

(No Model.)

W. WHITELY.

RAG ENGINE FOR PAPER MAKING.

No. 282,818.

Patented Aug. 7, 1883.

fig: 1.

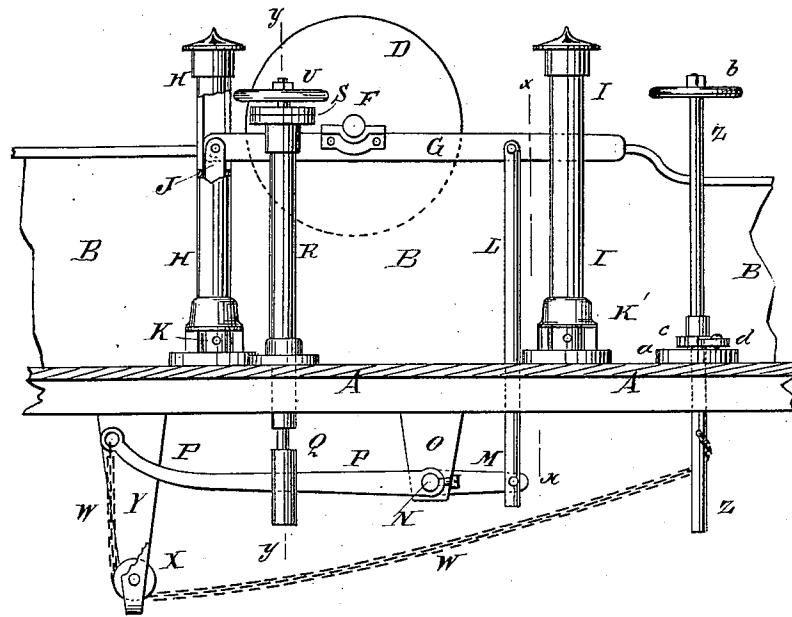


Fig: 3.

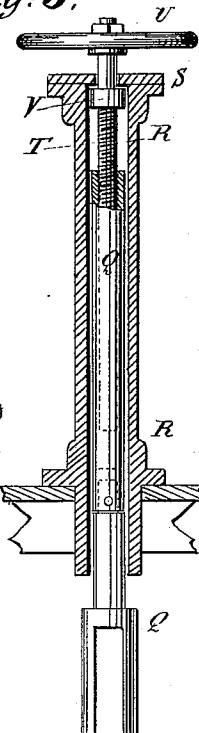


Fig: 2

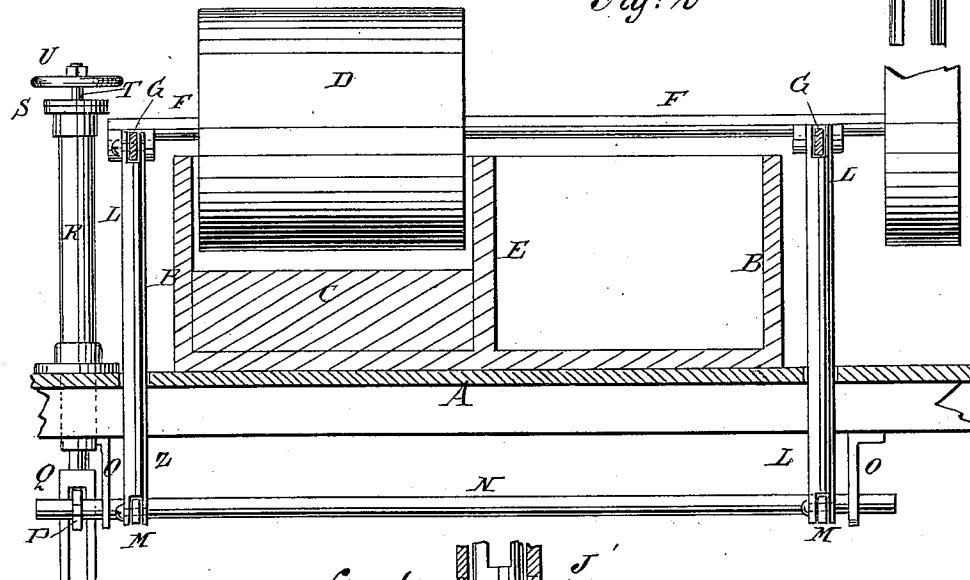


fig:4.

WITNESSES:

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Chas. Nida
C. Sedgwick

INVENTOR:

W. Whitley

BY

Alm's & Co.

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM WHITELY, OF HOUSATONIC, MASSACHUSETTS.

RAG-ENGINE FOR PAPER-MAKING.

SPECIFICATION forming part of Letters Patent No. 282,818, dated August 7, 1883.

Application filed March 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHITELY, of Housatonic, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Rag-Engines for Paper-Making, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improvement, parts being broken away. Fig. 2 is a sectional elevation of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a sectional elevation of a part of the same, taken through the line *y y*, Fig. 1. Fig. 4 is a sectional elevation of the lower part of one of the supporting-posts.

20 The object of this invention is to facilitate the adjusting and leveling of the roll in rag-engines, and also to allow the roll to be conveniently raised and lowered while in motion.

