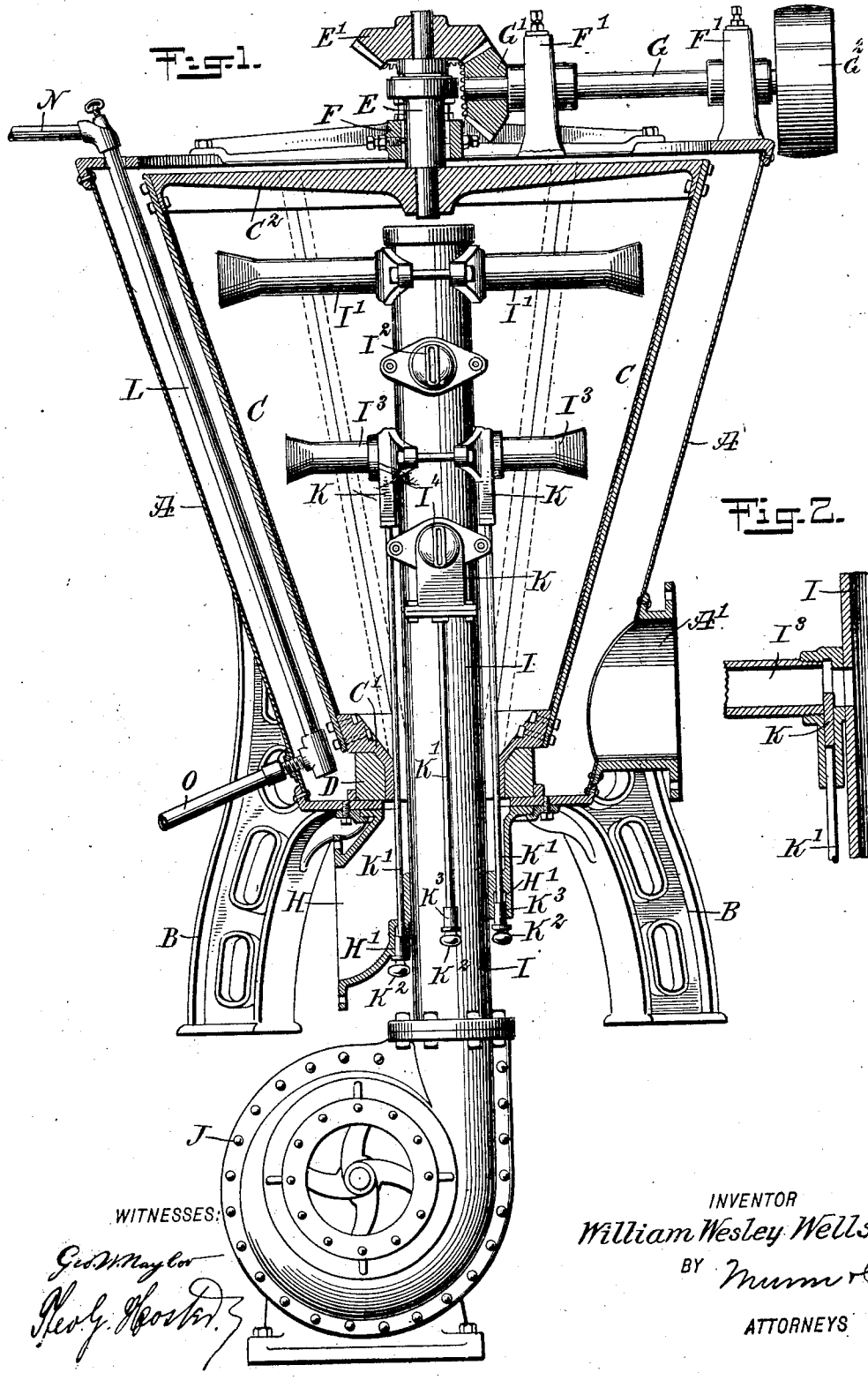
No. 830,389. PATENTED SEPT. 4, 1906.

W. W. WELLS.

PULP OR PAPER STOCK SCREEN.

