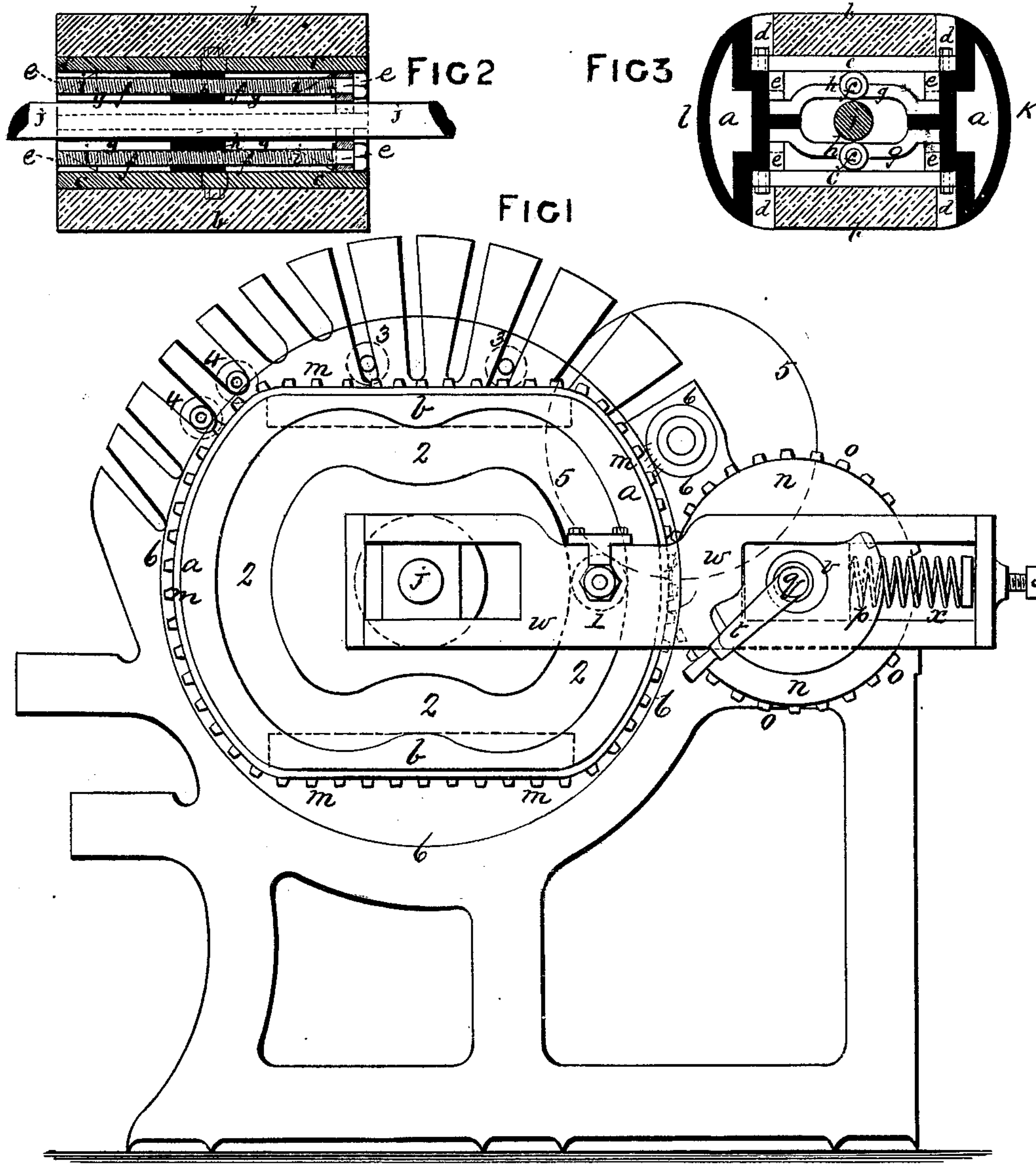


G. NEWSUM.
Rotary Printing-Machine.

No. 200,927.

Patented March 5, 1878.



