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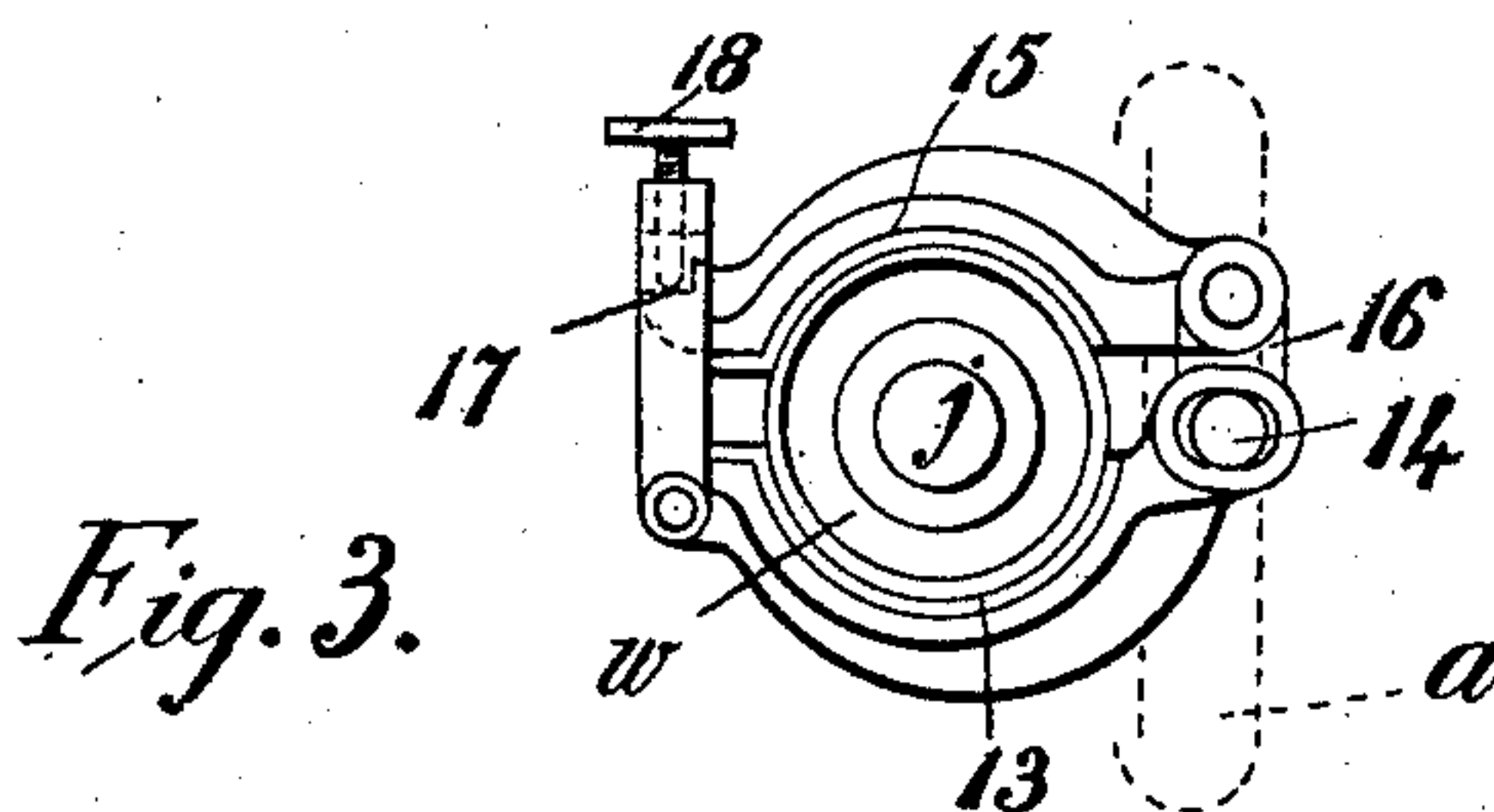
