

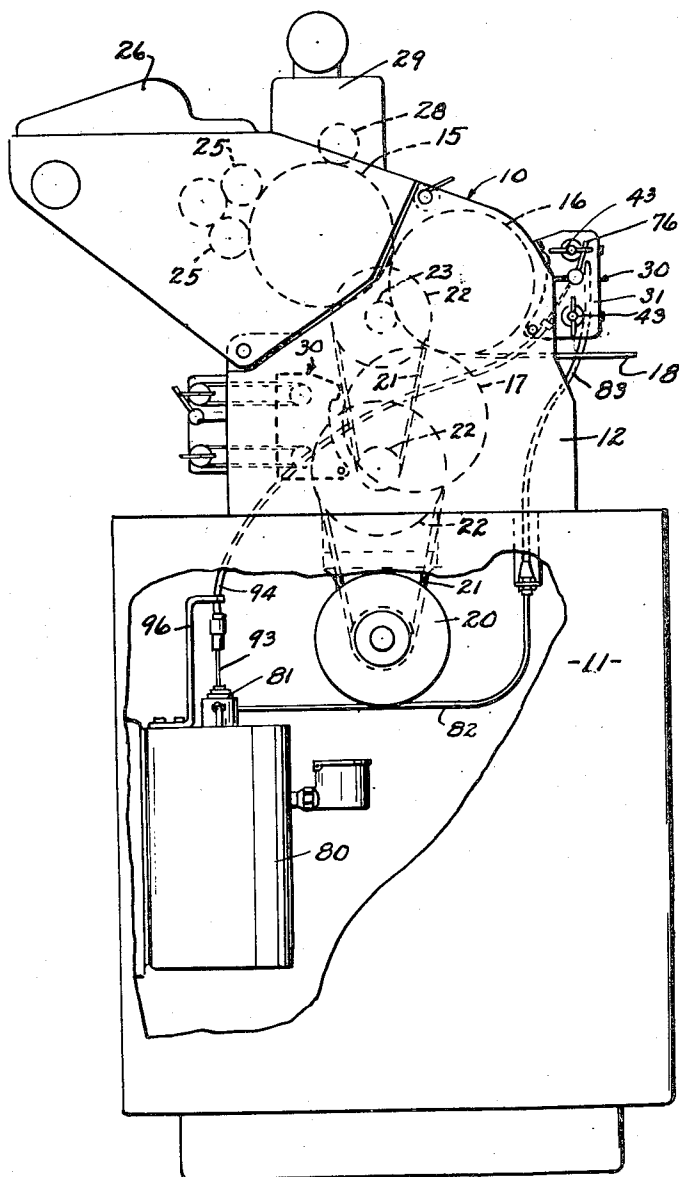
Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 1



INVENTOR

WILLIAM B. WESCOTT

By *Pates, Greer & McLean*

ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 2

FIG-3

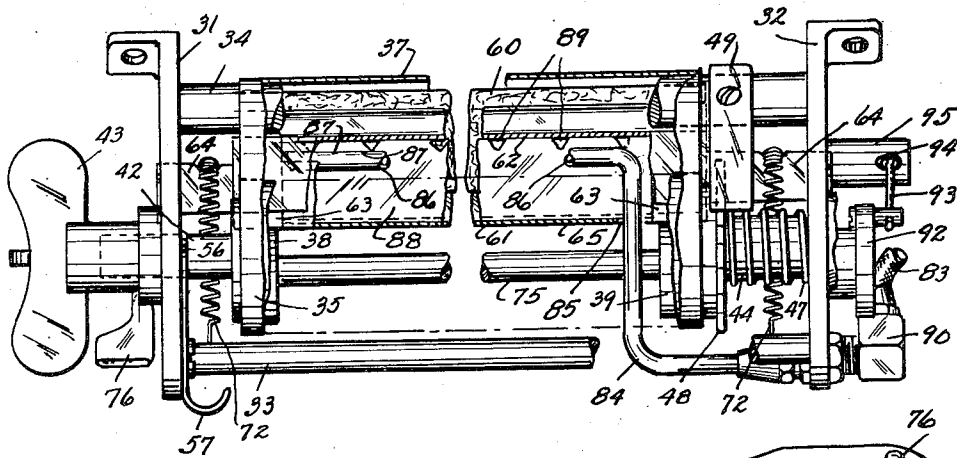


FIG-4

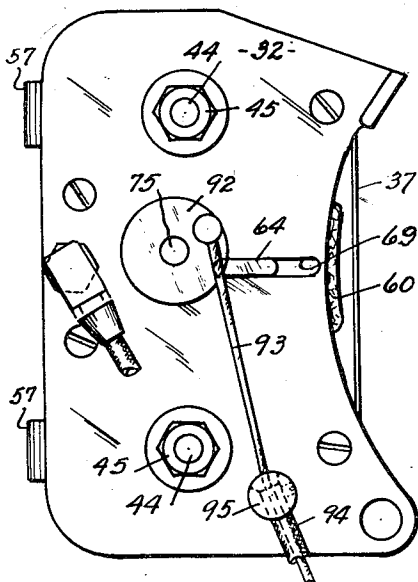
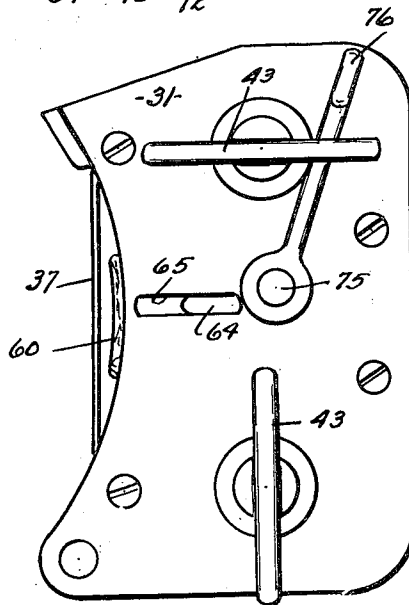


FIG-2

INVENTOR  
WILLIAM B. WESCOTT  
By *Bates, Tene, & McLean*  
ATTORNEYS

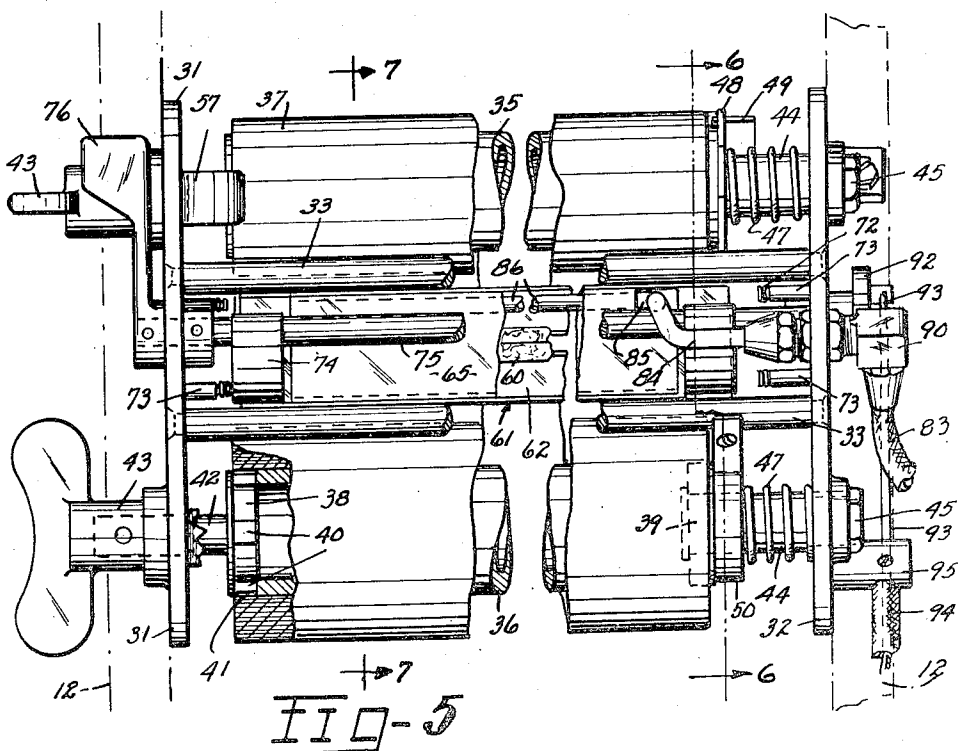
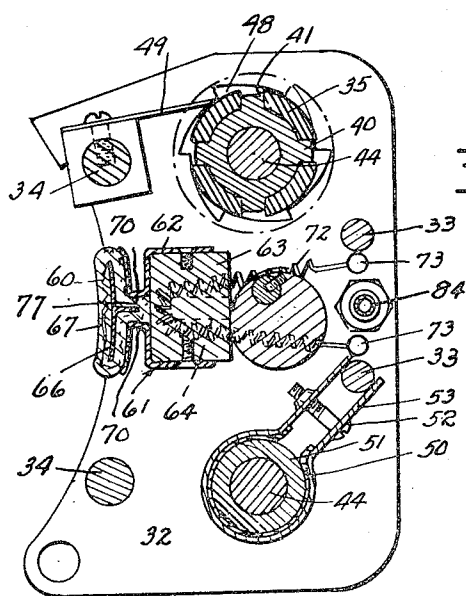
Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 3



