Oct. 17, 1944. R. WILSON 2,360,627

SPRAYING DEVICE

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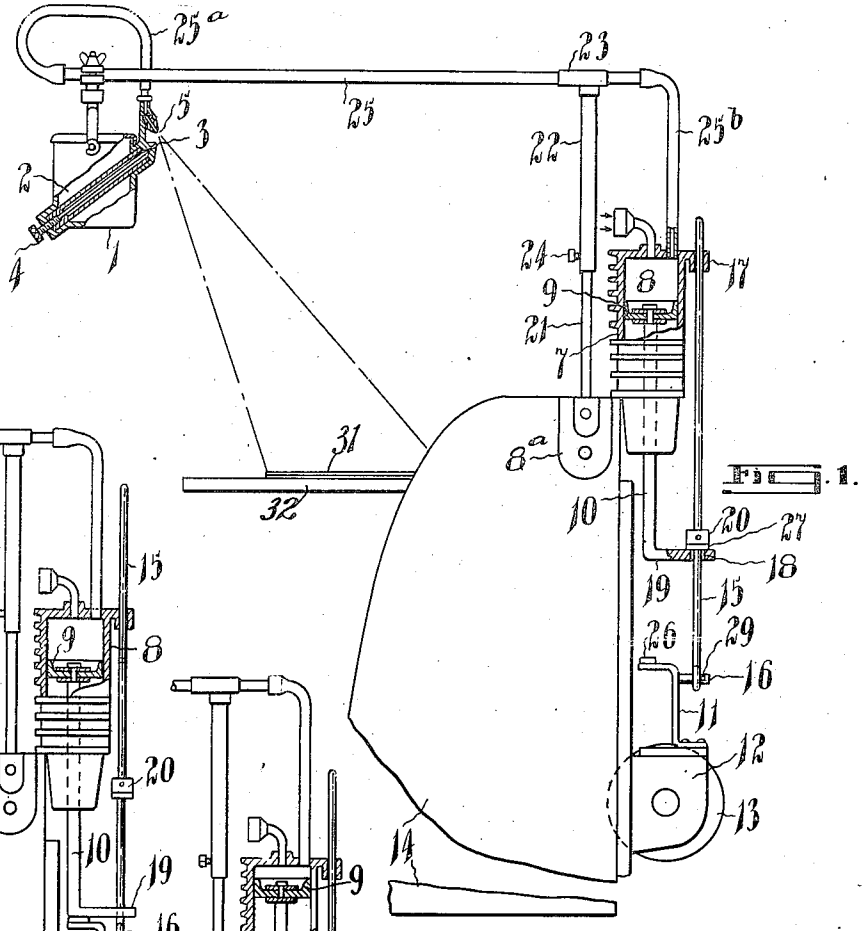


Fig. 1.

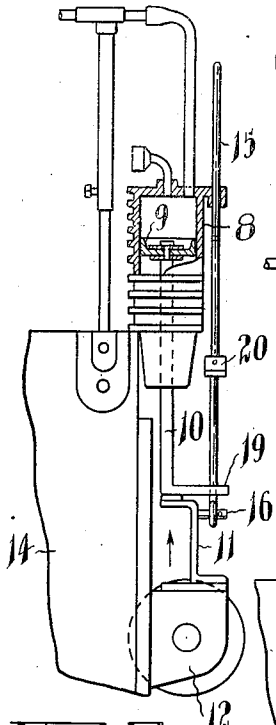


Fig. 2.

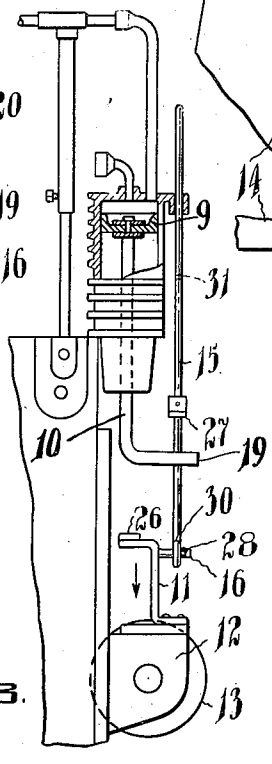


Fig. 3.

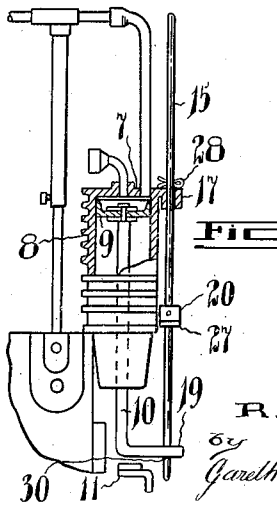


Fig. 4.

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SPRAYING DEVICE

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4 Claims. (Cl. 91—45)

This invention relates to spraying devices and more particularly to such devices used in connection with small printing presses for spraying freshly printed sheets to prevent offset. Heretofore such devices have been so designed that the parts thereof would break or jam and cause a great deal of trouble, delay and costly repairs. My object is to devise simple and positively actuated equipment of this character for overcoming the above mentioned objections.

The constructions are hereinafter fully described and are illustrated, by way of example, in the accompanying drawing in which

Fig. 1 is a side elevation of a portion of a vertical printing press showing my spraying device attached thereto, the parts being in their initial positions;

Fig. 2 a detail showing the reciprocating cylinder frame with its oscillating printing cylinder and moving part moving upwardly, the said part being in engagement with the plunger rod;

Fig. 3 a detail showing the reciprocating cylinder frame moving downwardly with the abutment for returning the plunger, still clear of the extension on the plunger rod; and

Fig. 4 another detail showing the sliding rod held in an inoperative position.

