

S. D. Tucker
Feeder for Printing Press
N^o 43349
Patented Jun. 28. 1864.

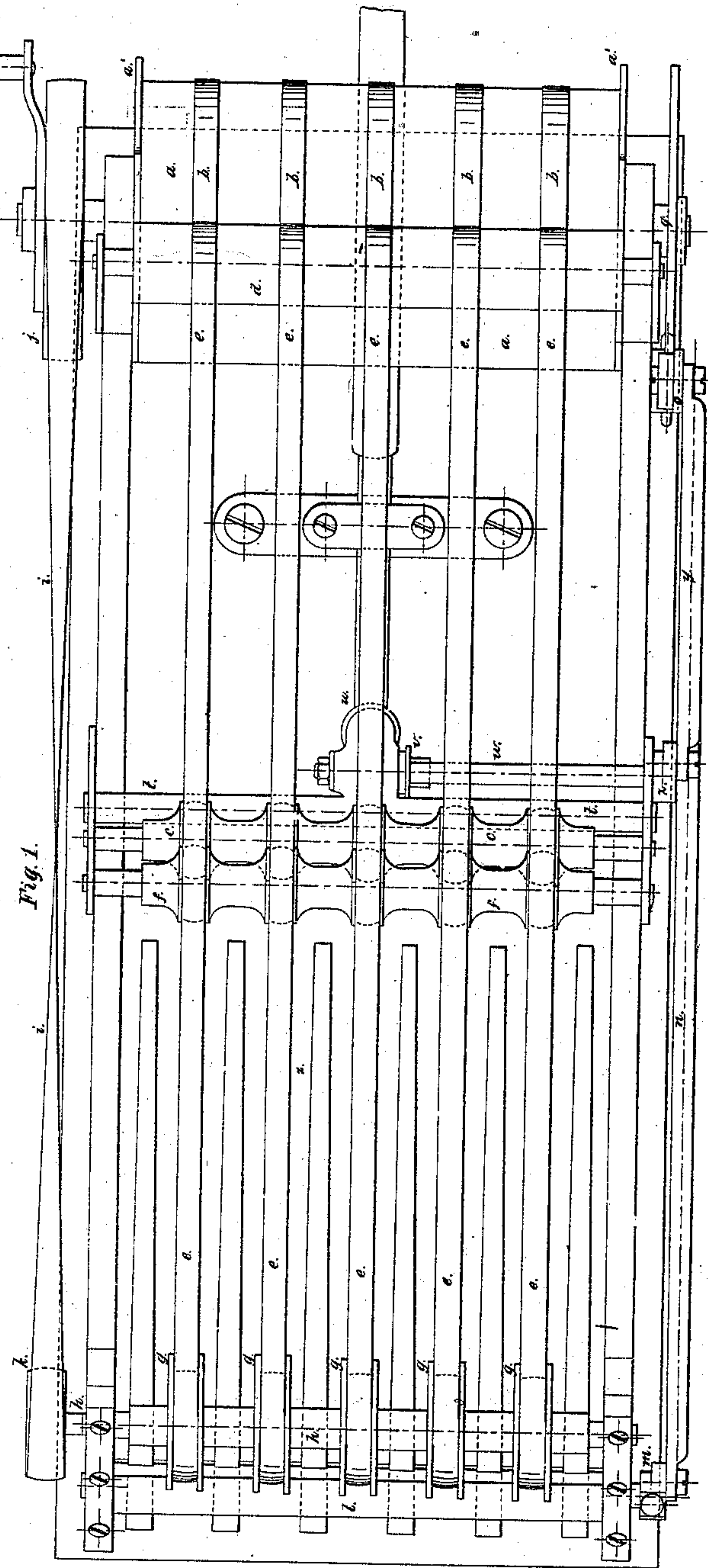


Fig. 1.

