

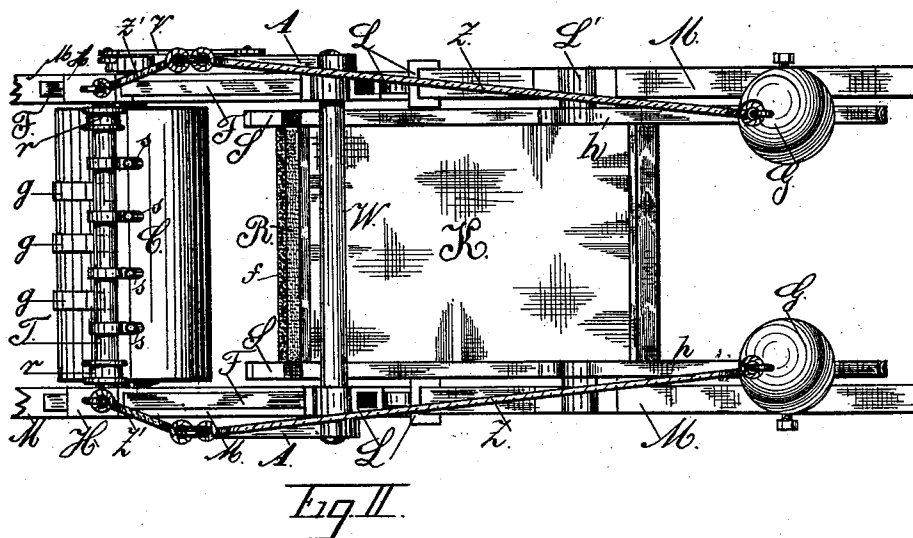
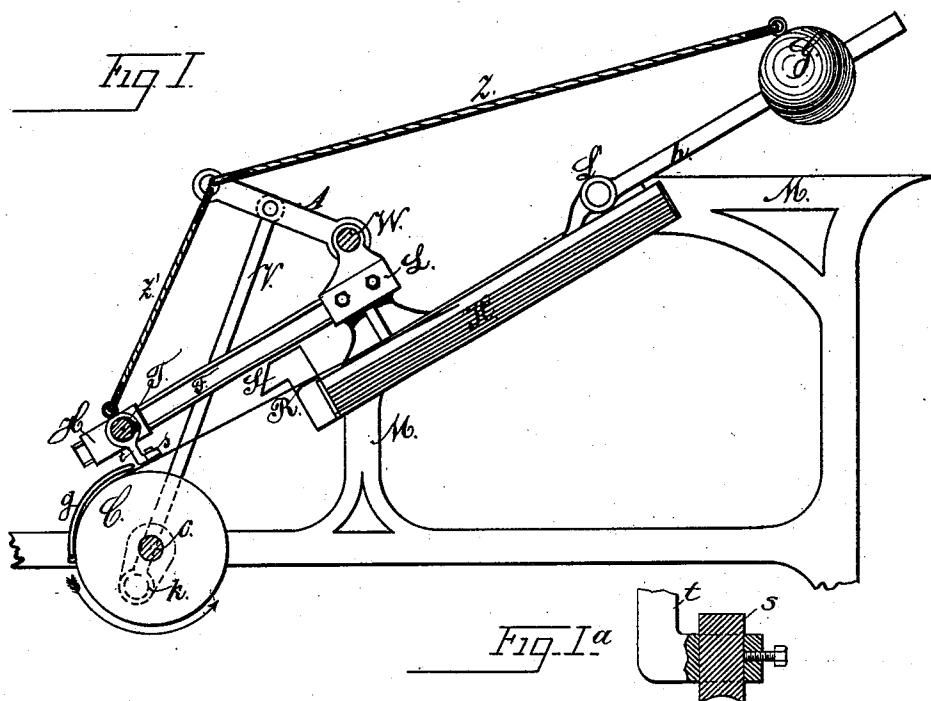
(No Model.)

2 Sheets—Sheet 1.

E. PAESLER.
PAPER FEEDER.

No. 506,605.

Patented Oct. 10, 1893.



Witnesses.

Jabius J. Elmyer.
William H. Shipley.

Inventor.

