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WEB REELING-OFF MACHINE

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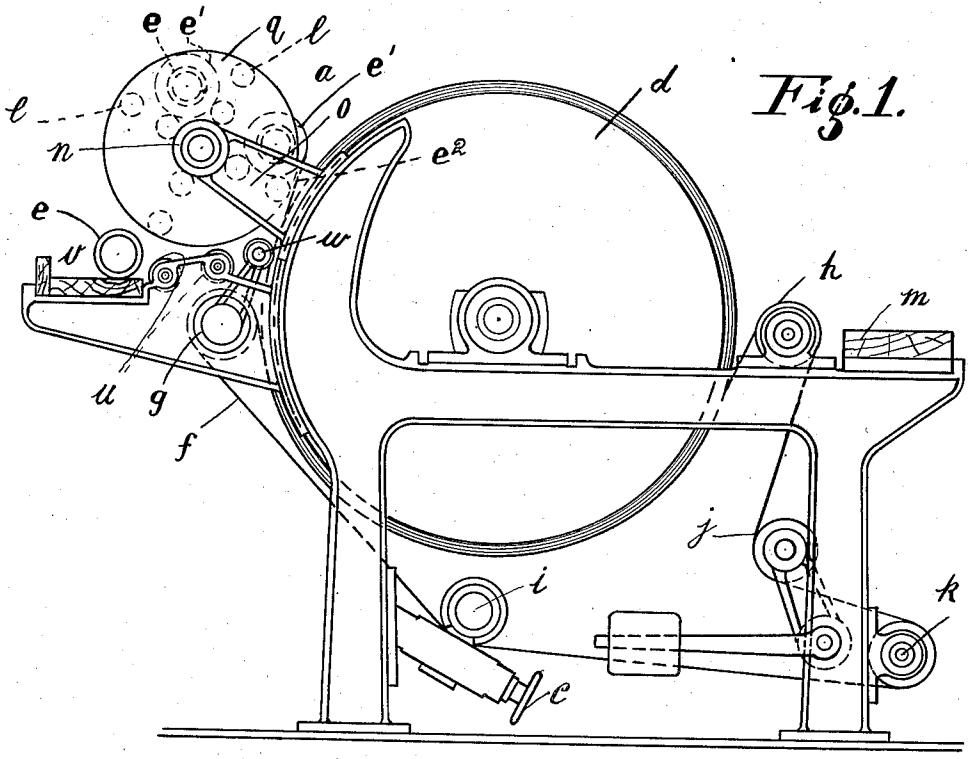


Fig. 1.

Fig. 2.

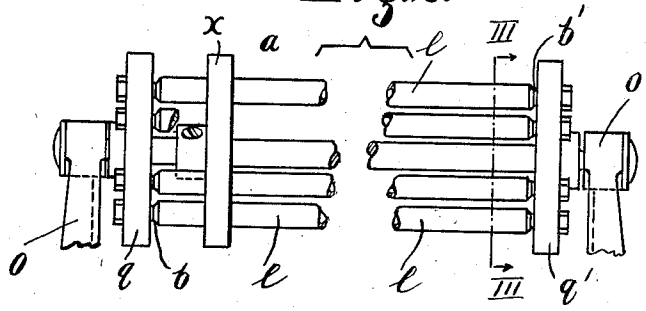
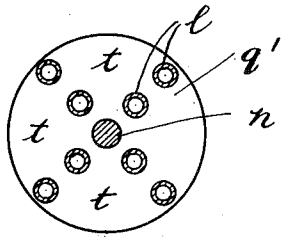


Fig. 3.



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WEB REELING-OFF MACHINE

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9 Claims. (Cl. 242—55)

This invention relates to machines for reeling off paper or other web in continuous sheet form from reels or "shells".

One object of the invention is to provide a reel-carrying head in which the reels of material to be unwound can be placed simply in order to be unwound, without the necessity of relative axial movement between the head and the reels, and from which the empty reels can be removed after the web has been unwound therefrom.

A second object of the invention is to provide a reel-carrying head from which the empty reel can be automatically discharged after the web has been unwound therefrom.

A third object of the invention is to provide a reeling-off machine in which a loaded reel of web can be placed in position for unwinding and from which an empty reel can be automatically discharged without the necessity for stopping the machine.

A fourth object of the invention is to provide a reeling-off machine having a reel-carrying head which is automatically caused to revolve by the drag of the web as this is unwound and which, as it revolves, automatically discharges the empty reels.

A fifth object of the invention is to provide a reeling-off machine in which the reels of web can be speedily dealt with and unwound.

In order that the invention may be clearly understood I have hereunto apended an explanatory sheet of drawings showing a convenient construction of the machine.

Referring to the drawing:—

Fig. 1 is an end view of the machine.

Fig. 2 is a plan view of the head in Fig. 1, and

Fig. 3 a cross section of Fig. 2 on line III—III.

The machine comprises a revolvable reel-carrying head *a* in the longitudinal pockets *t* of which the reels *e* carrying the reeled web e^1 are placed, the web being led from each reel in turn, over a drum *d*, which, on being made to revolve, unwinds the web from the various reels. The pockets *t* are radially open angularly spaced and extend axially of the head and their construction is hereinafter more particularly described. The reeled web is led off, as at e^2, from the nearest reel to be unwound on to the reeling-off drum *d*. This drum may be of any usual construction and be provided with an endless blanket *f* passing round rollers *g, h, i, j, k*, the roller *i* being adjustable by a screw handle *c*, and the roller *j* being a counterweighted jockey roller keeping the blanket taut. *m* indicates a table upon which the web if, say, paper, after being removed from the drum may be folded in known manner.