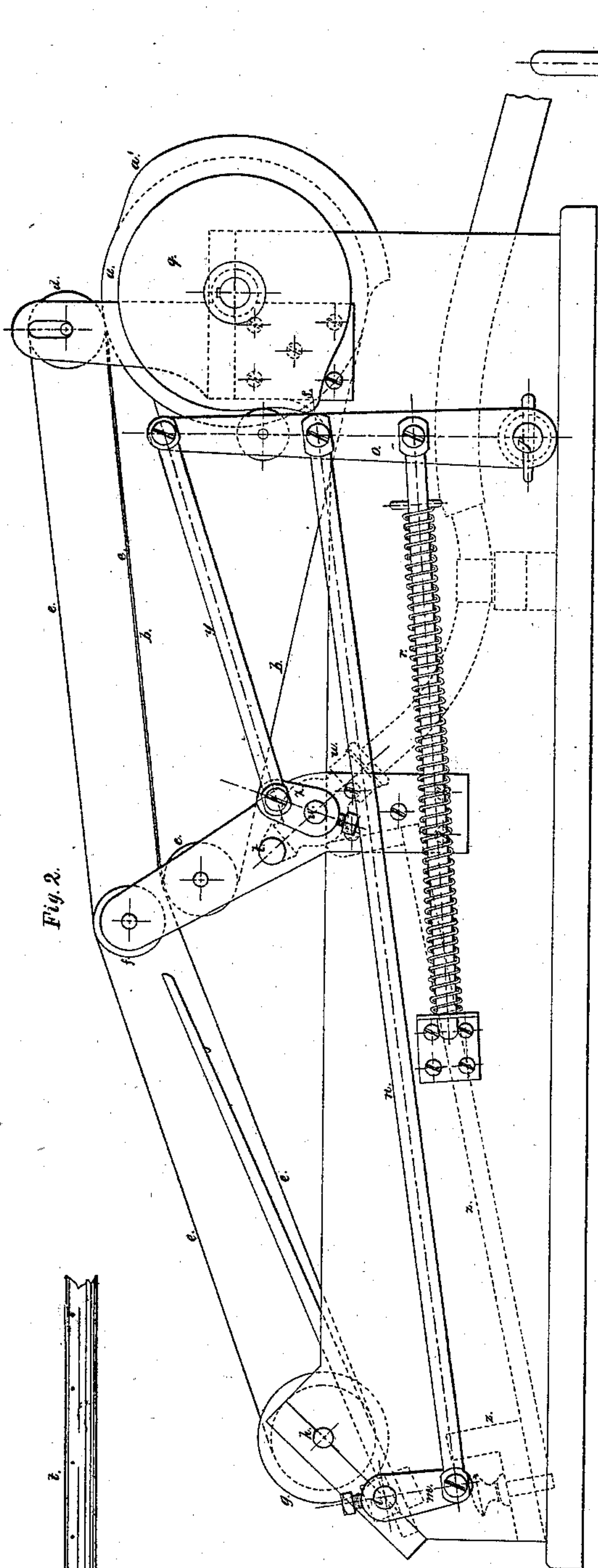
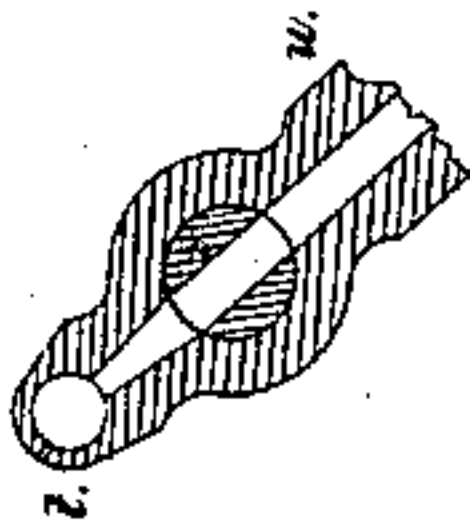


Fig. 2.



Fig. 3.



Witnesses.
Andrew Bellamy
Wm. H. Smith

Inventor.
Stephen D. Tucker.

UNITED STATES PATENT OFFICE.

STEPHEN D. TUCKER, OF NEW YORK, N. Y.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 43,349, dated June 28, 1864.

To all whom it may concern:

Be it known that I, STEPHEN D. TUCKER, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Delivering Sheets of Paper from Printing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan, Fig. 2 a side elevation, and Fig. 3 a cross vertical section, of the tube *t* and stop-cock *v*.

The same letters indicate like parts in all the figures.

In printing-machines it has been the practice for some years back to pile the printed sheets regularly, as they are delivered, by means of a mechanism called the "fly," which consists of a set of fingers or bars projecting from a rocking shaft. The sheets of paper as they are delivered from the printing-machine are carried down on a series of tapes, the plane of which forms an angle of a little more than ninety degrees with the plane of the bed on which they (the sheets) are to be laid or deposited. The fingers or bars of the fly are placed between the tapes and a little back of them, and so soon as a sheet has been carried down sufficiently low it is taken from the tapes by the fly, the fingers or bars of which strike it between the tapes and turn it over and lay it on the pile. To effect this, it was necessary for the fly to turn more than a quarter of a circle from the plane of the tapes to the plane of the pile of sheets. The range of motion of the fly was too great for rapid working, and if the tapes were placed so as to carry down the sheet in a plane too nearly vertical to reduce in part the range of motion of the fly the sheet was liable to leave them before being struck by the fly.

