Nov. 28, 1939. J. L. BLACKLEY 2,181,798

DUCTOR ROLLER

Filed Sept. 28, 1937

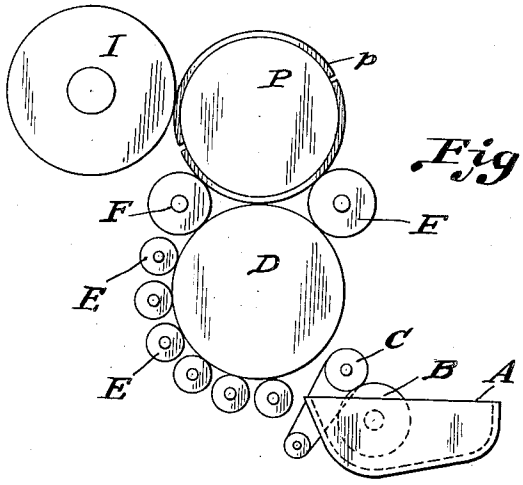


Fig. 1.

Fig. 2.

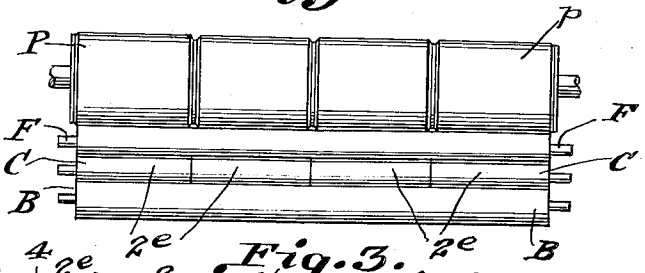


Fig. 3.

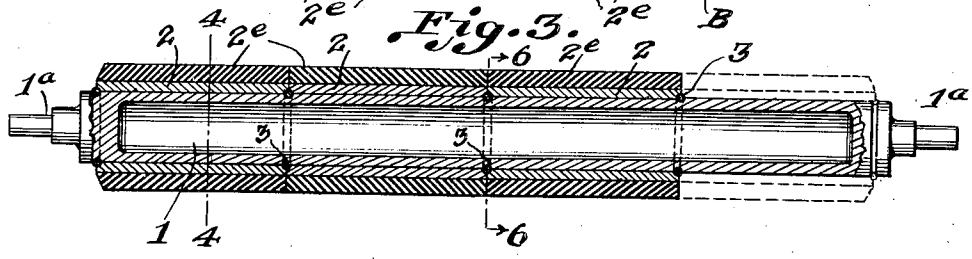


Fig. 4.

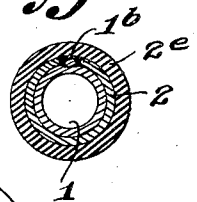


Fig. 5.

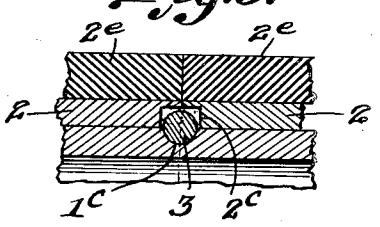
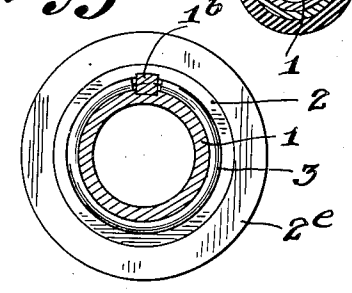


Fig. 6.



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UNITED STATES PATENT OFFICE

2,181,798

DUCTOR ROLLER

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Application September 28, 1937, Serial No. 166,221

7 Claims. (Cl. 101—348)

This invention is a novel improvement in ductor rollers for newspaper printing presses. Its object is to provide a ductor roller having plate-width ink transfer sections which can be assembled upon a spindle or core in any desired order, to produce a ductor roller which will deliver ink from the fountain roll to the ink distributing means only at points where ink should be supplied by the distributing means to page plates on the plate cylinder; and which will not supply ink to the distributing means at points where there is no printing plate on the cylinder to be inked.

