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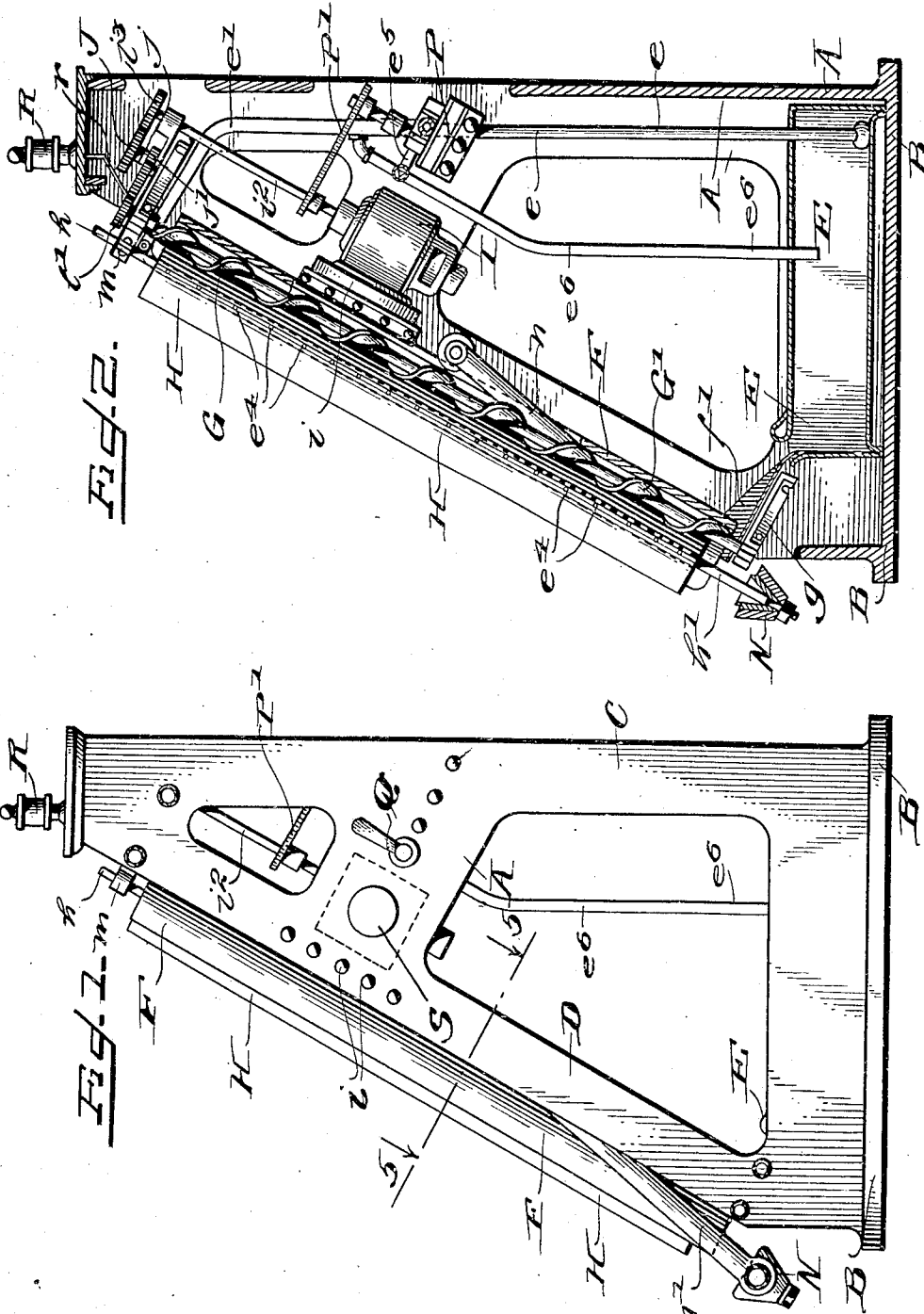
C. B. CUTLER.