INVENTOR  
WILLIAM D. WESCOTT  
By *Bates, Tamm, & McLean*  
ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 4

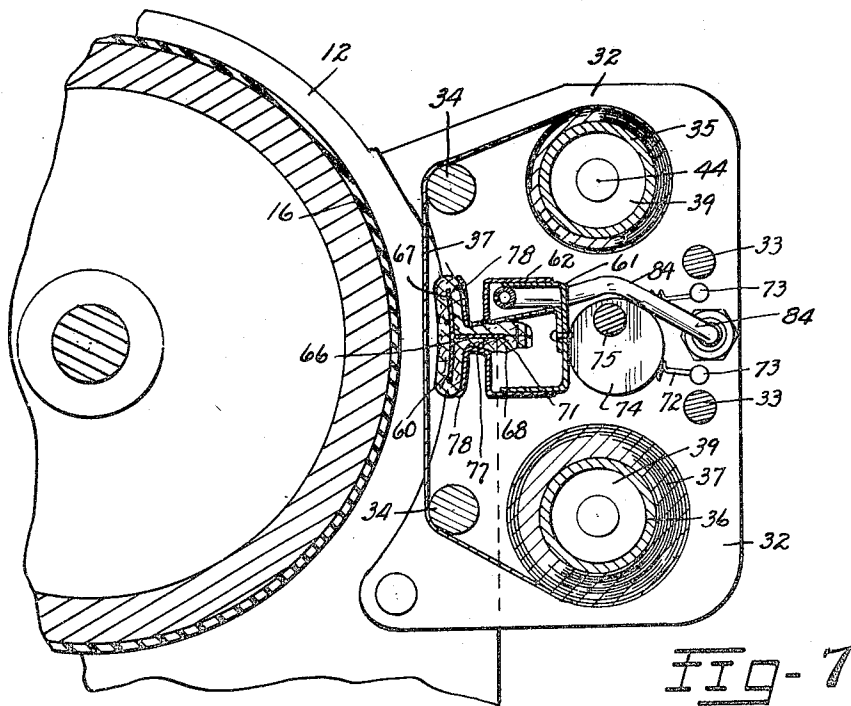


FIG-7

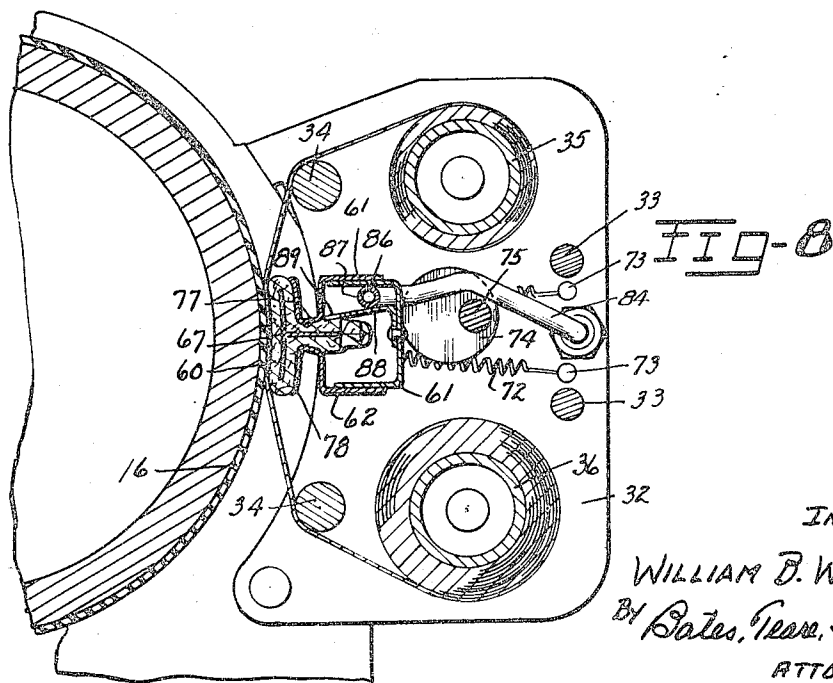


FIG-8

INVENTOR

WILLIAM D. WESCOTT

By Bates, Treadwell & McLean

ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 5

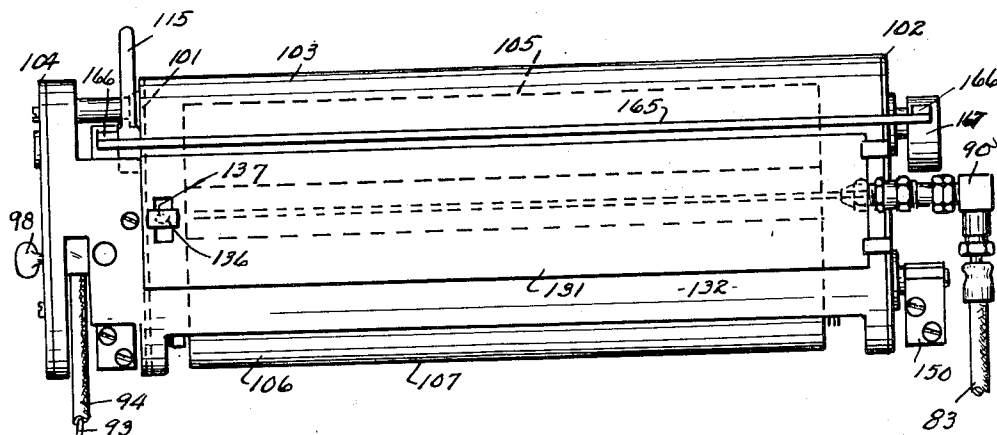


Fig-9

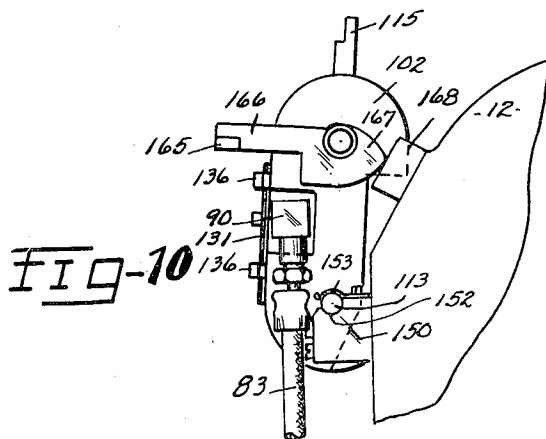
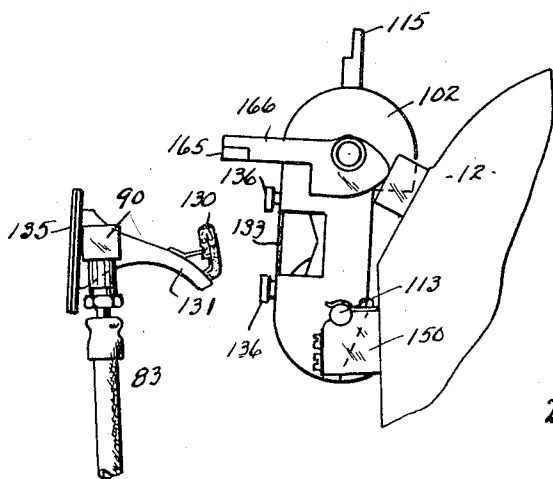