WITNESSES

W. H. Harding
Wm. Fairbairn Clark

INVENTOR

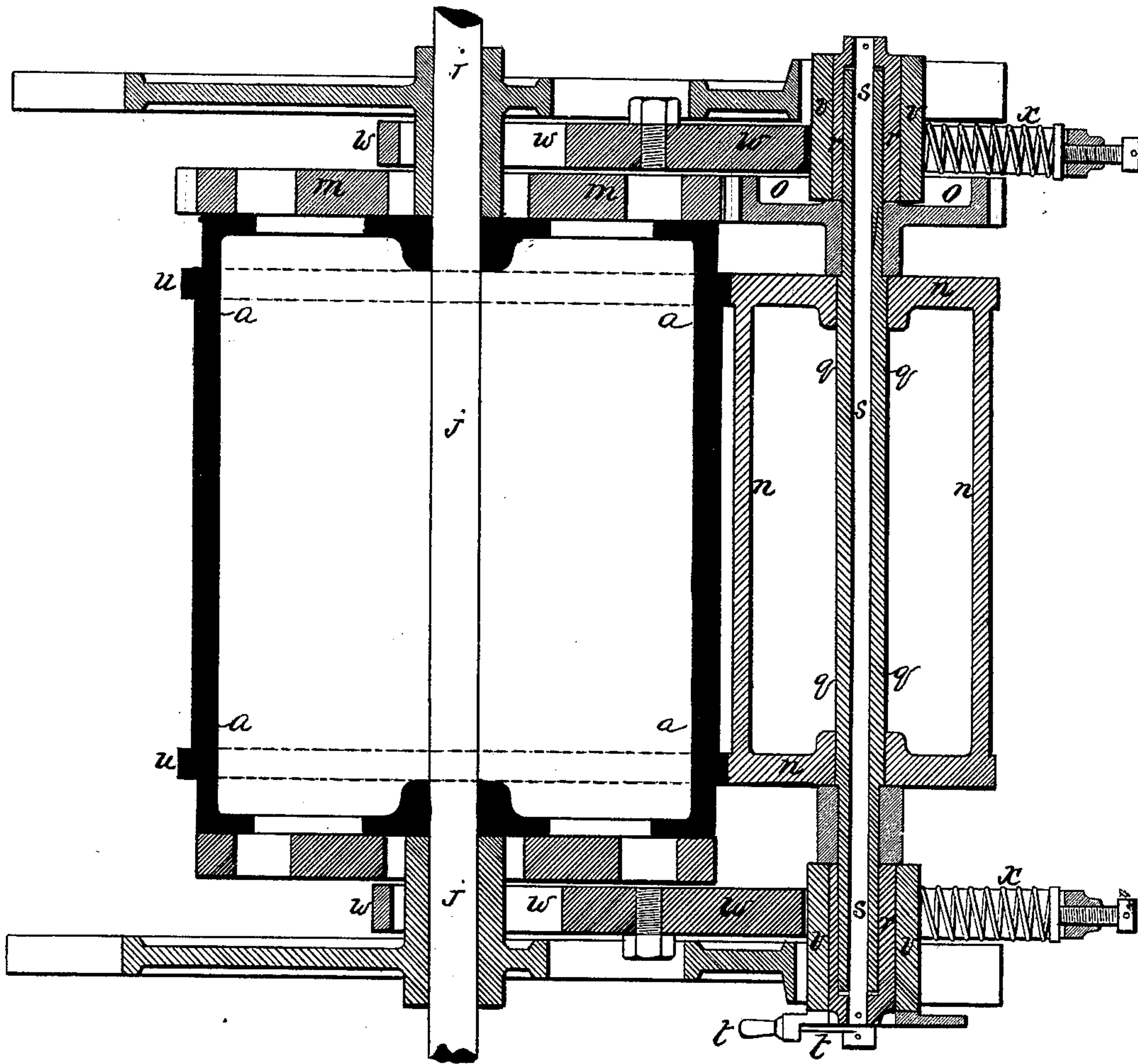
George Newsom

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FIG 4



WITNESSES

Wm. S. Searles
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INVENTOR

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UNITED STATES PATENT OFFICE.

GEORGE NEWSUM, OF LEEDS, ENGLAND.

IMPROVEMENT IN ROTARY PRINTING-MACHINES.

Specification forming part of Letters Patent No. **200,927**, dated March 5, 1878; application filed May 14, 1877; patented in England, July 17, 1872.

To all whom it may concern:

Be it known that I, GEORGE NEWSUM, of Leeds, in the county of York, England, have invented Improvements in Rotary Printing-Machines, of which the following is a specification:

This invention relates to that class of presses in which the surface to be printed from is flat, and the same is placed upon a revolving cylinder or carrier, and the impression-roller is brought toward the printing-surface by a cam.

My invention relates to the construction of the cylinder or carrier, and the means for producing the proper pressure upon the printing-surface.

