No. 753,958. PATENTED MAR. 8, 1904.

S. CRUMP.

MACHINE FOR CLEANING PRINTERS' ROLLERS.

APPLICATION FILED JUNE 25, 1903.

NO MODEL.

Fig. 1.

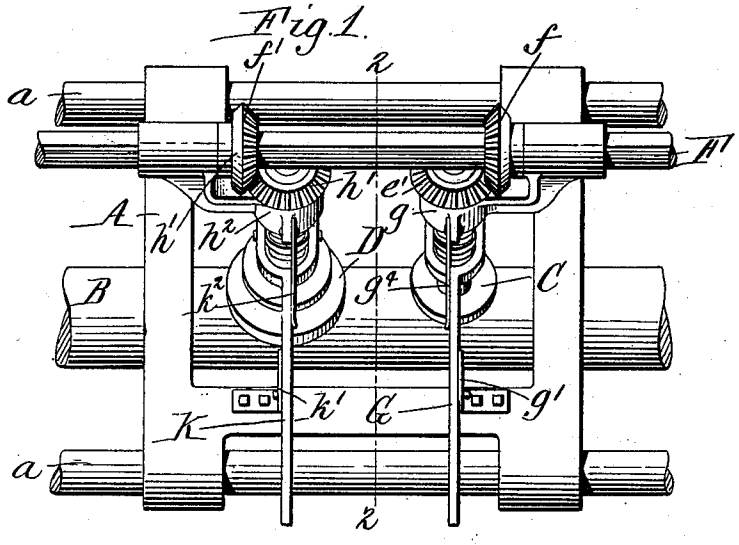


Fig. 3.

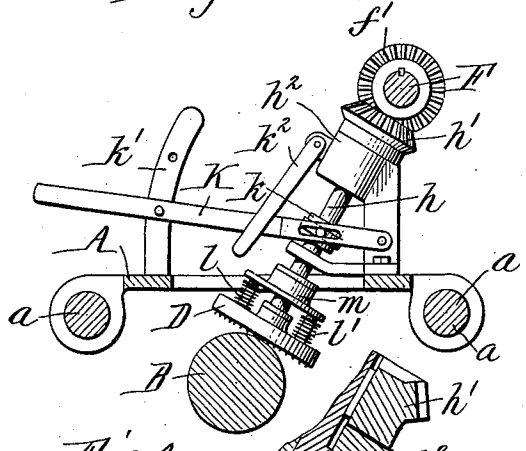


Fig. 2.

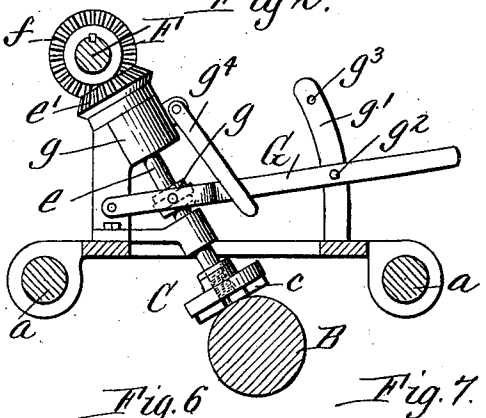


Fig. 4.

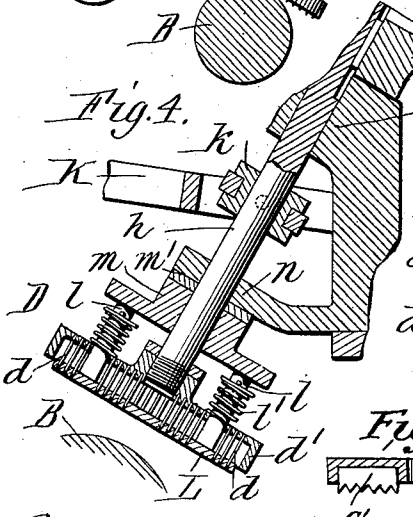


Fig. 5.

