2 Sheets—Sheet 1

C. KAHLER.

Delivery Apparatus for Printing-Machines.

No. 225,142. Patented Mar. 2, 1880.

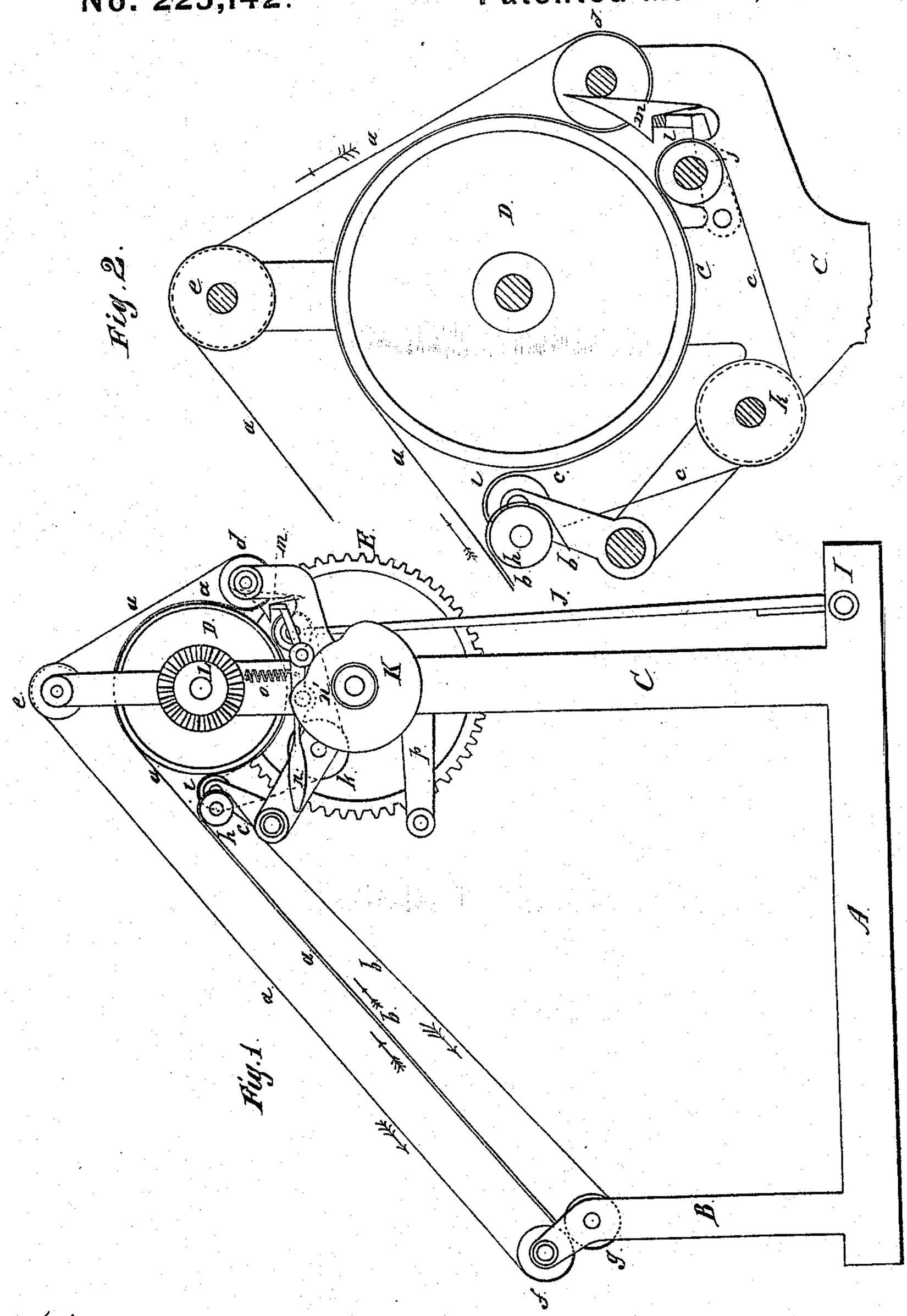

Fig. 2.

