

W. A. PRINGLE.
WEB SLITTING MECHANISM.
APPLICATION FILED JULY 26, 1908.

984,024.

Patented Feb. 14, 1911.

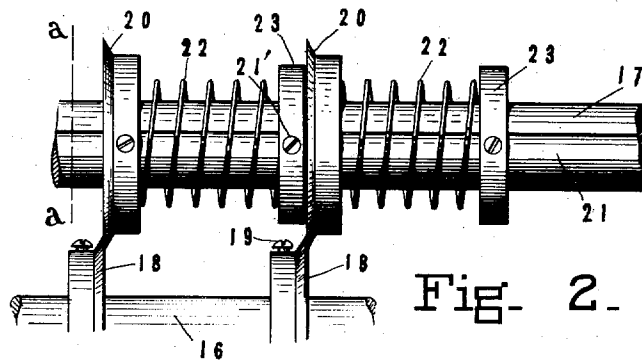
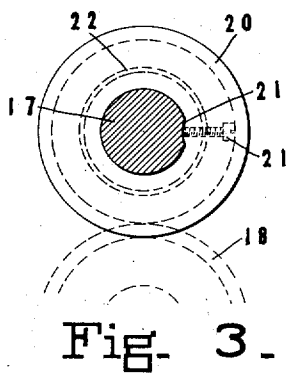


Fig. 4.

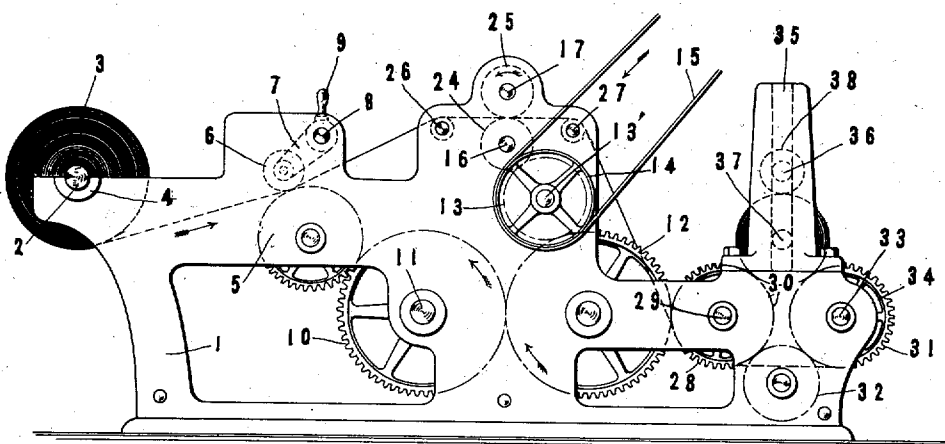


Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM A. PRINGLE, OF NIAGARA FALLS, NEW YORK, ASSIGNOR TO THE CARTER-CRUME CO., LIMITED, OF NIAGARA FALLS, NEW YORK, A CORPORATION OF CANADA.

WEB-SLITTING MECHANISM.

984,024.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed July 26, 1906. Serial No. 327,815.

To all whom it may concern:

Be it known that I, WILLIAM A. PRINGLE, a citizen of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Web-Slitting Mechanism, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mechanism for cutting webs, and one of its objects is to provide improved mechanism of the above type for slitting a sheet of webbing into a plurality of strips.

Another object is to provide means for insuring an even feed of the web through the machine and for preventing the adjoining edges of the cut strips from lapping over one another when the same are being wound upon the rewinding roller.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts, which will be exemplified in the mechanism hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, wherein is shown one of the various possible embodiments of my invention, Figure 1 is a view thereof in side elevation; Fig. 2 is a view in elevation showing a portion of the cutting means; Fig. 3 is a view taken on line *a-a* of Fig. 2; Fig. 4 is a view in elevation of the means employed to prevent the cut strips from lapping one upon another.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing, wherein I have shown a preferred adaptation of my invention, 1 denotes 1 of the two oppositely-disposed sides of the framework of the machine in which are supported the several operative parts thereof embodied in my invention. In the rear portion of the framework is journaled a roller 2 upon which is supported the roll of web 3 which is to be cut into strips. This roller is adapted to be re-

movably inserted in journal-block 4, as clearly shown in Fig. 1.

The web first passes between rollers 5 and 6 and is drawn thereby from the supply roll. Roller 5 is carried upon a shaft journaled between the side walls of the framework of the machine and the web is held in frictional contact with said roller by roller 6 which is carried by arms 7 extending from a shaft 8 journaled between the side walls of the machine, said shaft being provided with a handle 9 by means of which roller 6 may be swung upward from its operative position, as shown in Fig. 1, to allow for the ready insertion of the ends of the web therebetween, as when the supply of web becomes exhausted from the supply roller and is replaced by a fresh roll. Roller 5 is suitably driven by means of a gear wheel 10, carried upon shaft 11, which meshes with a gear wheel 12, it in turn meshing with a driving gear 13, the shaft 13 of which carries a pulley 14 which is driven from a suitable source of power, as by means of a belt 15.