Fig-10

Fig-11



INVENTOR  
WILLIAM B. WESCOTT  
By Bates, Teare & McLean  
ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 6

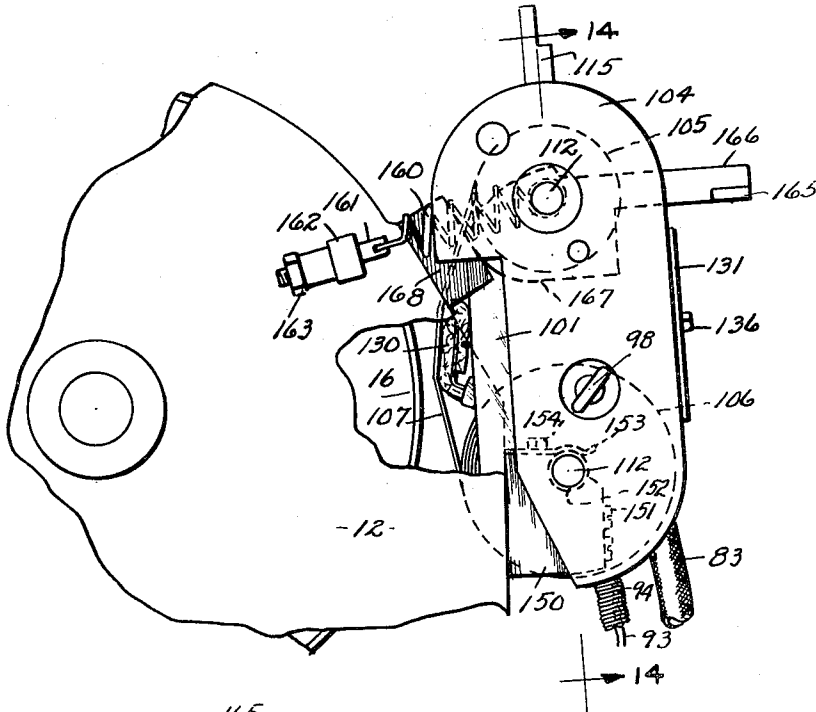


FIG-12

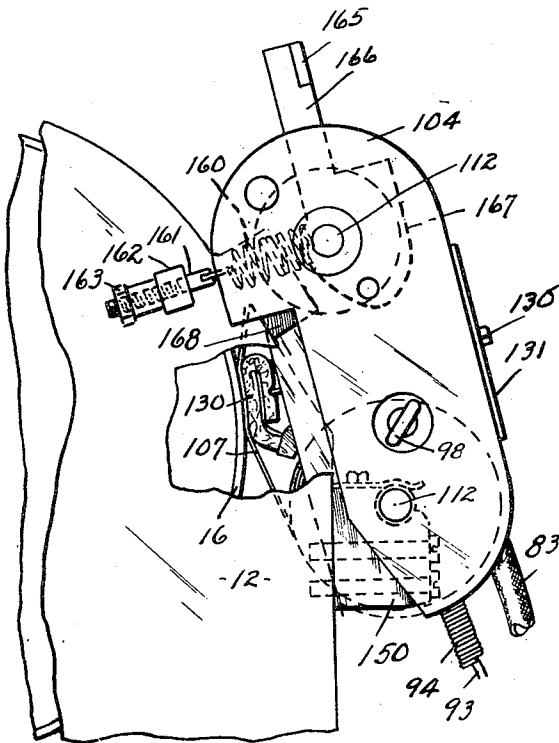


FIG-13

INVENTOR  
WILLIAM B. WESCOTT  
By *Bates, Teare & McLean*  
ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 7

