W. J. DOLAN.

SLITTING ATTACHMENT FOR PAPER MACHINES.

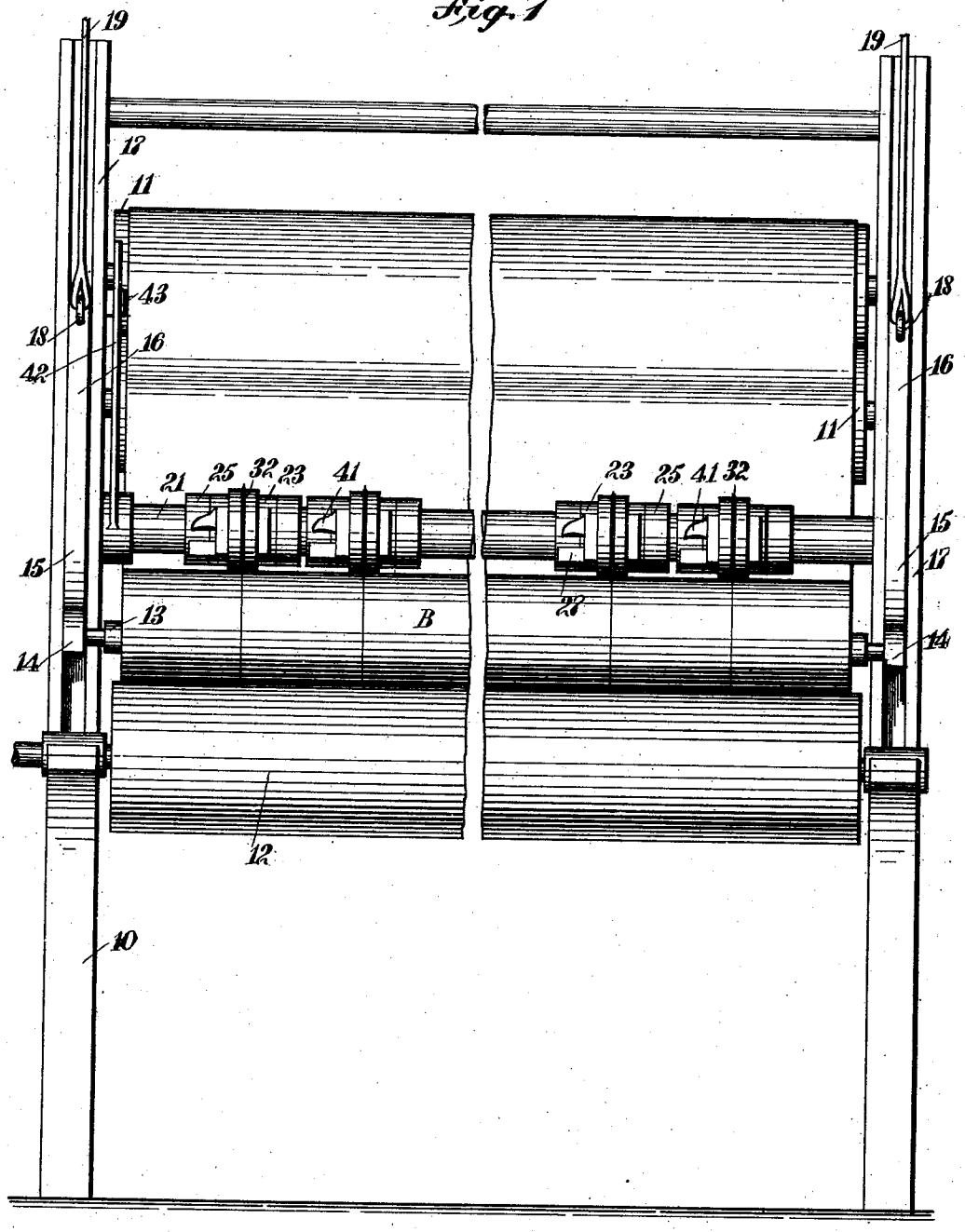
APPLICATION FILED SEPT. 14, 1909.

