wings, and the side framings of a carding-engine, all in section on the line *a a* in Fig. 10. Fig. 10 is a view showing the parts in section on the line *b b* in Fig. 9 and looking toward the left-hand side in the latter figure. Figs. 11 and 12 respectively show sectional side and end views of one of the boxes for the shaft of the licker-in and its adjusting devices, these figures showing, also, part of one of the side framings of a carding-engine, and Fig. 12 showing, also, part of a shroud for the licker-in.

In the drawings, 70 70 are portions of the side framings of a carding-engine. 111, Figs. 2 and 9, is the licker-in or leader, 110 is the shaft thereof and 723 723 are the licker-in shrouds, the same being placed adjacent to the ends of the licker-in and having holes therethrough for the passage of the licker-in shaft, these shrouds being each made by me in two parts 720 721, meeting on a line which crosses the hole for the licker-in shaft, as

shown clearly in Figs. 1 and 10. At 73 73 are shown the licker-in boxes, each having the removable cap 732, held in place by screws 733, and each of which boxes has connected thereto, as shown separately in Figs. 11 and 12, a screw-threaded stem or bolt 734, passing through a hole in a fixed abutment 72, which is applied to the side framing, and having nuts 731 thereon on opposite sides of the fixed abutment, which nuts may be turned, as required, for adjusting the box on the side framing—as, for instance, when it is required to adjust the licker-in relatively to the main cylinder. The box 73, as shown in Figs. 11 and 12, is held down upon the side framing by a bolt 713, having a nut 7131 and a washer 7132 on the threaded end thereof below the flange of the side framing 70 and a washer 7132 beneath the head thereof, while the abutment 72 is held in place by a nut 7221 and washer 7222 on the end of the threaded stem thereof below the said flange of the side framing 70. The bearings for the licker-in shaft 110 are formed in the shrouds 723 723, the latter having split or divided sleeve-like hubs which fit within the boxes 73 73 and are held in place therein by the caps 732 of the said boxes, which caps are secured by screws 733 733. One portion 7202 of each of the said hubs forms a part of the lower member 720 of the corresponding shroud, while the other portion 7213 forms a part of the upper member 721 of the said shroud. The construction which has just been described enables the licker-in shaft or journals readily to be applied to the bearings or removed therefrom.

The combination of a shroud formed in two members, each carrying one-half of the bearing for the corresponding journal or end of the shaft of the licker-in, with a box having a removable cap and connected with devices for setting it adjustably upon the side framing, so as to adjust the position of the licker-in relatively to the main cylinder, possesses the following merits: The cap of the box and the upper member of the shroud may be removed and then the licker-in removed and replaced without disturbing the lower member of the shroud and the parts carried thereby, or, what is quite important and convenient, the lower part of the box and the adjusting or setting devices which are combined therewith. After the removal of the licker-in the lower member of the shroud and the parts carried thereby may be removed and replaced without disturbing the lower part of the box and the adjusting or setting devices which are connected therewith. When the shrouds are each in one piece, the removal of the licker-in has to be accompanied by the removal of both shrouds entire and the parts connected therewith. This proves very inconvenient, particularly in cases where the licker-in blades are supported by the shrouds. When the separate box is omitted and the shrouds are secured directly to the side framing, the shrouds cannot be entirely removed without disconnecting them from the setting devices for the licker-in, which proves inconvenient. At 74 is shown the usual licker-in screen or undercasing, the same being pivoted at 751 to the main-cylinder undercasing 75, and at 770 770 are shown the hangers by which one side thereof is supported. The threaded ends of the eye-bolts or hangers 770 770 pass through slots in laterally-projecting portions of stands 771, which are secured to the side framings 70 and have nuts 7701 7701 thereon above and below said portions of the stands whereby to effect adjustment. The licker-in cover is shown at 7211, Fig. 1. At 7621, Fig. 1, is shown one form of the licker-in blade, and at 76210, Figs. 9 and 10, is shown another form thereof. For the purpose of providing for the support of the said blade I form the lower part of each shroud with a wing 7201 projecting horizontally toward the side of the licker-in, on which is located the feed-roll 10 and its shell or plate 71. (See Fig. 1.) On each wing I mount a stand or bracket, to which the blade is adjustably connected.

I have represented one form of bracket and connections in Fig. 1, the details thereof being presented in Figs. 3 to 8, inclusive, and another form thereof in Figs. 9 and 10.