Shafts 16 and 17 are journaled at either end in the side walls of the framework of the machine and upon these shafts are mounted the cutting devices employed for slitting the web into a plurality of strips. Shaft 16 carries a plurality of relatively fixed knives 18, these knives being made adjustable thereon, so that they may be spaced apart at different distances and secured in any adjusted position by means of set screws 19 to admit of the cutting of strips of different widths; and with knives 18 co-act knives 20 carried upon shaft 17. Shaft 17 is provided with a key-way, as at 21, to receive set screws 21' of knives 20, said set screws being loosely received in said key-way to permit of knives 20 being withdrawn from knives 18, as when a fresh strip of webbing is threaded through the machine, and these loosely mounted knives are held resiliently in position to co-act with knives 18 to cut the webbing by means of extensile springs 22 extending between collars 23, fixed upon shaft 17, and said knives. Shafts 16 and 17 are provided with intermeshing gears 24 and 25 respectively, gear 24 being driven by the main driving gear 13. Idler rollers 26 and 27 are provided for support-

ing the portion of the web being fed past the cutting devices.

Meshing with gear wheel 12 is a gear wheel 28 carried upon a shaft 29 journaled between the side walls of the framework, and upon this shaft is mounted a roller 30. Gear wheel 28 drives gear wheel 31 through an intermediate intermeshing gear wheel 32 and upon the shaft 33 of gear wheel 31 is mounted a roller 34 similar to that numbered 30 on shaft 29.

Slidably mounted in slots 35 of standards 36 erected upon either side of the framework of the machine is a rewinding or accumulating roller 37 for the cut strips of webbing. This roller rests upon rollers 30 and 34 and is adapted to be driven through frictional contact therewith, and as the windings of the cut strips increase thereon, said roller can slide upwardly in its slots to compensate for the increased circumference thereof due to the superimposed windings of the webbing thereon.

In order that the several rolls of webbing which are being wound upon rewinding roller 37 may be prevented from being fastened together by reason of the edges of the cut strips lapping one upon another, spreader roller 38 is loosely mounted between standards 36, one of which is shown in Fig. 1. This roller is threaded from its central portion toward either end, the threads running in opposite directions so as constantly to urge the strips one from another and thus provide a slight space therebetween. Roller 38 is driven through its peripheral engagement with the strips of webbing, and by reason of its being loosely received in slots 35 of standards 36, it is permitted to have a bodily movement to compensate for the constantly increasing diameter of the roll of wound strips of webbing upon roller 37.

Having thus described the structural features constituting this embodiment of my invention, the operation thereof, which should be in a large measure obvious to those skilled in the art to which this invention relates, may be described briefly as follows: The webbing is drawn from the supply roll by means of rollers 5 and 6 and passes over idler 26 through the cutting devices, through which it is drawn by means of rollers 30 and 34, idler 27 co-acting with idler 26 to support the same during the cutting operation. Rewinding roller 37 being driven peripherally by means of rollers 30 and 34, receives the several cut strips and as such strips are wound thereon the rewinding roller moves upward in its slots to compensate for its increased diameter while the frictional engagement between the cut strips and said driving rollers insures the passing of the webbing through the machine at a uniform ve-

locity. By reason of the employment of the reversely arranged threads on spreader roller 38, the several rolls of wound strips are carried from engagement with each other and may readily be separated when removed from the rewinding roller.

It will accordingly be seen that I have provided mechanism well adapted to attain the several objects and ends of my invention, and that such mechanism is characterized by simplicity and efficiency.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

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

1. In mechanism of the class described, in combination, a roller adapted to hold a supply of web to be cut, means for drawing a sheet of web from said supply roller, means independent of said drawing means for cutting the web into a plurality of strips, said cutting means comprising a shaft carrying a plurality of fixed knives and a second shaft having loosely keyed thereon a plurality of co-acting spring-pressed knives, means for drawing the web past the cutting means, a rewinding roller adapted to rest upon said drawing means and be driven through its frictional contact therewith, said rewinding roller being bodily movable from said drawing means as the same increases in size due to the increased windings of the cut strips thereon, and a roller having regular and reverse threads resting upon and engaging the cut strips of web wound upon said rewinding roller adapted to prevent their being lapped one upon another as they are being wound upon said rewinding roller.

2. In mechanism of the class described, in combination, web supporting rollers, means for cutting the web into a plurality of strips, independent web feeding means intermediate the web supporting roll and the cutting means, means for drawing the web through the cutting means, a loosely mounted roller for receiving the web after it is cut, and loosely mounted roller means above said web receiving roll in frictional contact with the web wound thereon, adapted positively to separate the strips into which said web is cut.

3. In mechanism of the class described, in combination, a paper receiving roller, and roller means in frictional contact therewith having its effective surface inclined with respect to the longitudinal axis of said paper

receiving roller whereby a lateral tension is exerted on the paper.

4. In mechanism of the class described, in combination, a rotary member presenting a resilient surface, and roller means in frictional contact therewith having its effective surface inclined with respect to the longitudinal axis of said paper receiving roller

whereby a lateral tension is exerted on the paper as the same passes therebetween.

In testimony whereof I affix my signature, in the presence of two witnesses.

WILLIAM A. PRINGLE.

Witnesses:

JAMES BENGOUGH,

THOMAS D. SUTHERLAND.

Correction in Letters Patent No. 984,024.

It is hereby certified that in Letters Patent No. 984,024, granted February 14, 1911, upon the application of William A. Pringle, of Niagara Falls, New York, for an improvement in "Web-Slitting Mechanism," an error appears in the printed specification requiring correction as follows: Page 1, line 45, the numeral "1", second occurrence, should read *one*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 7th day of March, A. D., 1911.

[SEAL.]

E. B. MOORE,

Commissioner of Patents.

receiving roller whereby a lateral tension is exerted on the paper.

4. In mechanism of the class described, in combination, a rotary member presenting a resilient surface, and roller means in frictional contact therewith having its effective surface inclined with respect to the longitudinal axis of said paper receiving roller

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