In brief the invention comprises a ductor roller made up of a spindle or core and a plurality of tubular page width sections, each covered with rubber or composition, and means for retaining a section or sections at any desired point or points on the spindle. Each tubular section is made one page wide, and one or more such sections can be placed on a spindle in any required arrangement to supply ink for any combination of page printing plates (from one to four or more on the related plate cylinder).

The accompanying drawing illustrates a ductor roller constructed in accordance with one embodiment of my invention; and I will explain the invention with reference to said drawing, and summarize in the claims the essentials and novel features of the invention for which protection is desired.

In said drawings—

Fig. 1 is a diagrammatic view of an ordinary type of inking mechanism for a newspaper printing press.

Fig. 2 is a diagrammatic plan view illustrating the relation between my ductor roller and the plate cylinder.

Fig. 3 is an enlarged side view of a ductor roller for supplying ink for the plates on a press cylinder four pages wide; three sections being shown in full lines and (one-fourth) section in dotted lines.

Fig. 4 is a transverse section on line 4—4, Fig. 3.

Fig. 5 is an enlarged detail longitudinal section of the ductor roller at one of the points where two sections meet thereon.

Fig. 6 is an enlarged transverse section on line 6—6, Fig. 3.

The inking mechanism of a newspaper printing press ordinarily comprises a fountain A having a roll B for delivering ink; a ductor roller C transferring ink from the fountain roll to a distributing drum D, with which coacts a plurality of distributing rollers E and form rollers F for transferring ink from the drum to printing plates *p* on the plate cylinder P. The ductor C is ordinarily a metallic core covered with rubber or plastic composition material; and the ductor is usually mounted in swingable brackets by which it is oscillated between the fountain roll and the distributing drum.

Rotary presses for printing newspapers are commonly made with plate cylinders capable of carrying four newspaper plate pages, and the ink fountain and ink distributing means must be made sufficiently long to be capable of delivering ink to all four printing plates on the plate cylinder when it is fully plated. The usual ductor roller will supply ink to all four page plates on the plate cylinder; which plates are of the same size.

Sometimes the newspaper product is to be reduced in size, and in such case less than four plates (one, two, or three pages) are used on one or more plate cylinders. In such case it is customary to use a ductor roller only wide enough to transfer ink to such portion of the ink distributing means as will deliver ink only to the plates actually used on the plate cylinder.

Use of less than a full equipment of plates happens frequently, and at short notice, and it is customary for the pressman to carry in stock interchangeable ductor rollers for respectively supplying ink for two, three, and four page plates. As the modern newspaper press is made up of units, each usually printing eight pages and requiring two ductors per unit (or when certain pages are printed with an additional color three or more ductor rollers per unit) it is expensive to maintain a sufficient quantity of interchangeable ductor rollers on hand to enable the ink to be supplied to the distributing means only at points required, and not supplied at points where it is not required.

By my invention one ductor spindle and one set of inking sections removably mounted thereon is sufficient to enable the ductor to properly supply ink to any number of page plates on the plate cylinder.

In the construction shown my ductor comprises a spindle or core 1 having reduced ends 1*a* which form the journals. This spindle can be made solid, but is preferably made tubular as shown to eliminate unnecessary weight. The spindle 1 is equipped with a longitudinal rib or spline 1*b*. The spindle also has spaced circumferential grooves 1*c*, one at the center and four others, the grooves being spaced apart the width of one printing plate or page.

A plurality of tubular metal sections 2 are provided, each being covered with rubber or composition 2*e*. Each section is approximately equal in length to the width of one printing plate or page, and is of such internal diameter as will enable it to be slipped endwise on or off the spindle 1. Each section is also provided with an internal longitudinal groove or keyway slidably engaging the spline 1*b*. The sections 2 are preferably also recessed at each end as at 2*c*.

The sections are removably secured in place on the spindle by any suitable means. As shown snap rings 3 of an internal diameter slightly smaller than the circumference of the bottom of the grooves 1c are used. These snap rings are not complete rings, and have an opening somewhat larger than the width of the spline 1b. The rings 3 fit tightly in grooves 1c, but can easily be pried open sufficiently to allow them to be slid along and on and off the spindle when a section is to be placed on the spindle, or removed therefrom.

The recesses 2c in the ends of the sections 2 are in depth equal to half the width of the rings 3 and of larger internal diameter than the outside diameter of said rings; so that adjacent sections 2 can be strung on the spindle with their ends touching. When the spindle sections and spring rings are all in place, the complete assembly forms the equivalent of a one-piece four plate wide ductor roll as shown in Fig. 2.