Fig. 1.

Witnesses:
L. L. Bond
O. W. Bond

Inventor
Conrad. Kahler

2 Sheets—Sheet 2.

C. KAHLER.

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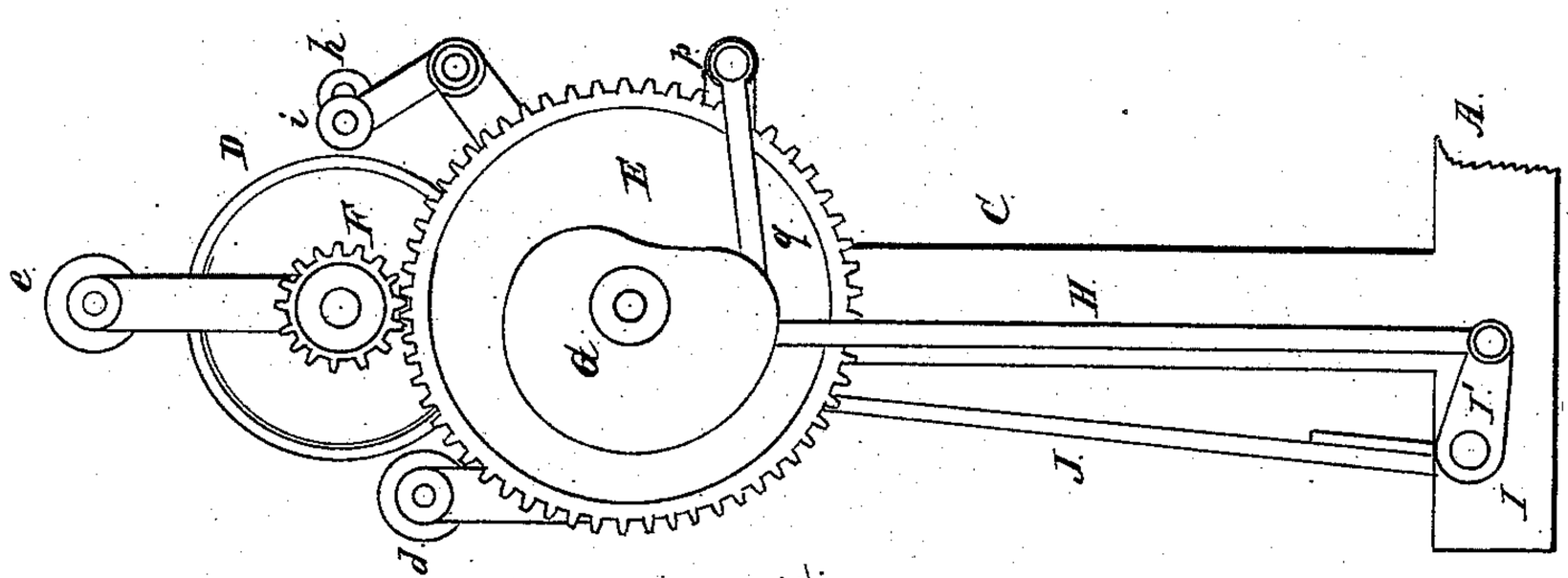

Fig. 4.