974,039.

Patented Oct. 25, 1910.

3 SHEETS—SHEET 1.

Fig. 1



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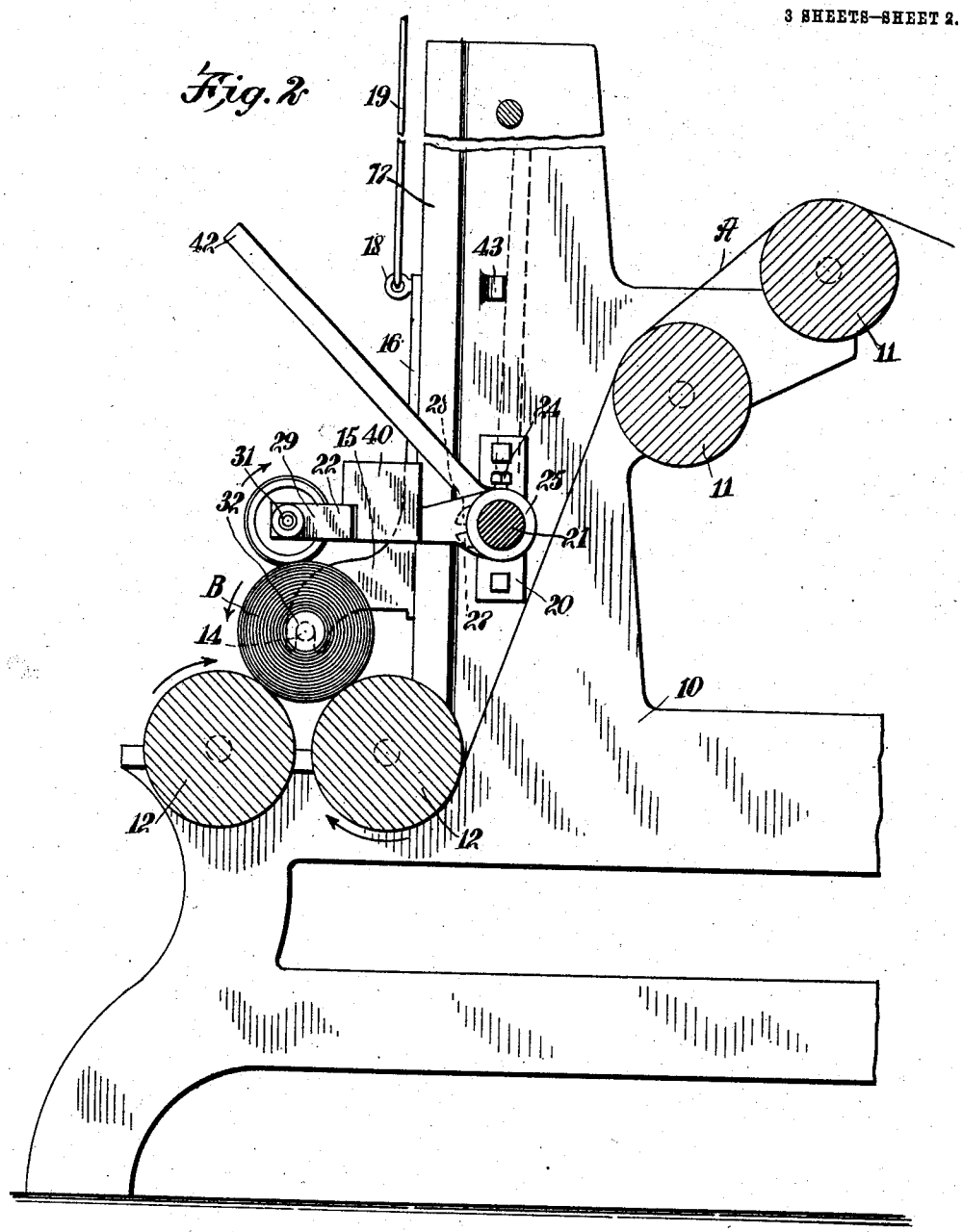
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3

