Aug. 31, 1948. R. WHITE 2,448,478

PAPER ROLL HEADING MACHINE

Filed Dec. 7, 1945 2 Sheets-Sheet 1

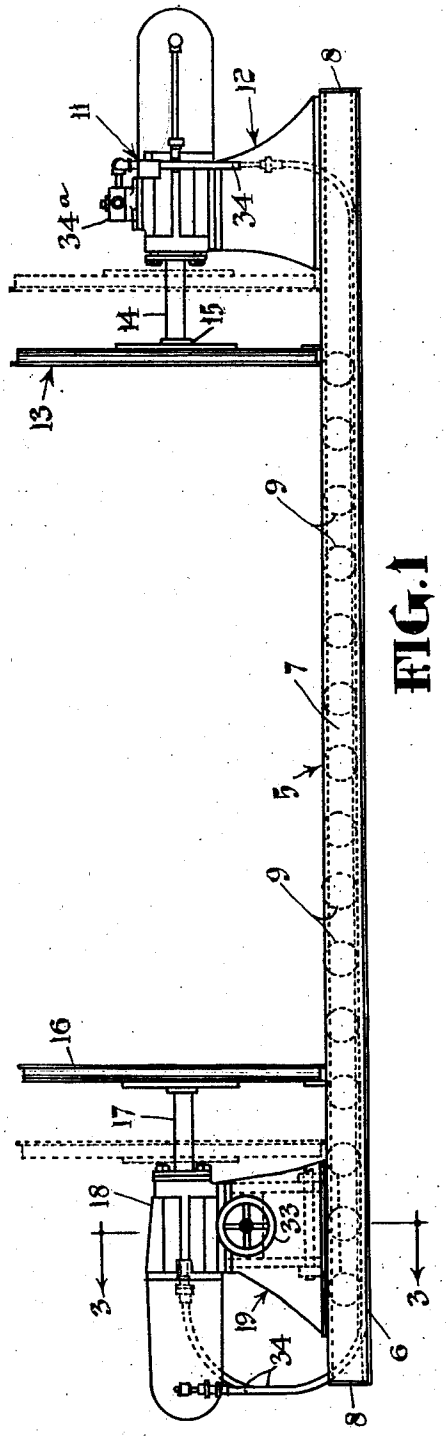


FIG. 1

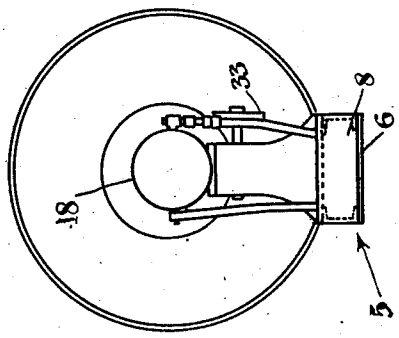


FIG. 2

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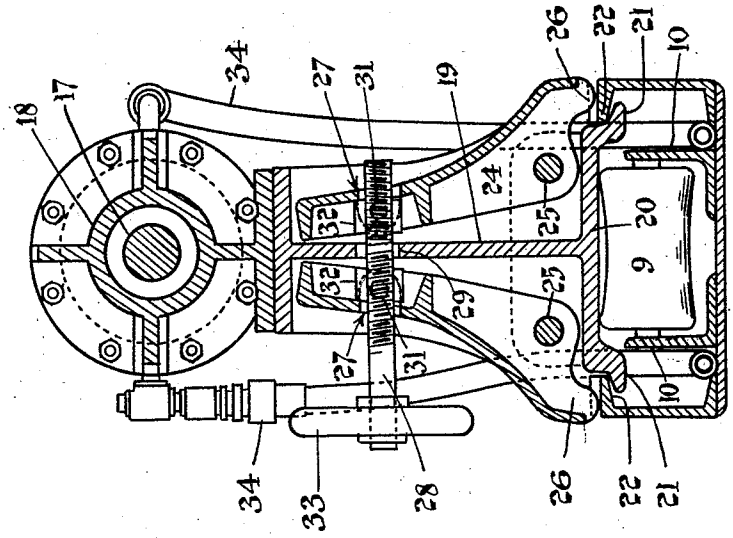


