April 25, 1933. E. CLARK 1,905,265

PNEUMATIC STRIPPER FOR CARDING ENGINES

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Fig. 1.

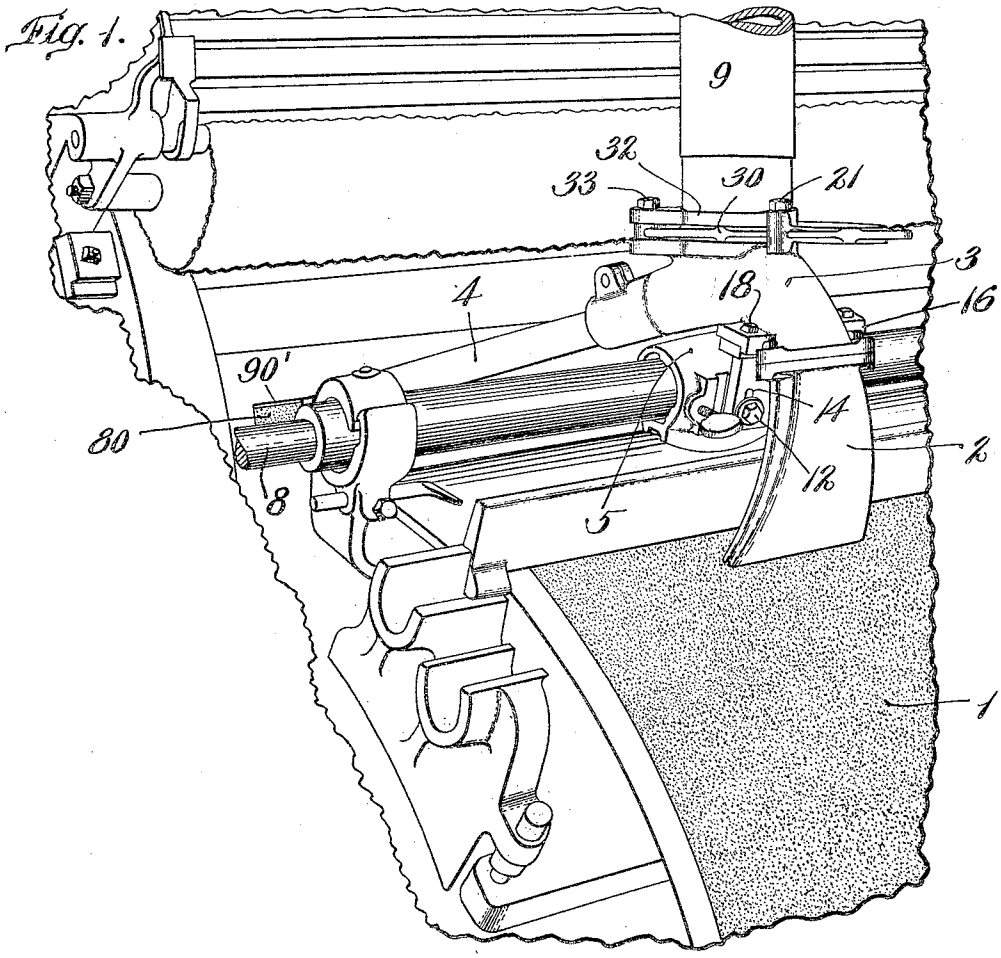
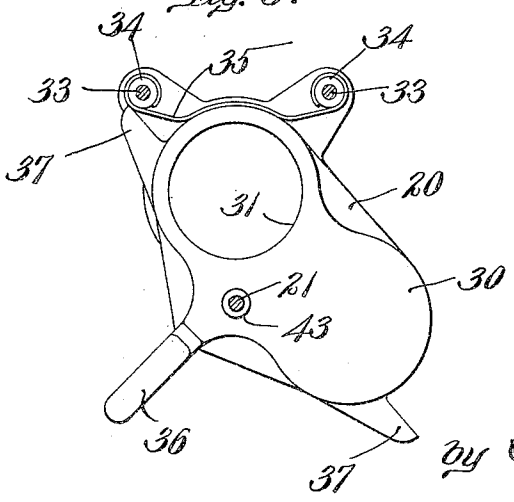


Fig. 8.



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Fig. 9.

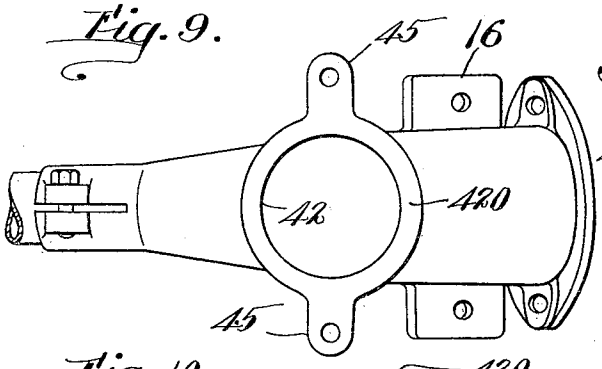


Fig. 10.

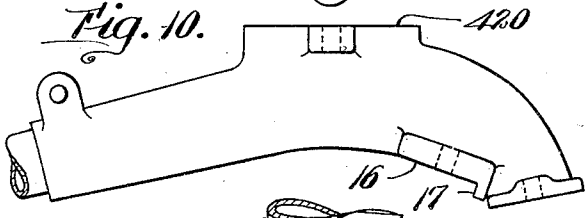


Fig. 4.