PATENTED JAN. 14, 1908.

MACHINE FOR CLEANING PRINTERS' ROLLERS AND THE LIKE.

APPLICATION FILED MAR. 27, 1906.

2 SHEETS—SHEET 1.



Witnesses
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R. B. Caranagh

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By his Attorneys *Lyford & Price*

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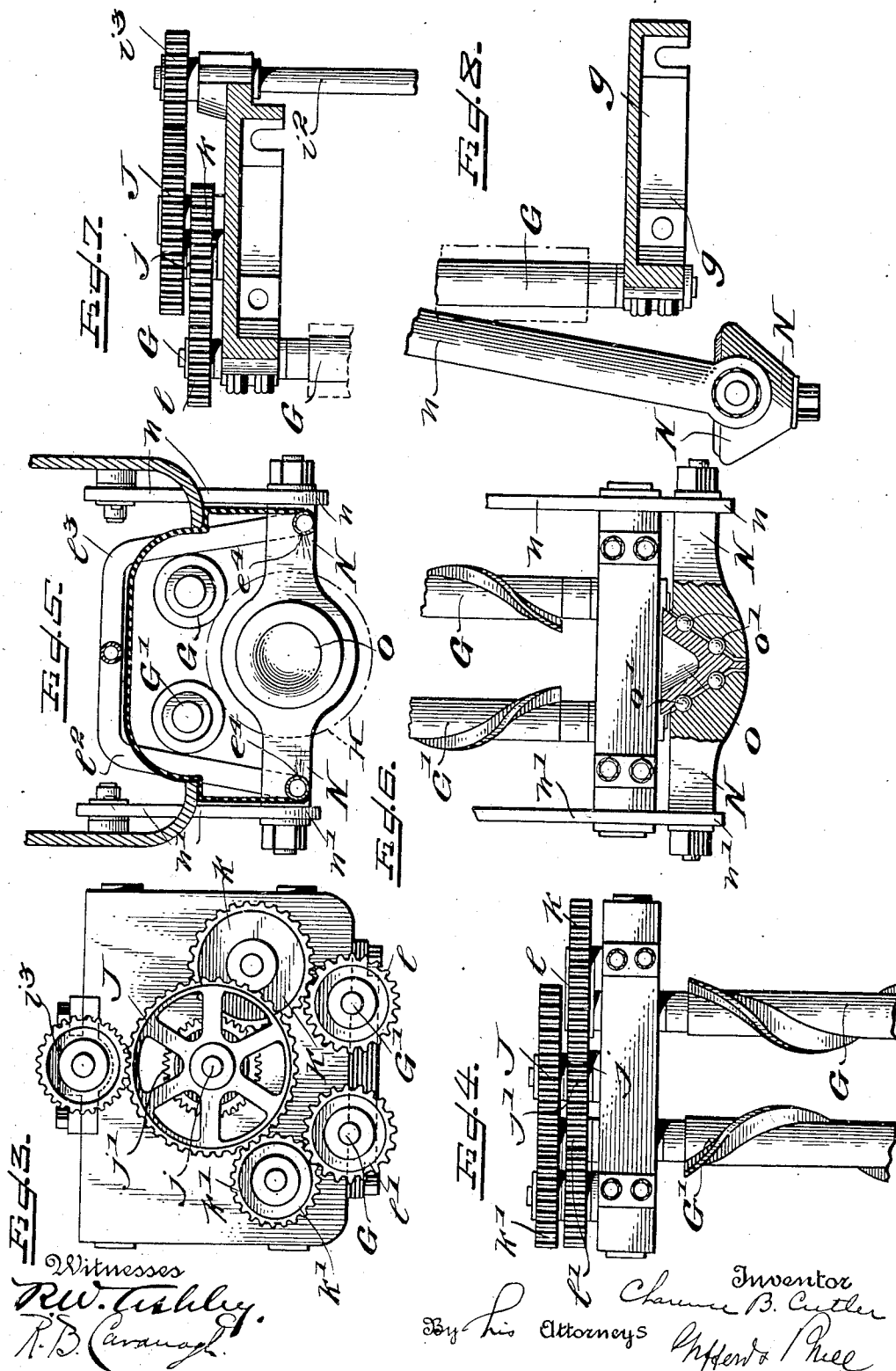
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By *his* Attorneys *Chas. B. Cuyler* Inventor
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UNITED STATES PATENT OFFICE.