APPLICATION FILED MAR. 3, 1906.

Fig. 1.



WITNESSES:

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PULP OR PAPER STOCK SCREEN.

No. 830,389. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed March 3, 1906. Serial No. 304,038.

To all whom it may concern:

Be it known that I, WILLIAM WESLEY WELLS, a citizen of the United States, and a resident of Sandy Hill, in the county of Washington and State of New York, have invented a new and Improved Pulp or Paper Stock Screen, of which the following is a full, clear, and exact description.

The invention relates to pulp or paper stock screens, such as shown and described in the Letters Patent Nos. 695,754 and 729,382, granted to O. H. Moore on March 18, 1902, and May 26, 1903, respectively.

The object of the present invention is to provide a new and improved pulp or paper stock screen arranged to permit of screening an exceedingly large amount of pulp or paper stock in a comparatively short time.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in 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 a sectional side elevation of the improvement, and Fig. 2 is an enlarged sectional side elevation of the valve on one of the nozzles.

The casing A is preferably in the form of an inverted frustum of a cone and is mounted on a suitable frame B, and within the said casing A is mounted to turn a similarly-shaped screen C, having its lower open end C′ mounted on a stop D, attached to the bottom of the casing A.

The upper end of the screen C is provided with a spider C^2, secured on a shaft E, mounted to rotate in suitable bearings F, attached to the top of the casing A. On the shaft E is secured a bevel gear-wheel E′, in mesh with a similar gear-wheel G′, fastened on a shaft G, mounted to rotate in suitable bearings F′, attached to the top of the casing A. On the shaft G is secured a pulley G^2, connected by a belt with other machinery for imparting a rotary motion of the shaft G, which by the gear-wheels G′ E′ rotates the shaft E, and consequently the screen C.

The lower end of the casing A is provided with a stock-outlet A′, and the lower open end C′ of the screen C discharges into a sliver-outlet H, attached to the under side of the casing A. Through one side of the sliver-outlet H and through the open lower end C′ of the screen C extends the pulp or paper stock feeding pipe I, connected at its lower end with a pump J of any approved construction for forcing the pulp up into the said pipe I and out of the same through sets of nozzles I′, I^2, I^3, and I^4, extending laterally from the pipe I one above the other and terminating at their free ends within a short distance of the inner surface of the screen C.

The two upper sets of nozzles I′ and I^2 have a larger cross-sectional area than the nozzles of the two lower sets I^3 and I^4, and the nozzles of the two upper sets I′ and I^2 are wholly unobstructed, while the lowermost sets of nozzles I^3 and I^4 are provided with valves K for controlling the flow of the pulp from the pipe I through the nozzles I^3 and I^4. The valve-stems K′ of the valves K extend downwardly through the lower open end of the screen C and also through the side wall of the sliver-outlet H, and the lower terminals of the said valve-stems K′ are provided with knobs K^2 under the control of the operator for opening or closing the valves K, as the case may require. Each of the valve-stems K′ adjacent to the knob K^2 is provided with a sleeve K^3, fitting a corresponding bearing H′ in the wall of the sliver-outlet H, so as to hold the valve-stem K′, and consequently its valve K, in either an open or a closed position.

By reference to Fig. 1 it will be seen that the uppermost nozzles I′ are two in number and extend diametrically in opposite directions from the pipe I, and the nozzles I^2 are also two in number and extend diametrically from the pipe I, but at right angles to the nozzles I′. The nozzles I^3 and I^4 are similarly arranged—that is, the nozzles I^3 extend on the same vertical plane as the nozzles I′ and at right angles to the nozzles I^2 I^4, which latter extends in the same vertical plane as the nozzles I^2. Now when the machine is in operation the pulp is forced up the feed-pipe I by the action of the pump J, and the pulp finally passes out through the nozzles I′, I^2, I^3, and I^4 into the screen C and against the inner surface thereof, it being understood that the amount of pulp passing into the screen C

can be readily controlled by the operator opening or closing the valves K correspondingly, it being understood that the nozzles I′ and I^2 are left unobstructed, as the capacity of the screen is sufficient at any time to readily accommodate all the pulp that passes out of the said nozzles I′ and I^2, and the screen is also capable to work off some or all of the pulp that can pass out of the nozzles I^3 and I^4. If, however, the screen becomes overloaded by the pulp, it is only necessary for the operator to close one or all of the valves K.