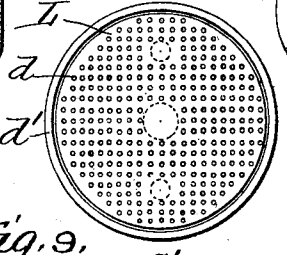


Fig. 6.

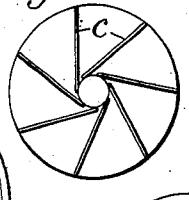


Fig. 7.

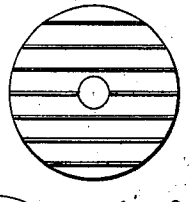


Fig. 8.

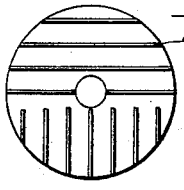
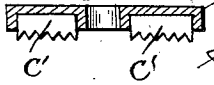


Fig. 9.



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

No. 753,958. Patented March 8, 1904.

UNITED STATES PATENT OFFICE.

SAMUEL CRUMP, OF POUGHKEEPSIE, NEW YORK.

MACHINE FOR CLEANING PRINTERS' ROLLERS.

SPECIFICATION forming part of Letters Patent No. 753,958, dated March 8, 1904.

Application filed June 25, 1903. Serial No. 163,079. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL CRUMP, a citizen of the United States, and a resident of Poughkeepsie, in the county of Dutchess and State of New York, have invented new and useful Improvements in Machines for Cleaning Printers' Rollers, of which the following is a specification.

This invention relates to a machine for washing or cleaning printers' rollers by acting upon the same by means of a liquid solvent which is worked into the ink, color, and other impurities on the roller by cleaning or massage rollers which are moved along the printer's roller or over which the printer's roller is moved. Machines of this general character are shown and described in Letters Patent No. 678,484, July 16, 1901, granted to F. Hart, assignor, &c., and No. 696,134, granted to me March 25, 1902. In Patent No. 678,484 a machine is disclosed which is more especially designed for cleaning the rollers of typographic presses and in which the printer's roller is moved over the cleaning or massage rollers. In Patent No. 696,134 a machine is disclosed which is more especially designed for cleaning the rollers of lithographic presses and in which the cleaning or massage rollers are moved over the printer's roller. In the machine of Patent No. 696,134 a disk-shaped cleaner is provided among other instrumentalities for operating upon the roller. The present invention relates to this disk-shaped cleaner, and has for its object to improve the construction of the same with a view of improving its action upon the printer's roller in removing the ink, color, &c., and keeping the cleaner free from these matters, and, furthermore, to provide in addition a cleaner which will effectually restore a grained or napped surface on leather-covered rollers.

In the accompanying drawings, Figure 1 is a top plan view of the traveling carriage of a roller-washing machine provided with two cleaners embodying my improvements. Fig. 2 is a vertical transverse section in line 2 2, Fig. 1, looking to the right and showing the blade-disk. Fig. 3 is a similar section looking to the left and showing the grainer-disk. Fig. 4 is a fragmentary sectional elevation of the grainer-disk on an enlarged scale. Fig. 5 is a face view of the grainer-disk. Figs. 6, 7, and 8 are face views of the blade-disk, showing different arrangements of the blades thereon. Fig. 9 is a vertical section of a blade-disk provided with blades having serrated edges for graining the leather.

Like letters of reference refer to like parts in the several figures.

A represents the traveling carriage mounted on horizontal guide-bars *a*, and B represents the printer's roller to be cleaned or washed. C and D represent two disk-shaped rotary cleaners which are mounted on said carriage to operate upon the roller either simultaneously or one at a time, as may be most suitable. The cleaner-disk C is provided in its flat working face with blades *c*, which operate upon the roller with their projecting edges and remove the liquid solvent, color, ink, and other matter from the roller. The cleaner-disk D is provided in its flat working face with needles or pins *d*, which operate upon the roller with their ends and grain the same, producing a soft, napped, or chamois-like surface on the leather cover of the roller. The blade-disk C is secured to the lower end of a shaft *e*, which is provided at its upper end with a bevel-wheel *e'*, meshing with a bevel-wheel *f* on a horizontal driving-shaft F, along which the carriage A slides. The upper portion of the shaft *e* is journaled in a bearing *g* on the carriage A, in which bearing the bevel-wheel is also journaled. The shaft and bevel-wheel are connected by a sliding driving connection, such as a groove and feather, so that the shaft can be raised and lowered in the bevel-wheel. The blade-disk is raised and lowered by a lever G, which is pivoted to the carriage in rear of the shaft *e* and pivotally connected to a collar *g* on the latter.