CLARENCE B. CUTLER, OF STANHOPE, NEW JERSEY, ASSIGNOR TO HENRY H. RICHARDSON,
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MACHINE FOR CLEANING PRINTERS' ROLLERS AND THE LIKE.

No. 876,386.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed March 27, 1906. Serial No. 308,263.

To all whom it may concern:

Be it known that I, CLARENCE B. CUTLER, a citizen of the United States, and resident of Stanhope, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in Machines for Cleaning Printers' Rollers and the Like, of which the following is a specification.

The present invention relates to certain improvements in machine for cleansing printers' rollers and the like, and in the present instance, it is my purpose to provide an apparatus or machine embracing in a compact and simple structure means whereby the roller or the like may be washed and scraped with facility and thoroughness.

My invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings wherein like characters of reference indicate like parts in all the views, Figure 1 is a side view of a preferred embodiment of my invention; Fig. 2 is a vertical, longitudinal sectional view taken through the same, certain parts being shown, however, in full lines; Fig. 3 is a top plan view showing the relative arrangement of gearing for driving the scraper; Fig. 4 is an enlarged detail view of certain portions of the scraper or screws and the gearing for actuating the same; Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1; Fig. 6 is an enlarged detail view partly in elevation and partly in section of the lower portion of the machine showing the cone bearing in which the lower end of the subject roller is designed to seat; Fig. 7 is a detail view partly in section showing the arrangement of drive gear in side elevation; Fig. 8 is a detail view of the lower portion of the machine, the cone bearing or seat for the subject roller being shown in side elevation.

In carrying out the present invention I desire to provide a mechanism through which a roller such as a printer's roller, may have the accumulation of ink and the like washed and scraped therefrom quickly and thoroughly. I have found that this function may be performed in a satisfactory manner by employing, in addition to other mechanism, a plurality of scrapers in the nature of screw blades adapted to revolve at relatively different speeds, so that the subject-roller, or the roller to be cleaned resting upon such

scraper rollers, will be rotated at the mean speed of said rollers. By this construction and arrangement the entire surface of the roller will be acted upon by the scrapers and, when the cleansing fluid is supplied thereto in sufficient quantities, such subject roller may be cleaned with despatch.

Referring now to the accompanying drawings in detail the letter A indicates the frame of my machine which may be of any desired and preferred form or structure, but in the present instance I have shown such frame as approximating a right angle triangle; that is to say, with a relatively short base portion B, a long vertical rear portion C and an inclined front or bed portion D. Within the base of this frame is arranged a tank E adapted to contain the cleansing fluid.

F is a trough arranged parallel with the inclined bed D and extending through and parallel with the trough are the two scraper screws G, G', upon which screws the subject roller indicated at H is adapted to rest.

As heretofore stated these two screws are preferably designed to be rotated at relatively different speeds, and may be rotated in either the same or different directions. To accomplish the actuation of the screws the following mechanism is provided: I is a motor of any suitable character, such as an electric motor, mounted at i upon the frame of the machine and the power shaft i² thereof is provided at one end with a drive pinion i³. This pinion in turn meshes with a relatively large gear wheel J mounted upon the stud shaft j as is also the smaller gear wheel j'. This latter gear in turn meshes with the gear wheel k, while k' is a second gear wheel smaller than the gear k and in mesh with the relatively large gear wheel J. l, l', are two gears in mesh respectively with the gear wheels k, k', and such gears l, l' are mounted upon the ends of the shafts of the screws G, G'. These screws or scrapers at their lower ends are journaled in a suitable bearing g and, as before stated, are thus arranged at an inclination to the vertical. By the construction just recited and the relative arrangement and size of the gears it will be noted that when the shaft i² of the motor is driven from the latter power will be imparted through the train of gearing to the screw shafts and the latter will be caused to revolve at relatively different speeds. Now, if the roller to be cleaned be placed upon the

shafts in the manner shown in Figs. 1 and 2 it will be rotated at a speed approximately mean of the speed of the two scrapers or screws, and the entire surface thereof will be
5 thoroughly scraped in an approximately longitudinal direction.