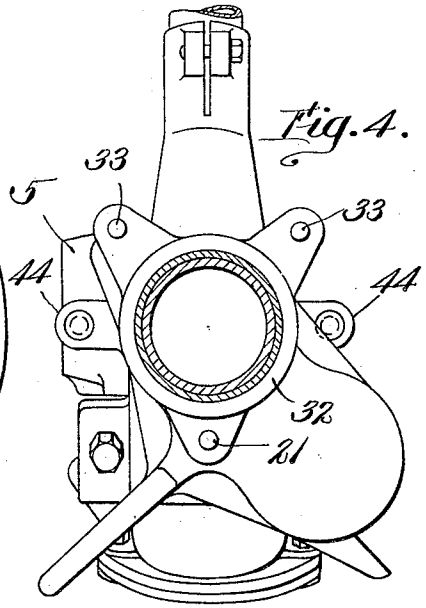


Fig. 2.

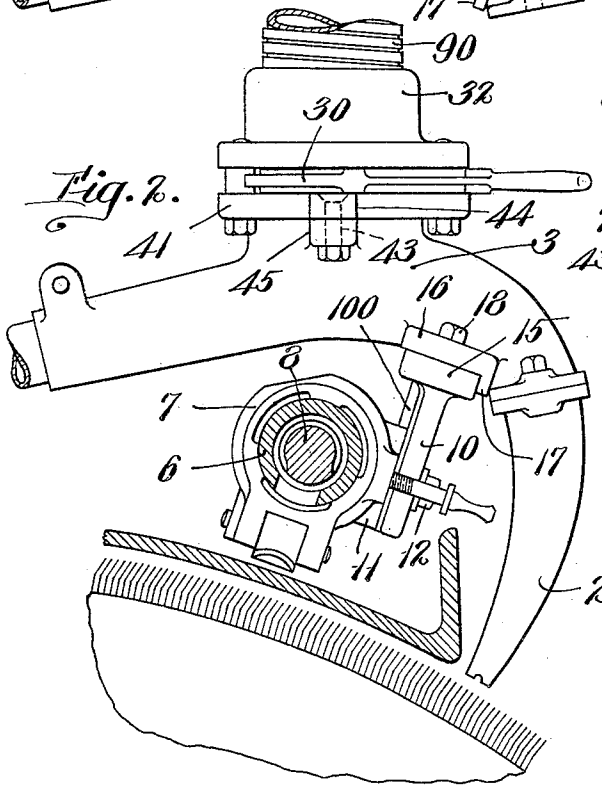
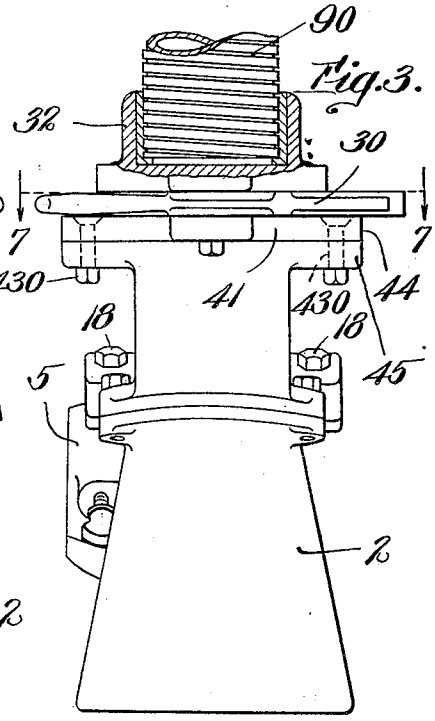


Fig. 3.



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Fig. 7.

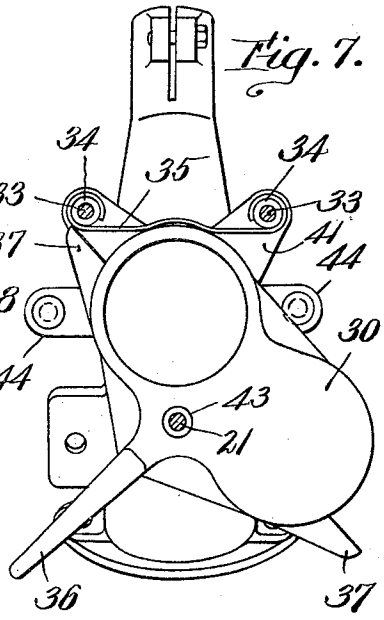


Fig. 6.

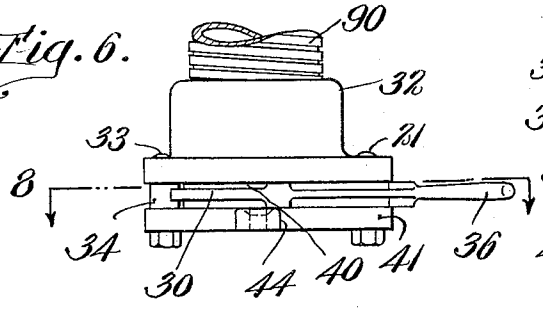


Fig. 5.