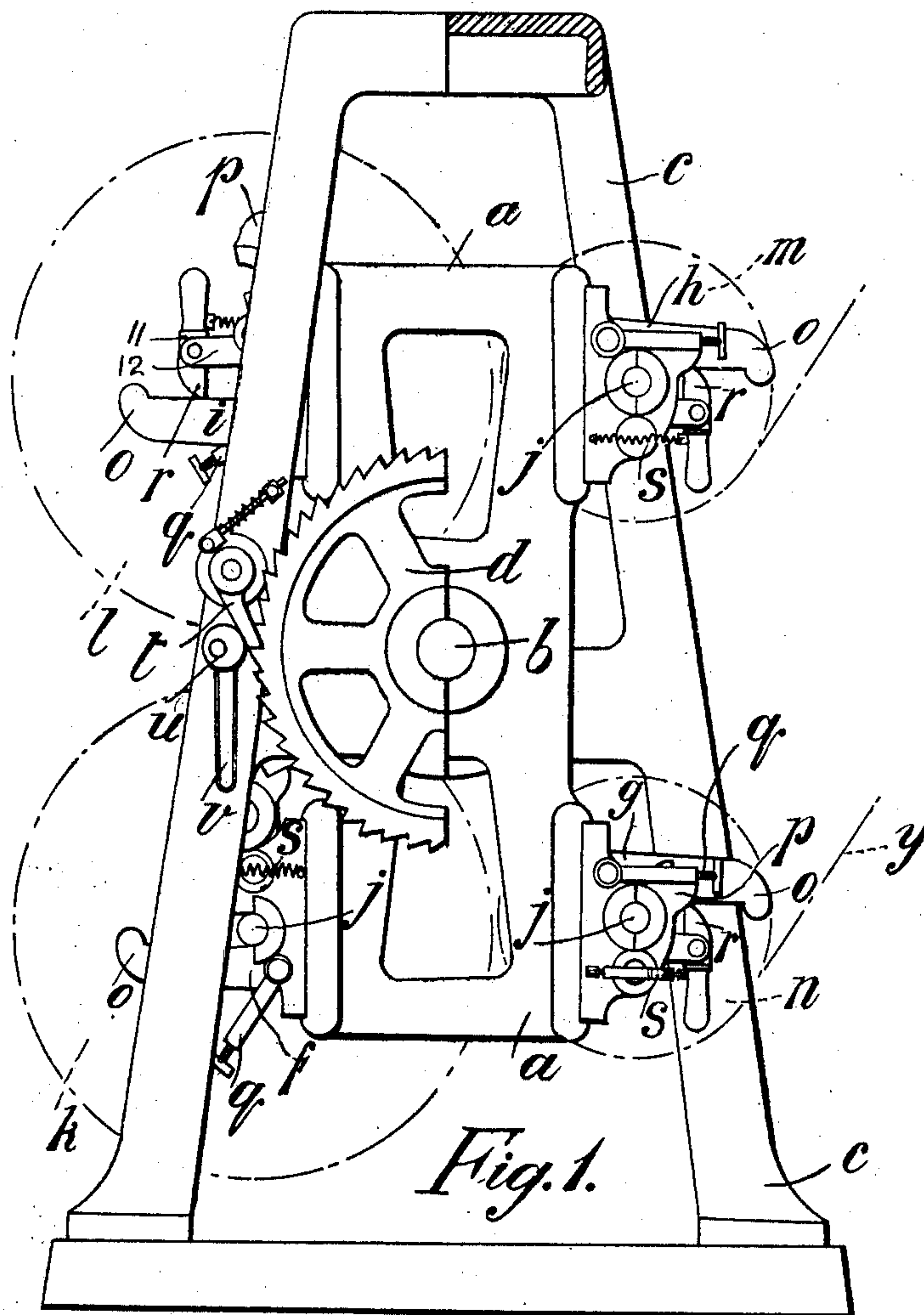
PATENTED JULY 31, 1906.