The spring rings 3 will hold the sections in desired position on the spindle and prevent endwise movement thereof; and the spline 1b prevents the sections turning on the spindle and causes them to rotate with the spindle. The complete assembly operates as if it were a single core covered with rubber or composition.

With my improved ductor the pressman is required to keep in stock only four sections 2, for each ductor roller. The sections are duplicates and any section can be placed at any desired operative position on the spindle. If the press is but four pages wide each ductor roller should be provided with four sections 2. When the impression cylinder is carrying four plates, i. e., fully plated, then the four sections 2 would be arranged end to end on the spindle, as in Fig. 2. If the plate cylinder carries but three plates, and say the right hand end plate is omitted, then the right hand end section on the ductor roller (which would ordinarily supply ink to the omitted plate) would be left off of the ductor, as in Fig. 3. If the left hand plate was omitted on the plate cylinder, the left hand section would be omitted from the ductor. If an intermediate plate was left off the plate cylinder, then the corresponding intermediate section would be left off of the ductor.

I claim:

1. A ductor roller for the inking mechanism of newspaper printing presses, comprising a spindle and a plurality of removable and replaceable tubular sections corresponding in number with the page width of the press and slidably assembled on the spindle, each section comprising a metallic core and an exterior resilient covering approximating in length the width of a printing plate, and pre-positioned means carried by the spindle for individually detachably securing all or any less number of the sections in their respective fixed positions on the spindle.

2. A ductor roller for the inking mechanism of newspaper printing presses, comprising a spindle equal in length to the length of the related plate cylinder of the press, and a plurality of sections slidably removable but non-rotatably mounted on said spindle, each section being as long as a printing plate is wide, and fixed means carried by the spindle for individually holding the sections in their respective fixed positions on the spindle; whereby the full component of sections or any less number of the sections can be arranged on the spindle in accordance with the number and position of the plates on the plate cylinder to be supplied with ink from the fountain.

3. A ductor roller for the inking mechanism of a newspaper printing press, comprising a spindle equal in length to the length of the related plate cylinder of the press, a plurality of inking sections mounted on said spindle corresponding in number with the page width of the press and each section comprising a metallic cylinder having an exterior resilient covering, means for individually securing the said sections against rotation on the spindle, and removable pre-positioned means carried by the spindle for individually securing each section in its respective fixed position on said spindle.

4. A ductor roller for the inking mechanism of a newspaper printing press; comprising a spindle equal in length to the related plate cylinder of the press, a plurality of inking sections mounted on said spindle, each section comprising a metallic cylinder having an exterior resilient covering, said spindle having circumferential grooves spaced apart the length of a section, and spring rings in said grooves for retaining the sections in position between them.

5. A ductor roller for the inking mechanism of a newspaper printing press; comprising a spindle equal in length to the related plate cylinder of the press, a plurality of inking sections mounted on said spindle, each section comprising a metallic cylinder having an exterior resilient covering, said spindle having circumferential grooves spaced apart the length of a section, and spring rings in said grooves for retaining the sections in position between them, the adjacent ends of the sections being recessed to accommodate the spring rings and permit the ends of the adjacent sections to be closely abutted.

6. A ductor roller for the inking mechanism of a newspaper printing press; comprising a cylindrical spindle equal in length to the related plate cylinder of the press and having a longitudinal spline; a plurality of inking sections mounted on said spindle, each section comprising a metallic cylinder having a slot to engage the spline, and an exterior resilient covering on said cylinder; said spindle having circumferential grooves spaced apart the length of a section, and interchangeable spring rings in said grooves for retaining the section in position.

7. A ductor roller for the inking mechanism of a newspaper printing press; comprising a spindle equal in length to the related plate cylinder of the press and having a longitudinal spline; a plurality of inking sections mounted on said spindle, each section comprising a metallic cylinder having a slot to engage the spline, and an exterior resilient covering on said cylinder; said spindle having circumferential grooves spaced apart the length of a section, and spring rings in said groove for retaining the section in position; the adjacent ends of the sections being recessed to accommodate the spring rings and permit the ends of the adjacent sections to be closely abutted.

JAMES L. BLACKLEY.