The revolvable head *a* is supported in two end bearings *o*, o^1, one at either side of the machine, and in which it is freely revolvable. The head comprises two disc constituting end-plates *q*, q^1, between which are carried rods which as illustrated consist of revolvable tubular shells or equivalent *l* on stub spindles *b*, b^1, fixed to the said end-plates. The rods are arranged in angularly spaced groups of two, the rods in each group lying in radial alignment with the central axis of the head, and the disposition of the groups—in the form of a cross—being such as to form four angularly spaced axially extending pockets *t* between which the groups of rods form partitions—see particularly Figs. 1 and 3. The central shaft *n* may also be looked upon as a pocket-defining rod, common to all groups. In this event each group may be said to consist of three rods in radial alignment with the central axis of the head *a*. It is evident in the drawing that the loaded reels can be simply dropped or placed in the pockets *t* by a movement which is radial with reference to the head and that, in the pockets the reels are supported only at their peripheries.

A loaded reel placed in a pocket in reel-receiving position at the top of the head with the free end of its web held to the drum will, on the rotation of the drum and the consequent drag in the web as it is unwound from the reel on to the drum, pull the reel towards the drum and, the head being freely revolvable, cause the head to turn and ultimately bring another empty pocket round ready to receive another filled reel. As this subsequent reel unwinds, the head is dragged round as before and the pocket in which the now empty reel is carried is brought to reel-discharging position at the under side of the head whereupon the empty reel is automatically discharged on to the rollers *u* on an incline and co-acting with a roller *w* mounted on arms carried on the same shaft as the roller *g*. The roller *w* bears against the web being wound on the drum and changes position automatically as the amount of material on the drum increases. The three rollers *u, u, w*, co-act to form an inclined roller-guideway for guiding the empty reel *e* from the head down on to a receiving table *v*.

It is evident that the disposition of the head relative to the drum is such that the drum in addition to its function as a reeling-off means, also functions as abutment means serving, as the head moves the pockets from reel-receiving to

reel-discharging position, to shut the reels in pockets between these positions.

Loaded reels can be placed in the head, the material unwound and the empty reels discharged, and new loaded reels placed in position, all without stopping the machine.

If desired there may be fitted so as to slide on the rods *l* a spacing disc or plate *x* having holes through which the rods pass. The disc can be adjusted in position on the tubes to suit the length of the reels and be then clamped in place by the set screw illustrated.

The drum can be made to rotate by any suitable known type of driving gear.

I claim:

1. In a reeling-off machine for reels of web including a reeling-off drum; a reel-carrying head and bearing means in which said head is revolvable, said head comprising two end plates and a plurality of rods extending between said end plates and disposed so as to form a plurality of angularly spaced open pockets.

2. In a reeling-off machine for reels of web including a reeling-off drum; a reel-carrying head and bearing means in which said head is revolvable, said head comprising two end plates and a plurality of angularly spaced groups of rods extending between said end plates, each group consisting of at least two rods in radial alignment with a central axis common to all groups.

3. In a reeling-off machine for reels of web including a reeling-off drum; a reel-carrying head and bearing means in which said head is revolvable, said head comprising two end plates, a plurality of rods extending between said end plates and disposed so as to form a plurality of angularly spaced pockets, and a spacing plate traversable on said rods between said end plates.

4. In a reeling-off machine for reels of web including a reeling-off drum; a reel-carrying head, bearing means located above the axis of said reeling-off drum in which said head is freely revolvable, a receiving table below the level of said head, and an inclined roller-guideway from said head to said table, said head comprising two end plates, a plurality of angularly spaced groups of rods extending between said end plates, and a spacing plate traversable on said rods between said end plates, each group of rods consisting of at least two rods in radial alignment with a central axis common to all groups.

5. A revolvable carrier for reels of web during the unwinding thereof, said carrier comprising two end plates and a plurality of angularly spaced groups of rods extending between said end plates, each group consisting of at least two rods in radial alignment with a central axis common to all groups.

6. In a reeling-off machine for reels of web including a reeling-off drum; a reel-carrying head having a plurality of receptacles constituted as open peripheral supports for the reels into which the reels can be inserted substantially radially with reference to the head, bearing means in which said head is revolvable to move the receptacles successively from reel-receiving to reel-discharging position, the reel-carrying head being located in such relative disposition to the reeling-off drum that the latter functions as abutment means spaced from the head and serving to shut the reels in the receptacles between the reel-receiving and reel-discharging position.

7. In a reeling-off machine for reels of web including reeling-off means, a reel-carrying head and bearing means in which the head is revolvable, the head comprising two end plates and a plurality of freely rotatable rods extending between said end plates and disposed so as to form a plurality of angularly spaced open pockets in which the reels can be received between said end plates.

8. A carrier for reels of web during the unwinding thereof, said carrier comprising two end plates and a plurality of freely rotatable rods extending between said end plates and disposed so as to form a plurality of open pockets angularly spaced about an axis in the carrier and in which the reels can be received between said end plates.

9. A carrier for reels of web during the unwinding thereof, said carrier comprising two end plates and a plurality of rods extending between said end plates and disposed so as to form a plurality of angularly spaced open pockets, a spacing plate being axially traversable on said rods between said end plates.

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