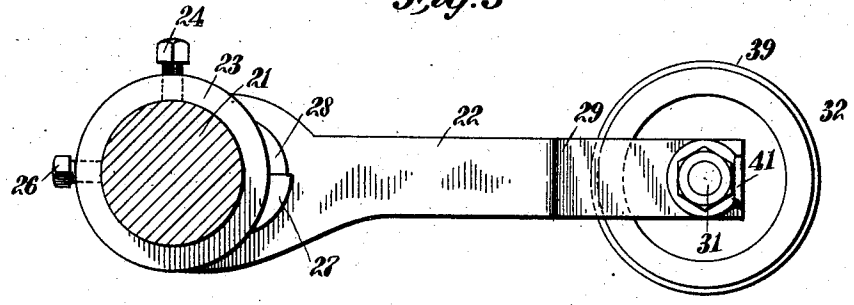


Fig. 4

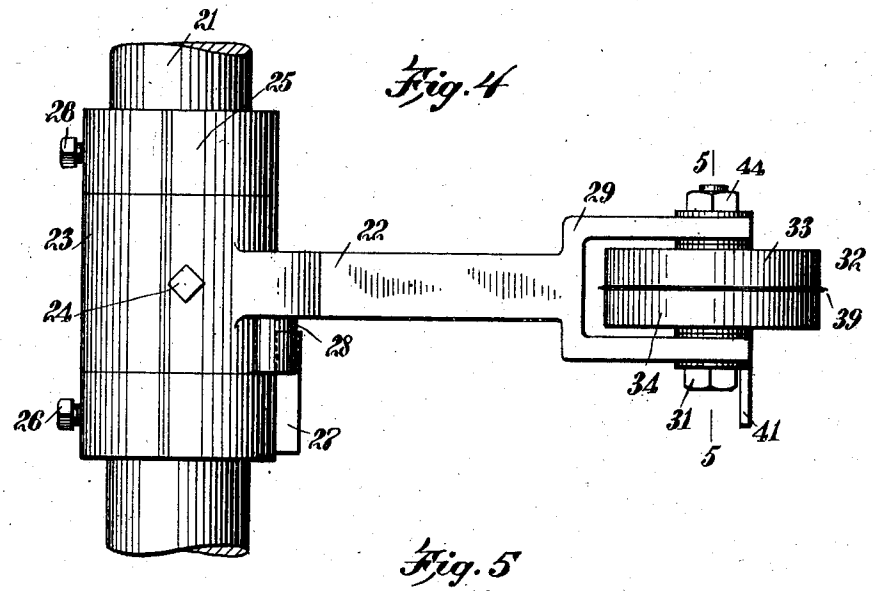


Fig. 5

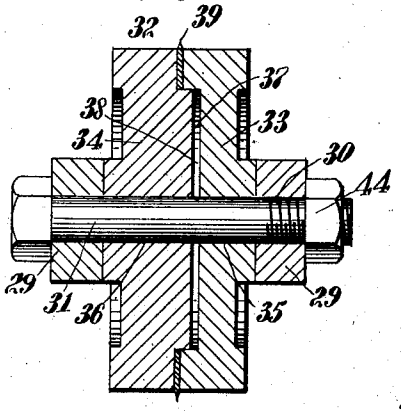
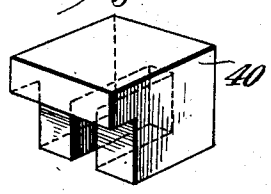


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM JAMES DOLAN, OF RHINELANDER, WISCONSIN, ASSIGNOR OF ONE-FIFTH TO RHINELANDER IRON CO. AND ONE-FIFTH TO BENNETT LARSEN, OF RHINELANDER, WISCONSIN.

