No. 672,208.

Patented Apr. 16, 1901.

P. DVORAK.

STEAM PRESS.

(Application filed Dec. 19, 1899.)

(No Model.)

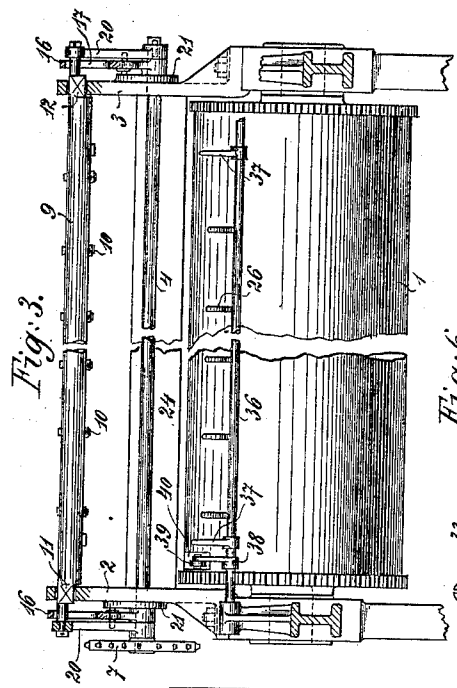


Fig. 3.

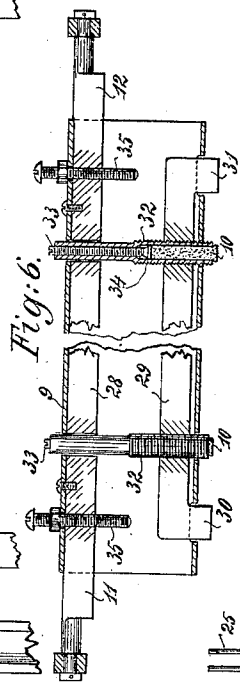


Fig. 6.

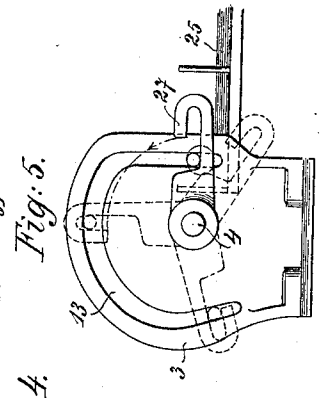


Fig. 5.

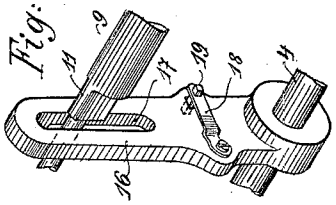


Fig. 4.

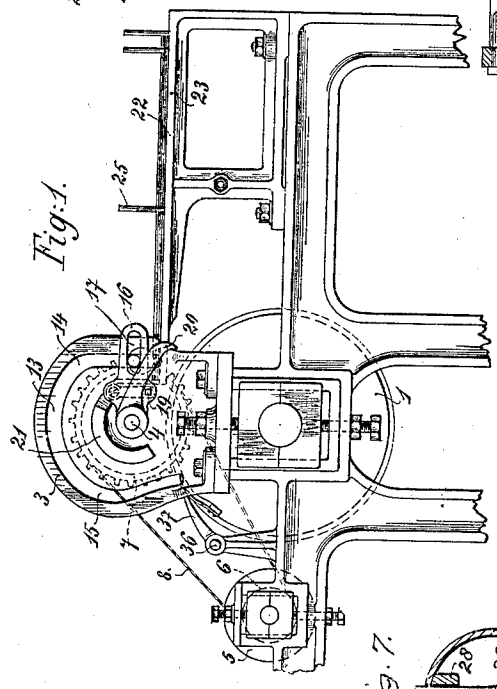


Fig. 1.

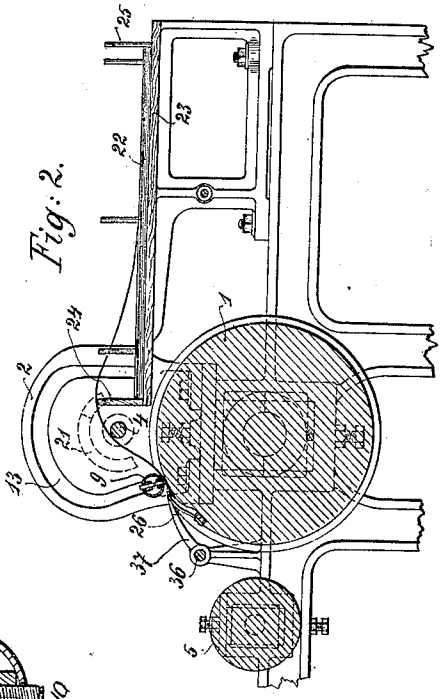


Fig. 2.