g' represents a standard arranged on the front portion of the carriage adjacent to the lever for supporting the latter in its elevated position by means of a stud g^2 on the lever entering one of a series of holes g^3 in the standard. These parts are yieldingly held in

engagement by a spring g^4, which is secured to the carriage and bears against the side of the lever.

The blades c of the disk C may be arranged in various ways. They are preferably arranged tangentially, as shown in Fig. 6, but may be arranged parallel, as shown in Fig. 7, or in groups, as shown in Fig. 8, or otherwise.

In rotating with the disk each blade strikes the roller alternately in opposite directions and removes the adhering matter therefrom with great thoroughness. The blades throw the removed matter by centrifugal force clear of the roller and the latter is in this manner very effectually cleaned of the liquid solvent, color, ink, and other matters, while the blades keep themselves free from accumulations of removed matter, and are therefore always in good working condition.

The grainer-disk D is mounted and driven like the cleaner-disk C, so that it can be raised or lowered. h represents the shaft of the grainer-disk, h' the bevel-wheel at the upper end of said shaft, and h^2 the bearing in which the shaft h is slidably journaled.

f' is the driving bevel-wheel on the shaft F, meshing with the wheel h'.

K represents the lifting-lever of the grainer-disk; k, the collar on the shaft h, to which this lever is connected; k', the supporting-standard, and k^2 the spring bearing against the lever.

The needles or pins d of the grainer-disk are straight and arranged parallel with the shaft of this disk. These needles are secured to the disk by soldering or otherwise and are surrounded by a marginal flange d', formed on the disk and extending nearly but not quite to the free ends of the needles.

L represents a stripper-plate which is arranged on the face side of the grainer-disk within the marginal flange d' thereof and provided with perforations in which the needles fit snugly and through which the needles project.

The grainer-disk and the stripper-plate are movable relatively to each other, so that by drawing the needles through the perforations of the stripper-plate any material adhering to the needles is stripped therefrom. For this purpose the stripper-plate is provided on its back or upper side with two parallel guide bars or posts l, which extend through openings in the grainer-disk and are provided above the latter with spiral springs l', by which the stripper-plate is yieldingly held against the lower or face side of the grainer-disk. Above these posts there is arranged a collar m, which is mounted loosely on the shaft of the grainer-disk and which moves up and down with the latter. The hub of this collar is preferably provided with a rotary washer m', and a short distance above this hub and washer there is arranged a stop-bearing n, through which the shaft of the grainer-disk passes and which is secured to the carriage.

When the grainer-disk is in its lower or working position, (shown in Fig. 3,) the collar m rests loosely on the posts l and the springs l' hold the stripper-plate against the disk, so that the ends of the needles project beyond this plate.

When it is desired to clean the needles, the grainer-disk is raised by the lever K sufficiently to draw the needles through the perforations of the plate, as represented in Fig. 4. During this upward movement of the grainer-disk the upward movement of the collar m and washer m' is arrested by the washer striking against the stop-bearing n. This arrests in turn the upward movement of the stripper-plate, the posts l of which bear against the washer. The further upward movement of the grainer-disk draws the needles through the perforations in the stripper-plate until the ends of the needles are entirely drawn into the plate, whereby all adhering matter is stripped from the needles. The washer m' relieves the friction when the collar is raised against the stop-bearing. The springs on the posts l are compressed during this final portion of the upward movement of the grainer-disk. Upon lowering the lifting-lever K the springs expand and withdraw the stripper-plate into the cavity of the grainer-disk. By cleaning the needles in this manner from time to time they are readily kept clean and in good working condition.