FIG. 4

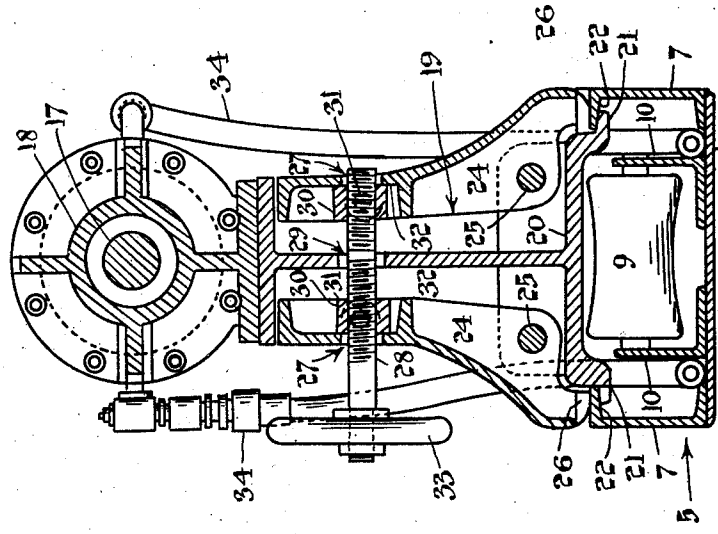


FIG. 3

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UNITED STATES PATENT OFFICE

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PAPER ROLL HEADING MACHINE

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5 Claims. (Cl. 93—1)

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This invention relates to paper roll heading machines used for applying adhesive disks of paper or the like to the ends of a wrapped roll of newsprint or other paper.

More particularly, the invention consists in the provision of an improved roll heading machine in which the header disks employed for pressing the paper disks against the ends of the wrapped roll of paper are carried by pistons working in cylinders mounted on a suitable base frame, one of said cylinders preferably being stationary and the other cylinder being movable to different positions of adjustment to suit the length of the paper roll being headed.

Another feature of the invention consists in the provision of novel means for clamping the movable cylinder to the base frame to hold said cylinder stationary on the frame during the roll heading operation.

A further feature of the invention consists in providing the base frame of the improved roll heading machine with rollers over which movable cylinder travels during adjustment thereof, said rollers also serving to support the paper roll during the roll heading operation.

Other features and advantages of the invention will be more readily understood from the following detailed description taken in connection with the accompanying drawings.

Fig. 1 is a side elevational view of a roll heading machine embodying the invention.

Fig. 2 is an end view of the assembly shown in Fig. 1.

Fig. 3 is a sectional view taken substantially on the section line 3—3 of Fig. 1.

Fig. 4 is a view, similar to Fig. 3 but showing the parts in a different position.

Referring more particularly to the drawings, 5 designates a base frame including bottom plate 6, side channel 7, end members 8. This frame is equipped with transversely extending rolls 9 spaced along the bottom plate 6 in elevated relation thereto. Each roll is journalled in supporting brackets 10 rising from bottom plate 6 in spaced relation to the side channels 7.

A stationary cylinder 11 is located at one end of frame 5 and is supported thereon by a fixed supporting bracket or standard 12. Cylinder 11 contains a piston (not shown) which operates a hollow header disk 13 fixed to piston rod 14 by connecting means 15 which permits the disk to oscillate slightly in all directions relating to said piston rod. Disk 13 is electrically heated by a suitable electric heating coil or resistance contained therein. This heating coil or resistance

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is not shown since it may be of any suitable type and may be connected in any suitable electrical circuit arrangement.

Disk 13 is opposed to and co-operates with a similar header disk 16 carried by piston rod 17 of a piston (not shown), working in a second travelling cylinder 18 carried by a supporting bracket 19 arranged to travel on the rolls 9 in the lengthwise direction of the base.

As shown to advantage in Figs. 3 and 4, bracket 19 includes a flat roller engaging base or bearing portion 20 provided with marginal gripping flanges 21 disposed beneath the top flanges 22 of channel members 7.

A pair of gripping jaws 24 are arranged at opposite sides of bracket 19 and are pivoted thereto as indicated at 25.

The lower ends 26 of jaws 24 are disposed above the top flanges 22 of channel members 7. The upper ends of jaw 25 are provided with openings 27 for the passage of a jaw operating screw 28 which also passes through an opening 29 in the upper portion of bracket 19.

Screw shaft 28 is threaded through nuts 30 which are swivelled as indicated at 31 to brackets 32 carried by jaws 24. A hand wheel 33 is fastened to one end of screw shaft 28 to facilitate turning thereof.

Air or other pressure fluid from any suitable source, is delivered to each of the cylinders 11 and 18 through control valve 34a and suitable fluid conduits 34 to operate the pistons working in said cylinders to advance or retract the disks 13 and 16.

