(No Model.)

J. F. JOHNSON & G. A. CLEMESON.

FLIER FOR PRINTING PRESSES.

No. 374,071. Patented Nov. 29, 1887.

Fig. 1.

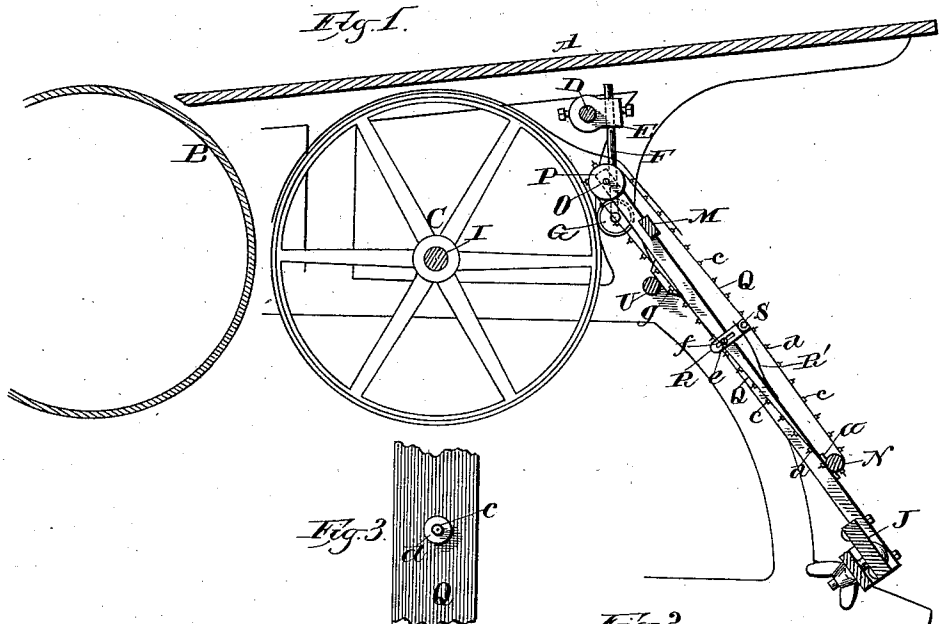


Fig. 3.

Fig. 2.

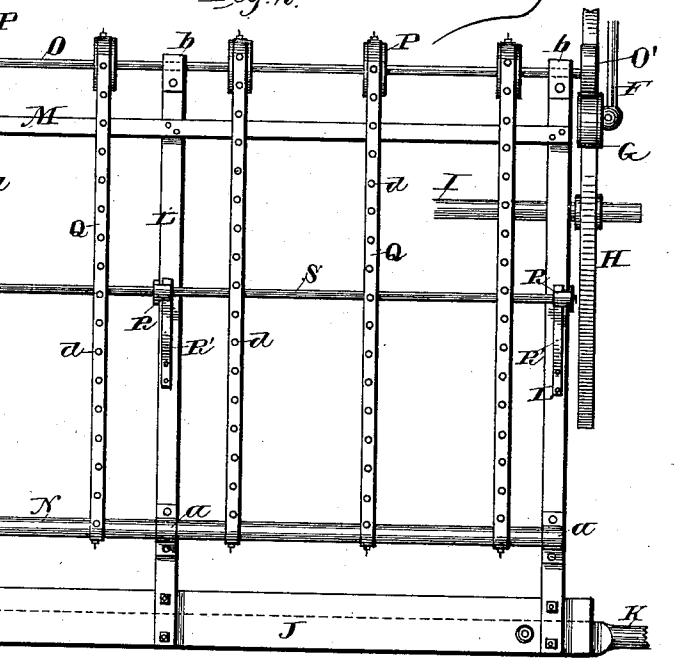
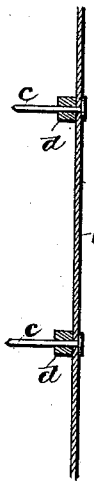


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN F. JOHNSON AND GEORGE A. CLEMESON, OF MILWAUKEE, WISCONSIN.

FLIER FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 374,071, dated November 29, 1887.

Application filed December 4, 1886. Serial No. 220,689. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. JOHNSON and GEORGE A. CLEMESON, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Fliers for Printing-Presses; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates to fliers for printing-presses; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a sectional view of a portion of a printing-press having our invention applied thereto; Fig. 2, an elevation of our flier; and Figs. 3 and 4, detail views of one of the flier-tapes, illustrating on an enlarged scale the means for securing the pins thereto.

