

(No Model.)

G. A. WILSON.
ROTARY FOLDING APPARATUS.

No. 345,352.

Patented July 13, 1886.

Fig. 1.

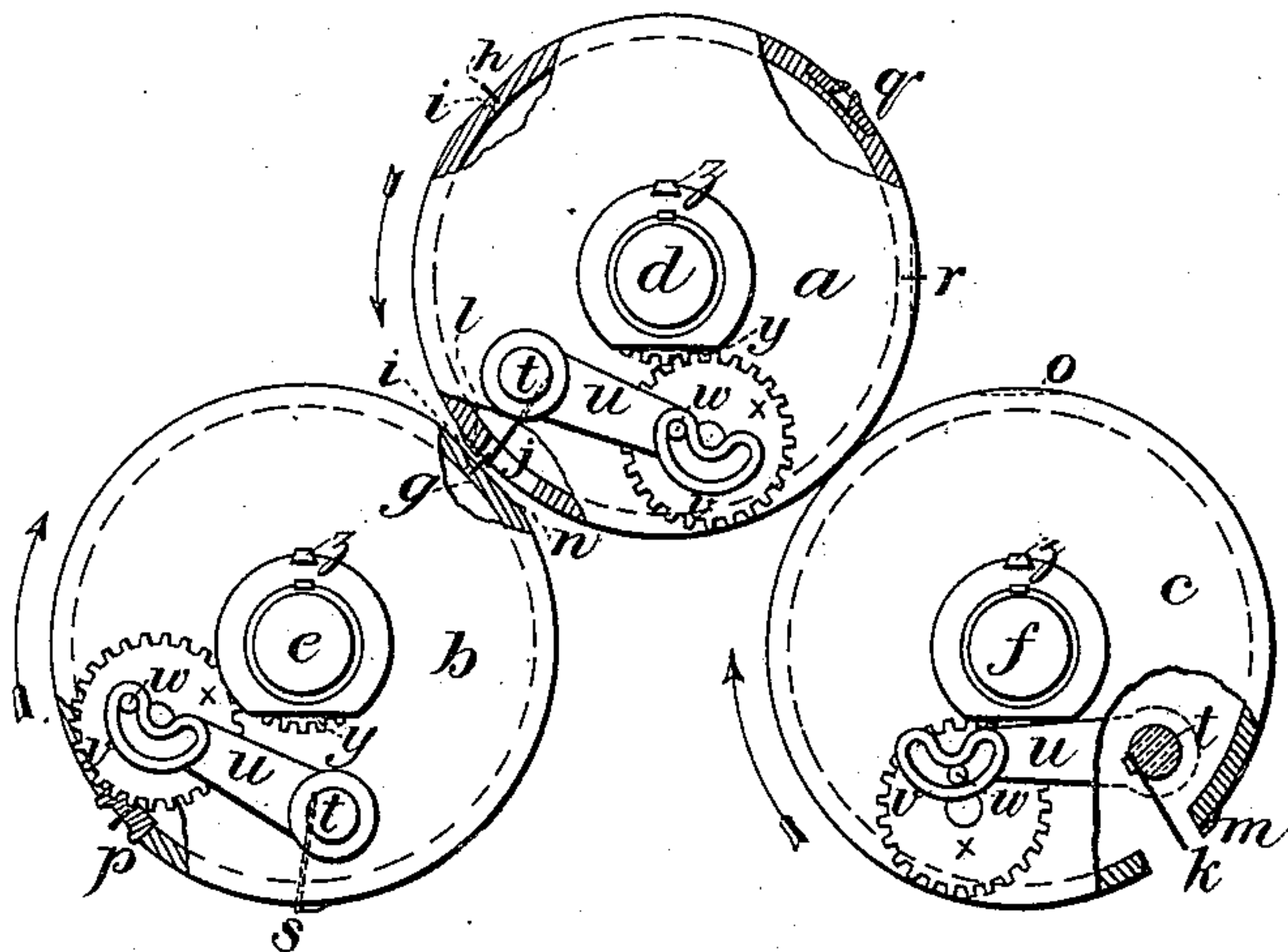
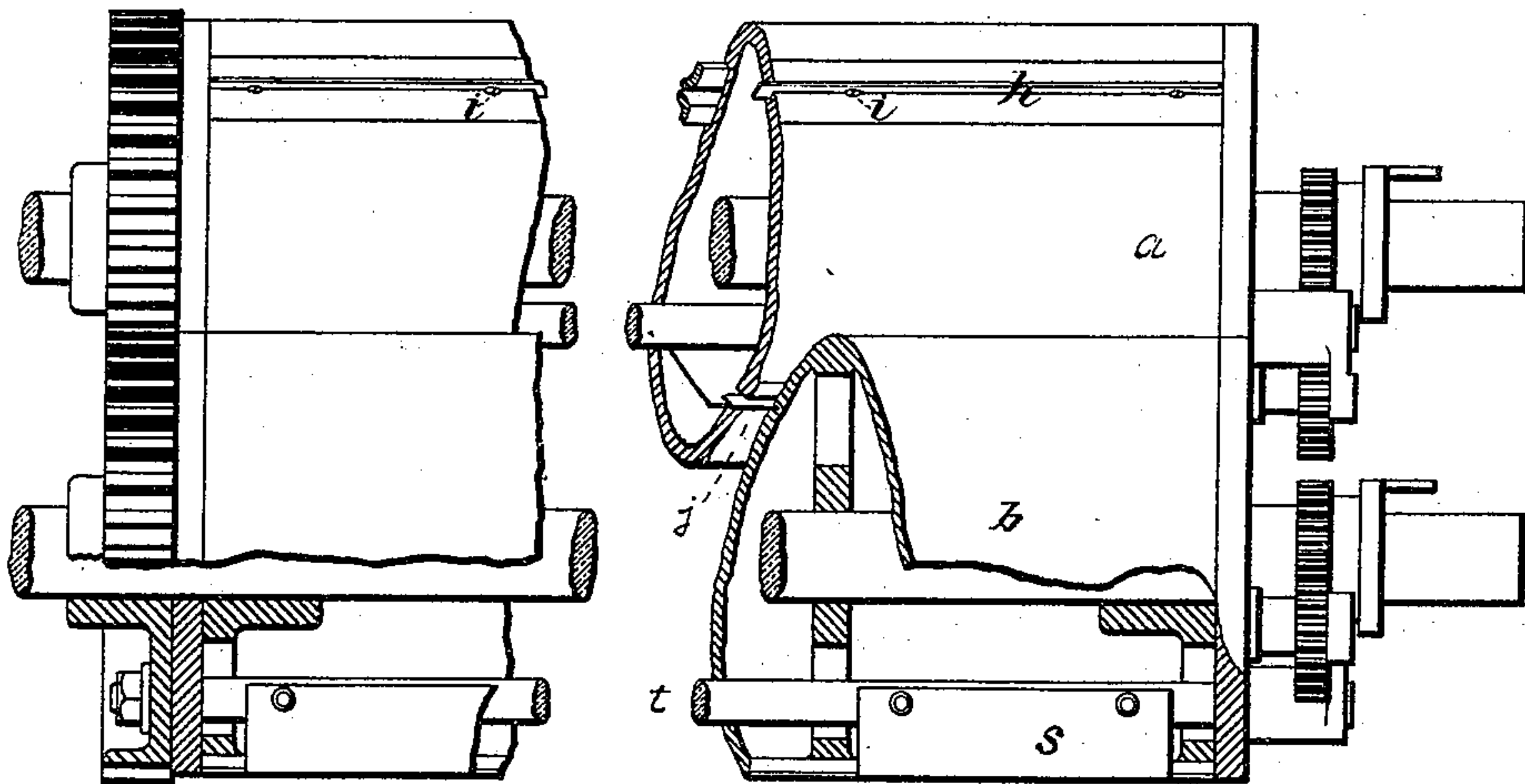


