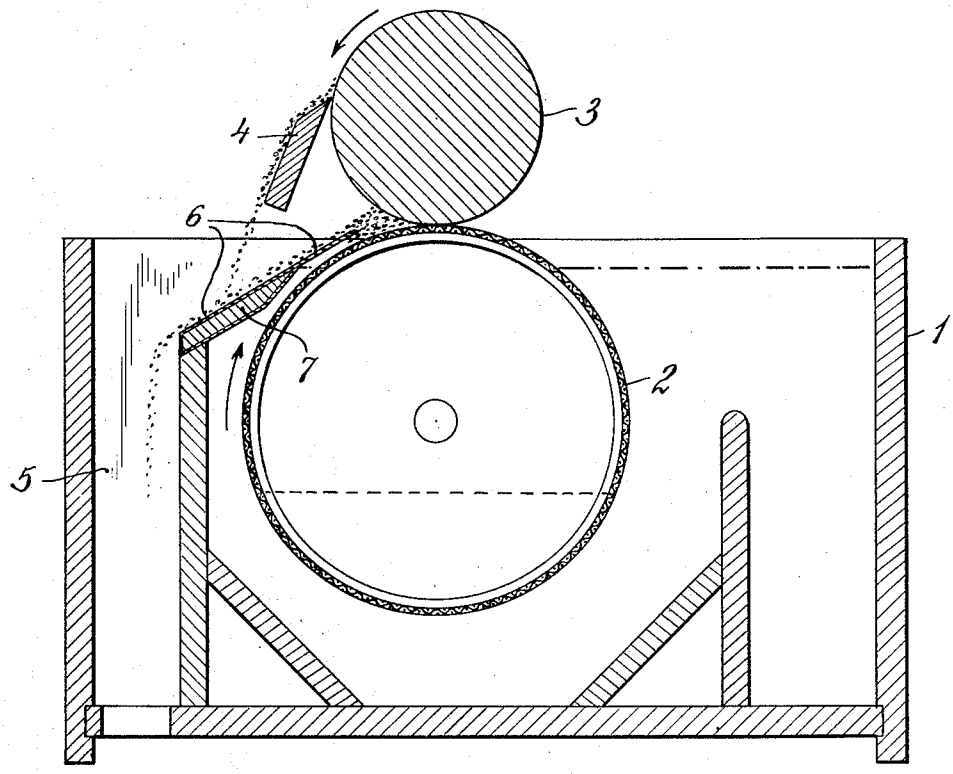
Aug. 18, 1925. 1,550,293

G. K. WALKER

PULP THICKENER

Filed June 24, 1924



George K. Walker
INVENTOR

BY
Pennie, Davis, Marvin & Edmonds
his ATTORNEYS

Patented Aug. 18, 1925. 1,550,293

UNITED STATES PATENT OFFICE.

GEORGE K. WALKER, OF GLENS FALLS, NEW YORK.

PULP THICKENER.

Application filed June 24, 1924. Serial No. 722,173.

To all whom it may concern:

Be it known that I, GEORGE K. WALKER, residing at Glens Falls, in the county of Warren, State of New York, have invented certain new and useful Improvements in Pulp Thickeners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to thickeners for paper stock and in particular to means for increasing production of thickened pulp by preventing or minimizing the return of thickened pulp to the vat.

The ordinary pulp thickener or decker comprises a screen cylinder immersed in a vat of stock and rotating about a horizontal axis. The water in the stock flows through the mesh of the screen and out through white water discharge outlets in the end or ends of the cylinder. The thickened pulp on the outer face of the cylinder is removed by means of a couch roll situated above the cylinder and is in turn removed from the couch roll by means of a doctor and discharged into a stock chest. During normal operation of such a thickener a substantial quantity of thickened pulp gathers at the nip of the couch roll and cylinder where the two approach each other, forms into rolls and falls back into the vat with the stock. It is the object of the present invention to correct this inefficiency and provide means which shall in a large measure direct this accumulated pulp into the stock chest and prevent its return to the vat.

