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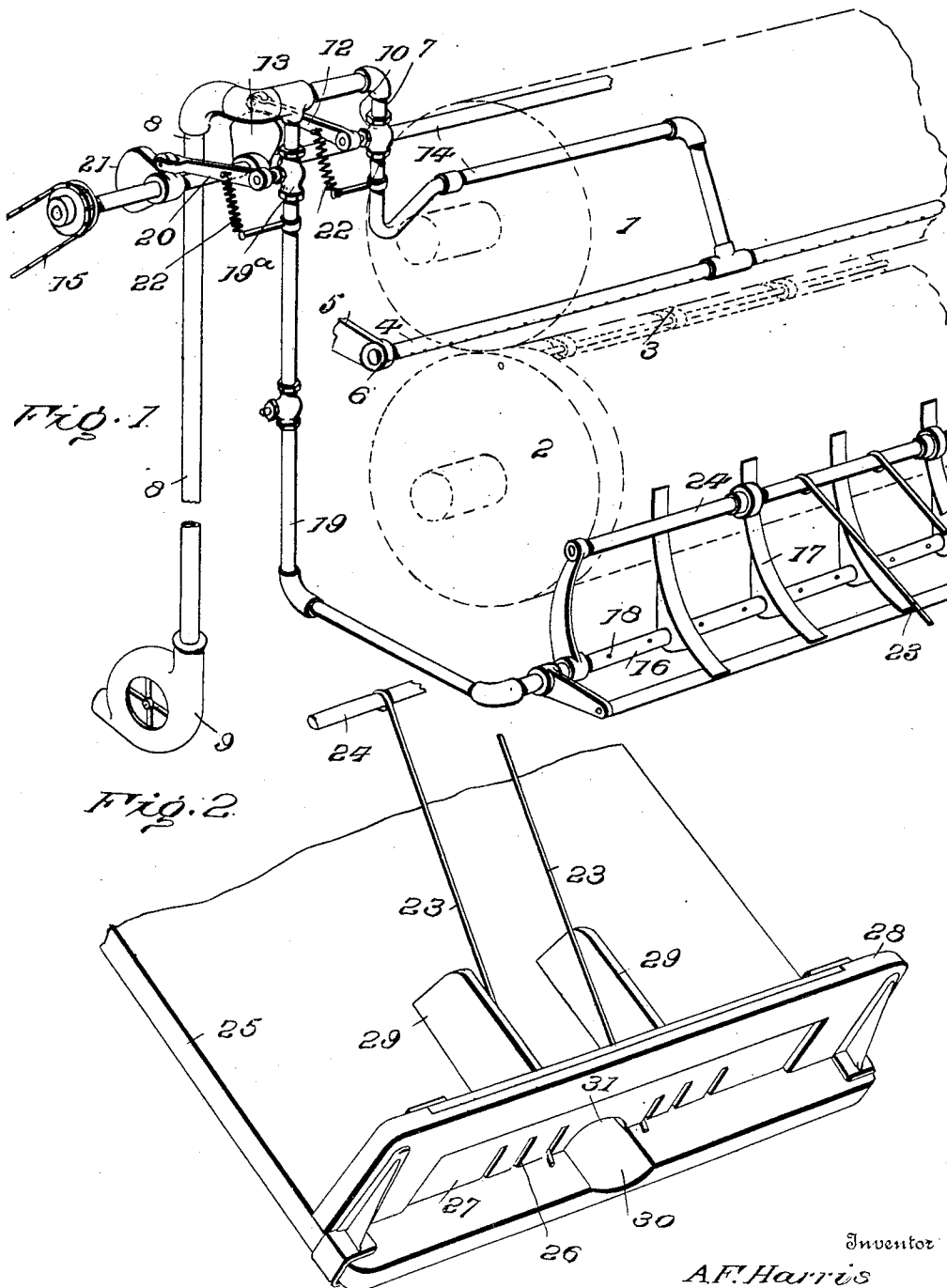
PATENTED AUG. 6, 1907.

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FEEDING AND DELIVERY MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED AUG. 21, 1906.