In order to maintain the subject roller H in position relative to the scraper I provide at the upper end a clip or clamp *m* for holding the stud shaft *h* of the roller, while at the
10 lower end of the frame is a bearing N hung from the ends of the pivoted arms *n*, *n'*. Carried by this bearing N at approximately the central portion thereof and in line between the two screws or scrapers is a conical
15 cup or bearing block O adapted to receive the spindle *h'* of the subject roller, said cup O being free to turn relative to the bearing N. *o'* are anti-friction bearings interposed
20 between the conical cup and the bearing plate N.

When it is desired to clean a roller it is preferable to first spray upon the same a cleansing fluid of any suitable nature and, as
25 before stated, a receptacle E for said fluid is provided.

e is a suction pipe leading from the tank E to the pump P mounted on the frame of the machine, which pump is driven from the
30 power shaft *i*² through the power transmission gearing P'.

e' is a pipe leading from the pump to the upper portion of the frame where such pump is branched at *e*² and *e*³, as is shown in Fig. 5
35 so as to pass on the outer longitudinal side of each of the scrapers or screw shafts and between such shafts and the wall of the trough F.

The branch pipes extend approximately
40 the entire length of the trough and are each perforated as shown at *e*⁴, so that the cleansing fluid may be sprayed therefrom upon the subject roller, as is clearly shown in Figs. 2 and 5. At the base of the trough F is a small
45 conducting chute or gutter *f'* into which the fluid and matter scraped from the subject roller passes, and is conducted into the base of the machine. After the roller has been sufficiently wetted with the cleansing fluid
50 and it is desired to continue the scraping operation without the application of additional fluid the three-way valve Q is actuated to direct the fluid through the branch *e*⁵ into the return pipe *e*⁶ whence it is conveyed back to
55 the tank E, so that while the revolution of the scrapers may be continued to scrape the rollers dry, the fluid will be pumped in a circuit back to the tank.

S is a switch for throwing the electric motor into and out of operation.
60

R is an oil cup mounted at the top of the machine and designed to furnish a lubricant to the gearing through the small conducting
tube *r*.

65 From the above description taken in con-

nection with the accompanying drawings the construction and operation of my improved machine will be readily apparent. The subject roller H to be cleaned is first placed in position as shown in Figs. 1 and 2 with the
70 lower spindle thereof resting in the conical cup of the bearing N and the upper spindle clamped as is shown at *m*. The switch S is then moved to throw the motor into operation and through the power shaft *i*² the screw
75 shafts or scrapers G and G' are caused to rotate at relatively different speeds, and their rotary movement is also imparted at mean speed to the subject-roller H. Through the train of power transmitting devices P' the
80 pump P is also actuated and the cleansing fluid is drawn up from the tank E to the pump and thence pumped through the pipe E' into the perforated branch pipes extending
85 longitudinally of and at the side of the subject roller. Such subject roller is thus thoroughly wetted by the applied fluid and the rotary motion of the screw scrapers cleanses or
90 scrapes the roller in a direction approximately longitudinally of its action. After the roller has been cleaned and dried by the scrapers it may be removed from the machine by unlocking the clamp at the top
95 thereof and swinging the lower pivoted bearing N to the desired position by shifting the pivoted arms *n*, *n'*. The machine is then ready for the next roller.