1 is an atomizer which includes a chamber 2 for receiving the spraying material which is preferably a liquid adapted when sprayed to be converted into a fine powder which settles on the freshly printed sheet being sprayed to prevent offset. The chamber is provided with a spray jet 3 which may have a needle valve controlled by an adjusting screw 4 for regulating the volume of the flow of the spraying material through said jet. The air jet 5 of the atomizer is connected as hereinafter described with a pump or compressor 7.

The pump 7 includes a cylinder 8 in which a plunger 9 is reciprocated. The plunger is provided with a plunger rod 10 which projects through the lower end of the cylinder 8 and is adapted to be engaged by a part 11 which is secured to any suitable moving member, such as a reciprocating cylinder frame 12, of a printing press. The frame 12, in the vertical printing press shown, carries the oscillating cylinder 13 for presenting the sheet to be printed to the type (not shown) and is reciprocably guided on the stationary frame 14 of the press. The cylinder 8 is also suitably secured to said frame 14 and is so positioned thereon that the moving part 11 will engage the lower end of the plunger rod 10 near the end of the upward stroke of the cylinder frame 12, as shown in Fig. 2.

The plunger 9 is moved downwardly during the return stroke of the cylinder frame 12, by means of a lost motion device whereby the plunger is returned to its initial position. The lost motion device comprises a sliding member 15 which may be removably mounted on a stud 16 secured to the moving part 11. The sliding member is suitably guided in a block 17 located at the upper end of the cylinder 8 and passes through an opening 18 formed in a lateral extension 19 of the plunger rod 10. On the sliding member is adjustably mounted an abutment 20 adapted to engage the upper surface of the extension 19 as the moving part 11 nears the end of its return stroke, see Fig. 3. The plunger is thus returned to its initial position as shown in Fig. 1 for engagement by the moving part 11 on the succeeding upward stroke of the cylinder frame 12. By adjusting the abutment 20 on the sliding member 15, the stroke of the pump plunger 9 may be varied to vary the amount of air supplied to the air jet 5 of the atomizer 1.

To the base 8^a of the pump cylinder 8 is secured a standard 21 on which the stem 22 of a T shaped tube support 23 is vertically adjustable. The stem is releasably locked, as adjusted, by means of a set screw 24. The cross portion of the T support is tubular for receiving a tube 25 on which the atomizer 1 is slidably mounted so that it may be adjusted longitudinally of the tube. Vertical adjustment of the atomizer is effected by moving the stem 22 on the standard 21. The air jet 5 is connected by tubing 25^a with the tube 25 and the latter is connected by tubing 25^b with the pump cylinder 8.

Each sheet 31 is printed on the upstroke of the cylinder frame 12 and each printed sheet is piled on a platform 27 of the press in the usual manner during the downstroke of the cylinder frame. It will thus be seen that as each sheet is being printed, the previously printed sheet, which is the uppermost sheet of the pile on the platform 32, is being sprayed. The amount of spraying material used on each sheet is regulated by adjusting the abutment 20 to vary the amount of air supplied to the atomizer.

The upper surface of the moving part 11 may be provided with a felt or other soft disk 26 to eliminate noise when the part 11 engages the plunger rod 10 to force the plunger upwardly in the cylinder. On the return stroke of the cylinder frame 12, the part 11 moves away from the plunger rod which is not returned until the abut-

ment 20 engages the extension 19. The underside of the abutment is provided with a felt washer 27 to eliminate noise between the abutment and the extension.

To enable the printing press to be operated without the spraying device, the sliding member 15 is removed from the stud 16 by withdrawing a cotter pin 28 from a transverse hole 29 in the stud. The lower end of the member is provided with a shoulder 30 for engaging the under side of the extension 19 and the upper end of the member 15 is provided with a hole 31 adapted to receive the cotter pin 28 which rests on the block 17 to retain the member 15 and the plunger 9 in their inoperative position.

What I claim as my invention is:

1. In a printing press, a reciprocating part, an atomizer for spraying sheets after they have been printed, a pump for supplying air to the atomizer, said pump having a reciprocating plunger, and a lost motion connection coupling said reciprocating part to said reciprocating plunger and positively operable to actuate the plunger first in one direction and then in the opposite direction during a limited portion only of each stroke of said part in corresponding directions.

2. In a printing press, a reciprocating part on said press, an atomizer for spraying sheets after they have been printed, a pump, including a reciprocating plunger, for supplying air to the atomizer, said plunger having an actuating part positioned so that the reciprocating part of the press will engage and move the plunger actuating part during a limited portion only of the stroke of the press part in one direction, a sliding member connected with one of said plunger actuating and press parts, and an abutment on the sliding member positioned to positively engage the other of said plunger actuating and press parts during a portion only of the stroke of the press part in the reverse direction.

3. In a printing press, a reciprocating part, an atomizer for spraying sheets after they have been printed, a pump for supplying air to the atomizer, said pump having a reciprocating plunger, a plunger rod connected to the plunger and positioned so that the reciprocating part will engage said rod for a portion of the stroke of said reciprocating part in one direction, a sliding member connected with the said reciprocating part, and an abutment on said sliding member and positioned to positively engage the said plunger rod for a portion of the stroke of said reciprocating part in the reverse direction.

4. In a printing press, a reciprocating part, an atomizer for spraying sheets after they have been printed, a pump for supplying air to the atomizer, said pump having a reciprocating plunger, a plunger rod connected with the plunger and positioned for engagement by said reciprocating part to move the plunger in one direction, a lateral extension carried by the plunger rod and having an opening therethrough, a sliding member connecting with the reciprocating part and passed through the opening in the extension, and an abutment adjustably mounted on the sliding member for engaging the extension to positively cause the plunger to be moved in the other direction a variable distance relative to the movement of the reciprocating part.

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