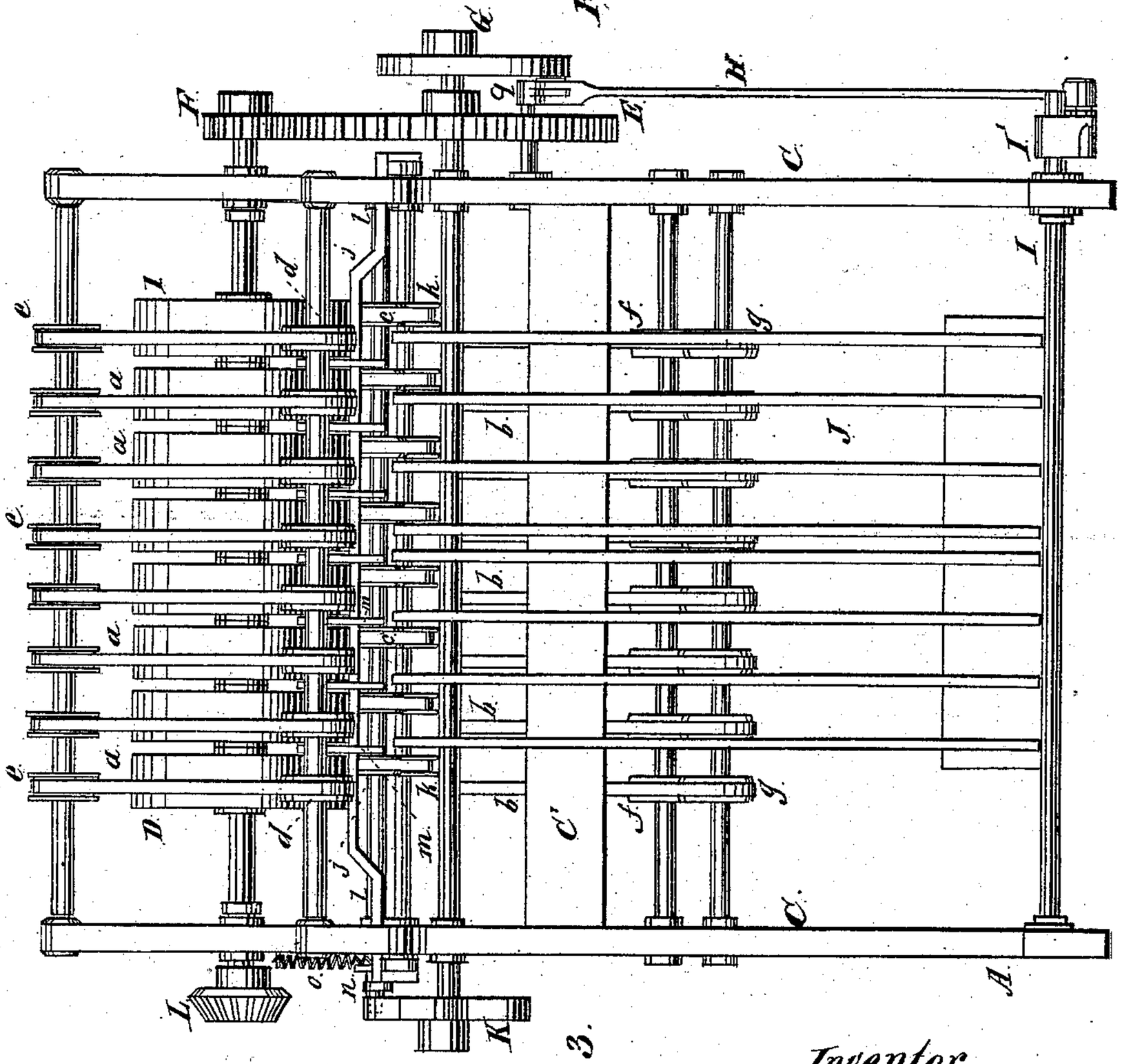

Fig. 3.

Witnesses:
L. L. Bond.
O. W. Bond.

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UNITED STATES PATENT OFFICE.

CONRAD KAHLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO FRANK B. WILLIAMS, OF PHILADELPHIA, PENNSYLVANIA.

DELIVERY APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 225,142, dated March 2, 1880.

Application filed June 5, 1876.

To all whom it may concern:

Be it known that I, CONRAD KAHLER, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Delivery Apparatus for Printing-Presses, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a longitudinal section of the delivering apparatus enlarged; Fig. 3, a rear view; Fig. 4, a side view of the final delivery portion of the side opposite to that shown in Fig. 1.

The object of this invention is to overcome the difficulty of clogging in the delivery of the paper from a web-press; and its nature consists in the several parts and combination of parts hereinafter set forth and claimed as new.