The invention will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a longitudinal section through stone or type carrier. Fig. 3 is a section of stone or type carrier, and Fig. 4 is a sectional plan.

a is the type-carrier, of a cam form instead of cylindrical, having two sides flat, as shown at *b*. In the flat sides *b* may be fitted adjustable beds *c*, (which are held in position in the carriers by the set-screws *d*,) on which the type is secured in any required position. The type may be adjusted laterally by means of set-screws, wedges, or their equivalents. The adjustable beds *c* are raised or lowered by means of the wedges *e*, (shown in Figs. 2 and 3,) to suit the varying thicknesses of type. The set-screws *f* are used to actuate the wedges *e*, which are all connected together by means of the castings or saddles *g*. The bosses *h* in the saddles *g* serve as nuts, into which the set-screws *f* work. It will be readily understood that by the movement of the saddles *g* the wedges may be moved backward or forward simultaneously. These, working against inclines *i* on the adjustable beds *c*, cause the beds to be raised or lowered at pleasure by the attendant. When preferred, the beds *c* are not made adjustable.

The type-carrier *a* is also provided with two distributing-surfaces, *k* and *l*. I mount the type-carrier *a* on the shaft *j* in suitable bearings in the frame-work, as shown. On each end of this carrier *a* a cam-shaped wheel, *m*, is pro-

vided, which is of the same form as the stone or type carrier. On the same frame-work, and in adjustable bearings *p*, I provide another shaft, *q*, on which is mounted the griper-cylinder *n*, of ordinary construction, as shown. On the griper-cylinder shaft *q* I mount a fast spur-wheel, *o*, which is circular, and made to gear into the cam spur-wheel *m* on the type-carrier shaft *j*. The type-carrier *a* and the griper-cylinder *n* are so arranged or geared that the latter makes two revolutions to the former's one.

In order to separate the griper-cylinder *n* from the type-carrier, for the purpose of preventing the impression being taken on the sheet in case of the sheet being improperly fed or placed on the griper-cylinder *n*, I make the shaft hollow, and mount it in internal eccentric bushes *r*. These two bushes are connected or coupled together by means of a rod, *s*, which passes through the hollow griper-cylinder shaft *q*. These bushes *r* are pinned or otherwise fastened to the rod *s*, as shown. On one or both ends of the rod *s* is provided a hand-lever, *t*. It will be readily understood that by turning the rod by means of the lever or levers *t* the internal eccentric bushes *r* are caused to move round simultaneously, whereby the griper-cylinder *n* is separated or brought up to the type-carrier when required.

The griper-cylinder, when working, runs against a surface prepared for it on the type-carrier *a*. This surface *u* is of the same dimensions as the pitch-line of the rack-wheel *m*. The internal bushes *r* of the griper-shaft *q* are provided with external bushes *v*, mounted in sliding bearings *p*, being so arranged that the griper-cylinder may be drawn in close contact with the type-carrier *a*. In order to do this, I couple suitable slide-bars *w* to the external bushes *v* of the griper-cylinder shaft *q*. These bushes are provided with adjustable bearings, in which the springs *x* are placed. These act as cushions for the bushes *v* of the griper-cylinder. On each side of bar *w* a roller, *1*, is mounted, and made to work in the recessed cams *2* at each end of the type-carrier *a*. As the latter rotates the rollers *1*, working in the cams *2*, retain the various rotating parts in their required position with regard to

each other—as, for instance, the fast spur-wheel *o* is retained at its proper distance from the cam-wheel *m*.

The inking-rollers 3 and “ductors” 4 are caused to revolve in the ordinary way, and, by means of suitable projections fixed on the type-carrier *a*, the rollers 3 for one color are lifted clear of the other rollers.

Motion is given to the type-carriers *a* from some suitable motive power through driving-pulleys 5 and gearing 6, thence to the griper-cylinder through the cam spur-wheel *m* and fast spur-wheel *o*, and the required motion is imparted simultaneously, through cams and friction-pulleys, to the damping and inking rollers.

Letters Patent in Great Britain for this invention were granted July 17, 1872, No. 2,139.

Having now described the nature of my said

invention, I would here remark that by substituting stones in place of the ordinary letterpress type the machine may be employed for lithographic printing, and that I do not limit myself to the exact limits, details, or configuration of the parts I have explained and shown; but

I claim—

The revolving carrier sustaining one or more flat printing-surfaces, in combination with the slide-bars *w*, rollers 1, cams 2, shaft *q*, griper-cylinder *n*, eccentric bushes *r*, and their connecting-rod *s*, substantially as set forth.

GEORGE NEWSUM.

Witnesses:

J. W. HARDING,

WM. FAIRBURN HART.