When the jaws 24 are positioned as shown in Fig. 4 they lie above and clear of the top flanges 22 of the frame channel 7. In this position of jaws 24 the flat base or bearing portion 20 of bracket 19 rests on and is supported by the underlying rollers 9. In this position of jaws 24 and bracket 19 the assembly comprising disk 16 cylinder 18 and bracket 19 is free to travel over the rollers 9 to any desired position of adjustment along the base 7, to suit the length of the paper roll to be headed. After the cylinder 18 has thus been shifted to the desired position on frame 7, it is secured in adjusted position by operating the screw shaft 28 to swing jaws 24 from the position shown in Fig. 4 to Fig. 3. During this operation of jaws 24 the lower ends 26 are brought into engagement with the top flanges 22 of side channel 7 to exert a lifting action on the bracket 19 which results in raising said bracket to a position in which the top flanges 22 of side channel 7 are firmly clamped between the gripping flanges 21

of bracket 19 and the lower end portions 26 of jaws 24. Bracket 19 is thus raised clear of its supporting rolls 9 and firmly clamped to the base frame 7 to hold the cylinder 18 stationary during the roll heading operation.

The machine described herein is used in the customary manner for roll heading operations. The paper roll to be headed is placed on the supporting rolls 9 of frame 7 so that it lies between the disks 13 and 16.

The paper roll is placed on the supporting rolls 9 with disks 13 and 16 retracted to the dotted line position shown in Fig. 1. If the distance between cylinders 11 and 18 is too great for effective heading of the roll, the cylinder 18 is moved the required distance in the direction of cylinder 11, and is then clamped in place by the clamping jaws 24. The heading operation is then proceeded with by applying adhesive header disk of paper to the ends of the paper roll and then operating the pistons of cylinders 11 and 18 to force the heated header disks 13 and 16 of the machine against the said paper disk to complete the roll heading operation.

The rolls 9, on which the paper roll is supported, also enable the paper roll to be centred between disks 13 and 16 by the centering action of the roll heading units.

Having thus described the nature of my invention and a preferred embodiment, it will be understood that various modifications may be resorted to within the scope and spirit of the appended claims.

I claim:

1. In a roll heading machine, a base frame including side members provided with inwardly directed flanges at their upper ends, transversely extending rollers journalled in said frame and a roll heading unit movable longitudinally of said frame, said unit comprising a cylinder, a header disk carried by a piston working in said cylinder, a cylinder-supporting element including a base portion adapted, at times, to rest on said rollers for movement longitudinally of said frame, said base portion including gripping flanges underlying the flanges projecting inwardly from the side members of the frame and pivotally mounted gripping jaws carried by said cylinder-supporting elements and adapted to be moved into and out of clamping engagement with the upper surfaces of the aforesaid frame flanges, the arrangement being such that the flanges of the base portion of the cylinder-supporting element are lifted off the rollers and into gripping engagement with the lower surfaces of the frame flanges when said jaws are operated into clamping engagement with the upper surfaces of said frame flanges.

2. In a roll heading machine, a base frame including side members, transversely extending rollers journalled in said frame, a roll heading unit movable longitudinally of said frame, said unit comprising a cylinder, a header disk carried by a piston working in said cylinder, a cylinder-supporting element including a base portion normally supported by said rollers for free travelling movement longitudinally of said frame, and means for shifting said base portion out of contact with said rollers and into pressure contact with portions of said frame to thereby secure the roll heading unit against movement relatively to said frame.

3. In a roll heading machine, a base frame including side members provided with inwardly directed flanges at their upper edges, transversely extending rollers journalled in said frame between said side members, a roll heading unit movable longitudinally of said frame, said unit comprising a cylinder, a header disk carried by a piston working in said cylinder, a cylinder-supporting element including a base portion normally supported by said rollers for free travelling movement longitudinally of said frame, said base portion including marginal portions underlying said flanges and means for raising the base portion of the roll heading unit clear of said rollers and into pressure contact with the lower surfaces of said flanges to thereby secure the roll heading unit against travelling movement relatively to said frame.

4. In a roll heading machine, a base frame including side members provided with inwardly directed flanges, transversely extending rollers journalled in said frame, a roll heading unit movable longitudinally of said frame, said unit including a base member normally supported by said rollers for free movement longitudinally of said frame, opposite marginal portions of said base member being positioned directly beneath and in spaced relation to the undersides of said flanges when said base member is supported on said rollers, and combined lifting and clamping means carried by said roll heading unit and engageable with the upper sides of said flanges to raise the flange opposing margins of said base member into pressure contact with the undersides of said flanges to thereby secure the roll heading unit against travelling movement relative to said frame.

5. A roll heading machine as set forth in claim 4, in which the last mentioned means comprises a pair of vertically extending jaw members intermediately pivoted to portions of the roll heading unit located above said base member, means for swinging said jaws about their pivotal axes to cause the portions of the jaws extending below said axes to approach or recede from each other, the last mentioned portions of the jaws being formed so that, during their approaching movement, they engage the upper sides of said flanges to lift the base member of the roll heading unit off the rollers and into pressure contact with the lower sides of said flanges, said last mentioned portions of the jaws being also formed so that as they recede from each other, they pass out of engagement with said flanges and permit the base member of the roll heading unit to drop down upon said supporting rollers.

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