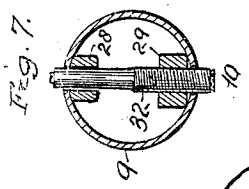


Fig. 7.

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STEAM-PRESS.

SPECIFICATION forming part of Letters Patent No. 672,208, dated April 16, 1901.

Application filed December 19, 1899. Serial No. 740,915. (No model.)

To all whom it may concern:

Be it known that I, PETER DVORAK, a subject of the Emperor of Austria-Hungary, and a resident of Vienna, Austria-Hungary, have invented certain new and useful Improvements in Steam-Presses, of which the following is a specification.

The invention resides in the combination and arrangement of parts hereinafter described, and particularly pointed out in the claims.

Figure 1 is a side view. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section. Figs. 4 to 7 are details.

The printing-cylinder is shown at 1 and the side frames at 2 3, in which a shaft 4 is journaled, and this receives rotation in any manner—for instance, from the ink-roller 5—by means of the chain-wheels 6 7 and the chain 8.

The adhesive feeder 9 is in the form of a hollow rod or cylinder and is provided at intervals on its lower side at the points 10 with an adhesive or glutinous material, for which a mixture of gelatin and glycerin has proven to be best suited by experience. This feeder 9 has eccentrically-arranged flattened portions 11 12 fitted to move in slots 13 in the journal-posts of the shape shown, so that it occupies permanently its uniform position owing to its center of gravity being located below—that is, the adhesive ends 10 are always directed downward. The slots 13 run straight and preferably vertical to the point 14, Fig. 1, from there to 15 concentrically of the shaft 4, and thence in a curve which is favorable to the correct introduction of the paper sheets into the press. On the shaft 4 two levers 16, Figs. 1, 3, and 4, are arranged loosely, into the slots of which the cylindrical end pins of the feeder 9 engage. Each arm has a spring 18, with pin 19 fitting an opening in the lever 16, the spring tending to retract the pin and preventing it from protruding. Alongside of the levers 16 the levers 20 are keyed on the shaft 4 and give movement to the feeder 9 by carrying along the levers 16 in the one direction by means of the cylindrical pivots and in the other direction by engaging the pins 19.

A rib 21, tapering at its right extremity and running concentrically to the shaft 4, coöperates with the pin 19 and effects its engagement and disengagement.

The paper pile 22 is situated on the stationary table 23 and is kept in its position by the front ledge 24 and the point-marks 25, arranged at the side and the rear.

The operation is as follows: When the feeder is in the position shown in Fig. 2, it presents the seized sheet to the grippers 26, which seize it and hold it during the impression. During this time the feeder 9 passes to the right because the ink-roller rotates back, and thereby turns the shaft 4 in that direction. With the shaft 4 the levers 20 revolve, and these by means of the pins 19, which are pressed out by the rib 21, carry along the levers 16, and consequently the feeder 9, moving the feeder through the slot 13, from one end to the other thereof. When the levers 16 are situated somewhat to the right of the vertical line laid through the axle 4, the pins 19 fall off the rib 21, owing to the action of the springs 18, and consequently do not project outward, so that the connection with the lever 20 fails. This is required for the reason that the levers 20 must always execute the same lift or stroke, while the levers 16, with the feeder, fall only to the depth allowed by the height of the paper pile as it stands at the time. The right-hand ends of the slots 13 are vertical, so that all sheets at any height of the pile can be seized at the same place by the feeders, provided the ledge 24 stands vertical. The right-hand end of the slots may run out obliquely or even in a curve, provided the ledge runs in the same direction, because it is required that the right-hand end of the slots 13 and the ledge 24 should run parallel, so that the sheet can be caught at the same place. When the feeder has seized the top sheet by means of its adhesive surfaces 10, the movement of the machine is reversed, and consequently also the movement of the shaft 4. The levers 20 strike again on the cylindrical pivots of the feeders and guide the levers 16, together with the feeder 9 and the sheet, to the printing-cylinder. Before the levers 16 have assumed a vertical position the pins 19 are pressed outward by running on the rib 21. Thereby a sudden fall of the feeder is prevented on the one hand, and on the other hand a means for the return movement of the feeder is presented. The form of the parts 11 12 allows a sliding in the slots

13, but prevents oscillation of the feeder at the proximity of the two terminal positions.

