

July 19, 1932.

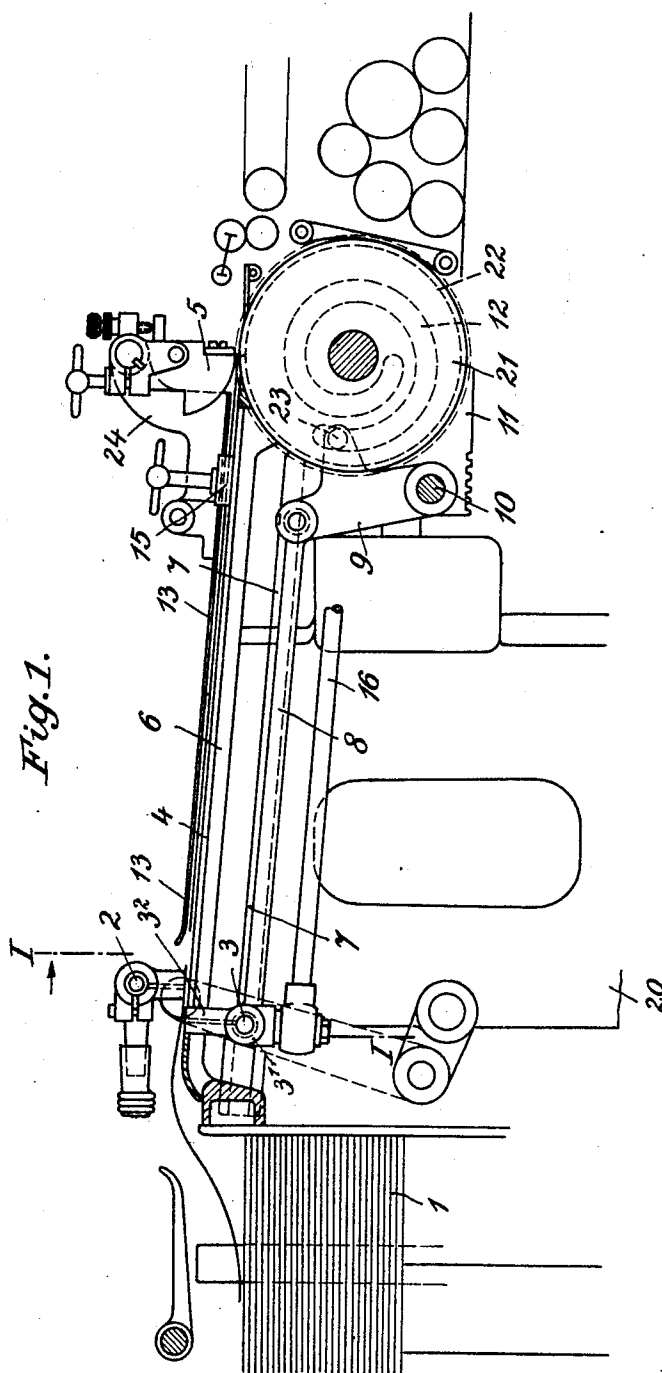
A. BÜTTNER

1,868,381

SHEET SUPPLYING DEVICE FOR PRINTING MACHINES

Filed Feb. 17, 1931

2 Sheets-Sheet 1



Inventor:
Artur Büttner
By B. Singer
Attorney.

July 19, 1932.