Referring by letter to the drawings, A represents the feed-table of a printing-press, B the receiving-cylinder, and C one of the delivery-wheels.

Secured to a cross-brace, D, of the press is a bearing, E, in which is adjustably secured the vertical arm of an angular hanger, F, the horizontal arm of this hanger having journaled thereto a friction-pulley, G, arranged to impinge against a wheel, H, on an end of the shaft I, that carries the delivery-wheels C.

Our flier-frame is composed of a transverse beam, J, having its ends provided with suitable journals, K, designed to operate in suitable bearings on the frame of a printing-press, a series of bars, L, arranged at suitable intervals and having their lower ends secured to the transverse beam, and a transverse brace-piece, M, connected to said bars near their upper ends. Operative in bearings *a* on the bars L, near their lower ends, is a shaft, N, and the upper ends of said bars are provided with bearings *b* for a shaft, O, that carries a series of pulleys, P, over which and said shaft N travel a corresponding series of endless tapes, Q. On one end of the shaft O is secured a contact-wheel, O′, that bears against the friction-pulley G, and by this means motion is communicated to said shaft to give the tapes Q the same speed as the delivery-wheels, and by having the hanger F adjustable the distance between the upper end of the flier and said delivery-wheels may be readily regulated to suit the work done on the press, while at the same time the wear on said friction-pulley is compensated for by adjusting said hanger. At suitable intervals pins *c*, preferably provided with flat heads, are passed through the tapes and disks *d*, the latter being of rubber, leather, or other suitable elastic material and serving to bind upon said pins to retain them in their proper position. Intermediate between the shafts N O are secured to the bars L slotted bearings R for a rod, S, that is kept up against the tapes by means of springs R′, secured to said bars.

The construction just described compensates for the stretch that may take place in the tapes and serves to prevent the latter from sagging, while at the same time these tapes are permitted to yield to the resistance of the air when the flier is operated to deliver the printed sheets to the table T, and also to cushion the stroke of said flier on this table.

Any time it is found desirable to retain the rod S in a fixed position the screws *e*, that engage the slots *f* in the bearings R, may be tightened.

The printed sheets coming from the delivery-wheels are received on the points of the pins projecting from the endless traveling tapes and carried down thereby when at the proper time the flier is operated to place said sheets on the table T. The moment the flier is operated to deliver a sheet the wheel O′ is brought out of contact with the pulley G, and hence the tapes Q cease their travel to prevent the sheet from being carried too far down upon said flier. The mechanism by which the flier is operated to place the sheets on the table is that commonly employed on printing-presses and too well known to need illustration and description in this instance.

To prevent the pins on the tapes from coming against the delivery-wheels of the press when the flier is returned to its normal position, we provide the bars L of said flier with buffers *g*, that come against a cross-brace, U, of said press, as shown in Fig. 1.

It will be noticed that the only possible bearing for the printed sheets is on the tape-pins, and hence these sheets are delivered to the table without smearing, as is often the case

with fliers that receive said sheets directly on fingers or permanent tapes.

By the employment of fliers similar to that above described a saving of sheets is effected, and at the same time the presses are better adapted to fine work, especially in book or other printing requiring an impression on both sides of said sheets.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A flier for printing-presses, having a series of traveling tapes provided with projecting pins, and elastic disks arranged on the pins adjacent to said tapes, as set forth.

2. A flier for printing-presses, consisting of a frame composed of a transverse beam provided with journals, arms secured at their lower ends to the beam, and a cross-piece uniting these bars near their upper ends, a shaft arranged near to and parallel with the frame-beam, another shaft having its bearings in the upper ends of said bars, a series of pulleys arranged on the latter shaft, a corresponding series of endless tapes operative on the pulleys and lower shaft and provided severally with projecting pins arranged at suitable intervals, a yielding rod arranged on said frame to bear against the tapes, and suitable means for retaining said rod in one position, as set forth.

3. A flier for printing-presses, consisting of a suitable frame having an upper and lower shaft journaled therein, a series of pulleys arranged on the former shaft, and a corresponding series of endless tapes operative on said pulleys and lower shaft and provided with projecting pins, in combination with an adjustable hanger carrying a friction-pulley, a wheel on an end of the delivery-shaft arranged to bear against the friction-pulley, and a contact-wheel on the adjacent end of the shaft that carries the tape-pulleys arranged to impinge against the friction-pulley, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JOHN F. JOHNSON.
GEORGE A. CLEMESON.

Witnesses:
N. E. OLIPHANT,
MAURICE F. FREAR.