The object of my invention is to insure a more rapid and proper delivery of the sheets onto the pile than has heretofore been attained; and to this end my said invention consists in the employment of means for discharging a blast of air against the under face of the sheet of paper, to hold it up against the under side of a series of tapes or cords, in combination with the fly for throwing it down onto the pile, from which it results that the sheets are more accurately delivered, and the range of

motion of the fly rendered materially less, and the rapidity of the delivery thereby greatly increased.

I have deemed it unnecessary in the accompanying drawings to represent any portion of a printing-machine, as my said invention is applicable to any printing-machine which delivers the sheets.

In the accompanying drawings, *a* represents a cylinder mounted in a suitable frame and which receives the sheets of paper from the printing-machine, and hence its periphery should travel with the same velocity as the sheet when it is being discharged. Motion may be imparted to the said cylinder in any suitable manner from the printing-machine. A series of endless tapes, *b*, pass around this cylinder and around a roller, *c*, parallel therewith and mounted in the same frame. The sheet of paper, as it is delivered from the printing-machine, is received by and carried forward on the said tapes. Above the cylinder *a* there is a roller, *d*, the journals of which work in vertical slots in two standards, so that its periphery rests on the cylinder *a*. Another series of endless tapes, *e*, just over the tapes *b*, pass around the roller *d*, over the roller *c*, and under a roller, *f*, which is mounted over the roller *c*; thence around a series of wheels, *g*, on a shaft, *h*, and back over the roller *f* to and around the roller *d*. Motion is communicated by a belt, *i*, from a pulley, *j*, on the shaft of the cylinder *a* to a pulley, *k*, on the shaft *h* of the wheels *g*, to communicate motion to the series of tapes *e*, the diameters of the pulleys *j* and *k* and of the cylinder *a* and wheels *g* being so proportioned that the two series of tapes *b* and *e* shall travel with equal velocity. Beyond the series of wheels *g* there is a rock-shaft, *l*, mounted in the frame, from which shaft project a series of parallel fingers or bars which play between the wheels *g* and the tapes *e*, and which, when at rest, are a little above the plane of the tapes. On one end of this rock-shaft *l* there is an arm, *m*, connected by a rod, *n*, with a lever, *o*, the lower end of which turns on a fulcrum-pin, *p*, and this lever is pressed against the periphery of a cam-wheel, *q*, on one end of the shaft of the cylinder *a*, by the tension of a spring, *r*, so that at each revolution of the cylinder *a* the cam projection or tappet *s* on the wheel *q* strikes the lever *o* and by the connections

rocks the shaft *l*, and thereby depress the fingers, which are immediately lifted by the tension of the spring *r*. Just under the roller *c* there is a tube, *t*, with a row of small apertures, and this tube is connected with a suitable blower (not necessary to be described or represented) by means of a pipe, *u*, and in the pipe *u* there is a stop cock, *v*, on one end of another rock-shaft, *w*, provided with an arm, *x*, connected by a rod, *y*, with the upper end of the lever *o*, so that as the fly is vibrated to depress its fingers or bars the blast of air from the blower will be shut off from the pipe *t*. As a sheet of paper passes from the printing-machine between the cylinder *a* and roller *d* it is carried along between the two series of tapes *b* and *e*, resting on the series *b*, and as soon as it passes beyond the roller *c* it is no longer held up by the series of tapes *b*, and it is then held up against the under side of the series of tapes *e* by the currents of air issuing in an upward direction from the series of apertures in the tube *t*, and it is thus held up until it is entirely beyond the series of tapes *b* and under the fly, at which time the tappet or cam *s* strikes the lever *o*, by which the stop-cock *v* is turned to stop the blast of air and the fly operated to strike down the sheet, which is thus quickly and by a slight motion of the fly deposited into a box, *z*. The fly is immediately lifted to permit the next

sheet to pass under it. In this way the sheets can be delivered and piled up accurately and more rapidly than heretofore in consequence of the very short range of motion necessary to be given to the fly.

To facilitate the entrance of the sheets of paper between the two series of tapes at the time each sheet is presented, the roller *d* is lifted by the passage under it of a projection, *a'*, at each end of the cylinder. This, however, may be dispensed with. And although I prefer to shut off the blast of air at the time the fly strikes down the sheet of paper, that being the best mode of applying my said invention, I do not wish to be understood as limiting my claim of invention thereto, as the sheets can be carried down by the fly while the blast is continued.

What I claim as new, and desire to secure by Letters Patent, is—

The employment of the means, or the equivalent thereof, for discharging a current or currents of air under the sheet of paper to hold it up against the under side of a series of tapes or cords, in combination with the fly for depressing or striking down the sheet, substantially as described.

STEPHEN D. TUCKER.

Witnesses:

ANDREW DE LACY,
WM. H. BISHOP.