2 SHEETS—SHEET 1.



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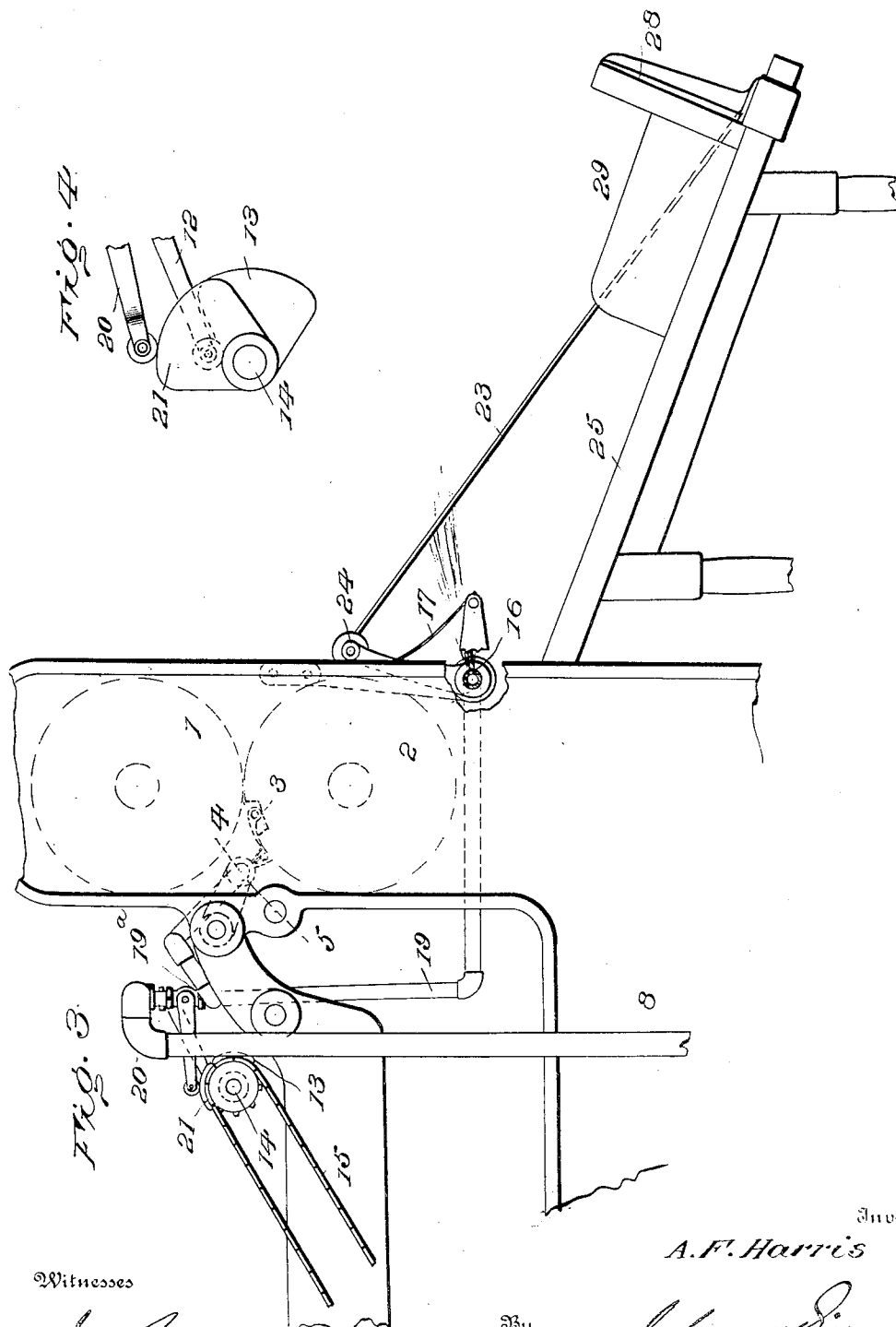
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED F. HARRIS, OF WARREN, OHIO, ASSIGNOR TO THE HARRIS AUTOMATIC PRESS COMPANY, OF NILES, OHIO, A CORPORATION OF OHIO.

