June 16, 1953 E. E. KING 2,642,317

SPRAY GUN

Filed Jan. 18, 1951 2 Sheets-Sheet 1

Fig. 1.

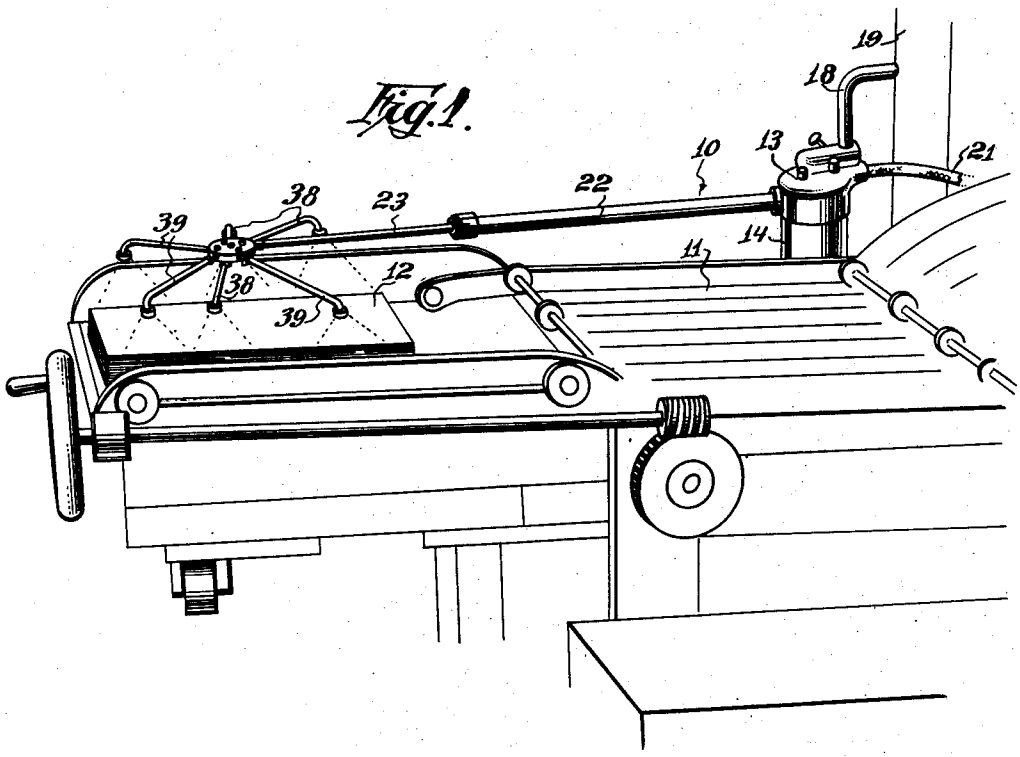
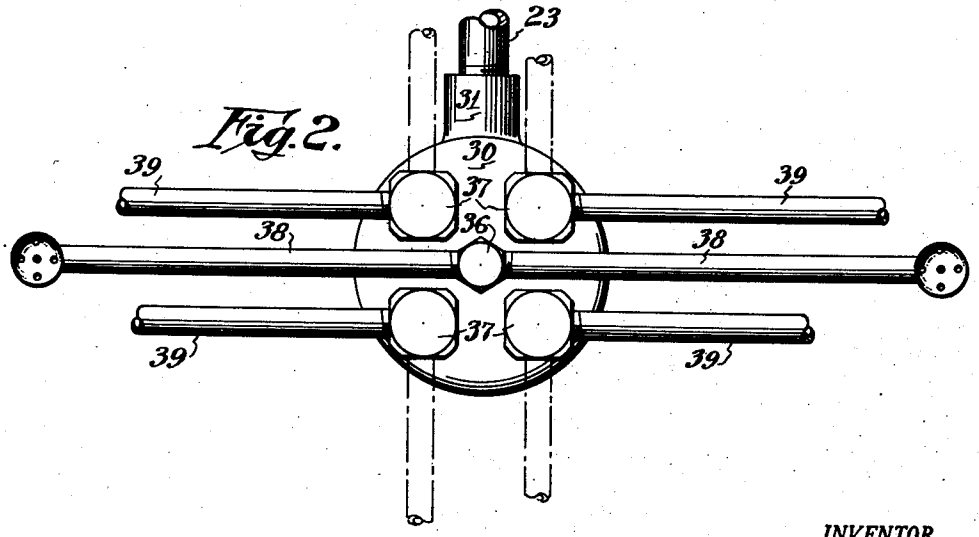


Fig. 2.



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Fig. 3.