R. C. ANNAND.

MEANS FOR SUPPLYING ROLLS OF PAPER TO WEB PRINTING MACHINES.

APPLICATION FILED SEPT. 26, 1905.

2 SHEETS—SHEET 1.



WITNESSES

W. P. Burke
L. J. Callaghan

INVENTOR

Robert Cumming Annand
By *Richard R. Attis*
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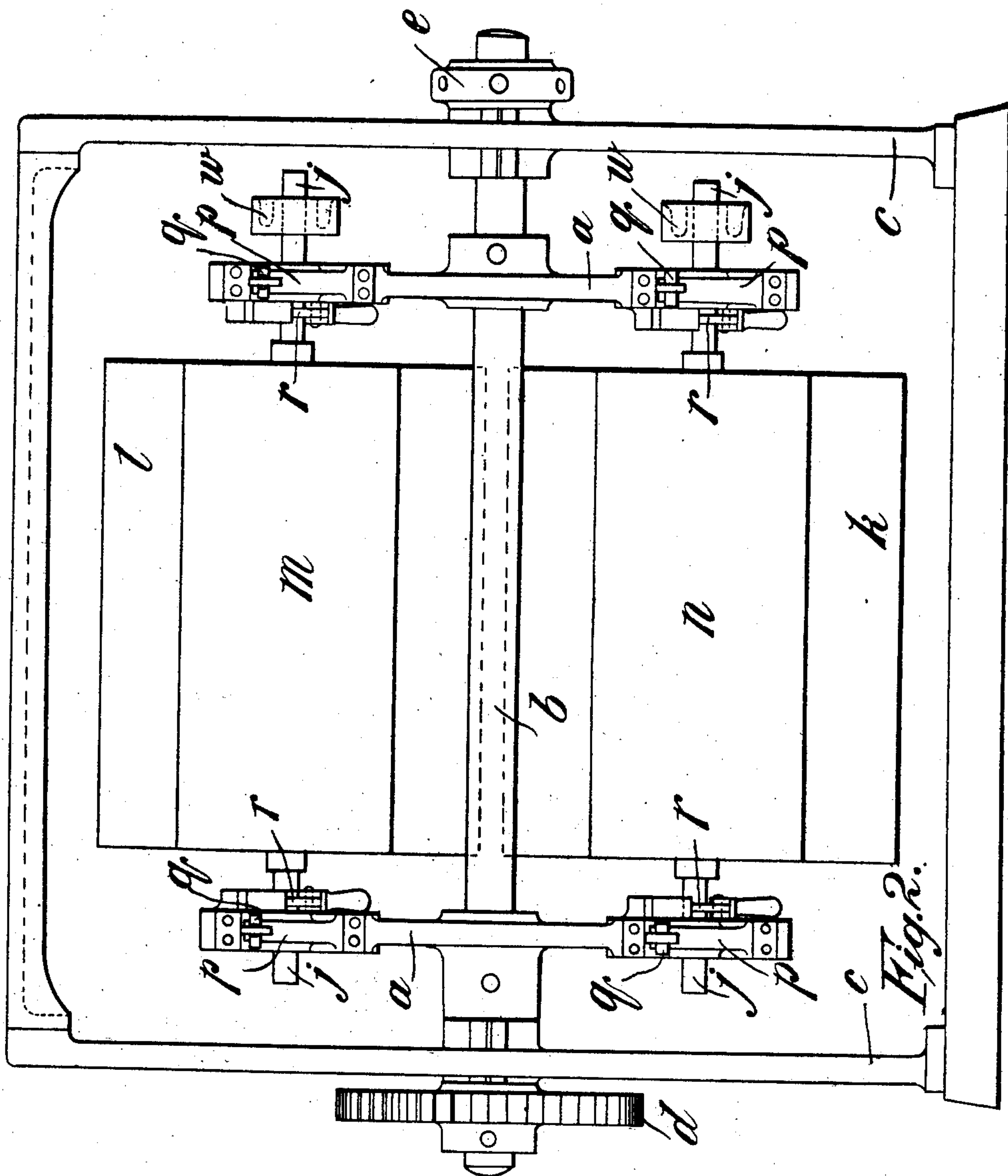
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ATTYS.