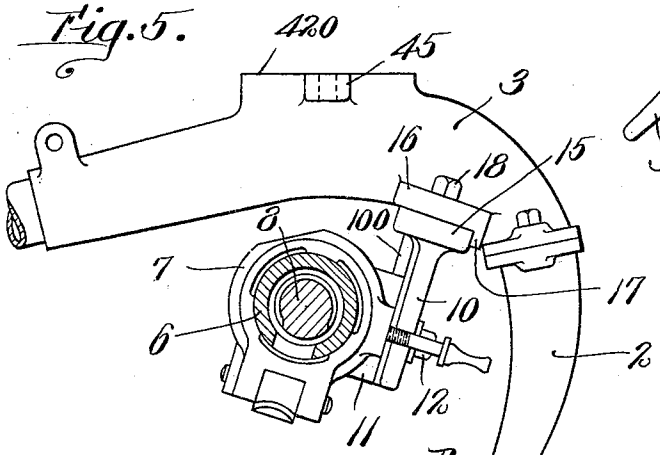
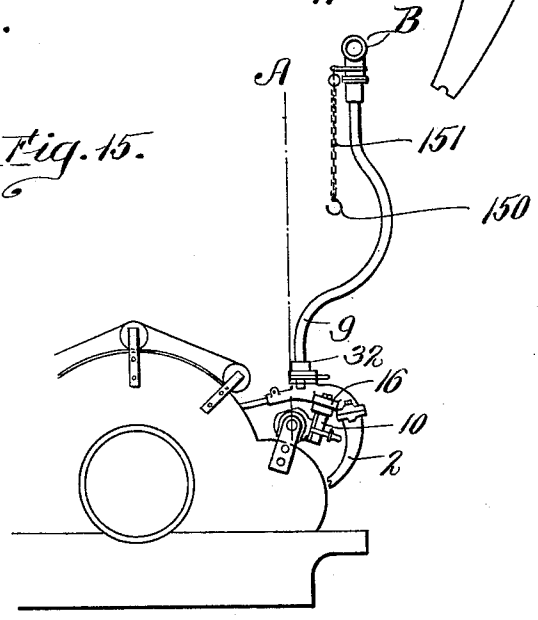


Fig. 15.



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Fig. 11.

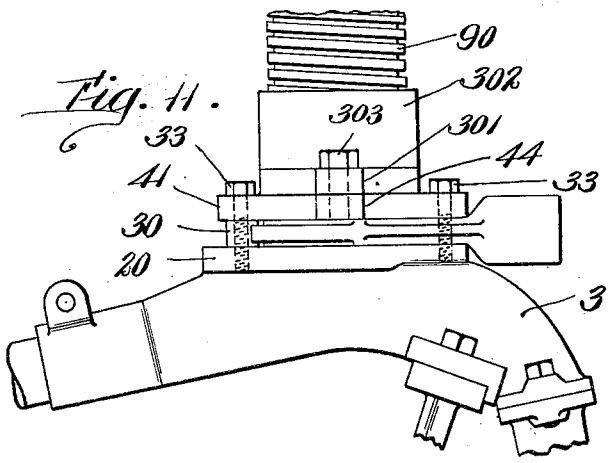


Fig. 14.

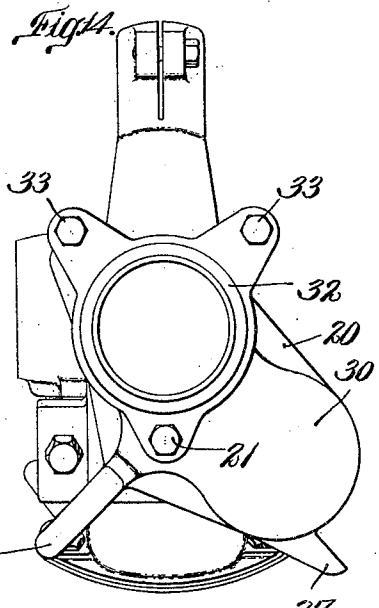


Fig. 12.

