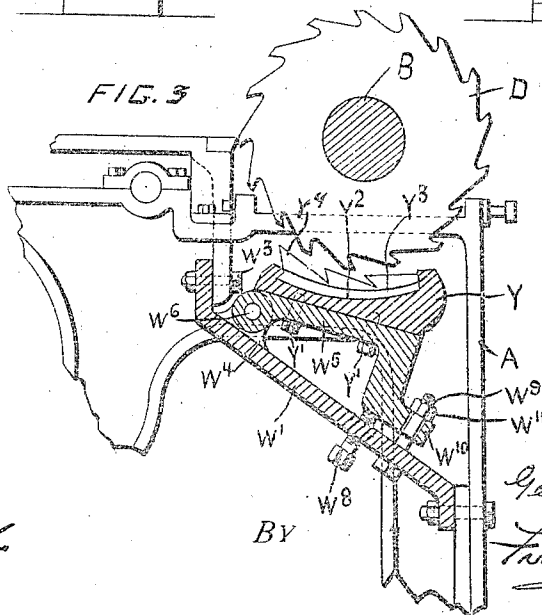
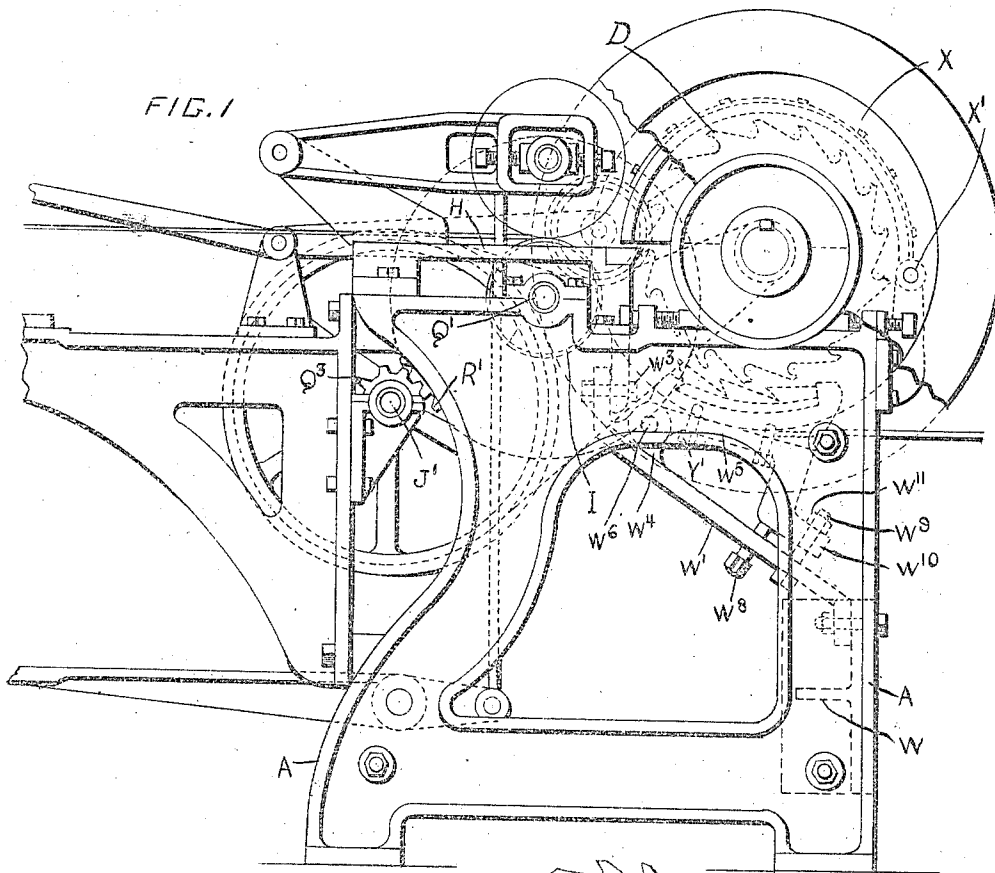


1,023,762.

G. D. RYHER.
PAPER STOCK SHREDDER.
APPLICATION FILED MAY 18, 1911.

Patented Apr. 16, 1912.

2 SHEETS—SHEET 1.



WITNESSES
W. F. Ryher.
A. D. Ryher.