FEEDING AND DELIVERY MECHANISM FOR PRINTING-PRESSES.

No. 862,330.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed August 21, 1906. Serial No. 331,508.

To all whom it may concern:

Be it known that I, ALFRED F. HARRIS, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Feeding and Delivery Mechanisms for Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide in a printing press employing air blasts in connection with the feeding and delivery mechanisms, simple and highly efficient means for controlling the outlet and cut-off of the air. And a further object is to insure the deposit of each sheet upon previously printed sheets in a manner that will prevent rubbing or smearing, the means employed for that purpose being utilized to aid in drying the ink on the preceding sheet.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective, showing an attachment for carrying out my invention, the cylinders of a printing press being shown in dotted lines. Fig. 2 is a similar view of the lay-boy and retaining wires. Fig. 3 is a side elevation. Fig. 4 is a fragmentary detail.

Referring to the drawings, 1 designates a type-carrying cylinder, and 2 the impression cylinder of a rotary printing press, the last mentioned cylinder being provided with ordinary grippers 3.

4 designates an air-discharge pipe mounted at its ends in holders 5 and located in parallelism to, and slightly above, and in front of, the impression cylinder, the stock being fed to the latter by any suitable means. In the under face of this pipe are holes or perforations 6 through which the air is discharged, and at one end this pipe is connected by a branch 7 to a supply-pipe 8 leading from a blower indicated at 9. The passage of the air is controlled by a valve 10 having an arm 12 which is actuated by a cam 13 on a constantly rotating shaft 14 driven by a chain 15 actuated preferably by the press gearing. The valve 10 is turned to allow the air to be discharged against the stock as the latter is brought to position prior to being engaged by the grippers, the stock being thereby flattened against the impression cylinder to remove any bend or curve therein. The blast continues as the stock travels forward with and around the cylinder, being carried by the grippers thereof, but is momentarily discontinued; by the closing of valve 10, as the rear end of the sheet passes onto the cylinder, so as to prevent such end from being lifted away from the latter.

16 designates a second air-discharge pipe suitably supported at a point beneath and slightly in rear of and parallel with the impression cylinder so that the

stock as it leaves the latter and travels rearwardly over stripper-fingers 17, will intersect the zone of blasts of air emitted through openings 18 in said pipe. These blasts are at an angle to the plane of travel of the stock, and act as carriers for the latter, preventing each sheet from rubbing previously printed sheets, and where static electricity is present in the stock, such blasts obviate the tendency of the forward edges to adhere to the top of the pile. The supply of air is discontinued as the rear end of a sheet reaches the zone thereof, and the air thereunder serves as a cushion therefor as it drops on the printed pile. Such air also aids materially in drying the printed surface of the last previously printed sheet.

The pipe 16 is connected by a branch 19 with the air-supply pipe 8, and in said branch is an air valve 19^a similar in construction and arrangement to valve 10, in axial line with which it is located. It is likewise provided with an arm 20 which is engaged by a cam 21 on shaft 14. The two valve arms 12 and 20 are normally held against their respective cams by springs 22. The valve 19^a is turned to allow air to be discharged against the stock as the latter leaves the cylinder, and is discontinued as the rear end of the stock reaches the blast zone. To provide for varying the length of each blast, according to the size of the stock being printed, the cams are preferably capable of being elongated or shortened, or cams of different sizes may be used.

23 designates wires which are loosely hung at their upper inner ends on a cross rod 24 and occupy an oblique position relative to the top of the lay-boy 25 which, as shown, occupies an inclined position. These wires at points near their lower, free ends, intersect the plane of travel of the stock, and said ends normally rest against the top of the lay-boy, being extended through slots 26 in a gate 27 mounted in a suitable stop 28. The lower ends of the wires are free to be raised in their respective slots 26, as the height of a pile of stock increases. The lower ends of the wires being in engagement with the lay-boy, or the lower edge of the pile of printed stock, the seating of each sheet is insured by reason of its engagement, sooner or later, with such wires. If there be an upward curl in the stock the wires prevent any deflection, while any downward curl is removed by the blast of air. The deposit on the pile is without sliding engagement, and in consequence all danger of smearing or blurring the ink of a previously printed sheet is avoided. Furthermore, each sheet is gradually lowered, being buoyed by the volume of air thereunder, which air aids in drying the ink of the last previously deposited sheet.