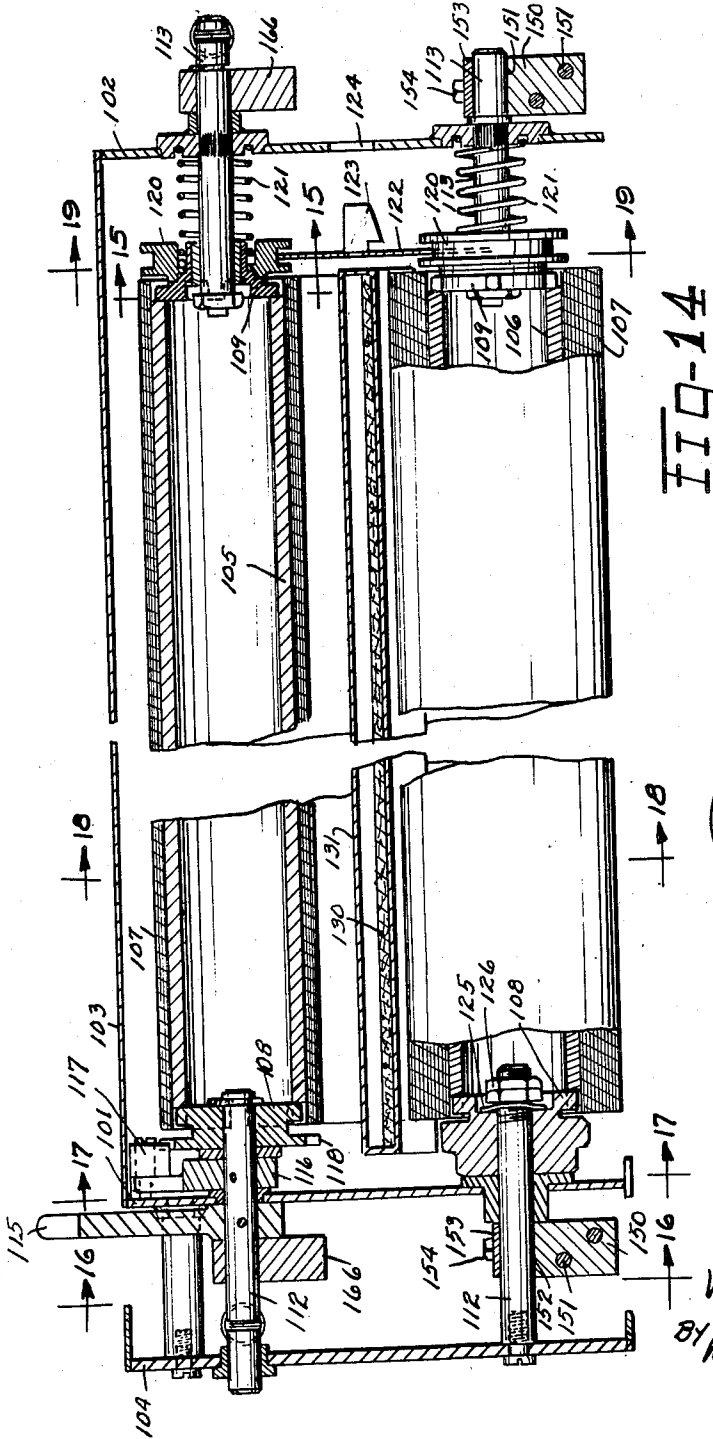


FIG-14

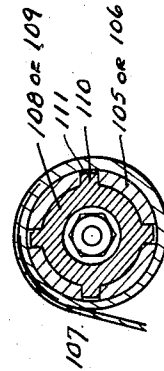


FIG-15

INVENTOR  
WILLIAM B. WESCOTT  
BY *Pates, Iron, & McLean*  
ATTORNEYS

Oct. 17, 1950

W. B. WESCOTT  
APPARATUS FOR CLEANING PRINTING SURFACES  
IN OFFSET PRINTING MACHINES

2,525,982

Filed April 27, 1948

8 Sheets-Sheet 8

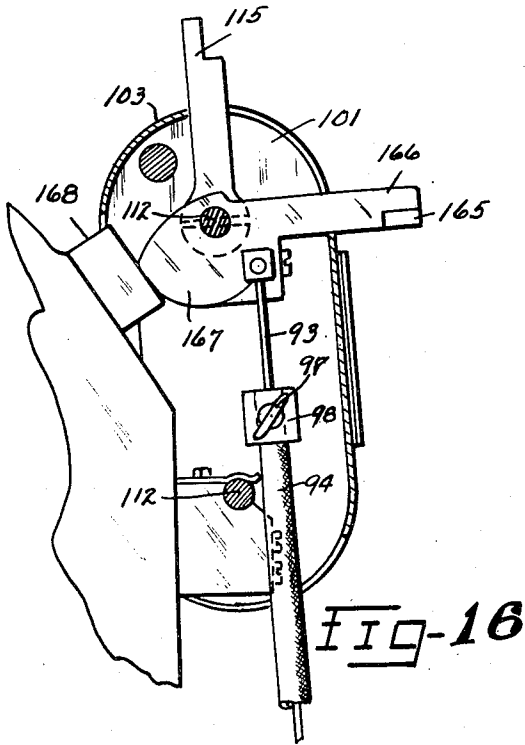


FIG-16

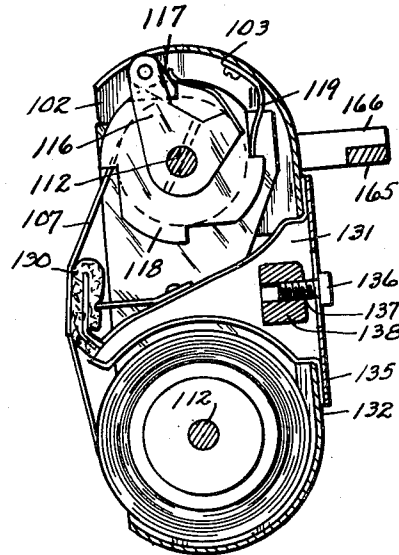


FIG-17

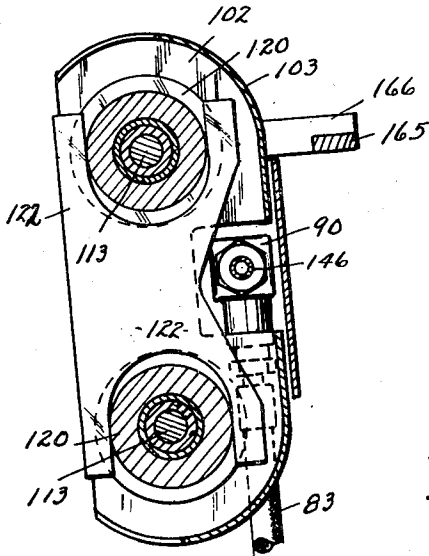


FIG-19

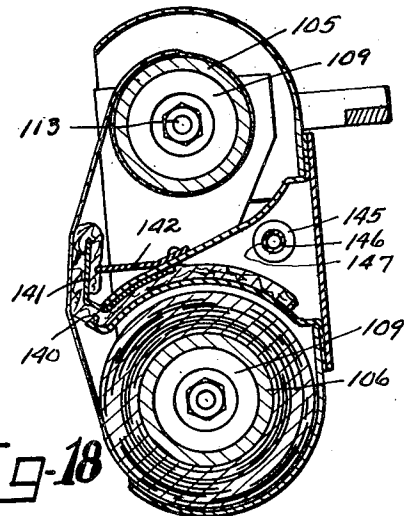


FIG-18

INVENTOR  
WILLIAM B. WESCOTT  
By Bates, Teare, & McLean  
ATTORNEYS

## UNITED STATES PATENT OFFICE

2,525,982

## APPARATUS FOR CLEANING PRINTING SURFACES IN OFFSET PRINTING MACHINES

William B. Wescott, Dover, Mass., assignor to  
Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Application April 27, 1948, Serial No. 23,586

23 Claims. (Cl. 101—425)

1

The purpose of this invention is to provide for the cleaning of printing surfaces. The invention is particularly concerned with the provision of an improved mechanism for removing undesired accumulations of ink from the offset or impression surfaces of printing machines. These, therefore, are the general objects of the invention.

The invention is especially applicable for use in connection with rotary planographic printing machines having cylinders covered with rubber blankets and the like, such as offset or transfer cylinders, and impression or platen cylinders. The periodic cleaning of such cylinders is rendered necessary, by either a change of printing plates, a "set-off" from the printed sheet, or by a gradual building up of ink in non-image bearing areas due to protracted use.

Heretofore the general practice has been to clean offset or impression surfaces of printing machines manually. The printing machine has been stopped, and the cylinders manually wiped with a cloth which has been moistened in a cleaning liquid. Such method is slow, particularly in office printing machines in which only small portions of the areas to be cleaned are accessible when the machine is idle. In such machines the accessible areas must be cleaned, the machine then operated to render another area accessible, such area cleaned, and the operation repeated until the entire area of the printing surface has been cleaned.

In the past, mechanisms were provided for cleaning such printing surfaces. One such mechanism utilized an elongated web of absorbent material which was held in contact with the surface of the printing cylinder by rolls or brushes. The printing cylinder was then rotated resulting in a wiping action between the web and cylinder to remove the excess ink. In some instances a solvent was applied to the surface of the cylinder before it was contacted by the wiper to soften ink to be removed. Another structure utilized a roll to supply the cylinder with liquid solvent which was thereafter removed together with softened ink by scraper blades or the like. These cleaning mechanisms were inefficient in operation to such an extent that the practice of manually wiping the rolls with a solvent dampened cloth is still in general use.

In the modern business use of offset printing machines, the problem of cleaning the transfer, or blanket cylinder surface, involves considerations both of speed and of health. Business offset machines are frequently required to produce a great many short editions in sequence. Such operations may, and often do, require the cleaning of the offset blanket at intervals as short as one or two minutes, or several hundred times in a working day. Hence the time required to clean the blanket may be, and by the older methods

2

was, the limiting time factor in the change-over to make ready for a subsequent edition. For effective cleaning, a volatile ink-solvent must be used. Hand cleaning with a cloth, saturated with such solvent, involves not only objectionable odors but health hazards as well. These are associated with the resulting high concentration of solvent vapors in the atmosphere of the working area. It is one of the objects of this invention to reduce the time of cleaning to a minor fraction of that required by the conventional manual operation. It is another object to avoid handling solvent soaked cloths by the operator, whereby the use of rubber gloves is eliminated. And still another object is to greatly reduce the area of the solvent dampened wiper exposed to evaporation, whereby the solvent vapors in the atmosphere are reduced to, or below, tolerance levels.

The present invention contemplates overcoming the inefficiency of modes used in the past by periodically wetting a wick of absorbent material, such as molleton, with an ink solvent liquid, transferring the solvent from the wick to an elongated web of paper having a high degree of absorbency and a high wet strength and bringing the solvent dampened web into wiping contact with the moving surface to be cleaned by pressure exerted on the web by the wick, and moving the web away from the cleaned surface. Further, the invention contemplates the provision of mechanism to progress the web from time to time to bring a clean surface thereof into position to be brought into wiping contact with the surface to be cleaned.

The present invention contemplates the use of a web of creped, lightweight kraft paper of a high wet strength type, otherwise unsized, the face of which is pressed against the surface of the cylinder to be cleaned. Further, the invention contemplates the provision of an improved apparatus for bringing the web and wick into contact with the printing surface to be cleaned, for periodically moistening the wick, and for advancing the wiping web. Accordingly, these are some of the more specific objects of the present invention.

Another object of this invention is to provide a device for cleaning the printing surfaces of rotary planographic printing machines with a volatile liquid ink solvent in which the evaporation of the solvent will be reduced to a minimum.

Other objects and advantages of the present invention will become more apparent from the following description in which reference is made to embodiments of the invention illustrated in the accompanying drawings. The essential features of the invention will be summarized in the claims.