It will be noted that I have provided an exceedingly simple machine, one occupying very little space, and while I have herein
100 shown and described a preferred embodiment of my invention, I wish it of course to be understood that I do not limit myself to the details of construction herein enumerated, as there may be modification and variation within the scope of the claims.
105

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:—

1. The combination of a frame, a plurality
110 of roller scraping elements carried by the frame and moving at relatively different speeds to scrape the surface of the roller, and means for supporting said roller while the latter is resting upon and in contact with the
115 scraping elements.

2. The combination of a frame, means for supporting the roller to be cleaned thereon, a plurality of scraping screws adapted to bear against said roller, and means for driving said
120 screws at relatively different speeds.

3. The combination of a frame, a plurality of roller cleaning devices mounted thereon and adapted to contact with a roller to be cleaned, and means for rotating said devices
125 at relatively different speeds whereby to impart the mean speed of said devices to said roller.

4. The combination of a frame, a plurality
130 of roller cleaning devices each comprising a

longitudinally extending spiral screw adapted to contact with the roller to be cleaned, and means for actuating said devices to clean or scrape the roller in a direction longitudinally of its axis.

5 5. The combination of a frame, a plurality of roller-cleaning elements arranged at an inclination to the frame, and adapted to contact with the roller to be cleaned, means for holding such roller when the latter is resting upon and in contact with the inclined cleaning elements, and means for driving said elements.

15 6. The combination of a frame, a spiral screw scraper mounted on said frame and arranged at an inclination relative to the base thereof, means for holding the roller to be cleaned in position longitudinally of and in contact with the scraper, and a motor carried by the frame and driving the scraper.

20 7. The combination of a plurality of inclined screws, means for driving said screws at relatively different speeds, and means for holding a roller to be cleaned in contact with said screws.

25 8. The combination of a frame, a plurality of scrapers therefor, means for maintaining a roller to be cleaned in contact with said scrapers, a motor, and power transmission devices interposed between the motor and the scrapers whereby said scrapers may be driven at relatively different speeds.

30 9. The combination of a frame, a plurality of inclined spiral scraping devices adapted to contact with the roller to be cleaned, means for driving said scraping devices at different speeds, a reservoir containing a cleansing fluid, and means for conducting fluid from the reservoir and applying the same to the roller.

40 10. The combination of a frame, spiral roller-cleaning devices therefor, a roller adapted to rest in contact with said devices, a pump for forcing a fluid from the reservoir to a point where it is to be sprayed upon the roller, and means for revolving the roller cleaning devices against the roller and for driving said pump.

11. The combination of a frame, a plural-

ity of screw members adapted to contact with the roller to be cleaned, means for supporting said roller to be cleaned including a pivoted bearing, means for applying a cleansing fluid to the roller including a pump connected with a source of fluid supply and piping leading from the pump to a position adjacent to the roller, and a motor for driving both the pump and the cleaning devices.

12. The combination of a frame, a plurality of roller cleaning devices adapted to contact with a roller and clean the same in a direction longitudinally of its axis, a reservoir for containing a cleansing fluid, means for taking such fluid from the reservoir and applying the same to the roller, and means for driving the devices at relatively different speeds to impart the mean speed of said devices to the roller.

13. The combination of a frame, a plurality of screw scraper members mounted thereon, a trough arranged beneath said members, means for holding a roller to be cleaned in contact with said members, means for applying a cleansing fluid to the rollers, a motor for driving said screws at relatively different speeds to scrape the roller in a direction longitudinally of its axis, and means for conducting the matter scraped from the roller to a point of discharge.

14. The combination of a frame, a plurality of scraping devices arranged at an inclination relative thereto and adapted to have a roller to be cleaned resting in contact therewith, a reservoir mounted in said frame, means for applying a cleansing fluid from the reservoir to the roller to be cleaned, a motor mounted on said frame, gearing interposed between said motor and scraping devices whereby said devices may be driven at relatively different speeds.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE B. CUTLER.

Witnesses:

RICHARD B. CAVANAGH,
WALTER A. PAULING.