Edward Paesler
By P. Y. Dodge
Att'y

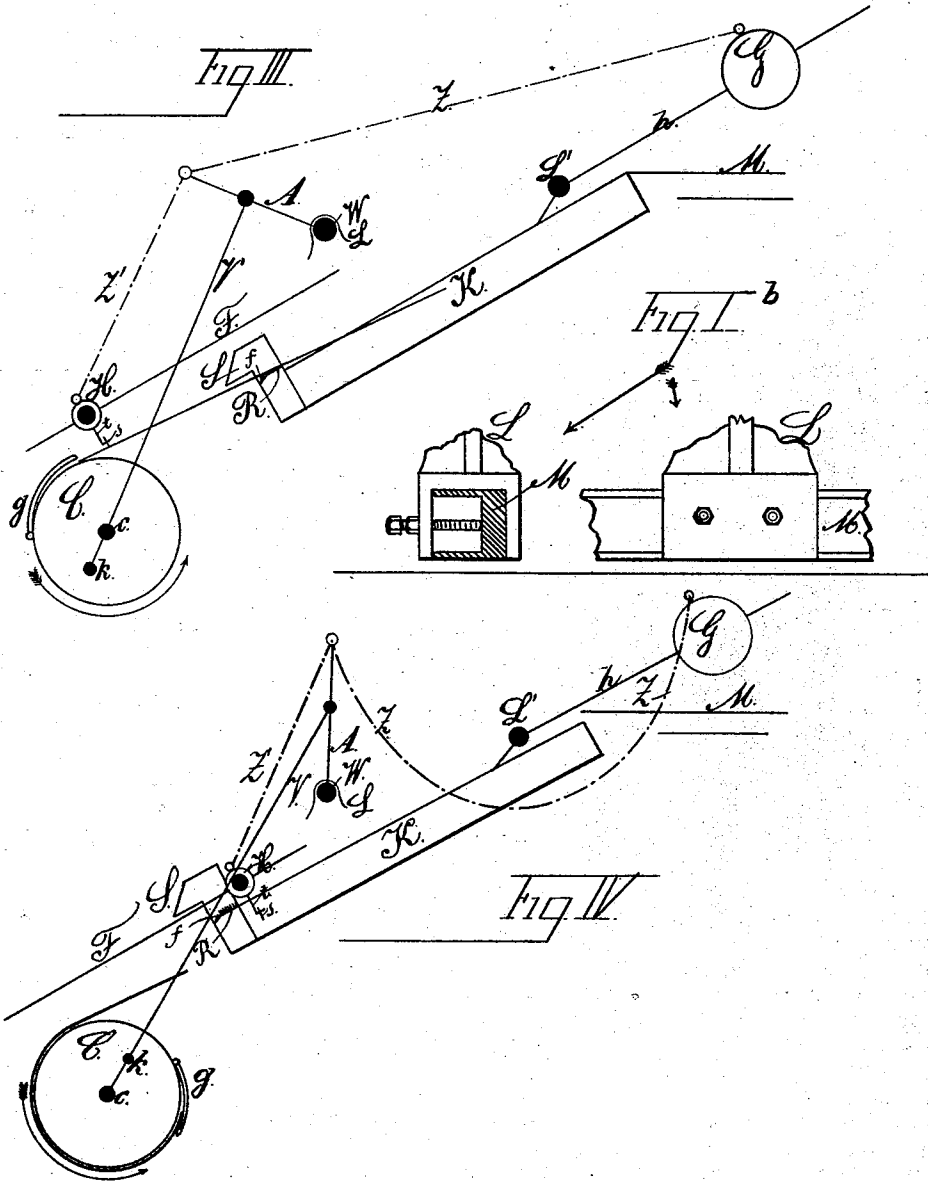
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UNITED STATES PATENT OFFICE.

EDUARD PAESLER, OF HANOVER, GERMANY.

PAPER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 506,605, dated October 10, 1893.

Application filed January 14, 1892. Serial No. 418,094. (No model.)

To all whom it may concern:

Be it known that I, EDUARD PAESLER, mechanical engineer, of Hanover, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Paper-Feeders, of which the following is a specification.

The construction of an apparatus constructed according to these improvements, and which can readily be fitted or adapted to existing machines, is illustrated by the accompanying drawings to which reference will hereinafter be made.

In these drawings, Figure I represents a side elevation; Fig. II a plan; and Figs. III and IV are diagrammatic representations of the moving parts of the apparatus in different positions. Figs. I^a and I^b show some of the details on an enlarged scale.