In the drawings, Fig. 1 is a side elevation of a printing machine of the planographic or offset type with cleaning devices of the present inven-

tion applied thereto; Fig. 2 is an end elevation on an enlarged scale, of a cleaning device removed from the printing machine; Fig. 3 is a plan view of the cleaning device, certain portions thereof being broken away to more clearly illustrate the internal construction; Fig. 4 is an end elevation of the far side of the cleaning device; Fig. 5 is an elevation looking at the right-hand side of the cleaner shown in Fig. 2, certain portions thereof being broken away; Fig. 6 is a vertical section, the plane of the section being indicated by the line 6—6 on Fig. 5; Figs. 7 and 8 are vertical sections, illustrating the device in its idle and active positions respectively, the plane of the sections being indicated by the line 7—7 on Fig. 5; Fig. 9 is a view similar to Fig. 3 but illustrating a modified form of cleaning device; Fig. 10 is a view similar to Fig. 4 but illustrating the modified form shown in Fig. 9; Fig. 11 is a view similar to Fig. 10 but illustrating the removal of the moistening device; Figs. 12 and 13 are elevations of the device of Fig. 9 applied to a printing machine, illustrating the device in its inactive and active positions respectively; Fig. 14 is a longitudinally extending vertical section through the device of Figs. 9 to 13, the plane of the section being indicated by the lines 14—14 on Fig. 12; Fig. 15 is a sectional detail as indicated by the line 15—15 on Fig. 14; and Figs. 16 to 19 inclusive are vertical transverse sections, the planes of which are indicated by the correspondingly numbered lines on Fig. 14.

Referring now to the drawings in detail, it will be apparent that the invention is illustrated in connection with an offset printing machine of the planographic type. As shown in Fig. 1, the printing machine 10 comprises a pair of spaced frame plates 12 mounted on a base 11 and between which a form cylinder 15, a blanket or offset cylinder 16 and a platen or impression cylinder 17 are rotatably mounted for cooperation in the usual manner. A paper feed table 18 is provided to facilitate the introduction of work sheets to the nip of the offset and platen cylinders. The various cylinders are driven by a motor 20 through driving belts 21, pulleys 22, and a pinion 23 which coacts with a suitable gear carried by the offset cylinder. This gear in turn drives similar gears carried by the form and impression cylinders.

The form on the cylinder 15 is inked by an inking mechanism which may include a pair of form rolls 25 which receive ink from an ink fountain mounted within the housing 26 and transfer such ink to the printing plate. An aqueous ink repellent is applied to the printing plate by a repellent applicator roll 28 which is supplied with the ink repellent by a supply system mounted within a housing 29.

It will, of course, be understood that the above described general organization of parts of the printing machine is for the purpose of illustration, and that the improved cleaning device may be used in connection with printing machines of various forms.

A cleaning device constructed in accord with the present invention is generally indicated in Fig. 1 at 30 as being attached to the side frame plates 12 of the printing machine 10 in a position relatively close to the surface to be cleaned. The cleaning device 30, illustrated in Figs. 1 to 8 inclusive, comprises a pair of end frame plates 31 and 32 spaced by transverse rods 33 and 34. Mounted between these frame plates are a pair of vertically spaced longitudinally extending

tubular reels 35 and 36. The lower reel 36 comprises a storage reel for an elongated web of paper 37. The web 37 extends from the reel 33, around a rod 34, thence upwardly to another rod 34, and thence to the upper or take-up reel 35.

The reels 35 and 36 are mounted between the frame plates 31 and 32 in a manner to facilitate a periodic advance of the web 37 by the winding thereof on the take-up reel 35. As shown, the ends of each reel are mounted on discs 38 and 39 which are provided with radially extending lugs 40 adapted to enter slots 41 formed in the ends of the reels to provide a driving connection between the discs and the reels.

The left-hand reel supporting discs 38 are secured to respective spindles 42. These spindles are journaled in the frame plate 31 and have operating knobs 43 secured to their outer ends to facilitate manual turning of the reels as desired. The right-hand discs 39 are rotatably mounted on respective spindles 44 which are secured to the right-hand frame plate 32, as by nuts 45. The discs 39 are resiliently maintained in contact with their respective reels 35 and 36 by springs 47 which encircle the spindles 44 between the frame plates and the discs.

The upper or take-off reel is provided with a ratchet wheel 48 which is engaged by an index spring 49 to assist the operator in determining the amount of advance of the web required to insure the bringing of a fresh portion thereof into operating position. The rotative movement of the lower reel 36 is frictionally retarded, as for instance, by a brake 50 which encircles a hub 51 formed integral with the lower disc 39, and the tension of which may be adjusted by an adjusting screw 52. Rotation of the brake 50 is prevented by engagement of arms 53 thereof with one of the frame bars 33.

To facilitate replacement of the reels 35 and 33, their left-hand spindles 42 are mounted for axial movement in the frame plate 31 so that they may be withdrawn from engagement with their respective reels. These spindles are provided with peripheral grooves 56 which are engaged by slidable keepers 57 to retain the spindles in engagement with their respective reels.

The cleaning or wiping web 37 is brought into, and maintained in contact with the periphery of the cylinder to be cleaned by a wick 60. In the form illustrated in Figs. 1 to 8 inclusive, the wick 60 is mounted in an elongated longitudinally extending wick holder 61. This holder comprises an elongated telescopic box, the front section 62 of which is secured at its ends to blocks 63 which are provided with longitudinally extending tongues 64. These tongues project into slotted openings 69 in respective side frame members 31 and 32 and guide the wick 60 for movement radially relative to the cylinder to be cleaned. The rear section or cover 65 of the wick holder is telescopically mounted on the front section to facilitate ready removal thereof and to provide a substantially enclosed box-like structure.

The wick 60, as shown in the drawings, comprises a strip of absorbent material such as felt, fabric, or molleton, folded on itself to form the two-ply wick, T-shaped in cross section, shown in Figs. 6, 7 and 8. The wick 60 is reenforced by a relatively thin T-shaped strip of metal 66. The head 67 of this T-shaped strip and wick extends normal to the radius of and may be curved to fit the contour of the cylinder with which it is to be used. The leg 68 of the T-shaped wick extends and projects through an elongated recess

77 in the front wall of the wick holder 61. The walls of this container adjacent the recess 77 are bent outwardly, as at 70, to form a restricted throat somewhat less in width than the normal thickness of the leg 68 of the wick, and are then bent upwardly and downwardly respectively, as at 78, to form a back-up or support for the rear face of the head 67 of the wick to facilitate the pressing of the wick against the cylinder to be cleaned.

The wick holder 61 is positioned to normally space the wick from the inner surface of the wiping web 37. As the wick holder is moved towards the cylinder, it first engages the web and then moves as a unit with the web to bring the web into wiping contact with the surface of the cylinder.

The wick 60 is normally retained in its withdrawn position by springs 72 interposed between the wick holder tongues 64 and pins 73 carried by the end plates 31 and 32. These springs normally retain the blocks 63 of the wick holder in contact with respective cam discs 74 carried by a cross rod 75 which is journaled in the frame plates 32 and 31. This cross rod is provided with an operating handle 76 whereby it may be swung manually to cause the cams 74 to move the wick holder, together with the wick and wiping web, into and out of contact with the drum. If desired, the arrangement may be such that the cams 74 pass dead center to retain the wick in wiping contact with the drum.

As heretofore mentioned, one of the objects of this invention is obtained by periodically applying a liquid moistening or ink solvent solution to the wick 60. As shown in the drawings, particularly in Fig. 1, a liquid container 80 is mounted within the cabinet base 11, and is provided with a plunger type pump 81 which pumps liquid from the container through conduits 82 and 83, to an elongated applicator tube 84.

The liquid applicator tube 84, as indicated in Figs. 5 and 8, is secured to the frame plate 32 and extends forwardly, into the wick holder 61, through a suitable opening 85, and is then bent to extend lengthwise of the wick holder 61. As indicated in the drawings, the longitudinal portion 86 of the liquid supply tube 84 is provided with a plurality of relatively small openings 87, which, when the pump 81 is operated, permit fluid to drop from the tube onto a plate 88 which extends transversely across the wick holder 61. The forward edge of the plate 88 is provided with a plurality of spaced notches 89 and is in engagement with the wick so that fluid dropping onto the plate passes through the notches to the wick. The restricted throat of the wick holder assists in controlling the supply of liquid passing to the web 37. Check valves, such as those indicated at 90, may be interposed in the fluid conduit lines to insure maintenance of a supply of fluid in the lines at all times so that the pump may function as a measuring device and may be intermittently operated to minutely control the supply of fluid to the wick. A pump delivering per stroke approximately one millilitre for every 100 square inches to be wiped has been found satisfactory.