The stand or bracket 761 (shown in Figs. 1, 3, 4, and 5) has flanges 7613, the main web of the said stand or bracket fitting against the side of the wing which faces the middle of the machine, and the said flanges thereof bearing against the top and bottom edges of the wing. Each stand or bracket 761 is held to the corresponding wing by a screw 7611, passing through a longitudinal or horizontal slot 7616 in the stand or bracket into a threaded hole in the wing. At the end thereof next to the licker-in each stand or bracket 761 is formed with a vertical slot 7614, in which fits a laterally-projecting portion 7622 of the knife end 762, which is shown separately in Figs. 6, 7, and 8. The said end of the stand or bracket is formed with a laterally-projecting lug 76119 through a threaded hole, in which is passed vertically a set-screw 7612, on which the knife end rests. The knife end 762 is formed with a triangular laterally-projecting portion 7621, which enters the end of the knife 763, the latter being composed of a steel facing-strip and a backing formed of a hollow triangular bar made of sheet metal bent into shape and soldered. The main web of the knife end passes to one side of that portion of the stand 761 which is at the front of the slot 7614, as shown in Fig. 1. As will be apparent, the stand or bracket may be adjusted as desired along the wing 7201 and secured in the desired position of adjustment by the screw 7611, and the knife also may be set at any desired height on the stand or bracket by the screw 7612, these two adjustments permitting the edge of the knife to be moved back and forth relatively to the surface of the card-clothing on the licker-in and to be brought into desired proximity to the said surface at the

proper distance from the feed-roll and its shell or plate.

In Figs. 9 and 10 each stand or bracket therein (marked 764) is formed at the end thereof adjacent to the licker-in with a flange 7641, turned at right angles toward the middle of the machine and having a vertical slot 7642 therein, the stand or bracket being also formed at the said end with a horizontally-projecting lug or ear 7643, having a screw-threaded hole therethrough. The licker-in blade 76210 is secured to the stands or brackets 764 764 by bolts 7644, passing through the blade and also through the slots 7642 in the stands or brackets and having nuts 7645 applied to the threaded ends thereof, which nuts are turned up against the flanges 7641 7641, and the licker-in blade rests upon the points of the set-screws 7646 7646, which are turned through the threaded holes in the lugs or ears 7643 7643. By means of the set-screws 7646 7646 the position of the licker-in blade may be adjusted edgewise or vertically, while the slots 7616 7616 permit the stands or brackets 764 764 to be adjusted horizontally on the wings of the shrouds.

In the case of both the constructions which are herein presented the provisions for effecting the two adjustments referred to above enable the edge of the licker-in blade to be placed as closely as may be deemed advisable to the surface of the licker-in, at a point which is at the desired distance from the feed-roll and shell or pair of feed-rolls, if the latter be employed. By forming the wings integral with the shrouds of the licker-in I provide conveniently and practically and by a simplified structure for the support of the blade in the desired position adjacent to the surface of the licker-in, and the adjustment of the licker-in relatively to the main cylinder does not disturb the relation of the blade to the licker-in and have to be followed by an adjustment of the blade, as sometimes has been the case in the constructions heretofore in use.

I claim as my invention—

1. The combination, with the licker-in and its shaft or journal, of the licker-in shroud formed in two parts and each provided with a half-bearing, as described, the box having a removable cap, and devices for holding the said box in place on the framing of a carding-engine and setting it into the desired position thereon, sustantially as described.

2. The combination, with the licker-in, its shroud provided with a wing, as described, and the licker-in blade, of a blade stand or bracket mounted upon the said wing and means for connecting the blade to the said bracket, substantially as described.

3. The combination, with the licker-in, its shroud provided with a wing, as described, and the licker-in blade, of a blade stand or bracket mounted upon the said wing and provided with means for connecting it adjustably with the latter in order to permit the stand or bracket and blade to be moved relatively to the surface of the licker-in, substantially as described.

4. The combination, with the licker-in, its shroud provided with a wing, as described, and the licker-in blade, of a blade stand or bracket mounted upon the said wing and provided with means for connecting it adjustably with the latter in order to permit the stand or bracket and blade to be adjusted toward and from the licker-in, and with means whereby the blade may be adjusted edgewise relatively to the surface of the licker-in, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM PITT CANNING.

Witnesses:

HENRY CALVER,

CHAS. F. RANDALL.