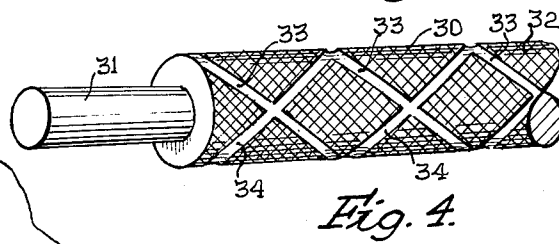
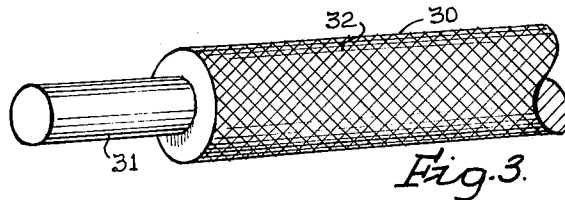
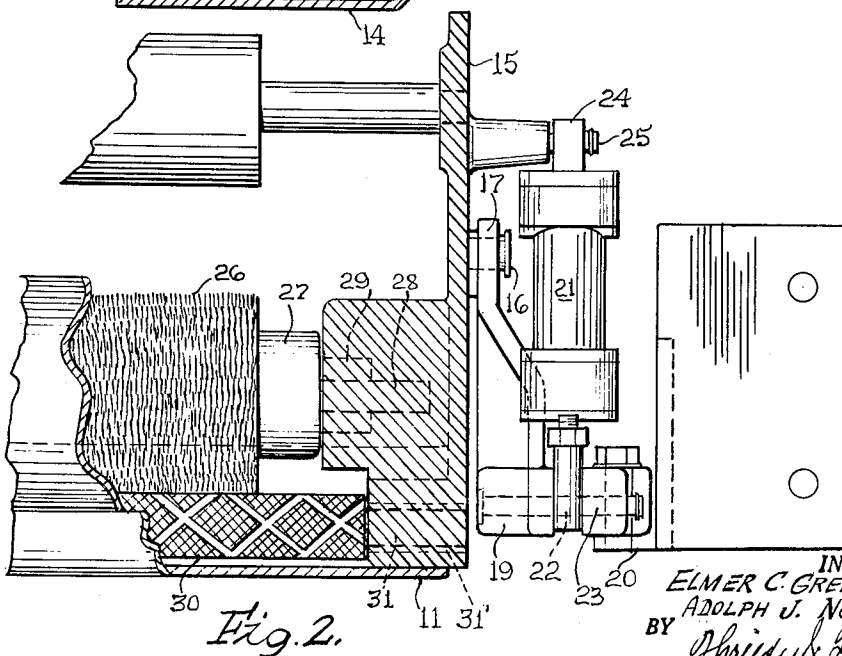
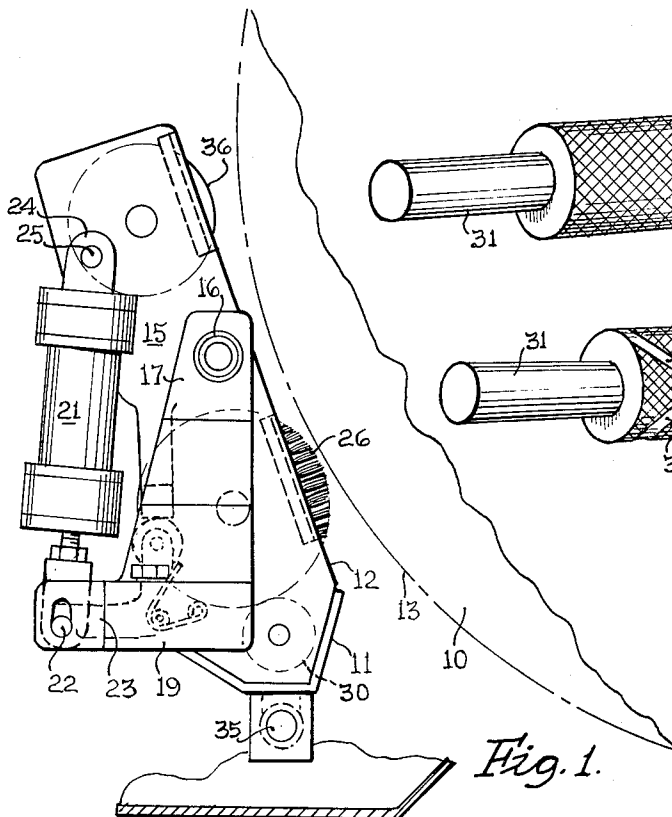