Beneath the free ends of the lighters are placed male and female screws, working in tubular posts, to serve as stops to prevent the lighters from dropping so low as to bring the roll too close to the bed-plate should the raising and lowering mechanism accidentally break. The free ends of the lighters are supported by upright bars pivoted to the short arms of the rock-shaft, which is also provided with a long arm, so that by operating the said long arm the lighters and roll can be readily raised and lowered. With the long arm of the rock-shaft is connected a male and female screw, placed in a tubular post, so that by turning one of the said screws the lighters and roll can be raised and lowered with a slow

40 movement. With the long arm of the rock-shaft is also connected a chain and a vertical shaft provided with a ratchet-wheel and pawl, so that by operating the said shaft the lighters and roll will be raised and lowered with a quick movement, as will be hereinafter fully described.

A represents the floor of the mill. B is the tub, C is the bed-plate, D is the roll, and E is the partition, of an ordinary rag-engine.

50 F is the roll-shaft, the journals of which rest

upon bearings in the upper sides of the lighters G. The ends of the lighters G enter slots in the tubular posts H I, and are hinged at one end in and to the slotted upper ends of the female screws J, placed within the posts H, and into the lower ends of which screw the male screws K. The heads of the screws K rest and turn upon the base-plates of the said post H. The heads of the screws K are perforated laterally, to receive the end of a hand-lever for turning the said screws to raise and lower the screws J, and the ends of the lighters G in adjusting and leveling the roll D, or for raising the roll for repairs. The other ends of the lighters G rest in the slotted upper ends of the 65 female screws J', which are provided with male supporting-screws K' in the same manner as the screws J. The screws J' K' serve as stops to prevent the lighters from being lowered so low as to bring the roll too close to the 70 bed-plate, and thus expose the said roll to damage.

The posts H I have openings in their lower parts to receive the hand-levers, by means of which the screws K K' are turned in adjusting 75 and leveling the roll.

To the lighters G, at a little distance from their free ends, are hinged the slotted upper ends of the upright bars L, to the slotted lower ends of which are hinged the ends of the short 80 arms M, formed upon or rigidly attached to the shaft N. The shaft N rocks in bearings in hangers O, attached to the floor A, or in other suitable supports. To the shaft N is rigidly attached, or upon it is formed, a long arm, P, 85 to serve in connection with the shaft N and arms M as a lever in raising the bars L, lighters G, and roll D, for freeing the said roll from obstruction or other desired purpose.

Upon the middle part of the long arm or lever P rests the slotted lower end of a female screw, Q, which passes up through a tubular post, R, attached to the floor A, and has a cap-plate, S, attached to its upper end. The cap-plate S has a central aperture for the passage of the shank of the male screw T, which screws into the female screw Q, and has a hand-wheel, U, attached to its projecting upper end, for convenience in operating the said screw T. Upon the shank of the male screw 100

T is formed, or to it is attached, a shoulder or collar, V, to rest against the lower side of the cap-plate S, and prevent the screw from being pushed upward by the weight of the roll D. 5 With this construction, by turning the male screw T backward, the female screw Q will be forced downward, operating the lever P N M and raising the bars L, lighters G, and roll D slowly while at work to clear the said roll of 10 obstructions or for any other desired purpose. To the outer end of the long arm P is attached the end of a chain, W, which passes down and around a pulley, X, pivoted to a slotted hanger, Y, attached to the floor A or 15 other suitable support. The other end of the chain W is attached to the lower part of a vertical shaft, Z, which revolves in bearings a, attached to the floor A or other suitable support, and has a hand-wheel, b, attached to 20 its upper end, for convenience in operating the said shaft Z. To the lower part of the vertical shaft Z is attached a ratchet-wheel, c, with the teeth of which engages the pawl d, pivoted to the bearing a, the floor A, or other 25 suitable support, and which is held forward against the teeth of the said ratchet-wheel c by a spring in the ordinary manner, so that the shaft Z will be held securely in any position into which it may be turned. With this 30 construction, by turning the shaft Z, the roll D will be raised with a quick movement. Should any breakage occur in the raising mechanism the free ends of the lighters G will be received upon the forked upper ends of the female 35 screws J' and stopped before the roll can come

so near the bed-plate as to cause any damage. With this construction the roll will be raised and lowered parallel with the bed-plate.

Having thus fully described my invention, I claim as new and desire to secure by Letters 40 Patent—

1. In a rag-engine, the combination, with the free ends of the lighters G, of the upright bars L and the rock-shaft N, having short arms M and a long arm, P, substantially as 45 herein shown and described, whereby the lighters and the roll can be raised and lowered by operating the said long arm, as set forth.

2. In a rag-engine, the combination, with 50 the lighters G, the upright bars L, and the lever M N P, of the male and female screws T Q, and the tubular post R and cap-plate S, substantially as herein shown and described, whereby the said lever can be operated to 55 raise and lower the lighters and roll with a slow movement, as set forth.

3. In a rag-engine, the combination, with the lighters G, the upright bars L, and the lever M N P, of the chain W, pulley X, and 60 upright shaft Z, having pawl and ratchet-wheel d c, substantially as herein shown and described, whereby the said lever can be operated to raise and lower the lighters and the roll with a quick movement, as set forth.

WILLIAM WHITELY.

Witnesses:

JUSTIN DEWEY,
FRANK H. WRIGHT.