Fig. 2.



Witnesses.

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GEORGE ASHLEY WILSON, OF BROAD GREEN, NEAR LIVERPOOL, COUNTY OF LANCASTER, ENGLAND.

ROTARY FOLDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 345,352, dated July 13, 1886.

Application filed February 24, 1885. Serial No. 156,664. (No model.) Patented in England March 25, 1884, No. 5,368.

To all whom it may concern:

Be it known that I, GEORGE ASHLEY WILSON, a subject of the Queen of Great Britain, residing at Broad Green, near Liverpool, in the county of Lancaster, England, have invented a new and useful Rotary Apparatus for Folding Sheets of Paper, (for which I have obtained a patent in Great Britain, No. 5,386, bearing date the 25th day of March, 1884, and nowhere else,) of which the following is a specification.

This invention relates to apparatus for giving folds to sheets of paper transversely to the direction in which the paper is traveling, whether the paper is fed to the said apparatus by hand or direct from a printing-press, or otherwise.

Now, the object of my invention is to simplify the construction of such folding apparatus, to enable folding to be effected with greater rapidity and certainty than heretofore, and to work with comparative silence.

Figure 1 is a side elevation; and Fig. 2 is a view of the cylinders *a b*, partially broken away.

a b c are folding-cylinders secured to and carried by shafts *d e f*, and arranged to give two folds to a sheet of paper.

g h are the creasing-blades, secured in grooves in the cylinders by set-screws *i* in such manner as to project slightly beyond the circumference of the cylinders.

j k are the folding-grippers, which, like the creasing-blades, project beyond the circumference of the said cylinders.

l m are projections or raised portions on the cylinders to face the grippers.

n o are depressions in the face of the cylinders to allow the passage of the gripper *j* and creaser *r*.

p q are the cutting-knife and recess.

r s are the creasing-blade and gripper for taking hold of the leading portion of the web, and they are constructed and operated in similar manner to the folding creaser and grippers above mentioned. The grippers *k s j* are secured by set-screws or their equivalents to shafts and carried in bearings in the ends of the cylinders. On the shaft *t* are lever-arms *u*, made at the free ends with

curved slots *v*, in which work crank or disk pins *w*, secured to the toothed wheels *x*. The toothed wheels *x* rotate freely on pins secured to the ends of the cylinders, and gear into wheels *y* on the shafts *d e f*. The said wheels *y* are left stationary by means of the sleeve and stud *z*, secured to any adjacent part of the framing of the machine.

The action of the apparatus is as follows:

As the cylinders rotate, the wheels *x* are carried around the fixed wheels *y*, and are thereby caused to rotate. The rotation of the said wheels *x* gives a rocking motion to the lever-arms *u*, and closing and opening action to the grippers *s*, with periods of rest, for the purpose of gripping, holding, and releasing the papers at the required times. On the cylinder *a* the gripper is shown as just closed. On the cylinder *b* the gripper is shown as just about to open and release the leading edge of the sheet. On the cylinder *c* the gripper is shown fully opened. The web is fed in between the cylinders *a b* until it is creased and seized by the gripper *s*, and is carried around the cylinder *b* until the cylinder reaches the position shown in Fig. 1. The blade *g* and gripper *j* then crease and seize the web, so as to fold the same and convey the doubled portion around the cylinder *a*, (the leading crease in the web being released by the gripper *s*,) until the cylinder *a* has made a half-revolution. The web is then cut by the knife-blade *p*, and at the same time the doubled sheet on the cylinder *a* is seized by the gripper *k*, (the leading crease being smoothed out,) which again doubles the sheet and carries it around the cylinder *c*. The leading end of the web, where it is cut by the knife-blade, passes between the cylinders until the web is again seized by the gripper *s*, as already described, and the operation is repeated, while the first sheet, being carried part way around the cylinder *c*, falls therefrom on being released by the gripper *k*. It will be seen that while the pins *w* are traveling from one end of the slots *v* to the other the grippers will be at rest. The length of the slot is usually such that the grippers are at rest during about one-third of the revolution of the cylinders.

I claim—

1. A rotary folding apparatus having cylinders provided with equally-projecting stationary creasing-blades and movable grippers, and projections adjacent to the grippers and depressions adjacent to the creasing-blades, said projections and depressions acting in combination with each other and the grippers and blades, substantially as described.

2. In rotary folding apparatus, the combination of gripper-shafts, levers with curved slots, crank or disk pins, and actuating-gear, substantially as set forth.

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Witnesses:

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