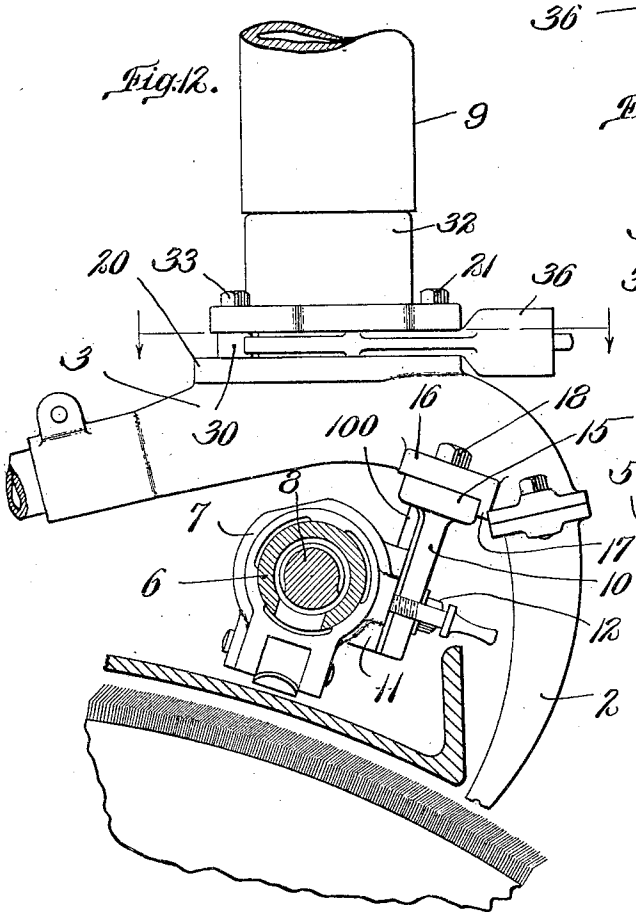
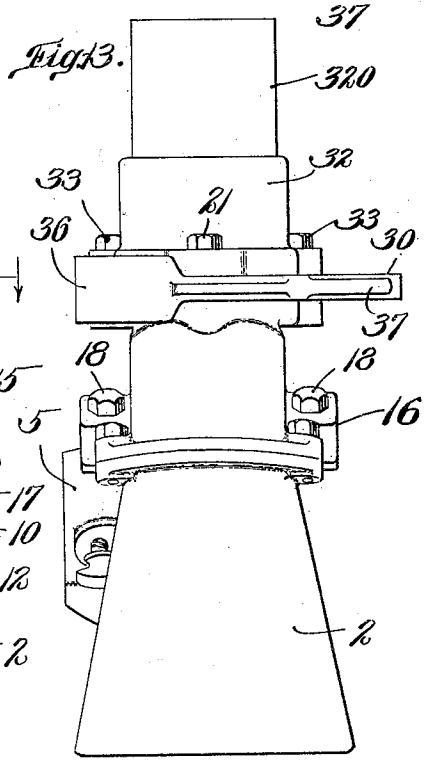


Fig. 13.



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1,905,265

UNITED STATES PATENT OFFICE

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PNEUMATIC STRIPPER FOR CARDING ENGINES

Application filed April 30, 1930. Serial No. 448,575.

The invention has relation to the pneumatic stripper mechanisms which are employed for removing accumulations of dirt, short fibers, etc., from among the teeth of the card-clothed surfaces of the cylinders and other fiber-working elements of carding engines. Stripper mechanisms of the type to which the invention is designed to be applied have a carriage which has combined therewith means for traversing it across a carding engine from one side of the latter to the other, lengthwise of the cylinders of such machine. It is customary to employ in connection with the said carriage one or two pneumatic nozzles normally having their open mouths disposed in close proximity to the card-clothed surfaces which are to be stripped. For instance, the well-known Cook's vacuum card stripper, developed from the structure shown in U. S. Patent No. 1,103,231, to Voster and Jungbauer, in general use in cotton mills comprises two nozzles, one arranged for stripping the main cylinder of a carding engine and the other arranged for stripping the doffer thereof, connected with a suction-box borne by the carriage, such suction-box being in communication with a pump or other means for exhausting the air from the suction-box. This organization, known as a combination nozzle, is designed for use in stripping the main cylinder and doffer simultaneously in the traverse of the carriage with its suction-box and nozzles from one side of the machine to the other.

The invention has as its object to improve the operation and manipulation of a pneumatic card stripper, to make it more adaptable to the various conditions of installation and other needs, and to this end comprises the provision of means for mounting the combination stripping nozzle upon the traversing carriage in such manner that the said nozzle may be removed therefrom upon occasion and replaced in operative position without losing the setting of the mouths of the nozzles with respect to the card-clothed surfaces of the cylinder and the doffer. It comprises further a novel and improved provision for adjustment of the setting of such combination nozzle in proximity to the said card-clothed surfaces. It also comprises an improved valve arrangement for controlling the flow of air through the nozzles. Other improvements will appear as set forth hereinafter.

Illustrative embodiments of the features of the invention are shown in the accompanying drawings showing pneumatic stripper devices operating on the vacuum principle, in which,—

Fig. 1 is a perspective view of certain portions of a carding engine and of a pneumatic stripper mechanism arranged to cooperate with the main cylinder and doffer cylinder thereof.

Fig. 2 is a side elevation of the combination stripping nozzle, showing a portion of the doffer and the nozzle cooperating therewith, the traversing carriage, one form of valve arrangement, and the novel means for supporting and adjusting the combination nozzle.

Fig. 3 is a front elevation of the combination nozzle mounted upon its traversing carriage.

Fig. 4 is a plan view of the parts of Fig. 3.

Figs. 5 and 6 show respectively the combination nozzle and the valve arrangement of Fig. 2 controlling the flow of air through the nozzle, with the parts separated preparatory to removing the combination nozzle from its carriage.

Fig. 7 is a view in horizontal section on line 7—7 of Fig. 3.

Fig. 8 is a view in horizontal section on line 8—8 of Fig. 6 showing the valve member and its coacting parts.

Figs. 9 and 10 are plan view and elevation, respectively, of the suction-box of Fig. 2.

Fig. 11 is a side elevation of the suction-box and portions of the nozzles, showing another arrangement of the valve.

Fig. 12 is a side elevation similar to Fig. 2 showing still another valve arrangement.

Figs. 13 and 14 are front and plan views, respectively, of certain parts of Fig. 12.

