

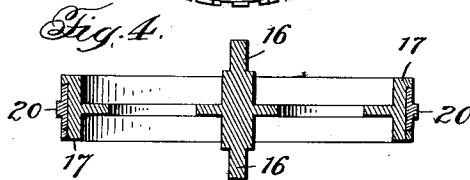
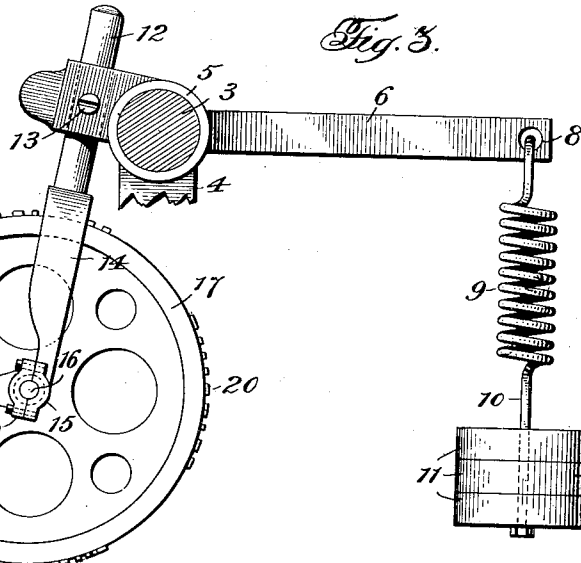
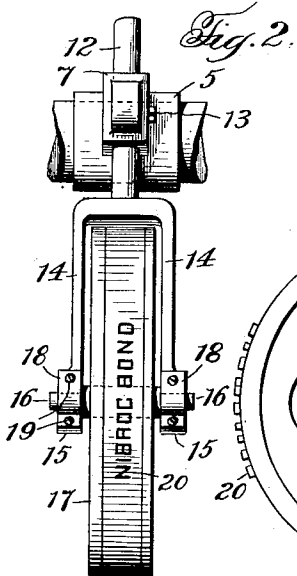
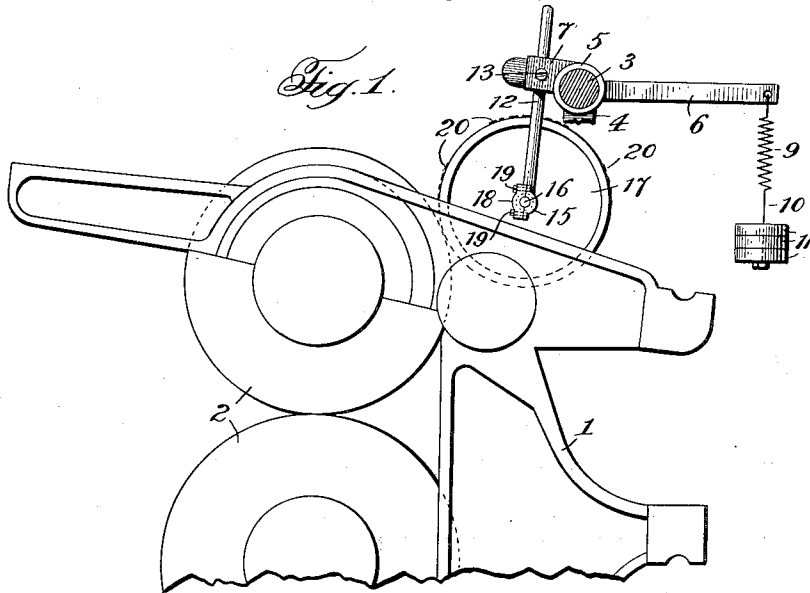
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1,522,579

A. EK

WATERMARKING ATTACHMENT FOR PAPER MAKING MACHINES

Original Filed April 28, 1920



Witness:

*James Hutchinson:*

*By*

Inventor:

*Arvid Ek,*

*Milans Milans Attorney S.*

# UNITED STATES PATENT OFFICE.

ARVID EK, OF PORTLAND, MAINE, ASSIGNOR TO BROWN COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

## WATERMARKING ATTACHMENT FOR PAPER-MAKING MACHINES.

Application filed April 28, 1920, Serial No. 377,262. Renewed May 21, 1923.

*To all whom it may concern:*

Be it known that I, ARVID EK, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Watermarking Attachments for Paper-Making Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to new and useful improvements in an attachment for a paper making machine, and more particularly to a device for forming a water mark in paper.

The principal object of the invention resides in the provision of a device which may be easily connected to the paper-making machines of ordinary construction, in such position to the paper supporting rollers as to compress or displace portions of the fiber of the paper web, while in a damp or soft condition, to form a water mark therein.

Another object consists in providing a wheel or roller having on its periphery certain elevations, or characters, adapted to form the water mark in the paper, said wheel being held so as to yieldably engage the paper web passing over the paper supporting rollers.