In practice it has been found that once the wick is dampened, it is ordinarily sufficient to operate the pump of properly chosen capacity once each time the wick and web are brought into contact with the surface to be cleaned. Accordingly, it is expedient to operate the pump 81 from the cam shaft 75. As indicated in Figs. 3, 4

and 5, the far end of the cam shaft 75 extends outwardly beyond the frame plate 32 and is provided with a disc 92, to which is secured a flexible pump operating cable 93. The cable 93 is encased in the usual flexible sheath 94, one end of which is secured to the frame plate 32 as at 95, and the other end of which is secured to a stationary bracket 96 located adjacent the pump 81.

In placing the device in operation, the wick may be first dampened with a suitable solvent solution and then moved to bring the wiping web 37 into contact with the rotating surface of the cylinder to be cleaned and such contact maintained for one or more revolutions until the surface is cleaned, whereupon the lever is released to withdraw the wick and web from contact with the cylinder and each other. The web is then wound up to bring a clean portion thereof into position to be contacted by the wick whereupon the device is in condition to be reoperated. It has been found that by applying the fluid to the wick intermittently and relying upon the absorption of the wick and paper web to transfer the fluid to the web, a highly efficient cleaning operation may be performed in a relatively brief interval of time.

As heretofore mentioned, it has been found expedient to use a wiping web comprising an elongated strip of crepe paper, preferably a lightweight kraft paper having a high wet strength but otherwise not sized, the face side of the paper being placed in position to coact with the surface to be cleaned. It has also been found that an excellent cleaning action is obtained with a paper which is creped with a fineness yielding a count of about twenty-five hairlines to the inch, and to such an extent as to impart to the paper an extensibility of between four and six per cent. For the purpose of this invention the face of the crepe paper has been termed that side which has rounded ridges, the reverse side having substantially hairline ridges between flats or slightly concave areas and being the side which was in contact with the creping blade during the manufacture of the paper. The high wet strength feature is highly desirable because otherwise the web might tear with the droplets of the form dampening aqueous solution which collect on the trailing end of the offset blanket which encircles the offset cylinder as heretofore described.

Figures 9 to 19 inclusive illustrate a modified form of the invention wherein the cleaning device is pivotally mounted on the printing machine whereby it may be swung as a unit to move the cleaning web into and out of active position, and wherein the wick and wick holder are removable as a unit to facilitate replacement of the wick and cleaning of the wick holder.

The modified structure comprises a pair of end plates 101 and 102 which are secured to and spaced apart by a cover 103. Mounted between these frame plates are a pair of vertically spaced longitudinally extending tubular reels 105 and 106. The lower reel 106 comprises a storage reel for a web of paper 107. This web extends upward from the reel 106 in front of a wick 130 to the upper or take-up reel 105.

The ends of each reel are mounted on discs 108 and 109 provided with radially extending lugs 110 which enter slots 111 formed in the ends of the reels. The left-hand discs 108 are rotatably supported by respective spindles 112 mounted in the left-hand frame plate 101 and an end cover plate 104. The upper spindle is rotatably mount-

7

ed in the frame and cover plates, while the lower spindle is secured to such plates. The right-hand discs 109 are mounted for rotary and axial movement on spindles 113 which are secured to the end plate 102.

The web 107 is advanced to bring a clean portion thereof in front of the wick 130 by the manual actuation of a lever 115 secured to the upper spindle 112. Also secured to this spindle is a pawl carrier 116 which is provided with a pawl 117 spring pressed into engagement with a ratchet wheel 118 secured to the upper reel disc 108. A spring detent 119 prevents movement of this reel in the reverse direction.

The reels are removed from their spindles by withdrawing the discs 109 from engagement therewith. As shown in Fig. 14, a grooved disc 120 is mounted on each disc 109 which is normally urged in its reel engaging position by a spring 121. The discs 120 are interconnected by a plate 122, the ends of which enter the grooves in the discs. The plate 122 is provided with a latch 123 which may enter a recess 124 in the end plate 102 and engage such plate to retain the right-hand reel engaging discs 109 in their disengaged positions.

The rotary movement of the lower reel 106 is frictionally retarded. One means for this purpose is shown in Fig. 14 as comprising a dished spring washer 125, encircling the lower spindle 112 and retained in frictional engagement with the inner face of the associated disc 108 by nuts 126 carried by the spindle.

The wick 130 is carried in a hollow elongated substantially enclosed wick holder 131. The wick holder is supported by the rear wall 132 of the housing or cover 103. As illustrated, the rear wall of the cover 103 is provided with an elongated opening 133 through which the wick holder and wick may be inserted and removed as a unit. The rear wall of the wick holder is provided with peripheral flanges 135 which abut the external surface of the cover adjacent the opening 133 and which is secured in position thereagainst by enlarged heads 136 of threaded studs 137 which threadingly engage stationary lugs 138.

The wick holder extends forward to a position at the front of the device, and is there provided with a restricted elongated throat or opening 140 through which the wick 130 projects. The wick 130 extends upward from the opening 140 and passes around an elongated stiffener plate 141 carried by the wick holder. A flat spring 142 engages the rear surface of the wick 130 and retains it in position as indicated in Fig. 18.

A moistening or ink solvent liquid is supplied to the wick from the pump 81 and reservoir 80, heretofore described. In this form the upper conduit 83 is flexible and is connected with a fitting 145 carried by one end of the wick holder 131, and which is connected with one end of a tube 146 which extends longitudinally within the wick holder. The other end of this tube is sealed. Fluid escapes from this tube from a series of relatively small openings 147 spaced longitudinally thereof, and drops onto the wick 130.

As heretofore mentioned, the modified form of cleaning device is pivotally connected to the frame of the printing machine. As shown in Figs. 10, 12 and 14 there are provided a pair of pivot blocks 150 which may be secured to the frame plates of the printing machine as by bolts 151. These blocks are provided with seats 152 to receive the lowermost spindles 112 and 113 respectively. Leaf springs 153, secured to the blocks

8

150 by bolts 154, maintain the spindles in their seats.

Tension springs 160 attached to the upper spindles 112 and 113 act to swing the cleaning device about the axes of the lower spindles 112 and 113 in a direction to cause the web 107 to be pressed into wiping contact with the printing surface to be cleaned. The pressure of this contact may be adjusted. To this end the springs 160 are each connected at one end to a threaded stud 161 mounted for axial movement in a block 162 secured to the printing machine frame. The position of these studs is regulated by adjusting nuts 163 in the usual manner.

The movement of the cleaning device of Figs. 9 to 19 into and out of contact with the printing surface is controlled by the manual operation of an elongated bar 165. The ends of this bar are secured to levers 166 which are rotatably mounted on the upper reel spindles 112 and 113. The hubs 167 of these levers are cam shaped and engage blocks 168 mounted on the printing machine frame. Figures 12 and 13 illustrate the position of these parts when the device is in its inactive and active positions respectively.

As in the form illustrated in Figs. 1 to 8 inclusive, the moving of the device into active position operates the liquid pump 81. In the form of the invention illustrated in Figs. 9 to 19 the pump operating cable 93 is connected between the pump 81 and the cam shaped hub 167 of the left hand operating lever 166 whereby the movement of the wiping device into active position causes one stroke of said pump. The upper end of the cable enclosing sheath 94 (Fig. 16) is secured, as by a wing nut 97, to a block 98 which is mounted on the end plate 101.

In the form illustrated in Figs. 1 to 8 inclusive, the wiping pressure is governed and maintained manually by the operator, whereas in the modification of the invention illustrated in Figs. 9 to 19 the wiping pressure may be regulated by the adjusting nuts 163 to the optimum and maintained independently of the operator, which is of advantage.

It is another advantage of this latter embodiment of the invention that the web advancing lever 115 and the cam actuating levers 156 may be manipulated simultaneously by one motion of the operator. Thus by the downward motion of the levers 115 and 166 in unison the web 107 is both relieved from pressure contact with the surface of the blanket cylinder 16 and advanced to bring a clean section of said web into position for the next succeeding wipe, and on the upward motion of said levers in unison an increment of solvent is supplied to the wick 130 and said wick and web are brought into pressure contact with said form cylinder while the web advancing lever 115 is returned to operating position; all of which, as stated, is of advantage.