In the frame M there is mounted the shaft *c* which has an intermittent rotary motion derived from any similarly moving and suitable gearing of the machine. An open-topped paper holding box or receptacle K is mounted in the frame on trunnions supported by the bearings L' in an inclined position and in such a manner that the box may be turned or rocked upon the bearings. The longer sides of the box have the ends of two counter-weighted levers *h h* secured to them, the counter weights G G being adjustably secured upon the free ends of the levers. The same sides of the box have secured to their lower ends the two guide brackets S S, the upper surfaces of which slope toward the shaft *c*. The lower end or front of the box is formed or covered with a rough surface *f* which may consist of felt, bristles, and the like, the object being to provide such an amount of resistance to the passage of the paper over the end of the box as to prevent more than one sheet being fed at once in the event of two sheets adhering together. In such case the rough surface will act to hold, by friction, the lower sheet and prevent it from being carried forward with, or by, the upper. In addition to this rough surface, a cleansing cushion or brush R is fixed between the guide brackets S S flush with the top of the box, with the object of cleansing the vacuum cups by brushing off any foreign

particles or substance that might adhere thereto, when they pass over the cushion empty on each return journey.

The gripper cylinder C is fixed upon the shaft *c* and is provided with the curved grippers *g g*.

The brackets L which are fixed to the machine frame M carry the guide rods F F at an inclination parallel with the plane of the box K. On these guide rods there are fixed the two slides H, one upon each rod, firmly connected with each other by means of the cross-bar T upon the two ends of which are mounted two rollers *r—r* in such positions that they will roll upon, and over, the guide brackets S. S. when the slides H and the cross-bar are carried back.

To the cross-bar T there are secured a number of holders *t* fitted with vacuum cups *s*. The vacuum cups are made of, or faced with any soft elastic material or composition and are hollowed or concaved on their acting surfaces; when pressed upon the paper—or rather, when the paper is thrown up against the cups—they are partially collapsed and seize and hold the top sheet by suction or atmospheric pressure induced by their expansion, or the effort to resume their normal shape. The shaft *c* has fitted upon it a crank *k*, which is connected with the two levers A A by means of the connecting rod V, both of the levers A being mounted upon a common shaft or fulcrum W having its bearings in the frame M. The motion of the levers A is transmitted through the ropes Z Z' to the counter-weights G and to the slides H respectively. When the levers A are thrown backward, or toward the right as viewed in the drawings, by the action of the crank *k* and connecting rod V the weights G drop by gravity and the front end of box K is thrown upward thereby; at the same time the slides H, and cross-bar T are drawn backward on the guide rods F, the rollers *r* striking the inclined front ends of the guide-brackets S, depressing the latter and the box K. When the rollers pass above or beyond the brackets the box again swings upward, throwing the paper carried thereby against the vacuum cups *s* which seize and hold the top sheet, as above explained. The continued rotation of the

shaft *c* and its crank *k* to the position indicated in Fig. I draws the levers *A* forward and lifts the weights *G*, at the same time depressing the box *K* and its guide brackets so as to release the cross-bar *T* and its rollers *r* whereupon the slides *H* drop back by gravity, to the position indicated in Fig. I, the vacuum cups *s* carrying along the top sheet of paper and presenting the front projecting edge thereof to the grippers *g* of cylinder *C*. At the moment when the leading edge of the paper arrives at the cylinder grippers, it is arranged that the cylinder is at rest with the grippers open so as to receive it. When the paper has thus been delivered to the cylinder, the latter recommences its motion and draws the sheet forward from under the vacuum cups and delivers it to the printing machine. During this further motion of the cylinder the slides are again drawn upward by the cords *Z'* and the vacuum cups are brought back to seize another sheet of paper. The cycle of movements is repeated for every sheet of paper fed to the machine.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a paper feeding apparatus the combination of a paper holder mounted to swing back and forth in a vertical plane, collapsible vacuum cups movable in a plane above the paper holding box and adapted to seize and hold the top sheet by atmospheric pressure, induced by the expansion of the cups means for moving said cups, and means for

swinging the paper holder to press the paper against the cups.

2. In a paper feeding apparatus the combination of a vertically swinging paper-holder or receptacle, collapsible vacuum cups adapted to seize and hold a sheet of paper by atmospheric pressure, induced by their expansion and movable back and forth, a gripper-cylinder, and connections between said cylinder and the movable parts of the apparatus to move the cups back and forth and to swing the paper holder.

3. In an apparatus for feeding sheets of paper to a printing machine, the combination and arrangement with a counter-weighted rocking paper holding box, of slides carrying vacuum cups for seizing the paper, a crank, connecting rod, and levers operating the counter-weights and slides through cords, guide brackets for the slides, and a gripper cylinder, substantially as hereinbefore described and as illustrated by the accompanying drawings.

4. In a paper feeding apparatus the combination of the reciprocating vacuum cups and a cleaning cushion or brush arranged in the plane of movement to wipe and clean the mouths of said cups in their movements thereover.

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

EDUARD PAESLER.

Witnesses:

ADOLF ROSCHINSKY,
ADOLF RATHE.