(No Model.)

J. T. HAWKINS.

SHEET TRANSFER APPARATUS FOR PRINTING MACHINES.

No. 445,018. Patented Jan. 20, 1891.

Fig: 2.

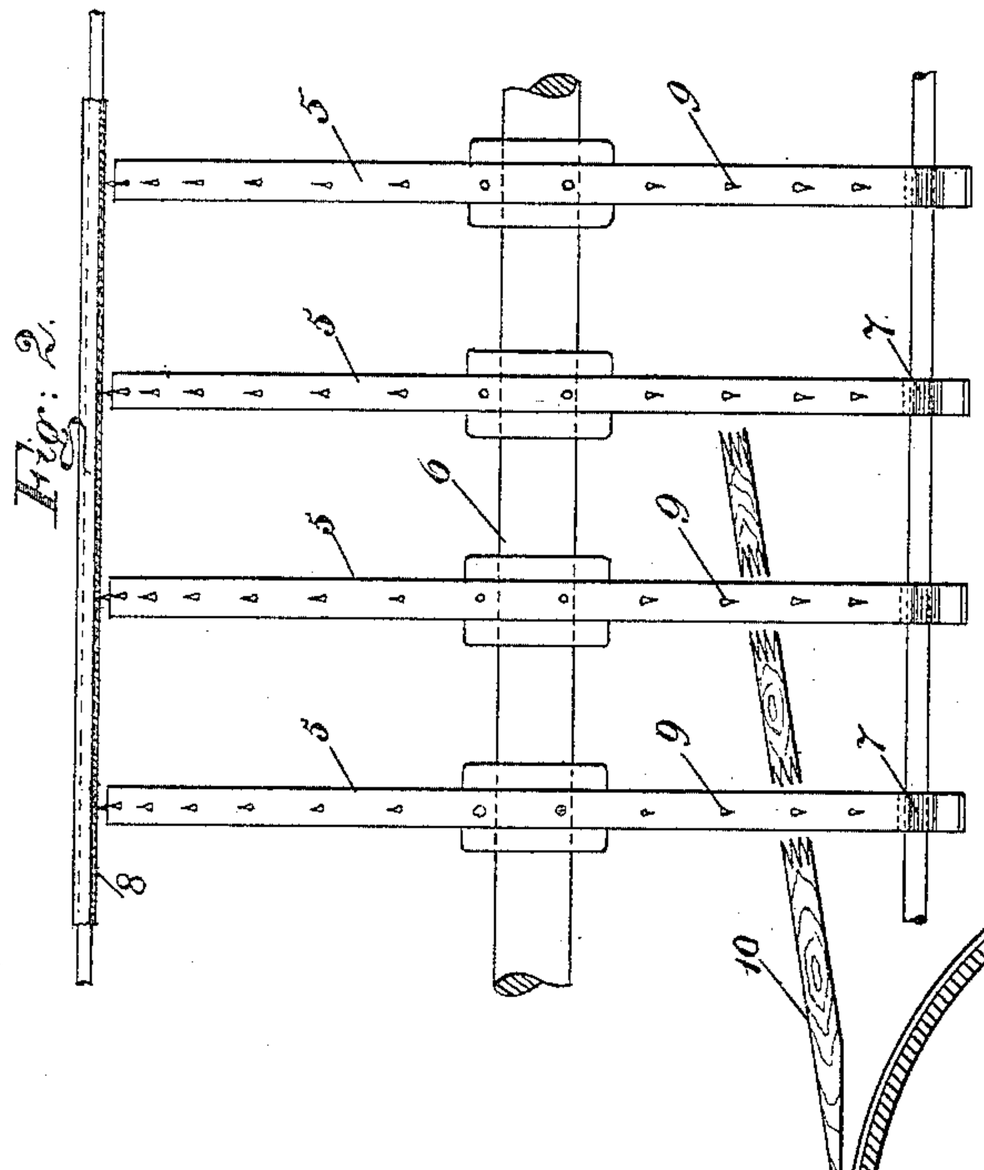
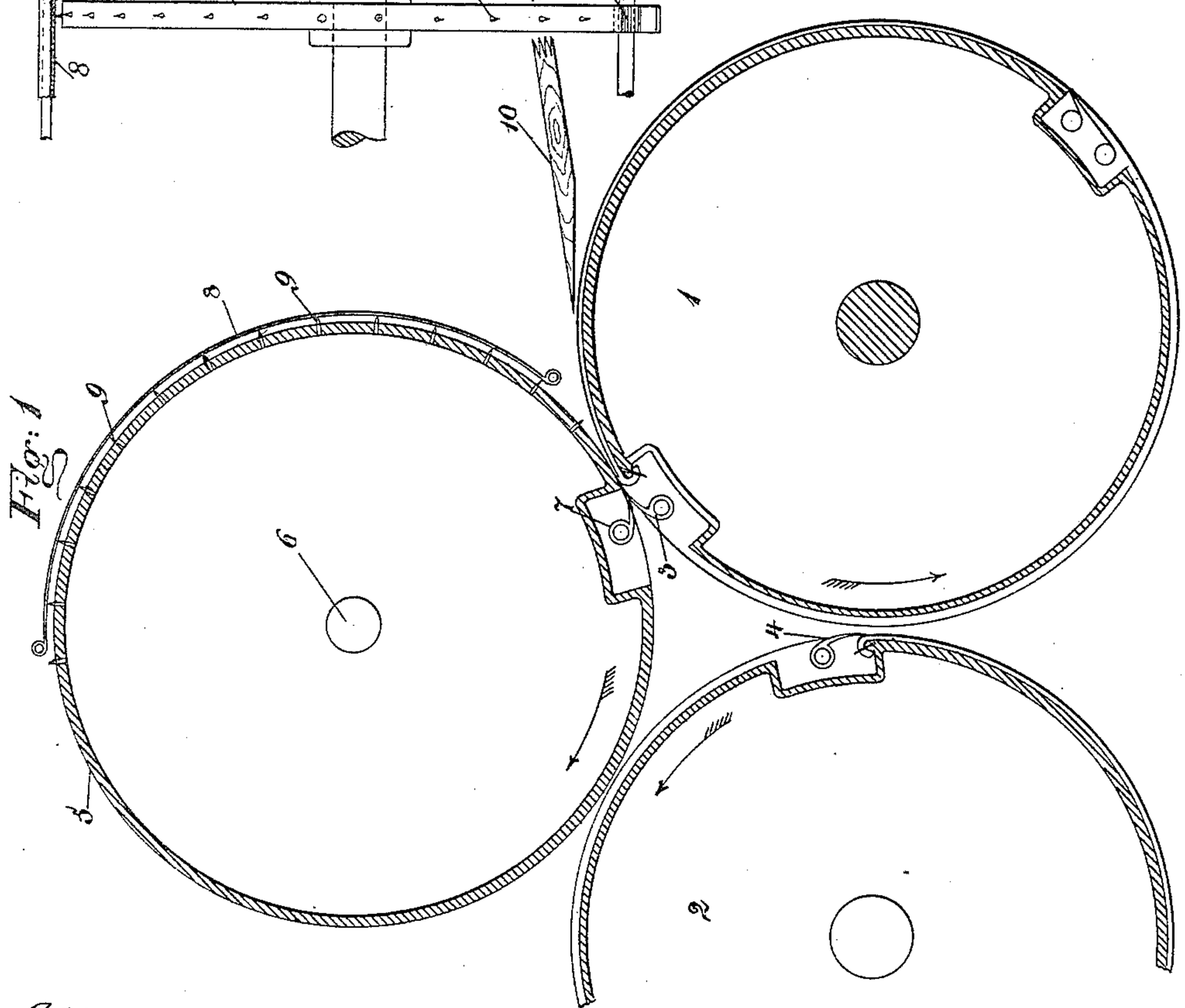