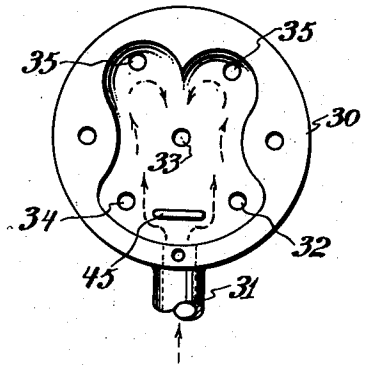


Fig. 8.

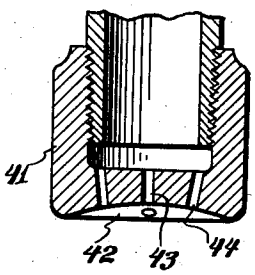


Fig. 4.

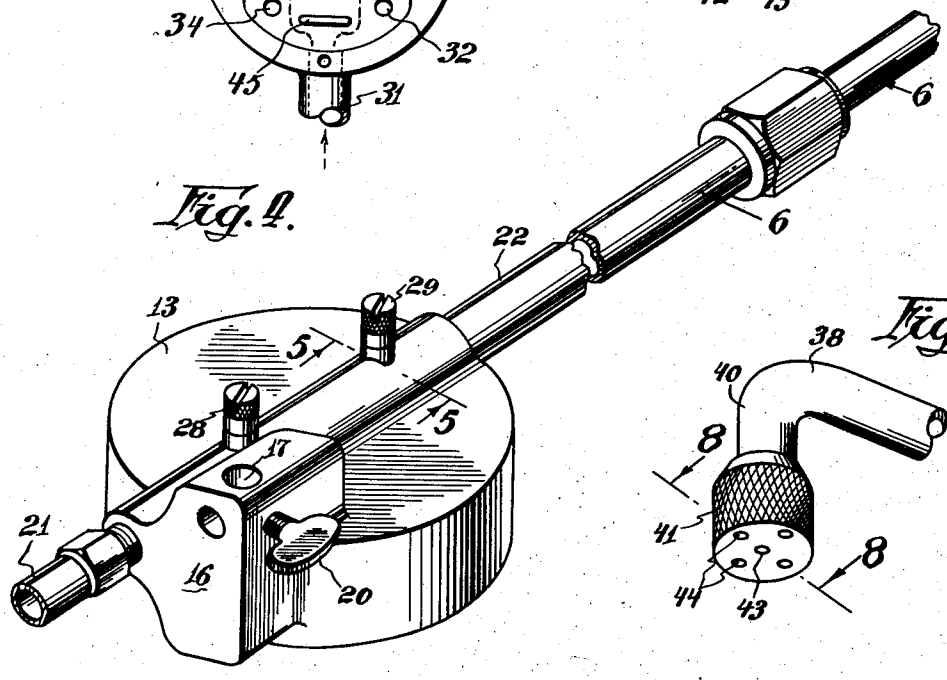
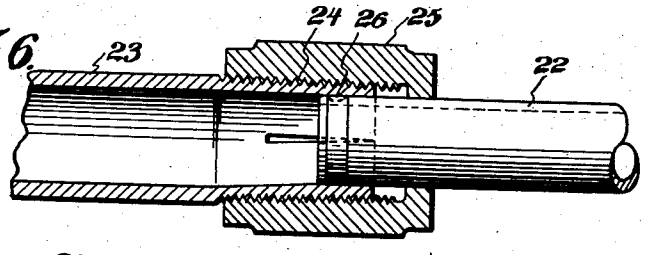


Fig. 7.

Fig. 6



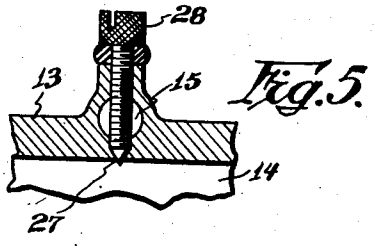


Fig. 5.

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SPRAY GUN

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3 Claims. (Cl. 302—63)

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This invention relates to printing machinery and more especially to apparatus for dusting printed sheets to prevent them from sticking together and smearing. In printing machinery it has heretofore been a problem to prevent smearing and sticking together of printed sheets when being stacked after the printing operation and while numerous means have been heretofore devised for alleviating this situation the present invention has been developed to more efficiently and satisfactorily overcome this problem.

It is therefore an object of the invention to provide novel and improved means for dusting printed sheets with a powder or other substance which effectively prevents smearing of the ink of the printed sheets and also keeps the sheets from sticking together.

Another object of the invention is to provide improved apparatus for dusting printed sheets with a substance to prevent smearing, which apparatus may be readily positioned for operation on existing printing presses and which apparatus may be adjustable to accommodate to varying printing press conditions.

An additional object of the invention is to provide a novel dispersion chamber and nozzle for spraying a powder or other substance onto printed sheets for preventing smearing and sticking of the sheets occasioned by the fresh ink thereon.