I have attained this object by placing an inclined plate or backfall adjacent the nip of the couch roll and cylinder in such manner that the bulk of the accumulating pulp rolls down this plate and into the stock chest rather than back into the vat.

In order that the invention may be more clearly understood, I have illustrated a preferred embodiment of it in the accompanying drawing, the single figure of which represents more or less diagrammatically a transverse vertical section through a thickener equipped with the backfall of the present invention.

In this drawing, 1 represents the stock vat in which the ordinary screen cylinder 2 rotates partly submerged, the level of the stock being indicated by the dot and dash line. Mounted above the screen cylinder is the ordinary couch roll 3 which rotates in contact with the screen cylinder and removes thickened pulp therefrom. A doctor 4 removes the pulp from the face of the couch roll and directs it through an outlet passage 5 to the stock chest (not shown).

In the ordinary operation of a thickener or decker of this type, rolls of thickened pulp accumulate between the nip of the couch roll and the screen cylinder as illustrated in the drawing and roll back along the face of the cylinder into the vat. Because of this, the efficiency of the machine is seriously impaired and the capacity cut down. In accordance with the present invention I place an inclined plate 6 adjacent the nip of the couch roll and cylinder and leading to the discharge outlet 5. This plate or backfall is so situated that the thickened pulp accumulating between the rolls move downwardly over its face and is directed into the stock chest. The backfall is so placed relative to the screen cylinder that it does not obstruct the rotation thereof, nor scrape any thickened pulp from its surface.

Structurally I have found that a sheet of thin metal having its upper edge bevelled and reinforced by means of a strip of wood 7 about which the lower side of the metal is bent forms a satisfactory construction. The worker skilled in the art may adjust this backfall relative to the two rolls in order to get the most advantageous results, but when working with a screen cylinder thirty six inches in diameter, I have found that I get the best results by placing the backfall one inch, measured radially, from the surface of the screen cylinder, and the bevelled upper edge three-eighths of an inch below the horizontal line passing through the point of tangency of the couch roll and the cylinder.

The backfall illustrated not only serves to direct the accumulated pulp from the nip of the rolls to the stock chest and prevent its return to the vat, but also acts to direct the pulp from the doctor to the vat.

I claim:

1. In a pulp thickener comprising a screen cylinder designed to rotate partly submerged in a vat of paper stock and a couch roll mounted above the screen cylinder and designed to remove the thickened pulp from the cylinder, the combination of means situated adjacent the nip of the

couch roll and cylinder and extending above the stock level for preventing the return of thickened pulp to the stock in the vat.

2. In a pulp thickener comprising a screen cylinder designed to rotate partly submerged in a vat of paper stock and a couch roll mounted above the screen cylinder and designed to remove the thickened pulp from the cylinder, the combination of an inclined plate extending to a point adjacent the nip of the couch roll and cylinder for directing accumulations of thickened pulp to a stock chest.

3. In a pulp thickener comprising a screen cylinder designed to rotate partly submerged in a vat of paper stock and a couch roll mounted above the screen cylinder and designed to remove the thickened pulp from the cylinder, the combination of an inclined plate extending to a point adjacent the nip of the couch roll and cylinder for directing accumulations of thickened pulp to a stock chest and spaced from the cylinder a distance at least equal to the thickness of the layer of thickened pulp which is formed on the cylinder.

4. A pulp thickener comprising the combination of a stock vat, a screen cylinder mounted to rotate therein, a couch roll for removing the thickened pulp from the cylinder, a doctor for removing the thickened pulp from the couch roll, a stock chest, and an inclined plate beneath the doctor and extending to a point adjacent the nip of the couch roll and cylinder for directing thickened pulp which accumulates between the couch roll and the cylinder, and the thickened pulp from the doctor to the stock chest.

In testimony whereof I affix my signature.

GEORGE K. WALKER.