Fig: 1



Attest:
Francis R. Reilly.
F. A. Davies.

Inventor.
John T. Hawkins
by R. M. Dorrhes
Atty.

UNITED STATES PATENT OFFICE.

JOHN T. HAWKINS, OF TAUNTON, MASSACHUSETTS.

SHEET-TRANSFER APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 445,018, dated January 20, 1891.

Application filed February 13, 1890. Serial No. 340,257. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. HAWKINS, of Taunton, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Sheet-Transfer Apparatus for Printing-Machines, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

In some forms of cylinder printing-machines, in which a plurality of forms and impression-cylinders are used, the sheets are transferred from one impression-cylinder to another by means of a transfer-cylinder, or series of narrow pulleys acting as such. In such transfer it is sometimes necessary, in order to time the sheets to meet the respective forms, to provide that the sheet be carried one or more times around the transfer-cylinder before delivering it to the next succeeding impression-cylinder. In such cases the printed side of the sheet is sometimes brought into contact with the surface of the transfer cylinder or pulleys.

The object of this invention is therefore to prevent the smutting of the sheets from the accumulation of ink on such transfer cylinder or pulleys and the contact of the sheet therewith.

The invention will first be described in detail, and then particularly set forth in the claim.

In the accompanying drawings, Figure 1 is a sectional diagram of so much of a multicolor printing-machine as is involved in the invention, and Fig. 2 a front elevation of the transfer-pulleys.

In said figures the several parts are indicated by reference-numbers as follows: The numbers 1 and 2 indicate two contiguous impression-cylinders, each carrying grippers, as 3 and 4. A transfer-cylinder, or series of transfer-pulleys 5, secured upon a shaft 6, is journaled in the main frames of the machine in the usual way. Said transfer cylinder or pulleys carry grippers 7. A guard-apron 8, surrounding the side of the transfer-pulleys upon which the sheets descend in passing around them, is placed at a short distance from them, being used generally only on the transfer-cylinder nearest the feed-board to prevent the sheet from falling thereon. A series of pins 9 is inserted in the peripheries of the transfer-pulleys to prevent contact of the sheets with the face of the pulleys. From the feed-board 10 the sheets are fed to the impression-cylinder 1.

In the operation of the parts the sheet being taken by the grippers 3 is carried once around impression-cylinder 1 and printed on the corresponding form, is then taken by grippers 7 and carried around transfer-pulleys 5, resting with its printed side in contact with the points 9 and prevented from falling over upon the feed-board 10 on the downward side by the guard-apron 8, then delivered to the grippers 4 of impression-cylinder 2 to be printed on the second form, and similarly for any succeeding impression-cylinder and transfer-pulleys.

I am aware that the use of points or pins in transfer-pulleys is not new, as the same is described in Patent No. 365,952, "sheet-delivery apparatus," as used in combination with plain-faced pulleys at the end. I therefore do not claim, broadly, the use of such points; but

As of my invention, I claim—

In a printing-machine containing a plurality of impression-cylinders, as 1 and 2, in combination with said impression-cylinders, one or more transfer-cylinders or series of pulleys, as 5, armed with projecting points, as 9, one or more guard-aprons, as 8, whereby sheets are transferred from one to the next succeeding impression-cylinder and carried around said transfer-cylinder or series of pulleys in the process of transfer, with the printed side toward said transfer-cylinder, and prevented from falling away from said transfer-cylinder or series of pulleys in passing downward, and said transfer effected without contact of the printed sides of the sheets with the faces of said transfer-cylinder or series of pulleys, substantially as set forth.

JOHN T. HAWKINS.

Witnesses:
THEO. H. FRIEND,
FRANCIS P. REILLY.