UNITED STATES PATENT OFFICE.

ROBERT CUMMING ANNAND, OF SOUTH SHIELDS, ENGLAND.

MEANS FOR SUPPLYING ROLLS OF PAPER TO WEB-PRINTING MACHINES.

No. 827,072.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed September 26, 1905. Serial No. 280,177.

To all whom it may concern:

Be it known that I, ROBERT CUMMING ANNAND, a subject of the King of Great Britain, and Ireland, residing at Cornwallis street, South Shields, in the county of Durham, England, have invented certain new and useful Improved Means for Supplying Rolls of Paper to Web-Printing Machines, of which the following is a specification.

My invention relates to means for renewing the rolls of paper in web-printing machines.

The object of the invention is to provide means for removing the empty rolls and replacing them by new rolls with the shortest possible stoppage of the machine.

The invention consists in an arrangement for renewing the rolls of paper in web-printing machines in such a manner that the new rolls of paper are swung into position wholly or partly by their own weight at the instant they are required to take the place of the used rolls.

The invention further consists in the arrangement for renewing the rolls of paper hereinafter described.

Referring to the accompanying drawings, Figure 1 is an end elevation of a roll-carrying device constructed according to one modification of my invention, Fig. 2 being a side elevation of the same. Fig. 3 is an end elevation showing the reel-brakes for regulating the tension of the web.

In carrying my invention into effect according to the form illustrated the roll-carrier *a* is mounted on a horizontal axle *b*, pivoted in the standards *c* of the machine, the axle *b* being continued beyond the standards and having keyed to it at one end a ratchet-wheel *d* and at the other end a capstan-head *e*. The roll-carrier, which in the arrangement shown is suitable for working in conjunction with a two-roll printing-press, is provided with four pairs of forked arms *f g h i*, each pair of arms being adapted to receive and form bearings for the axles *j* of the paper-rolls and hold said axles in a horizontal position. The rolls of paper *k l m n* are lifted so that their axles *j* lie on the rests *o*, and the axles *j* are then pushed home into the bearings in the forked arms, the hinged keeps *p* then being fastened down upon the axles *j* by means of pivoted clamps *q*, thus keeping the rolls in position.

In order to prevent the rolls falling out when the carrier is swung round if by an over-

sight the pivoted clamps have not been secured, automatic pivoted catches *r* are provided, held by springs *s* in one direction, so that they give when the rolls are pushed in and prevented from moving in the other direction by a shoulder or the like *11* on the catch coming in contact with one end *12* of the forked arm or a stop on the same. On the standard is pivoted a spring-pressed pawl *t*, adapted to engage the teeth of the ratchet-wheel *d*. An eccentric disk *u*, provided with a handle *v*, bears against the pawl *t*, preventing it from moving away from the ratchet-wheel *d* until the handle *v* is lifted. Brake-disks *w* are provided on the roll-axles adapted to be gripped by brakes pivoted to the standard of the machine in order to control the unwinding of the paper *y* from the rolls.

The brake shown operates as follows: A braking element *13*, pivoted at *14*, together with a similar element *15*, connected to *14* by a short link *16*, is adapted by screw means *17 18* to be brought into contact with the brake-disk *w*. The braking action is controllable by the screw *18*, coacting with the recess *17*.