In order to keep the screen openings or perforations in operative or effective condition and to wash down the bulk of the stock for delivery out through the outlet A′, I provide a perforated spray-pipe L, extending into space between the casing A and the screen C, as plainly indicated in Fig. 1.

The upper end of the spray-pipe L is connected by a pipe N with a suitable water-supply, and the lower end of the said spray-pipe L is provided with a waste-pipe O.

From the foregoing it will be seen that an exceedingly large feed of the supply-pipe I may be employed having a large number of nozzles to feed an exceedingly large quantity of stock or pulp into the screen and to direct this pulp against the inner surface of the screen C to be screened by the latter and to pass into the casing A and out of the same by the stock-outlet A′.

The sliver passing down the inside of the screen C finally flows through the open lower end C′ into the sliver-outlet H to be conducted to one side of the machine.

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

1. A pulp or paper stock screen provided with a rotary screen and a stationary pulp-feeder having a plurality of nozzles discharging onto the inner surface of the screen at different points of its height.

2. A pulp or paper stock screen provided with a rotary screen and a stationary pulp-feeder extending into the screen through the open lower end thereof and having sets of nozzles discharging onto the interior surface of the screen at different points of its height.

3. A pulp or paper stock screen provided with a rotary screen and a pulp-feeder having sets of nozzles discharging onto the interior surface of the screen at different points of its height, the upper sets of nozzles having a larger cross-sectional area than the nozzles of the lower sets.

4. A pulp or paper stock screen provided with a rotary screen and a pulp-feeder having a valved nozzle.

5. A pulp or paper stock screen provided with a rotary screen and a pulp-feeder having a nozzle discharging onto the interior surface of the screen and a valve in the said nozzle having its valve-stem extending to the outside of the screen to allow an operator to control the valve.

6. A pulp or paper stock screen provided with a rotary screen and a pulp-feeder having valved and non-valved nozzles.

7. A pulp or paper stock screen provided with a rotary screen, a pulp-feeding pipe extending within the screen provided with sets of nozzles for discharging the pulp onto the inner surface of the screen and manually-controlled valves on sundry of the said nozzles.

8. A pulp or paper stock screen comprising a casing, a rotary screen disposed vertically within the said casing, a sliver-outlet on the said casing and into which opens the lower open end of the said screen, a stock-outlet leading from the lower end of the said casing, a pulp-feeding pipe extending into the screen through the open lower end thereof, and nozzles extending laterally from the said pulp-feeding pipe for discharging the pulp onto the inner surface of the screen.

9. A pulp or paper stock screen comprising a casing, a rotary screen disposed vertically within the said casing, a sliver-outlet on the said casing and into which opens the lower open end of the said screen, a stock-outlet leading from the lower end of the said casing, a pulp-feeding pipe extending into the screen through the open lower end thereof, nozzles extending laterally from the said pulp-feeding pipe for discharging the pulp onto the inner surface of the screen, and valves on sundry of the said nozzles having their stems extending through the lower open end of the screen and through the said sliver-outlet to the outside of the casing.

10. A pulp or paper stock screen comprising a casing, a rotary screen disposed vertically within the said casing, a sliver-outlet on the said casing and into which opens the lower open end of the said screen, a stock-outlet leading from the lower end of the said casing, a pulp-feeding pipe extending into the screen through the open lower end thereof, nozzles extending laterally from the said pulp-feeding pipe for discharging the pulp onto the inner surface of the screen, valves on sundry of the said nozzles having their stems extending through the lower open end of the screen and through the said sliver-outlet to the outside of the casing, and a spray-pipe extending in the space between the sides of the screen and the side of the casing to spray water exteriorly onto the said screen.

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

WILLIAM WESLEY WELLS.

Witnesses:
ARTHUR MCLAREN,
EMMA H. DE VOLL.