It is manifest that any desired number of retaining wires may be employed, although I have only shown two such: The number depends upon the width of the stock, and the latter controls the space allowed

therefor between the adjustable side guides 29. From time to time the attendant inserts his hand through the cut-out 30 in the upper face of the lay-boy and into the cut-out 31 in the lower edge of the gate 27, and lifts the latter sufficiently to grasp the pile of stock and withdraw it beneath the gate, which is immediately returned to its normal position by gravity.

I claim as my invention:

1. In a printing press having an impression cylinder, the combination of means for supplying a blast of air against stock as it passes onto said cylinder, means for supplying a blast of air against the underside of stock at an angle to its plane of travel from said cylinder, valves for controlling the air-supply to each of said means, and means for actuating both of said valves.

2. In a printing press having an impression cylinder, the combination of means for supplying a blast of air against stock as it passes onto said cylinder, a perforated pipe located adjacent to and beneath the plane of travel of the stock as it is discharged from said cylinder, an air-supply pipe connected to said means and also to said perforated pipe, separate valves controlling the passage to said means and pipe, and a shaft for actuating both of said valves.

3. The combination with a printing press having an impression cylinder, of a lay-boy set on an incline, means for supplying a blast of air above said lay-boy and against the underside of stock as it leaves said cylinder, said blast being at an angle to the plane of travel of such stock and discontinued as the rear end of each sheet of stock reaches the zone thereof, and means extending from about the point of discharge of the stock from said cylinder to the lay-boy, and against the underside of which such stock is designed to engage for insuring the proper seating thereof on the lay-boy.

4. The combination with a printing press having an impression cylinder, of a lay-boy occupying an inclined position, retaining wires extended obliquely over said lay-boy, from about the point of discharge of the stock from said cylinder, with their lower ends normally lying against the latter, and means located beneath the upper ends of said wires for supplying blasts of air obliquely against the underside of stock as it leaves the press, said stock being guided by said wires onto the lay-boy.

5. The combination with a printing press having an im-

pression cylinder, of a lay-boy occupying an inclined position, retaining wires extended obliquely over said lay-boy, from about the point of discharge of the stock from said cylinder, with their lower, free ends normally lying against the latter, a stop on said lay-boy intersected by the lower ends of said wires, and means located beneath the upper ends of said wires for supplying blasts of air obliquely against the underside of stock as it leaves the press.

6. The combination with a printing press having an impression cylinder, of a lay-boy occupying an inclined position, retaining wires extended obliquely over said lay-boy, with their lower free ends normally lying against the latter, a vertically-movable gate on said lay-boy having slots to accommodate said wires, and means for supplying blasts of air obliquely against the underside of stock as it leaves the press.

7. The combination with a printing press having an impression cylinder, of a lay-boy occupying an inclined position, a gate extended over said lay-boy near the lower end thereof and having vertically-arranged slots, wires loosely mounted and extended obliquely over said lay-boy, the free ends of said wires being extended through said slots, a blast pipe arranged parallel to said cylinder, beneath the plane of travel of the stock, for supplying air-blasts obliquely against the underside of the stock, an air-supply pipe connected to said blast-pipe, a valve, and means for intermittently opening and closing said valve.

8. In a printing press having a rotary impression cylinder, the combination of a blast-pipe arranged above the plane of travel of stock to the cylinder, a valve for allowing air to pass to said pipe as the stock is brought into position relative to said cylinder, said valve cutting off the air-supply as the rear end of the stock passes beneath the blast-zone, a second blast-pipe arranged beneath the plane of discharge of the stock from said cylinder, a valve for allowing air to pass to said second blast pipe as the stock passes from the cylinder, said valve cutting off the air supply as the rear end of the stock passes over the blast-zone, and a shaft for controlling the position of each of said valves.

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

ALFRED F. HARRIS.

Witnesses:

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C. G. PRITCHARD.