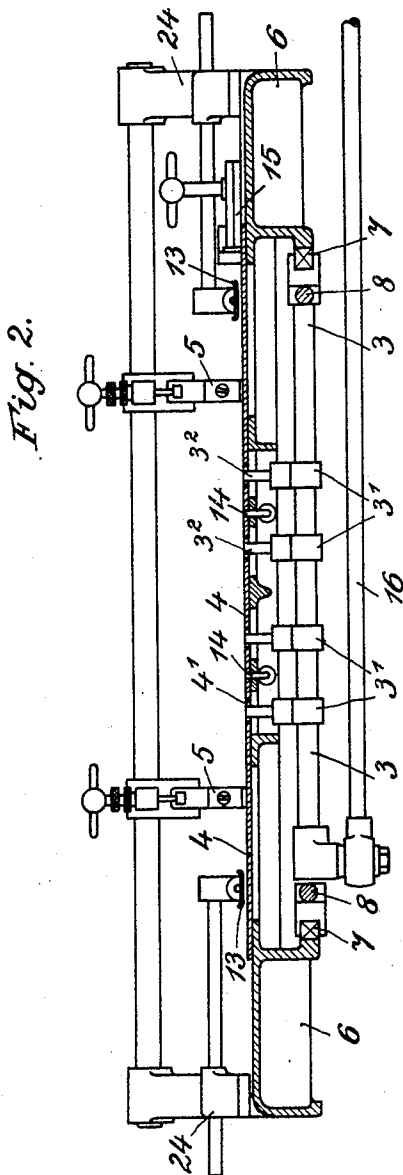
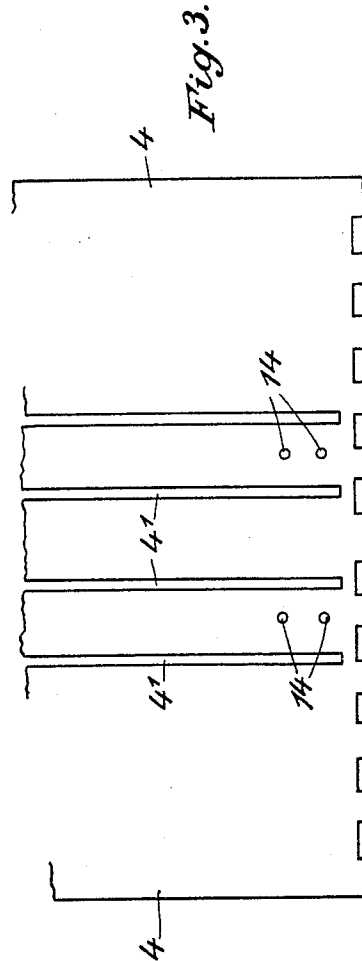
A. BÜTTNER

1,868,381

SHEET SUPPLYING DEVICE FOR PRINTING MACHINES

Filed Feb. 17, 1931

2 Sheets-Sheet 2



Inventor:
Artur Büttner

By B. Singer
Attorney.

UNITED STATES PATENT OFFICE

ARTUR BÜTTNER, OF HEIDELBERG, GERMANY, ASSIGNOR TO SCHNELLPRESSEN-FABRIK AKTIENGESELLSCHAFT HEIDELBERG, OF HEIDELBERG, GERMANY

SHEET-SUPPLYING DEVICE FOR PRINTING MACHINES

Application filed February 17, 1931, Serial No. 516,425, and in Germany February 25, 1930.

This invention relates to a sheet supplying device for printing machines and the like of that type in which the sheet to be printed is conducted along over a laying-on table by means of suckers.

With the known sheet-supplying devices of this type, there is arranged across the laying-on table a sucker rod which can slide in guides provided at both sides of said table, and is, besides, connected at each table side with an endless band-guide in order to be moved along to and fro over the said table. A drawback of that known arrangement and combination of parts consists therein that separate driving devices must be provided for every endless band, and must extend upwardly to the laying-on table. Owing to that arrangement this table is not freely accessible; it is, however, often times necessary to lay on the sheets manually. The sucker rod must in this case either be disconnected from the driving mechanism provided for it or must be removed from the machine together with that mechanism.

Another drawback of the known arrangement is this that by the sucker rod which is moved to and fro over the laying-on table and by said driving mechanism the person attending to the machine can easily be hurt.

The drawbacks mentioned are overcome by the present invention, the subject-matter of which consists therein that the sucker rod can be shifted rectilinearly below the laying-on table, and that the plate of this table is provided with longitudinal slots into which the suckers extend in order to act on the sheet at the lower surface thereof. There are, thus, above the table no reciprocating parts likely to hurt the person attending to the machine, and besides, the table is continually free for laying-on the sheets also manually. The sucking action of the suckers running to and fro below the table can be interrupted by turning only one handle.

With printing machines in which the rotating impression cylinder and the composition bed are moved counter to one another, the sucker rod arranged below the laying-on table can be connected with the impression cylinder easily in such a manner that

it takes part in the to-and-fro movement of said cylinder whereby a separate driving mechanism can be dispensed with.