Fig. 5 shows a modification in which the levers 16 and 20 are substituted by a hook-lever 27, which is fixedly arranged on the shaft 4 at both sides of the machine and guides the feeder to and fro in reciprocating movement in the slots 13 by means of the cylindrical end pivots of the feeder. When these end pins or pivots are in the vertical part of the slots 13 when the feeder is in position to seize a new sheet, they are not subject to the action of the hook, and the hook-lever 27 can finish its permanently uniform stroke downward, as shown in dotted lines. At all other positions the end pins are under the control of the hook-lever 27, as appears from the positions in dotted lines, so that the movement of the feeder 9 in the slots 13, with the exception of the vertical part, is dependent upon the movement of the hook-levers 27. This is due to the fact that the vertical part of the slot 13 is nearest to the shaft 4 and that the pivots withdraw from the shaft 4 at their removal from the vertical part and engage in the hooks of the levers 27.

Figs. 6 and 7 show the feeder 9 in longitudinal and cross sections on a larger scale. The feeder consists of a tube 9, in the hollow of which a rod 28 is fixed, which supports the tube and forms the prismatic and eccentric terminal pins or pivots 11 12 for guidance in the slots 13. In the tube another rod 29 is arranged vertically movable, the shoulders 30 and 31 of which protrude outwardly at the lower side of the tube. Into this rod are screwed hollow screws, which are guided in the rod 28 by their smooth parts. These screws hold in their lower part the adhesive mass 10 and in their upper part a screw-bolt or set-screw 33, with an enlarged presser-plate 34. The lift or stroke of the rod 29 can be regulated in any manner by screws 35. The purpose of this construction is as follows: Owing to the movability of the screws 32 they can be engaged or disengaged at will and set accurately, a circumstance of importance for paper of various size and fineness. Thus, for instance, more screws 32 will be set in operation for thick sheets than with thin paper, because the former require greater adhesive power on account of the heavier weight. The adhesive mass 10 must be so qualified that it will not seize paper fibers, as in such case it would soon become covered and lose its adhesive effect. The mass, on the contrary, must stick so that only a scarcely perceptible part of the same adheres on the sheet when it is taken off, so that the sheet is not disfigured. As the mass is slowly consumed in the continued operation it becomes necessary to keep up the supply by pushing it forward out of the screw. The screw 33 serves that purpose, and when it is screwed down the mass is pressed out from the hollow screw 32.

The vertically-movable rod 29 serves to allow taking off the sheet from the feeder without damage to the sheet. For that purpose levers 37 are arranged in a horizontal shaft 36, Figs. 1 to 3, said levers being situated ordinarily at a certain distance from the printing-cylinder. They are maintained in that position by a lever 38, the roller 39 of which rests on the jacket of the printing-cylinder 1 and enters into a hollow 40 of the same at each revolution. This latter action takes place at the moment when the feeder presents the sheet to the grippers 26 as the levers 37 descend thereby, and the shoulders 30 31 of the rod 29 are situated over these levers. While the grippers 26 seize the presented sheet, the roller 39 runs out from the cut-out or free space and runs on the cylinder-jacket, whereby the levers 37 are lifted, and they take along the rod 29, so that the screws 32 enter into the tube 9, which is still stationary for the time. By the entrance of the screws 32 into the tube 9 the sheet strikes on the tube and as a consequence the mass is detached from the sheet in a manner which does not injure even the finest sheets of paper.

The adhesive surface of the feeding organs appropriate to seize the top sheet of papers or for seizing pasteboard, linen, fabrics, &c., can be attained in various manners by the application of different glutinous or adhesive materials with which the feeders, which may be of any shape, are covered or provided. An adhesive material consisting of about one and three-fourths to two parts in weight of gelatin and about ten parts in weight of glycerin is advantageous for securing a moderate adhesion of the sheet of paper at a moderate pressure.

I claim—

1. In a press, a feeder, a guide therefor comprising arch-shaped slots for the projecting parts of the feeder and means for moving the feeder consisting of levers 16 loosely arranged on the shaft, and levers 20 permanently coupled in one direction by the end pivots of the feeders, and in the other direction by spring-pins 19, substantially as described.

2. In a press, an adhesive feeder comprising a hollow rod 9, hollow screws 32 arranged within the same for the adhesive mass, means for feeding the mass and means for obtaining a ready release of the sheet from the feeder, substantially as described.

3. In combination with a press, an adhesive feeder comprising a carrier, adhesive material carried thereby, and means for feeding the adhesive material, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

PETER DVORAK.

Witnesses:
RUD. ZIPSERK,
ALVESTO S. HOGUE.