The operation of the machine is as follows: When the full rolls of paper *m n* on the side next the printing-press are partly used, two new full rolls *k l* are placed in the forked arms *f g* and the retaining-clamps fixed in position. When the rolls *m n* are finished, the handle *v* of the eccentric disk *u* is lifted and frees the pawl *t*, which then allows the roll-carrier to swing round by reason of the greater weight of the rolls *k l* on the side remote from the printing-press. The pawl being pressed against the ratchet by a spring prevents the carrier from swinging back again. The friction of the apparatus may prevent the new rolls from reaching the precise position occupied by the exhausted rolls which they replace; but this does not affect the practical working of the apparatus. If the new rolls *k l* fail to reach the position occupied by the used rolls *m n*, which they replace, the next pair of rolls put in will be as much above the center of the apparatus as the rolls *k l* were below it, and this next pair of rolls will therefore rise higher than the rolls *k l*.

While I have shown my invention as applied to a two-roll machine, it will be readily understood that the apparatus can be duplicated to serve a machine printing from three or four or more rolls at each end of the press without departing from the invention.

Having thus described my invention, what

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

1. Means for supplying rolls of paper to web-printing machines, comprising a rigid roll-carrier rotatable about a horizontal axis, bearings for rolls of paper so placed on said carrier, that said carrier rotates by the difference in the weight of full and empty rolls placed on said roll-carrier, as set forth.
2. Means for supplying rolls of paper to web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, roll-carrying arms oppositely disposed with relation to said axis, means for retaining the axles of the rolls of paper in bearings in said arms, means preventing said roll-carrier from rotating until the roll or rolls next the printing-machine are used, and means for freeing said carrier and allowing same to rotate, as set forth.
3. Means for supplying rolls of paper to web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, forked arms on said roll-carrier oppositely disposed with relation to said axis, bearings in said forked arms, keeps retaining the axles of paper-rolls in said bearings, means for preventing said roll-carrier from rotating until the roll or rolls next the printing-machine are used, and means for freeing said carrier and allowing same to rotate under the action of gravity, as set forth.
4. Means for supplying rolls of paper to web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, forked arms on said roll-carrier oppositely disposed with relation to said axis, bearings in said forked arms, keeps retaining the axles of paper-rolls in said bearings, automatic catches allowing said axles to be pushed into said bearings but preventing return movement of said axles, means for preventing said roll-carrier from rotating until the roll or rolls next the printing-machine are used, and means for freeing said carrier and allowing same to rotate under the action of gravity as set forth.
5. Means for supplying rolls of paper to

web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, roll-carrying arms oppositely disposed with relation to said axis, means for retaining the axles of the rolls of paper in bearings in said arms, a ratchet-wheel mounted on the axle of said roll-carrier, a pawl pivoted on the standard of the machine engaging with said ratchet-wheel to prevent rearward motion, and means for locking and unlocking one of the last-named parts, as and for the purpose described.

6. Means for supplying rolls of paper to web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, roll-carrying arms oppositely disposed with relation to said axis, bearings in said arms, means for retaining the axles of the rolls of paper in said bearings, a ratchet-wheel mounted on the axle of said roll-carrier, a pawl pivoted on the standard of the machine engaging with said ratchet-wheel to prevent rearward motion, and an eccentric disk adapted to lock said pawl and ratchet-wheel as and for the purpose described.

7. Means for supplying rolls of paper to web-printing machines, comprising in combination, a rigid roll-carrier rotatable about a horizontal axis, roll-carrying arms oppositely disposed with relation to said axis, bearings in said arms, means for retaining the axles of the rolls of paper in said bearings, brake-disks mounted on the axles of said rolls of paper, and brakes carried by the arms of the machine adapted to act in conjunction with said brake-disks, means preventing said roll-carrier from rotating until the roll or rolls next the printing-machine are used, and means for freeing said carrier and allowing same to rotate under the action of gravity as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT CUMMING ANNAND.

Witnesses:

H. D. JAMESON,
F. L. RAND.