The invention is illustrated diagrammatically and by way of example on the accompanying drawings on which Figure 1 is a side-view of the parts concerned of a printing machine having a reversely movable impression cylinder and bed; Figure 2 is a transverse section in the plane I—I of Fig. 1, and Figure 3 is a plan of a part of the laying-on table.

Immediately at the laying-on pile 1 a frame 20 is secured to the frame 6; the large opening formed by this frame is covered with a plate 4 consisting of a non-electric material. Below this plate is a sucker rod 3 which can be moved to and fro upon longitudinal guides 7, and to which are attached a plurality of suckers 3¹, the nozzles 3² of which extend into longitudinal slots 4¹ of the plate 4, but do not extend above the upper surface thereof.

The sucker rod 3 is engaged by rods 8, the other ends of which are connected with levers 9 affixed to a shaft 10 supported in the lateral parts 11 of the impression cylinder. Said parts 11 are reciprocated in known manner together with the impression cylinder reversely with respect to the bed of the machine. As the length of way of this reciprocating motion is shorter than the length of way requisite for conveying the sheet to the laying-on marks there is arranged in the cog-wheel 22 which is connected with the impression cylinder a spirally-shaped cam way 12 which is engaged by a roll 23 secured to the lever 9 whereby the two lever 9 and, thus, also the sucker bar 3 receives an additional movement when the impression cylinder will be moved to and fro, the length of that additional way being such as is requisite to attain the complete length of way for the sheets.

The suckers 3¹ are arranged upon the sucker rod 3 in such a manner that even sheets of the smallest size occurring in practice are gripped by all suckers. In order to prevent the longitudinal side parts of large sheets from fluttering upwardly removable and ad-

justable covering rakes 13 are provided over the frame 6 and are supported in brackets 24 located upon said frame.

With the arrangement and combination of parts described the sucker rod 2 takes a sheet from the laying-on pile 1 and lifts it over the suckers 3¹ to and upon the laying-on table. The vacuum to the suckers is then interrupted so that the sucking action ceases, and instantly thereafter a pressure below atmospheric pressure is produced in the flexible pipe 16 (which is connected with an air pump) so that the suckers suck on the sheet which now is conveyed parallel to the upper edge of the table plate 4 to the laying-on marks 5. Owing to the use of a non-electric material for the covering plate 4 electric impediments to the movement of the sheet are prevented.

As soon as the front of the sheet arrives at the laying-on marks 5, the reduced pressure in the suckers 5 is broken and is switched on to suckers 14, the orifices of which lie in the plate 4 directly in front of the laying-on marks 5 (Figs. 2 and 3). The sheet is now in a quiet position and is then straightened in that the lateral mark 15 shoves it a little inwardly, and simultaneously therewith the laying-on marks are moved rearwardly by say 5 mm. so that they shove back the sheet. Hereby is attained that slight inaccuracies in the sheet guidance are equalized in forward direction.

I claim:

1. A sheet-supplying device for printing machines, comprising, in combination with a laying-on table and with suckers adapted to convey the sheets along over said table, a sucker rod to which said suckers are attached and which is arranged below the said table and adapted to be shifted rectilinearly below it; a plate forming the uppermost part of the laying-on table and consisting of a non-electric material and having longitudinal slots, the said suckers extending into these slots, for the purpose set forth.

2. A sheet-supplying device for printing machines, comprising, in combination with a laying-on table, conveying suckers for the sheets, and suckers adapted to retain the sheets temporarily after having been conveyed by the first-mentioned suckers; a sucker rod to which said suckers are attached and which is arranged below the said table and adapted to be shifted rectilinearly below it; a plate forming the uppermost part of the laying-on table and having longitudinal slots, the said suckers extending into these slots, for the purpose set forth.

3. A sheet supplying device for printing machines, comprising, in combination with impression members moved counter to one another, a laying-on table, and suckers adapted to convey the sheets along over said table, a sucker rod to which said suckers are at-

tached and which is arranged below the said table and adapted to be shifted rectilinearly below it, and being connected with the cylindrical part of said impression members in such a manner that it takes part in the to-and-fro movement thereof; a plate forming the uppermost part of the laying-on table and having longitudinal slots, the said suckers extending into these slots, for the purpose set forth.

In testimony whereof I have affixed my signature.

ARTUR BÜTTNER.