Fig. 15 is a more or less diagrammatic showing of the distribution of the combined

weight of the combination stripping nozzle and its associated parts including the flexible hose, disposed so as to keep the nozzles steady during their traverse.

In Fig. 1, only such of the parts of a carding engine as are more immediately concerned with the pneumatic stripping mechanism are shown. In this figure, 1 represents a portion of the card-clothed exterior of the doffer which is to be stripped by the vacuum stripping nozzle indicated at 2. This nozzle, its portion 3, designated as the suction-box, with its valve 30, and fittings, and a second nozzle 4 adapted to work on the main cylinder 80 of the carding engine, are all carried across the width of the machine by the familiar traversing carriage 5 which is moved slowly across the machine, sliding upon the slotted sleeve 6, by reason of the engagement of a follower in connection with the carriage 5 with the groove of the traversing screw 8 which is rotated continuously or as desired during the operation of the carding engine by well-known means not necessary to be shown herein. A flexible connection 9 applied to the top of the suction-box 3 connects the combination nozzle with the vacuum pump, and leads off the lint and dirt removed by the said nozzle.

The setting of the mouths of the stripping nozzles, such as 2 and 4, at the proper distance from the ends of the wires of the card-clothing of the doffer and of the cylinder is a matter of extreme importance in securing satisfactory results from the stripping mechanism. If the nozzle is too far from such card-clothing the stripping will be incomplete; while if it is too close mechanical damage to the card-clothing through contact with the nozzle and resulting expense will follow. Proper performance requires that the nozzles be set in such relationship as to prevent damage to the clothing and yet with such clearance as to allow the fibers to enter freely into the nozzle without tendency to roll up and choke the nozzle. The combination nozzle must be mounted very rigidly upon the traversing carriage to prevent unwanted variations in its position, and must also be mounted for adjustment of the spaced relation between the extremities of the nozzles and the card-clothing. Further, it is desirable to provide for the removal of the complete combination nozzle from its traversing carriage upon occasion, as to permit the periodic grinding of the card-clothing, and it is of great practical advantage to be able to effect the replacement thereof following removal without necessity for adjustment of this critical spacing.

To provide for the mounting of the combination nozzle upon the traversing carriage with capacity for quick removal and accurate replacement, the invention provides a bracket 10 which is applied to the face of a boss 11 formed on the front side of the carriage 5, the bracket being provided with a tongue 100 adapted to be received in one or other of two vertical grooves formed in the face thereof, as described in my U. S. Letters Patent No. 1,614,103 of Jan. 11, 1927, and No. 1,622,246 of March 22, 1927, and being secured thereto by bolts 12, 12, which pass through the shank of such bracket through slots 14, Fig. 1, formed therein. The bracket 10 has at its upper end a head 15 which presents at its upper face a broad, flat, accurately cut surface, and the suction-box 3 is provided upon its under side close to the nozzle 2 with a seat 16 to fit upon the said surface of the head 15, such seat being preferably provided with a shoulder 17 extending down from its frontward edge to engage the finished front edge or face of the head 15, to increase the firmness of the engagement of the suction-box with the head and determine accurately its position thereupon. The head of the bracket 15 and the seat 16 are held in engagement by screws 18 passing through the lateral flanges of the seat 16 at each side of the suction-box 3 and into the head 15 of the bracket. Removal of merely the two screws 18, 18, permits the entire combination nozzle to be removed from the traversing carriage. Replacement is quickly effected by application of the seat 16 to the head of the bracket with the shoulder 17 bearing against the side of the head and then returning the bolts to their bolt holes, without danger of changing the previously-secured adjustment of the nozzles in spaced relation to the card-clothing. As is obvious, the seat and shoulder through engagement with the upper face and front edge respectively of the head of the bracket define the position of the suction-box and correspondingly of the nozzles in two dimensions, and govern the extent of the nozzle 2 downward toward the doffer cylinder and the position of the nozzle 4 with respect to the surface 80 of the main cylinder. Insertion of the bolts 18 serves to fix the position of the combination nozzle with respect to its traversing carriage in the third dimension, widthwise of the machine.

To effect the occasional adjustment of this spaced relationship between the nozzles and the card-clothing, which becomes necessary through grinding down of the surface of the card-clothing and from other causes, a simple and novel provision lies in the slots 14 through which pass the bolts 12 which secure the bracket 10 to the traversing carriage 5. With the said bolts 12 loosened, the whole bracket 10 may be shifted upwardly or downwardly with respect to the traversing carriage to remove the nozzles from or approach them toward the card-clothing. If

necessary, the nozzle 4 may be given subsequent individual adjustment of its extent out from the suction-box to perfect its setting with respect to the main cylinder. Tightening of such bolts after adjustment secures the parts fixedly in adjusted relation.

The efficiency of a vacuum stripping system depends to a very great extent on maintaining a high degree of vacuum throughout the system at all times when the stripping devices are in action. This requires that all leaks admitting air into the system other than through the stripping nozzles be reduced to the lowest practical minimum, and to this end all pipe fittings, flexible hose connections, and valves are fitted in the tightest manner possible as manufactured and installed. The valves in particular must be ground to fit and assembled with greatest care and if taken apart are extremely likely to be reassembled with loss of the exact setting and consequent harmful leakage of air.