Other objects and advantages will appear and be brought out more fully in the following specification, reference being had to the accompanying drawings.

In the drawing:

Figure 1 is a perspective view of a printing press, showing the present invention in association therewith.

Figure 2 is a bottom view of the dispersion chamber and nozzle unit shown in Figure 1.

Figure 3 is a plan view with the top plate removed of the dispersion chamber shown in Figures 1 and 2.

Figure 4 is a perspective view of the top of the powder supply tank and the supporting means for the dispersion chamber.

Figure 5 is a partial sectional view taken along the line 5—5 of Figure 4.

Figure 6 is a sectional view taken along the line 6—6 of Figure 4.

Figure 7 is a perspective view of one of the spray nozzles shown in Figure 1.

Figure 8 is a sectional view taken along the line 8—8 of Figure 7.

Figure 1 of the drawing shows a printing press 10 having a conveyer mechanism 11 for receiving and removing sheets printed by press 10, which sheets are deposited in a stack formation 12 at the end of the press. A casting 13 comprises the cover of a powder supply tank 14 and is formed with a bore 15 and a block 16, the latter having one or more holes 17 to receive a bracket member 18 by which the supply tank may be supported from a frame member 19 of the printing press 10, member 17 being secured to block 16 by a wing screw 20 or in other equivalent manner.

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A pipe or tube 21 for the supply of air under pressure is suitably connected to one end of bore 15 and a discharge pipe 22 extends from the other end of bore 15 and is connected to a pipe 23 by extending into the split threaded end 24 thereof, a clamping nut 25 being so arranged as to compress end 24 against a sealing ring 26 on the end of pipe 22 whereby to effect a sealed connection between the two pipes, pipe 23, however, being longitudinally adjustable with respect to pipe 22. A casting 13 has a pair of openings 27 which communicate between bore 15 and the interior of tank 14 and a pair of valves 28 and 29 are provided for controlling the flow of air into tank 14 and a supply of air-borne powder from tank 14 into discharge pipes 22 and 23.

A dispersion chamber 30, generally in the form of a flat cylinder, is secured to a pipe 23 and has an inlet connection 31 of conventional type and is formed with a dispersion chamber cavity 32 and has a cover plate which may be removed. A plurality of bores 33, 34 and 35 extend through the bottom of the chamber 30 and are connected to swivel fittings 36 and 37 to which are connected a plurality of nozzle tubes 38 and 39 respectively as shown in Figures 1 and 2. Tubes 38 and 39 have downwardly directed ends 40 to which are connected nozzles 41, each formed with a concave recess 42 and a plurality of discharge passages 43 and 44, the latter being arranged concentrically about the central passage 43. A baffle 45 is positioned in cavity 32 to deflect the flow from pipe 23 and the side walls of the cavity are directed inwardly as shown whereby an even distribution of the dusting powder is directed to bores 33, 34 and 35.

The operation of the invention should be clear from the foregoing description. A supply of suitably selected dusting powder is placed in tank 14 and a supply of air under pressure connected to pipe or tube 21. Valves 28 and 29 may be suitably adjusted and upon the operation of the printing press a supply of air-borne powder will be discharged from each nozzle 41. As can be seen in Figure 1, tubes 39 are longer than

tubes **38** and the tubes may be arranged in various angular positions over the stack of printed sheets **12** so that a substantially uniform supply of dusting powder can be applied over the printed sheets, which powder will prevent the sheets from sticking together or smearing. The connection between pipes **22** and **23** is such that dispersion head **30** may be moved inwardly or outwardly or changed in its angular position with respect to stack of sheets **12**.

While in the foregoing there has been shown and described the preferred form of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

I claim:

1. Dusting apparatus for printed sheets comprising, in combination, a tubular supporting arm through which dusting material is caused to travel, a flat cylindrical body having a shallow dispersion chamber therein, a radial inlet to said chamber having an end of said tubular arm connected therewith for discharge into the chamber, said body having a plurality of outlet ports opening from said chamber through one flat side of the body, a plurality of nozzle tubes each having one end swivelly connected in an outlet port and extending outwardly from the body, said tubes being disposed in a common plane parallel with said one flat side of the body and swingable in said plane to extend in different directions from the body, and a downwardly directed discharge nozzle carried upon the outer end of each tube.

2. The invention according to claim 1, wherein said flat body has an outlet port at the axial center thereof, a swivel coupling in said center port, a pair of oppositely extending nozzle tubes carried by the central swivel coupling to turn as a unit with the coupling, and a nozzle upon the outer end of each of the last named tubes.

3. The invention according to claim 2, wherein the first named outlet ports are arranged in a circle around said center port and wherein the first named nozzle tubes are of greater length than the said pair of oppositely extending nozzle tubes.

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