SLITTING ATTACHMENT FOR PAPER-MACHINES.

974,039. Specification of Letters Patent. **Patented Oct. 25, 1910.**

Application filed September 14, 1909. Serial No. 517,592.

To all whom it may concern:

Be it known that I, WILLIAM J. DOLAN, a citizen of the United States, and a resident of Rhinelander, in the county of Oneida and State of Wisconsin, have invented a new and Improved Slitting Attachment for Paper-Machines, of which the following is a full, clear, and exact description.

This invention relates to slitting attachments for paper machines, and more particularly to a device of this class which comprises a number of swinging arms, operable individually and together, each of the arms carrying a cutter and being adjustable, so that a web of paper can be slit into a number of different widths by means of the attachment.

The object of the invention is to provide a simple, strong and efficient slitting attachment for paper machines of different kinds, which avoids the necessity of employing a special machine for cutting wide webs of paper, produced by the paper-making machinery, into smaller widths, by means of which the webs can be slit into different widths and by means of which different numbers of widths can be produced.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an end elevation of a paper machine, showing an embodiment of my invention applied thereto; Fig. 2 is a longitudinal section of part of the machine, showing the attachment; Fig. 3 is an enlarged transverse section, showing one of the swinging arms; Fig. 4 is an enlarged plan view of one of the arms; Fig. 5 is a transverse section on the line 5—5 of Fig. 4; and Fig. 6 is a perspective view of a detail.

Before proceeding to a more detailed explanation of my invention, it should be understood that the paper-making machines, which are now very generally employed, produce webs of paper of great width, for instance, of a width of one hundred inches or more. These webs it is frequently desirable to cut or slit into strips of suitable smaller widths. My invention can be attached directly to the paper machine, so that it is unnecessary to remove the roll from the machine and place it in a special machine, in which it is unwound and at the same time cut into separate strips, and these again wound on different rolls.

Referring more particularly to the drawings, I have shown a paper machine of any suitable type, having a frame 10, upon which are journaled rolls 11, over which the web A of paper passes. The web subsequently passes under one of a pair of winding cylinders 12, and is wound upon a suitable shaft or mandrel 13. The latter has the end journaled in inverted bearings 14 of bearing brackets 15. The latter are integral with slides 16, which are movably mounted in guides 17 of the frame. It will be understood that the roll of the paper web is supported upon the winding cylinders in the usual manner, the guide brackets moving upward as the roll increases in thickness. The slides 16 have eyes 18 at which are secured flexible members 19, preferably connected with counter weights. The frame on opposite sides has bearings 20, in which is journaled a transverse slitter shaft 21. A plurality of arms 22 are mounted upon the shaft 20 by means of extended guide portions 23 having openings to receive the shaft, and which are provided with set screws 24, by means of which the arms can be rigidly secured upon the shaft. At each of the arms the shaft has a collar 25 also provided with a set-screw 26 by means of which the collar can be secured in position and held against movement longitudinally of the shaft. However, it will be seen that by loosening the set screws 26 and by shifting the collars 25, the arms can be moved into different positions upon the shaft. They can also be positioned in operation and can be held out of operation by means of the set screws 24. One of the collars 25 has a lug 27 adapted to cooperate with a lug 28 of the part 23 of the

corresponding arm for a purpose which will be brought out more clearly hereinafter. The free end 29 of each arm is bifurcated and the side of the bifurcated part has bearing openings 30 therethrough, in which is journaled the spindle or pivot bolt 31 of a cutter 32. Each of the cutters comprises a female member 33 and a male member 34, circular in form and having respectively openings 35 and 36 therethrough to receive the spindle bolt 31. The female member has, inwardly spaced from the periphery, a recess 37 formed to receive a correspondingly shaped extension 38 of the member 34. The blade 39, which is annular in form and has an outer peripheral cutting edge, is positioned between the members and projects radially. Each of the arms has mounted thereon a removable weight 40 the preferred construction of which is shown in Fig. 6. It has, further, at the end a lateral projection or lug 41, which affords means for manipulating the arm, that is, for swinging it upward out of operation. The shaft has rigid therewith a lever 42 by means of which the shaft can be manually turned, to position all of the arms out of or in operation as the case may be, a stop 43 being provided on the frame of the machine to engage the lever 42 and to hold it in position such that the arms are disposed out of operation.