With these requirements in view, another feature of the invention provides for removal of the flexible hose from the combination stripping nozzle and its reconnection therewith without loss of its air-tight relation after replacement. This provision is desirable in the event of breakdown and loss of vacuum in part of the vacuum pipe-line, and makes it possible to attach a vacuum hose from another vacuum line, such as the hand-clearing hoses commonly used in connection with vacuum systems. The valve controlling the flow of air through each suction-box and its nozzles is commonly applied between the suction-box 3 and the flexible tube or hose 90 which is connected to the fixed overhead piping of the vacuum system. In the improved form of Fig. 11, the valve-member 30 works in sliding relation to a valve-seat constituted by the under-surface of a plate 41, the valve-member being confined between such under-surface and the proximate surface of a seat 20 formed on the top of the suction-box 3. An appropriate air passage extends from the interior of the suction-box through the seat 20 and a similar port in the plate 41. The valve-member 30 is pivotally mounted on a spacer 43, Fig. 7, applied to one bolt 21 of the three bolts which pass through lugs in connection with the plate 41 and into the seat 20 on the suction-box, similar spacers 34 being applied to the other bolts 33 so as properly to confine the valve-member between the plate and the seat 20, in air-tight relation while providing for easy sliding movement of the valve-member. The valve-member 30 is provided with a port 31 which is aligned with the bore of the collar 302, plate 41, and the hose when the valve is swung to the limit of its rotation in one direction, as in Figs. 4 and 8, and has also a solid portion to close the said air passage when swung reversely to its limit of rotation. The valve 30 being roughly of figure-8 shape, a novel and simple way of holding it securely in its open or closed position has been conceived, and comprises the spring 35, anchored to the spacers 34, 34, by being coiled around them, and having an arc formed in its middle extent conforming to and pressing against the curve of the periphery of the lobes of the valve 30 when in open or closed relation and maintaining the setting. Such holding means has been found necessary to counteract the tendency of the valve to work partway open when intended to be shut. An operating handle 36 is provided, and projecting lugs 37, 37, engage the spring 35 at the points where it is coiled around the spacers 34, 34, to act as stops to limit its movement. The construction adopted has the advantage of not having to fit extremely tightly in its working parts, as when the valve is closed and held from swinging movement about its pivot the atmospheric air-pressure serves to hold the valve 30 closely against the underside of the collar 32 and effectually shut off the flow of air into the vacuum hose.

The end of the flexible tube or metallic hose 90 is provided with a terminal piece or flanged collar 302, Fig. 11, which is permanently attached in air-tight relation to the end of the metallic hose, as by soldering it thereto. This collar is adapted to fit in air-tight relation upon the finished top surface of the plate 41, being secured thereto by bolts 303 put through lugs 301 in connection with the collar and corresponding lugs 44 on the plate 41. With this arrangement the flexible tube may be speedily removed and quickly replaced in air-tight relation, without the necessity for taking apart the valve with resulting probable loss of its efficiency following replacement. It permits quick and easy substitution of a different flexible tube connected with a different point in the vacuum system. This arrangement also makes it possible to ship or transport from the point of manufacture the nozzle and the flexible tube or hose in separated relation, with the assurance that when coupled together by unskilled hands a tight joint will result.

To adapt the stripping devices to meet other conditions, so as to provide for complete removal of a combination stripping nozzle assembly while the vacuum piping system is working to effect the stripping of other carding engines, as is necessary for special reasons, such as to permit grinding of the card-clothing or to remove the assembly for repairs, another valve arrangement is provided as shown in Figs. 2 to 6, inclusive. In this arrangement the valve-member 30 works in sliding relation to a seat formed directly on the under-surface of a

flanged collar 32 that is applied in air-tight relation as described above to the lower end of the flexible tube or metallic hose 90. A plate 41 just as described in connection with the first valve arrangement is applied between the suction-box and the movable valve-member 30, the arrangement of bolts, spacers, and locking spring being just as shown in Fig. 7 and as described hereinbefore except that the bolts 21, 33 pass through the flange of collar 32, eliminating bolts 303, Fig. 11. The valve-member 30, the collar 32 and the plate 41 thus form a complete shut-off adapted to be permanently combined with the metallic hose 90 and to be separable from and operable independently of the suction-box 3 and of its other associated parts, as shown in Fig. 6.

The shut-off as thus contrived is detachably combined with the suction-box 3 by fitting the under-surface of the plate 41 to the top of the suction-box so that the passage through the valve coincides with an aperture 42, Fig. 9, formed in connection with a seat 420 on top of the suction-box, and securing the plate and the suction-box tightly together by bolts 430 put through lugs 44 on the plate 41 and corresponding lugs 45 on the suction-box 3. By means of this arrangement when it becomes necessary to remove the stripping devices to prepare for grinding the card-clothing or otherwise, while the vacuum system is in use for stripping other carding engines, such devices can be removed from the traversing carriage as provided for hereinbefore. Then by removing the two bolts 430 the stripping devices may be removed from the vacuum hose and placed out of harm's way, while the shut-off remains on the end of the vacuum hose, thus preventing the inflow of air while the stripping devices are detached and preserving the vacuum in the vacuum piping system so that the efficiency of other stripping devices which may be in operation at the time shall not be interfered with. The parts are reinstated in operating relation in obvious manner by replacing the bolts 430 through the lugs 44 and 45, and replacing the combination nozzle upon the traversing carriage.