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MEANS FOR CLEANING THE CYLINDRICAL SURFACE OF
PRINTING PRESS BLANKET ROLLER
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3,089,415

MEANS FOR CLEANING THE CYLINDRICAL SURFACE OF PRINTING PRESS BLANKET ROLLER

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Our invention relates to means for cleaning the cylindrical surfaces of a printing press blanket roller.

An object of the invention is to provide a simplified arrangement for more effectively and economically cleaning a printing press blanket roller.

It is the ordinary custom to transfer from a trough or the like cleaning fluid to the cylindrical surface of the blanket roller. This has been accomplished by means of a rotatable brush which picks up the cleaning fluid from the trough and applies it to the surface of the blanket roller. One of the objectionable features of such an operation has been found to reside in the fact that either too little or too great an amount of cleaning fluid is applied to the blanket roller. When an insufficient amount of cleaning fluid is applied, the job of cleaning the roller is entirely unsatisfactory and the same is also true when too much cleaning fluid is applied to the blanket roller. In the latter situation, the fluid will flow from the surface of the blanket roller before the cleaning operation has been completed. Another objectionable feature to this operation is found in the fact that on the cylindrical surface of the blanket roller there is generally a certain amount of lint or other foreign matter which clings or becomes entangled in the bristles of the brush, with the ultimate result that the brush is rendered ineffective for its cleaning and scrubbing operation.

It is therefore one of the principal objects of my invention to provide an arrangement for evenly applying the cleaning fluid to the cylindrical surface of the blanket roller during the scrubbing operation thereof by the brush and to remove from the bristles of the brush lint and other foreign matter which may be collected by the brush during the cleaning and scrubbing operation.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing showing the preferred form of construction, and in which:

FIG. 1 is an end elevational view of the invention showing its relationship to a blanket roller;

FIG. 2 is a fragmentary plan view of the same;

FIG. 3 is a fragmentary perspective view of a cleaning applicator roller prior to its being grooved longitudinally;

FIG. 4 is a perspective view of the roller shown in FIG. 3, but showing the same grooved.

In the drawings which illustrate the preferred form of construction for carrying my invention into effect, a blanket roller of a printing press is fragmentarily illustrated at 10. It is the cylindrical surface of this blanket roller which is to be cleaned and scrubbed.

The mechanical means embodied in my invention for accomplishing this operation includes a trough 11 having an open front 12 confronting the cylindrical surface 13 of the blanket roller. This trough contains the cleaning fluid which is to be applied to the surface 13 of the blanket roller. Beneath the trough 11 is a drain pan 14. The trough 11 at its end walls 15 is provided with

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trunnions 16 which are journaled as at 17 in the upper end portions of brackets 19 disposed at opposite ends of the trough 11 and each supported by elements 20 of the printing press. The trough 11 is pivoted about its trunnions 16 by pneumatic cylinders 21 of any approved construction and operable in a manner well known in the art, there being a cylinder at each end of the trough. The casing of each cylinder 21 is pivoted as at 22 to an arm 23 of the bracket 19. The piston 24 of each cylinder is pivoted at 25 to a stud shaft provided by and extending from each end wall 15 of the trough 11.