A further object consists in the provision of a counterbalanced lever carrying a marking roller, said lever being so positioned upon the paper-making machine that the marking roller will engage the paper web passing over the paper supporting rollers.

Still another object resides in the provision of a lever pivotally supported upon the paper-making machine, said lever carrying an adjustable marking roller on one end and having a weight yieldably suspended from the opposite end.

With these and other objects in view, my invention consists in the novel arrangement of parts and details of construction which will be more clearly understood from the following specification and drawings, in which:—

Figure 1 is a side elevation of my attachment applied to a paper making machine.

Figure 2 is a front elevation of the attachment.

Figure 3 is a side elevation of the attachment.

Figure 4 is a horizontal section through the marking roller.

In the drawings, 1 indicates a section of the frame of a paper making machine and 2 the paper supporting rollers through which the paper web passes in the usual manner. A shaft 3 is supported upon the frame in bearings 4 and preferably at a point slightly above the top of the upper paper supporting roller and to one side thereof.

A sleeve 5 is carried on the shaft 3 and may be either loosely mounted thereon to rock upon the shaft or keyed thereon, in any usual manner, to rock with the shaft. This sleeve has an arm 6 extending from one side and a lug 7 is formed on the opposite side and has a vertically extending opening therein. The arm 6 is provided with an opening 8, adjacent the outer end, and the upper end of a coil spring 9 is secured in the opening. The opposite end of the spring is formed with a vertical extension 10 upon which weights 11 are supported.

A rod or post 12 is held in the vertical opening in the lug 7, by means of a set screw 13 or other suitable fastening means, and the lower end of this rod or post is forked to form the arms 14. The lower ends of the arms are formed with the bearings 15 which receive the ends 16 of the axle of the marking wheel or roller 17. Bearing plates 18 are secured to the bearings 15 by means of bolts 19 and hold the ends of the axle in the bearings 15.

The outer periphery of the wheel or roller 17 is provided, at circumferentially spaced intervals, with letters or other characters 20 which form the impression in the paper. These characters may be either formed integrally with the wheel or separately and held in position in any desired manner. I wish it further understood that, if desired, the marking wheel or roller 17 may be heated in any desired manner.

From the above it is thought that the construction and operation of my device will be clearly understood. While I have only described one marking wheel or roller, with its associated parts, it will be understood that any number may be mounted upon the shaft 3 to make the water marks in the paper at any desired intervals. The coil spring 9 and weights 11 will yieldably hold the marking wheel or roller 17 in engagement with the upper paper supporting roller 2 and as the paper web is drawn through the rollers, in the usual manner, the characters 20 on

the marking wheel will compress or displace portions of the fiber of the web to form water marks therein. The web will be preferably damp or soft. The sleeve 5 will either rock on the shaft 3 or rock with the shaft, and the coil spring 9 will allow the marking wheel or roller to yield slightly. By releasing the set screw 13 the rod or post 12 may be adjusted in the lug 7. If it is desired to change the marking wheel or roller it can be done by removing the bearing plates 18.

While I have described the preferred form of my invention, it will be understood that changes might be made in the construction and operation without departing from the spirit of the invention.

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

1. An attachment for paper-making machines comprising a support and a vertically adjustable marking roller carried by the support for swinging movement.
2. An attachment for paper-making machines comprising a support, a sleeve mounted on the support, and a vertically adjustable marking roller carried by the sleeve.
3. An attachment for paper-making machines comprising a support, a sleeve carried on the support, a lug formed on the sleeve and provided with a vertically extending opening, a rod vertically adjustable in the opening in the lug, and a marking roller carried by the rod.
4. An attachment for paper-making machines comprising a supporting shaft, a sleeve carried on the supporting shaft, an

arm formed on the sleeve, a weight yieldably suspended from the arm, and a marking roller carried by the sleeve.

5. An attachment for a paper-making machine comprising a supporting shaft, a sleeve carried on the supporting shaft, an arm formed on one side of the sleeve, a lug formed on the opposite side of the sleeve and having a vertically extending opening, a weight yieldably suspended from the arm, a rod secured in the opening in the lug, the lower end of the rod being forked, and a marking roller carried in the forked end of the rod.

6. An attachment for paper-making machines comprising a supporting shaft, a sleeve carried on the supporting shaft, an arm formed on one side of the sleeve, a lug formed on the opposite side of the sleeve and having a vertically extending opening, a coil spring suspended from the arm, a weight carried by the coil spring, a rod secured in the opening in the lug, and a marking roller carried by the rod.

7. The combination with a paper-supporting roller, of a paper making machine, of an attachment for forming a water mark in the paper, said attachment comprising a shaft, a sleeve mounted upon the shaft, an arm formed on the sleeve, a weight yieldably suspended from the arm, and a marking roller carried by the sleeve and yieldably engaging the paper-supporting roller.

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

ARVID EK.

Witnesses:

MELVIN F. PRAY,  
CLARENCE E. EATON.