Under certain conditions of installation and use, and to meet the need for stripping carding engines of certain designs, it is preferable in some instances to contrive the stripping assembly so that it will not be possible or practicable to remove the flexible tube or hose which connects the suction-box with the fixed piping system. Such conditions arise where a nozzle 4 of exceptional length must be used, such nozzle being of sufficient weight to overbalance the stripping nozzle assembly when freed from the counterbalancing weight of its vacuum hose 9, so that the assembly would tip toward the main cylinder, resulting, if a fine setting of such nozzle were in use, in damage to the clothing of the rotating cylinder.

Under these conditions the form of valve arrangement shown in Figs. 1, 12, 13, and 14 is employed in which the valve-member 30 is of the same form as described hereinbefore and as shown in Figs. 7 and 8, being mounted identically as therein in regard to its pivot 21 and the use of the spacers 34, 34, and the spring 35 retaining it in the position in which it is set. However, the valve-member 30 is applied directly to the seat 20 formed on the top of the suction-box as explained in the description of Fig. 11, and works directly against the face of the collar 32 which is permanently combined with the end of the flexible tube 9. The collar 32 is attached to the suction-box by means of the bolts 21, 33, and the under-surface of the flange of this collar serves as the valve-seat with which the valve-member 30 co-operates. With this arrangement, the tube 9 cannot easily be removed except through the removal of bolts 21, 33, with resulting disassembling of the entire valve assembly, a proceeding which will naturally be avoided by the machine attendant, and which procedure would unavoidably leave the vacuum hose open with consequent loss of vacuum all over the system, a result which also would be avoided. With these unfavorable results attending the attempt to separate the hose from the combination nozzle, the machine attendant will be constrained to remove the complete stripping nozzle assembly by separating it from its carriage as hereinbefore described, thus avoiding the damage to the card-clothing of the main cylinder which would result where a long nozzle 4 is used. With the stripping nozzle assembly removed whle still attached to its vacuum tube 9, the whole assembly is suspended out of harm's way by being hung on a hook 150 at the end of a chain 151 attached to the overhead piping system, the hook being put through the aperture 31 in the valve which is exposed at one side of the stripping nozzle assembly when the valve is in closed relation, this means of suspension thus assuring that the valve will remain in closed relation.

The tube or hose 9 illustrated in connection with the valve arrangement of Figs. 1, 12, 13, 14 is of rubber and is combined with the collar 32 by means of a ferrule 320 in connection with such collar adapted to fit closely within the end of the hose and to be permanently attached to the hose by shellac or other means.

Another phase of the invention has to do with overcoming the tendency of the entire stripping assembly to rock about the axis of the traverse screw on its way across in effecting the stripping. In stripping two

cylinders at once, by a combination nozzle assembly, it is of the greatest importance that this rocking movement and the resultant deviations of the nozzles be reduced to a minimum. It has been the practice hitherto to restrain such rocking or partial rotation by guiding the end of the main cylinder stripper-nozzle 4 in a narrow slot, as this gives a long lever-arm to control the position of the assembly. But the slot must be wide enough for free lateral motion in traversing, and hence there has been a tendency for this nozzle to play up and down in the slot on the way across. Elimination of even this slight play or backlash makes possible a finer setting of the nozzles with respect to the card-clothing, resulting in practice in more efficient stripping. I have accomplished the elimination of this slight but critical amount of backlash as indicated in Fig. 15 by disposing the center of gravity of the stripping assembly a short distance to one side of the vertical plane A passing through the traverse screw, and on the side thereof away from the main cylinder and toward the doffer-stripping nozzle. I further attach the vacuum hose to the overhead vacuum piping system at a point B also at the same side of the vertical plane through the traverse screw, and arrange the length and relation of such hose so that there shall always be a certain amount of weight or pressure, of such hose supported by the stripping devices, even when the hose is contracted by the exhausting of the air therefrom and as well as when the stripping devices are at one extremity or the other of their traverse. This weight or pressure of the hose operates at all times to augment the tendency to tip in one direction secured by the over-balanced arrangement of the parts of the stripping devices, just described. The same relation of the weight and pull of the hose is observed if the hose is run to the stripping devices from below, or in any other manner. Thus I keep the stripping devices tipped always in one direction about their center of support on the carding engine, and by keeping the main cylinder stripping nozzle 4 pressed always against the top edge 90′ of the slot in which it works I am able to eliminate all rocking about the axis of the traverse screw and do away with all variation of the nozzles toward and from their respective cylinders, enabling them to be set more closely and to operate more efficiently than hitherto has been possible.

What I claim as my invention is,—

1. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a traversing carriage, a nozzle, a seat extending at each side of said nozzle, a surface upon the traversing carriage upon which said seat fits, and screw means holding the seat to the surface with capacity for easy removal and permitting replacement of the nozzle upon the carriage after removal without change in the spaced relation established between the nozzle and the cylinder before removal.

2. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing carriage, a nozzle, and a mounting surface upon one thereof establishing a base upon which the nozzle is mounted and permitting removal and replacement without necessity for readjustment of the spaced relation between the nozzle and the cylinder, said mounting surface being itself adjustable to change such spaced relation upon occasion, and spaced quickly-removable fastening devices engaging with portions on the nozzle and at opposite sides of the latter and also engaging with the carriage to hold the nozzle in place on such surface.

3. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a traversing carriage, a bracket in connection with the carriage having a head, stripping nozzles, a suction-box upon which the nozzles are carried having surfaces adapted to engage a plurality of surfaces upon the bracket head, to define accurately the position of the suction-box with respect to the traversing carriage in at least two dimensions when mounted upon the bracket head, and easily removable fastening means at each side of the suction-box holding the said surfaces on the latter in engagement with the surfaces on the bracket head.

4. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, means for inducing a flow of air through such nozzle including a flexible tube, and a valve in connection with such flexible tube adapted to control the flow of air therethrough when the tube is detached from the nozzle.

5. A pneumatic stripper attachment for the cylinders of a carding engine comprising, in combination, a traversing carriage, a plurality of stripping nozzles, means for inducing an exhausting flow of air through said nozzles, including a flexible tube, a valve between said nozzles and the flexible tube controlling simultaneously the flow of air through said plurality of nozzles, and separable from the nozzles to control the flow of air through the tube when the nozzles are to be removed from their working relation.

6. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, means for inducing a flow of air through such nozzle including a flexible tube, and a coupling device for attaching the tube to the nozzle, in-

cluding a valve adapted to control the flow of air through the tube while the latter is detached from he nozzle.

7. A pneumatic stripper attachment for a cylinder of a carding engine, having, in combination, a traversing nozzle, means for inducing a flow of air through such nozzle including a flexible tube, and having a coupling member affixed to the end thereof, a valve, a valve-guiding surface in connection with the nozzle, and a second valve-guiding surface between the valve and the flexible tube, adapted to permit the application and removal of the coupling member while the valve and its cooperating surfaces remain in undisturbed relation.

8. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, a fixed guiding surface in engagement with the nozzle to control the angular relation of the latter with respect to the cylinder, and means for inducing a flow of air through the nozzle including a flexible tube, with the tube of such excess length and so disposed that when shrunk and stiffened by the differences in air-pressure it exerts a force on the nozzle tending to hold the nozzle in contact with the fixed guiding surface at all times.

9. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, means for supporting the nozzle while traversing, a fixed guiding surface in engagement with the nozzle to control the angular relation of the latter with respect to the cylinder, and means for inducing a flow of air through the nozzle including a flexible tube, with the nozzle and its appurtenances including the flexible tube so disposed as to tip in one direction under the influence of gravity at all times during normal operation and thus to hold the nozzle against the fixed guiding surface even when the tube is shrunk and stiffened under vacuum.

10. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, means for supporting the nozzle while traversing, a fixed guiding surface in engagement with the nozzle to control the angular relation of the latter with respect to the cylinder, means for inducing a flow of air through the nozzle including a flexible tube, mounted with sufficient length in spite of its contraction and stiffening under vacuum so that a portion of the weight of the tube is borne by the nozzle at all times and acts to hold the nozzle against its fixed guiding surface.

11. A pneumatic stripper attachment for a cylinder of a carding engine having, in combination, a traversing nozzle, a fixed guiding surface in engagement with the nozzle to control the angular relation of the latter with respect to the cylinder, and means for inducing a flow of air through the nozzle including a flexible tube, with the tube suspended from a point above the nozzle located a substantial distance at one side of the vertical transverse plane through the center of support of the nozzle and with such tube of excess effective length and so related to the nozzle as to exert a force thereon tending to hold the nozzle in contact with the fixed guiding surface at all times.

12. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a stripping nozzle, means for inducing a flow of air through said nozzle, a valve, including a movable valve-member, and spring means yieldingly acting to maintain such valve-member in its extreme positions of adjustment.

13. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a stripping nozzle, means for inducing a flow of air through said nozzle, a valve, including a movable valve-member, and spring means maintaining such valve-member in its extreme positions of adjustment through engagement with the periphery of the valve-member.

14. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a stripping nozzle, means for inducing a flow of air through said nozzle, a valve, including a movable valve-member, and a spring disposed in substantially tangential relation to the valve-member, to engage the periphery of the latter and maintain it in its extreme positions of adjustment.

15. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a stripping nozzle, means for inducing a flow of air through said nozzle, a valve, including a movable valve-member, which blocks the flow of air through the nozzle, and a leaf-spring disposed in the plane of movement of the valve-member to engage its periphery and maintain it in adjusted relation.

16. A pneumatic stripper attachment for the cylinders of a carding engine having, in combination, a stripping nozzle, means for inducing a flow of air through said nozzle, a valve, including a movable valve-member, and a leaf-spring engaging such valve-member and tending to hold the valve-member from movement out of its position at either end of its permitted path of movement.

17. A pneumatic stripper attachment for carding engines having, in combination, a stripping nozzle, means for inducing a flow of air through such nozzle, a valve including a valve-member movable edgewise and possessing a portion of convex contour, and a leaf-spring disposed in the plane of move-

ment of the valve-member, having a portion shaped to conform to the convexity of the valve-member and pressed against the latter to hold these mutually conforming portions in engagement and maintain the valve-member in adjusted relation.

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