I claim:

1. An apparatus for cleaning printing surfaces including a web of absorbent material, an elongated wick holder, an elongated wick carried by said holder and projecting toward said web, a tube in said wick holder having a plurality of axially spaced openings, said tube extending parallel with said wick and positioned thereabove, means to supply said tube with a wick moistening liquid, and means to move the wick into engagement with one surface of the web and bring the opposite surface thereof into engagement with a printing surface to be cleaned.
2. In a rotary planographic printing machine,

a main frame, a form cylinder and an offset blanket cylinder both rotatably mounted in said frame, a device for cleaning the surface of the form cylinder, a second device for cleaning the surface of the blanket cylinder, each of said devices comprising a pair of spaced frame members secured to said main frame, an enclosed wick holder mounted in said frame for movement to and from the surface of the cylinder to be cleaned, a wick mounted in said wick holder and provided with an outward projecting portion extending normal to the radius of the surface to be cleaned, spring means tending to move the wick and wick holder as a unit away from the surface to be cleaned, a pair of spaced reels removably mounted between said frame plates, a roll comprising an elongated strip of absorbent paper mounted on one reel and extending from such roll, between the wick and surface to be cleaned, to the other reel, a cam coacting with said wick holder to move the wick into engagement with the strip and the strip into engagement with the surface to be cleaned, means to rotate said cylinders to provide a wiping action between said strips and the surfaces to be cleaned, a reservoir for liquid ink solvent, a pump, a conduit from the pump to each device, said conduits extending into the respective wick holders and having small openings whereby when the pump is actuated fluid will be supplied to said wicks, a lever on each device and operatively connected with the respective cam to bring the strip into contact with the surface to be cleaned, an operating connection between said levers and said pump to cause actuation thereof consequent upon operation of the levers, and manually operable means to periodically advance the respective strips to bring fresh portion of the webs into position between the respective wicks and surfaces to be cleaned.

3. A device for cleaning the surface of the form or blanket cylinders of rotary planographic printing machines, said device comprising a pair of spaced side frame members connected by cross frame members, an enclosed wick container mounted between said side frame members for movement to and from the surface to be cleaned, a wick mounted in said container and having an outward projecting portion extending normal to the radius of the surface to be cleaned and terminating in a portion arcuately shaped to fit the contour of such surface, spring means to move the wick holder away from such surface, a pair of spindles mounted in each frame plate and disposed in planes above and below said container, a storage reel removably supported between the upper spindles, a take-up reel removably supported between the lower spindles, a supply of absorbent paper carried by the upper reel and extending downward therefrom in front of said wick to the take-up reel, a shaft mounted in said side frame members, cams on said shaft and coacting with said container to move the wick into engagement with the paper and the paper into engagement with the surface to be cleaned, a reservoir for liquid ink solvent, a fixed displacement pump to remove solvent from said reservoir, a conduit extending from the pump into the wick container, that portion of the conduit within the container being provided with a plurality of outlets whereby when the pump is actuated fluid will be supplied to said wick, a check valve in said conduit, a lever operatively connected to said shaft to ac-

tuate said wick container and bring the web into contact with the surface to be cleaned, an operating connection between said shaft and said pump to cause an actuation thereof each time the wick is moved toward the surface to be cleaned, and means under control of the operator to periodically impart a partial rotation to the take-up reel to bring a fresh portion of the paper into position in front of said wick.

4. In a rotary planographic printing machine, a main frame, a printing cylinder rotatably mounted in said frame, a device for cleaning the surface of said cylinder comprising, a pair of spaced frame plates mounted on said main frame, an enclosed wick holder mounted between said frame plates for movement to and from the surface of said cylinder, a wick mounted in said wick holder and provided with an outward projecting portion extending substantially parallel with the surface to be cleaned, spring means tending to move the wick and wick holder as a unit away from the surface to be cleaned, a pair of spaced reels mounted between said frame plates, a roll comprising an elongated strip of absorbent paper mounted on one reel and extending from such roll, between the wick and surface to be cleaned, to the other reel, a cam coacting with said wick holder to move the wick holder and wick toward the surface to be cleaned and thereby move the wick engaged portion of the strip into engagement with such surface, means to rotate said cylinder to provide a wiping action between said strip and the surfaces to be cleaned, a lever on said device and operatively connected with said cam to bring the strip into contact with the surface to be cleaned, and means operatively connected to said lever to supply said wick with a liquid ink solvent consequent upon operation of the lever.

5. In a rotary planographic printing machine, a frame, a printing cylinder in said frame, a means for cleaning the surface of the said cylinder comprising, an enclosed wick holder mounted in said frame for movement in a substantially horizontal plane to and from the surface of the cylinder to be cleaned, a wick mounted in said wick holder and provided with an outward projecting portion extending substantially normal to the radius of the surface to be cleaned, spring means tending to move the wick and wick holder as a unit away from the surface to be cleaned, a pair of spaced reels mounted in said frame, a roll comprising an elongated strip of absorbent paper mounted on one reel and extending from such roll between the wick and surface to be cleaned to the other reel, a cam coacting with said wick holder to move the wick into engagement with the strip and the wick engaged portion of the strip into engagement with the surface to be cleaned, means to rotate said cylinders to provide a wiping action between said strips and the surfaces to be cleaned, a reservoir for liquid ink solvent, a pump, a conduit extending from the pump into said wick holder and having small openings within the wick holder, said openings being positioned to project fluid onto said wick when the pump is actuated, means operatively connected with the said cam to bring the strip into contact with the surface to be cleaned, an operating connection between said means and said pump to cause actuation thereof consequent upon movement of said wick holder toward the surface to be cleaned said wick holder having a reservoir portion disposed below said wick to receive excess liquid.

6. In a rotary planographic printing machine, a frame, a printing cylinder rotatably mounted in said frame, a means for cleaning the surface of said cylinder, said means comprising an enclosed wick holder mounted in said frame for movement to and from the surface of the cylinder to be cleaned, a wick mounted in said wick holder and provided with an outward projecting portion extending substantially parallel with the surface to be cleaned, spring means tending to move the wick and wick holder as a unit away from the surface to be cleaned, a pair of spaced reels removably mounted in said frame, a roll comprising an elongated strip of absorbent paper mounted in said frame, means to guide said strip from the roll between the wick and the surface to be cleaned and spaced from the wick and such surface, a cam coacting with said wick holder to first move the wick into engagement with the strip and then to move the wick and wick engaged portion of the strip as a unit to bring the strip into engagement with the surface to be cleaned, means to rotate said cylinder to provide a wiping action between said strip and the surfaces to be cleaned, a reservoir for liquid ink solvent, a pump, a conduit extending from the pump into said wick holder and having small openings whereby when the pump is actuated fluid will be supplied to said wick, a lever on said frame and operatively connected with said cam to bring the strip into contact with the surface to be cleaned, an operating connection between said lever and said pump to cause actuation thereof consequent upon operation of the lever.

7. A device for cleaning the surface of the form or blanket cylinders of rotary planographic printing machines, said device comprising a pair of spaced side frame members connected by cross frame members, an enclosed wick container mounted between said side frame members for movement to and from the surface to be cleaned, a wick mounted in said container and having an outward projecting portion terminating in an arcuate portion shaped to fit the contour of the cylindrical surface to be cleaned, spring means to move the wick holder inwardly relative to the device, a pair of spindles mounted in each frame plate and disposed in planes above and below said container, a storage reel removably supported between the upper spindles, a take-up reel removably supported between the lower spindles, a supply of absorbent paper carried by the upper reel and extending downward therefrom in front of and out of contact with said wick to the take-up reel, a shaft mounted in said side frame members, cams on said shaft and coacting with said container to move the wick outwardly relative to the device into engagement with the paper and then move the wick and wick engaged portion of the paper outwardly as a unit, and means to intermittently supply said wick with a liquid ink solvent.