In the drawings, A represents the base of the frame; B, the posts or standards for supporting the shafts where the paper is fed in; C, the posts or standards for supporting the parts of the final delivery; C′, the cross-bar; D, the main or gathering cylinder; E F, the gear-wheels for operating the switch and fly; G, the cam-wheel for driving the pitman which operates the fly; H, the pitman; I, the shaft of the fly; I′, the crank on the outer end of the fly-shaft; J, the fly; K, the cam-wheel for operating the switch; L, the gear or other suitable wheel by which the power is applied; *a*, the upper tapes; *b*, the lower feed-tapes; *c*, the tapes for holding the paper against the main cylinder; *d e f*, the pulley-wheels for operating upper tapes; *g h*, the pulley-wheels for operating the lower feed-tapes; *i j k*, the pulley-wheels for operating the tapes *c*; *l*, the switch bar or shaft; *m*, the switch-projections; *n*, the switch-lever; *o*, the spring; *p*, the arm to which the bar *q* is pivoted; *q*, the bar for keeping the pitman H in position.

This device is to be used as an attachment for delivering the printed sheets from a web-press; and it is to be made of a suitable height and width for the press to which it is to be attached.

The gathering-cylinder D may be made cylindrical and be provided with grooves for the reception of the switch; or it may be made up of separate disks or wheels on a shaft, as shown. The circumference of this cylinder is made from four to six inches greater than the length of the printed sheets, so as to leave a space between the ends of the sheets when wound thereon.

The tapes, as shown, are mounted on pulleys, which are fixed to their shafts, except the pulleys *h i*. In practice, the pulleys *e* will be made with bearings in separate standards, so that all of the tapes may be adjusted or tightened through the pulleys in the usual manner.

The cam-wheel G is provided on its inner surface with a cam-groove having the same conformation as shown in outline in Fig. 4. This cam operates the pitman H, and the pitman, through the crank I′, operates the fly. The upper end of the pitman H is held in position by the arm *q*, which is pivoted to the fixed arm *p*.

The cam-wheel K has a flange upon its outer edge, of the form shown in Fig. 1; but below the flange the wheel is cut away, so that the lever *n* may be depressed in any position of the cam. The pin on the side of the lever *n* is held up against the cam-flange by the spring *o*.

The switch bar or shaft *l* is slightly bent near its ends, as shown in Fig. 3. The hooks *m* are located along on this bar, so that when the switch is depressed the points will enter into the spaces or grooves on the main cylinder D.

The wheels E F are so geared that the wheel F makes six revolutions to one of the wheel E, so that six sheets will be wound upon the cylinder between each operation of the switch and fly. The wheels, however, may be so geared as to take a greater or less number of sheets, as desired.

In operation the sheet, as it comes from the press, passes between the wheels *f g*, and is held between the tapes *a b*. The printed sheets are perforated at the margin by the press itself, and the delivery apparatus is speeded so as to travel faster than the press. The sheets, while they are between the tapes, will slip so as not to strain them; but as soon as they are pressed upon the cylinder D by the tapes *a* the extra speed will tear them apart and carry them sufficiently far in advance to leave the necessary space for the operation of the switch.

When six sheets are wound upon the cylinder D the cam-wheel K depresses the lever *n* and throws the switch into the grooves or spaces of the cylinder D, when the papers are carried down against the fly J, which is then operated by the wheel G and the papers thrown into position on a suitable bed or table.

I have arranged the lever *n* so that it may be depressed by hand at any time, and thereby throw out irregular sheets.

The fly J, as shown, is located so as to operate from a vertical position; but in this device it may be set at an angle, so as to avoid the use of air currents or blasts.

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

1. The combination of the switch *l m*, lever *n*, and spring *o* with the cylinder D and cam-wheel K, constructed and operating so that the lever may be operated either automatically or by hand, substantially as specified.

2. The combination of the cylinder D and tapes *a b c* with the pulleys *h*, *i*, *j*, *k*, *d*, and *e*, with the switch *l m*, lever *n*, and cam-wheel K, substantially as specified.

CONRAD KAHLER.

Witnesses:
L. L. BOND,
O. W. BOND.