The pivotal connection 25 between the piston 24 and the end wall 15 of the trough 11 is eccentric with respect to the trunnions 16. The arrangement is such that each time the cylinders 21 are charged, the pistons 24 will pivot the trough 11 about the trunnions 16, thereby to dispose a brush 26 into brushing and scraping engagement with respect to the cylindrical surface of the blanket roller 10.

The brush 26 is carried by a shaft 27 which has trunnions 28 journaled in suitable bearings 29 provided by the end walls 15. In order to apply a film of cleaning fluid to the brush 26, we arrange in the trough 11 an applicator roller 30. The ends of such roller terminate into stud shafts 31 journaled in suitable bearings 31'. The roller is positioned in the lower part of the trough 11 in bearing engagement with the bristles of the brush 26.

The cylindrical surface of the roller 30 is knurled as at 32. These knurls provide minute criss-cross depressions in such cylindrical surface which function to carry a predetermined amount of cleaning fluid so that when such fluid is transferred to the bristles of the brush by reason of contact between the roller 30 and the bristles, a film of cleaning fluid will be applied to the brush and by the brush transferred to the cylindrical surface of the blanket roller, thereby applying to such latter surface the amount of cleaning fluid necessary for the best performance of a scrubbing operation by the brush.

As before stated, if a heavy film or excessive amount of cleaning fluid is applied to the cylindrical surface of the blanket roller, an unsatisfactory scrubbing and cleaning operation results. As the space between the knurls is relatively shallow, at no time can an excessive amount of cleaning fluid be applied to the blanket roller.

During the cleaning and scrubbing operation of the blanket roller by the brush, lint and other foreign matter is collected by the brush and eventually such lint and foreign matter becomes entangled in the bristles of the brush to the extent of interfering with the proper cleaning of the blanket roller. To avoid such situation, we form in the roller 30 spiral grooves 33 and 34 which extend longitudinally in criss-cross fashion with respect to the roller 30. As the brush 26 and roller 30 rotate relative to each other, the bristles of the brush will fall into the spiral grooves and any lint or other foreign matter which may be on the bristles will be combed by the walls of the spiral grooves from the bristles. By this simple arrangement, the brush 26 is maintained substantially clean during the scrubbing and cleaning operation.

A suitable drain 35 is provided for draining the trough 11 whenever it is necessary or required.

The brush 26 and roller 30 are rotated simultaneously with respect to each other by suitable rotating means (not shown). Such means may be similar to that shown and described in our copending application, Serial No. 12,831, filed March 4, 1960, now Patent 3,049,997 granted August 21, 1962.

In the operation of our mechanism for combing and cleaning the blanket roller, there is at no time an overflow of fluid applied to the brush, with the consequence that the brush cannot in turn apply an overflow of fluid to the blanket roller.

It is understandable that the bristles at no time pass through the cleaning fluid in the trough 11 but that the level of the cleaning fluid is at all times maintained below the brush. The fluid by our mechanism is applied to the brush by our applicator roller 30. After the scraping and cleaning operation of the blanket roller, the fluid is drained from the trough 11 and a drier roller 36 is brought into contact with the blanket roller. This is accomplished by extending the pistons of the rollers 21 to their maximum extension.

From the foregoing construction, it will be apparent that we provide a simple and efficient arrangement for scraping and cleaning a blanket roller by the application of a proper amount of cleaning fluid thereto and that during such operation the bristles of the brush are subjected to a cleaning operation by virtue of the spiral grooves formed in the applicator roller.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A mechanism for scraping and cleaning the cylindrical surface of an elongated blanket roller comprising

- (a) a trough adapted to contain a cleaning fluid,
- (b) an elongated brush rotatable in the upper area of the trough above the level of the fluid therein,

(c) means for supporting the brush in contact with and for rotation relative to said surface of said blanket roller,

(d) and an elongated rotatable applicator roller mounted in said trough and having its cylindrical surface in bearing engagement with said brush and provided with shallow depressions functioning to transfer the fluid from said trough to the bristles of said brush in a uniform amount for transfer by said brush in the form of a film of fluid to said cylindrical surface of said blanket roller, the cylindrical surface of said applicator roller having intersecting spiral grooves formed thereon which engage and comb the bristles of said brush when said brush and applicator roller are rotated relative to each other.