When the cutters are in operation they rest upon the roll B of the paper web and are held in engagement therewith by their own weight and that of the weight 40, so that as the roll turns the paper is severed into strips by the cutter blades. The lugs 27 and 28 limit the downward movement of the cutter arms to prevent the cutter blade from coming into engagement with the mandrel 13, whereby the mandrel would be injured and the edge of the blade destroyed. It will be seen that one or more of the arms can be disposed out of operation while the others of the arms are in position to sever the web.

The cutters can be easily removed to permit the replacing or sharpening of the blades by simply removing the nuts 44 of the spindle bolts and withdrawing the latter. The cutters are rotatable upon the spindle bolts and turn as the roll B turns. The arms, it will be understood, adjust themselves automatically to the thickness of the roll and remain in operative engagement therewith as long as the lugs 27 and 28 do not prevent it.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A slitting attachment for paper machines, comprising a shaft, arms mounted to swing loosely upon said shaft and having cutters, and separate stops carried by said shaft for limiting the movements of said arms, whereby said arms can be swung independently of one another, and whereby said shaft is operable to swing said arms simultaneously.

2. A slitting attachment for paper machines, comprising a shaft having a lever, whereby said shaft can be rocked, a counterweight for said shaft, said shaft being slidably mounted, and arms mounted to swing loosely upon said shaft, and having cutters, said shaft having stops for limiting the movements of said arms in one direction.

3. The combination, with a paper machine of a rock-shaft, an arm mounted to swing upward freely upon said shaft, means for holding said arm against movement longitudinally of said shaft, and a stop for limiting the downward swinging movement of said arm, whereby said arm can be thrown out of operation by rocking said shaft.

4. The combination, with a paper machine having sliding bearings, of a rock shaft journaled in said bearings, a counterweight operatively connected with said shaft, a lever carried by said shaft, whereby it can be manually rocked, arms mounted to swing upon said shaft, and collars secured upon said shaft and adjustable longitudinally thereof, said collars serving to limit the movements of said arms along said shafts, and having stops, said arms having parts adapted to engage said stops, whereby said stops serve to limit the swinging movements of said arms.

5. The combination with a paper machine, of a shaft journaled thereon, an arm mounted to swing upon said shaft, adjustable collars carried by said shaft and positioned at opposite sides of said arms, one of said collars having a lug, said arm having a lug adapted to engage said above-mentioned lug to limit the movement of said arm, means for securing said arm in operation, and a cutter carried at the free end of said arm.

6. The combination with a paper machine having a web roll, of a shaft journaled upon said machine adjacent to said roll, arms pivotally mounted upon said shaft, collars adjustably carried by said shaft at opposite sides of said arms, certain of said collars having lugs, said arms having lugs adapted to engage said first mentioned lugs, said arms having set screws whereby they can be held out of operation, a lever rigid with said shaft, and a stop carried by said machine and adapted to engage said lever to hold said shaft in position such that said arms are inoperatively disposed with respect to said roll, each of said arms at the free end having a cutter.

7. In a device of the class described, a cutter comprising a female member having a

recess, a male member having an extension adapted to be received by said recess, an annular blade mounted between said members and about said extension and having a projecting peripheral edge, said members having openings therethrough, a spindle bolt in said openings and serving to secure said members together and adapted for rotatably mounting the cutter, and a member having spaced sides adapted to receive said bolt therebetween.

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

WILLIAM JAMES DOLAN.

Witnesses:

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Merton Stiles.