8. In a rotary planographic printing machine, a frame, a printing cylinder rotatably mounted in said frame, a device to clean the surface of said cylinder comprising, a pair of spaced side plate members connected by cross frame members and pivotally mounted on said frame, an enclosed wick container removably mounted between said side frame plates, a wick mounted in said container and having an outward projecting portion arcuately shaped to fit the contour of the surface to be cleaned, a pair of spindles mounted in each frame plate and disposed in planes above and below said container, a storage

reel removably supported between the upper spindles, a take-up reel removably supported between the lower spindles, a supply of absorbent paper carried by the upper reel and extending downward therefrom in front of said wick to the take-up reel, a cam mounted on one of said side plates and adapted to coact with said main frame to move supplemental frame and wick as a unit to move that portion of the paper engaged by the wick out of engagement with the surface to be cleaned interconnected between said device and said frame to move the wick engaged portion of the paper out of engagement with such surface, a reservoir for liquid ink solvent, a fixed displacement pump to remove solvent from said reservoir, a conduit extending from the pump into the wick container, that portion of the conduit within the container being provided with a plurality of outlets whereby when the pump is actuated fluid will be supplied to said wick, a check valve in said conduit, a lever connected to actuate said cam, a cam carried by said device and operable to coact with said main frame to move said wick away from the surface to be cleaned, adjustable means to limit the movement of the device toward the surface to be cleaned and thereby limit the pressure between the paper and such surface, and means to supply said wick with a predetermined amount of cleaning fluid each time the wick is moved toward the surface to be cleaned, and means under control of the operator to periodically impart a partial rotation to the take-up reel to bring a fresh portion of the paper into position in front of said wick.

9. In a cleaning device for cleaning movable printing surfaces comprising, a wick, means to support said wick adjacent the surface to be cleaned for movement to and from such surface, an elongated web of absorbent material disposed between the wick and the surface to be cleaned, means to supply fluid to said wick, and manually operable means to move said wick to press the web into wiping contact with the moving surface to be cleaned.

10. A device for cleaning movable planographic printing surfaces, comprising a wick, means to position said wick adjacent the surface to be cleaned, a web of absorbent material disposed between the wick and surface to be cleaned, means to intermittently supply said wick with liquid, and means operable to move said wick to press said web in wiping contact with the moving surface to be cleaned.

11. In an offset printing machine, a printing cylinder, a device for cleaning the cylindrical surface of said cylinder including a liquid absorbent member mounted adjacent said cylinder for movement to and from said surface, an elongated web of absorbent paper having a portion thereof disposed between said member and said surface and normally spaced from said surface, means operable to move said member to move the web into wiping engagement with said surface, means to rotate said cylinder, and means to supply said member with liquid.

12. In a device for cleaning movable printing surfaces comprising, a wick, means to support said wick adjacent the surface to be cleaned, a web of absorbent paper disposed between the wick and the surface to be cleaned and normally spaced from such surface and wick, means to supply fluid to said wick, and means operable to move said wick to press the web into wiping contact with the moving surface to be cleaned.

13. In a device for cleaning movable printing

surfaces comprising, a wick, means to support said wick adjacent the surface to be cleaned, a web of absorbent material disposed between the wick and such surface and normally spaced from such surface and from said wick, means operable to intermittently supply said wick with liquid, and means operable to move the wick to bring the web into contact with the moving surface to be cleaned.

14. An apparatus for cleaning rotatable printing surfaces without removing them from the printing machine including, a wick, means to support said wick adjacent to the surface to be cleaned for movement to and from such surface, means to intermittently supply said wick with fluid, a web of absorbent material having a portion thereof disposed between the rotating printing surface and said wick, means operable to move the wick to bring the web into wiping contact with said cylinder, means operable to intermittently advance said web to bring a clean portion thereof into position between said wick and cylinder.

15. In a device for cleaning moving printing surfaces comprising, a wick, a support to support said wick adjacent the surface to be cleaned, a web of absorbent material having a portion thereof disposed between the wick and the surface to be cleaned, means operable to move the wick to bring the web into contact with the surface to be cleaned, a liquid supply, a pump connected to draw fluid from said supply and pump it to said wick, an actuating means for said pump, and an operating connection between said actuating means and said first named means.

16. A device for cleaning printing surfaces comprising, a frame, a supply reel mounted in said frame and carrying an elongated strip of absorbent material, a second reel spaced from the first named reel and acting as a take-up reel to draw the strip of material from the supply reel, means to position said frame with the stretch of web extending from one reel to the other past and adjacent to the surface to be cleaned, a wick container mounted between said reels, a wick carried by the container and having a portion thereof projecting toward the stretch of the web extending between the supply and take-up reels, means to supply fluid to said wick and means operable to move the container to cause the moistened wick to bring the web into contact with the surface to be cleaned.

17. In an apparatus for cleaning printing surfaces including, a web of liquid absorbent material, a wick to supply liquid to said web, means to supply liquid to said wick, means to support said wick adjacent to the surface to be cleaned for movement to and from such surface with the wick in contact with said web and said web extending between the wick and said surface, and means operable to move said wick and web as a unit into contact with the printing surface to be cleaned to press the moistened wick into contact with the surface to be cleaned.

18. In an apparatus for cleaning the offset and impression surfaces of rotary printing machines including, a wick, means to support said wick adjacent the surface to be cleaned for movement to and from such surface, a web of liquid absorbent paper having a portion thereof disposed between the surface to be cleaned and said wick, and means operable to move said wick toward the cylinder to be cleaned and simultaneously apply liquid to said wick and consequent upon a further operation to cause the

wick to press the web into wiping contact with the surface to be cleaned.

19. In a device for cleaning the surface of offset blankets and printing forms of the cylinders of planographic printing machines, said device comprising, an elongated wick, means to support said wick to extend parallel with the axis of and adjacent the surface of the cylinder to be cleaned for movement to and from such surface, means to apply liquid to said wick, a web of absorbent paper of a width substantially equal to the length of said wick and extending transversely relative to the wick between the wick and the surface to be cleaned, said web being normally spaced from said wick and surface, and means operable to bring said wick into contact with said web and thereafter move said wick and web as a unit to bring said web into wiping contact with the surface to be cleaned.

20. In a device for cleaning moving printing surfaces comprising, a wick receptacle mounted adjacent the surface to be cleaned for movement to and from such surface, a wick removably mounted in said receptacle, means to supply liquid to said wick, means operable to move said wick and receptacle as a unit toward the surface to be cleaned, a web of absorbent paper positioned between said wick and the surface to be cleaned, said web being arranged and adapted to be moistened by said wick and brought into wiping contact with the surface to be cleaned by pressure exerted thereon by the wick consequent upon movement of the wick toward the surface to be cleaned, and resilient means constantly tending to move said wick away from said surface.

21. In an offset printing machine, a main frame, a printing cylinder mounted for rotation in said frame, a supplemental frame pivotally mounted on said main frame for movement about an axis substantially parallel with the axis of said cylinder, an elongated strip of absorbent material carried by said supplemental frame, a wick container mounted in said supplemental frame adjacent the surface to be cleaned, a wick carried by the container and having a portion thereof in engagement with said web adjacent the surface to be cleaned, and means to move the supplemental frame about its pivots to bring the wick engaged portion of said web into contact with the surface of said cylinder to be cleaned.

22. An apparatus according to claim 21 in which the wick and wick holder are removable from the supplemental frame as a unit.

23. An apparatus according to claim 22 having means operable to periodically advance the web to bring a fresh portion thereof into engagement with said wick.

WILLIAM B. WESCOTT.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

| Number    | Name         | Date           |
|-----------|--------------|----------------|
| 692,350   | Reid         | Feb. 4, 1902   |
| 1,089,500 | Ross         | Mar. 10, 1914  |
| 1,147,152 | Eaton        | July 20, 1915  |
| 1,759,520 | Parsons, Jr. | May 20, 1930   |
| 1,927,056 | Aitchison    | Sept. 19, 1933 |
| 2,140,009 | Hand         | Dec. 13, 1938  |
| 2,234,973 | Marchev      | Mar. 18, 1941  |
| 2,341,020 | Curtis       | Feb. 8, 1944   |
| 2,424,534 | Ford         | July 22, 1947  |