2. The mechanism of claim 1 further characterized by the inclusion of means for pivoting said brush supporting means from and into engagement with said cylindrical surface of said blanket roller.

3. A mechanism for scraping and cleaning the cylindrical surface of an elongated blanket roller comprising

- (a) a trough adapted to contain a cleaning fluid,
- (b) an elongated brush rotatable in the upper area of the trough above the level of the fluid therein,

(c) means for supporting the brush in contact with and for rotation relative to said surface of said blanket roller,

(d) an elongated rotatable applicator roller mounted in said trough and having its cylindrical surface in bearing engagement with said brush, the cylindrical surface of said applicator roller being knurled to provide shallow depressions functioning to transfer the fluid from the trough to the bristles of said brush in a uniform amount for transfer by said brush in the form of a film of fluid to said cylindrical surface of said blanket roller, the cylindrical surface of said applicator roller further having intersecting spiral grooves formed thereon which engage and comb the bristles of said brush when said brush and applicator roller are rotated relative to each other,

(e) and means for pivoting said brush supporting means from and into engagement with said cylindrical surface of said blanket roller.

4. A mechanism for scraping and cleaning the cylindrical surface of an elongated blanket roller comprising

- (a) a trough adapted to contain a cleaning fluid,
- (b) an elongated brush rotatable in the upper area of the trough above the level of the fluid therein,

(c) means for supporting the brush in contact with and for rotation relative to said surface of said blanket roller,

(d) and an elongated rotatable applicator roller mounted in said trough and having its cylindrical surface in bearing engagement with said brush, the cylindrical surface of said applicator roller being knurled to provide shallow depressions functioning to transfer the fluid from the trough to the bristles of said brush in a uniform amount for transfer by said brush in the form of a film of fluid to said cylindrical surface of said blanket roller, and said cylindrical surface of said applicator roller having intersecting spiral grooves formed thereon which engage and comb the bristles of said brush when said brush and applicator roller are rotated relative to each other.

5. A mechanism for scraping and cleaning the cylindrical surface of an elongated blanket roller comprising

- (a) a trough adapted to contain a cleaning fluid,
- (b) an elongated brush rotatable in the upper area of the trough above the level of the fluid therein,

(c) means for supporting the brush in contact with and for rotation relative to said surface of said blanket roller,

(d) and an elongated rotatable applicator roller mounted in said trough and having its cylindrical surface in bearing engagement with said brush and provided with shallow depressions functioning to transfer the fluid from said trough to the bristles of said brush in a uniform amount for transfer by said brush in the form of a film of fluid to said cylindrical surface of said blanket roller.

(e) said applicator roller having means for combing the bristles of said brush when said applicator roller and said brush are rotated relative to each other.

6. A mechanism for scraping and cleaning the cylindrical surface of an elongated blanket roller comprising

- (a) a trough adapted to contain a cleaning fluid,
- (b) an elongated brush rotatable in the upper area of the trough above the level of the fluid therein,

(c) means for supporting the brush in contact with and for rotation relative to said surface of said blanket roller,

(d) and an elongated rotatable applicator roller mounted in said trough and having its cylindrical surface in bearing engagement with said brush, the cylindrical surface of said applicator roller being knurled to provide shallow depressions functioning to transfer the fluid from the trough to the bristles of said brush in a uniform amount for transfer by said brush in the form of a film of fluid to said cylindrical surface of said blanket roller,

(e) said applicator roller having means for combing the bristles of said brush when said applicator roller and said brush are rotated relative to each other.

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