The cleaner or blade disk C and the grainer-disk D rest by gravity upon the roller to be cleaned when in their working position and are held in an elevated position clear of the printer's roller by means of the levers and their supporting devices when not required for use. The blade-disk is used nearly always when operating upon a printer's roller; but the needle or grainer disk is used only from time to time when the leather covering of a roller is in such a condition that it requires to be grained.

Instead of the grainer-disk D, provided with pins, as described, a grainer-disk C', such as is represented in Fig. 9, may be used. In this construction the grainer-disk is provided with blades c', arranged as shown and described with reference to the cleaner-disk, but the blades instead of having straight or plain edges have serrated edges. The points of the teeth or serrations operate upon the leather in a way similar to the action of the needles and produce a nice grained surface.

I claim as my invention—

1. In a machine for cleaning printers' rollers, the combination of a rotary disk having in its working face one or more cleaner-blades arranged at right angles to the axis of rotation,

and means for producing a relative movement in the longitudinal direction of the roller between the latter and the cleaner-disk, substantially as set forth.

2. In a machine for cleaning printers' rollers, the combination of a traveling carriage, and a rotary disk mounted on the same and having its flat working face formed by cleaner-blades arranged at right angles to the axis of rotation, substantially as set forth.

3. In a machine for cleaning printers' rollers, the combination of a rotary cleaner-disk having its flat working face formed by one or more cleaner-blades arranged at right angles to the axis of rotation, and a rotary grainer-disk having its flat working face provided with projecting grainer-points, substantially as set forth.

4. In a machine for cleaning printers' rollers, the combination of a traveling carriage, a rotary disk mounted in the same and having its flat working face formed by cleaner-blades arranged at right angles to the axis of rotation, and a rotary grainer-disk also mounted in said carriage and having its flat working face provided with projecting grainer-points, substantially as set forth.

5. The combination of a rotary cleaner-disk having its flat working face formed by projecting needles, a stripper-plate having perforations through which the needles extend, and means for moving said disk and plate relatively to each other, substantially as set forth.

6. The combination of a rotary cleaner-disk having a recess in its face, needles secured within said recess and projecting beyond the same, a perforated stripper-plate arranged in said recess, and means for moving said plate and disk relatively to each other, substantially as set forth.

7. The combination of a rotary cleaner-disk, a shaft to which the same is secured, needles secured to the disk and forming the flat working face thereof, a stripper-plate through which said needles extend, a guide on said plate extending through said disk, and a stop device whereby the movement of said plate in the direction of said shaft is arrested, substantially as set forth.

8. The combination of a rotary cleaner-disk, a shaft to which the same is secured, needles secured to the disk and forming the flat working face thereof, a stripper-plate through which said needles extend, a guide on said plate extending through said disk, a stop-collar loosely mounted on said shaft, and a fixed stop which arrests the movement of said collar and through the same the movement of the stripper-plate, substantially as set forth.

9. The combination of a rotary cleaner-disk having its flat working face formed by projecting needles, a perforated stripper-plate provided on its back with guides which extend through said disk, springs by which the stripper-plate is yieldingly held against said disk, a movable stop-collar arranged above said guides, and a fixed stop which limits the movement of said collar, substantially as set forth.

10. The combination of a traveling carriage, a cleaner-disk, a rotary shaft to which said disk is secured, a bearing on said carriage in which said shaft is slidably journaled, a lifting-lever pivoted to said carriage and connected with said shaft, and means for supporting said lever in its elevated position, substantially as set forth.

11. The combination of a traveling carriage, a grainer-disk having its flat working face formed by projecting needles, a rotary shaft to which said shaft is secured, a bearing on said carriage in which said shaft is slidably journaled, a stripper-plate movable with reference to said needles, a stop on said carriage by which the movement of said stripper-plate is arrested, and a lifting-lever pivoted to said carriage and connected with said shaft, substantially as set forth.

Witness my hand this 6th day of June, 1903.

SAMUEL CRUMP.

Witnesses:
HARRY H. RICHARDSON,
RICHARD H. CLIFFORD.