BY

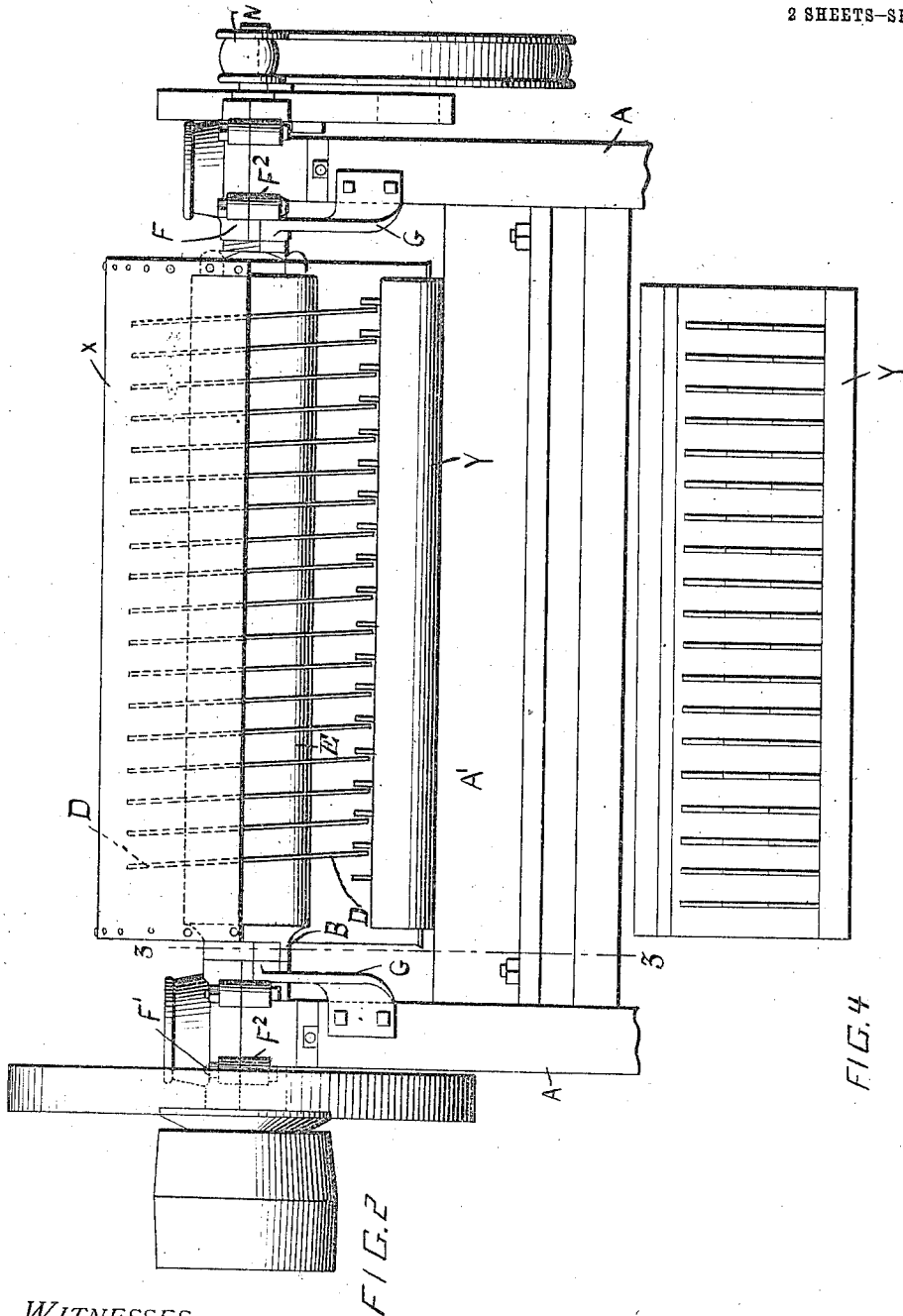
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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PAPER-STOCK SHREDDER.

1,023,762.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed May 18, 1911. Serial No. 628,054.

To all whom it may concern:

Be it known that I, GEORGE D. RYTHUR, a citizen of the United States, residing at Carthage, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Paper-Stock Shredders; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in paper stock shredding apparatus and comprises, in connection with other features of the apparatus, means whereby pieces of stock, which may pass by the table upon which the stock rests while being shredded, may be disintegrated by coming in contact with serrated blades adjustably held relative to the shredding saws. The invention comprises various details of construction and combinations and arrangements of parts which will be herein-after fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is an end elevation of the apparatus embodying the features of my invention. Fig. 2 is a front elevation. Fig. 3 is a vertical sectional view on line 3—3 of Fig. 2, and Fig. 4 is a detail plan view of the adjustable member carrying the shredding blades.

Reference now being had to the details of the drawings by letter, A designates the frame of the apparatus which supports the table A', feed rolls A² and A³ and the arbor B. A series of shredding saws D is keyed to the arbor in positions spaced apart and parallel to each other and at inclinations to the arbor, as shown clearly in Fig. 2 of the drawings, so that, as the arbor is rotated, said saws will have a rasping action as they rotate against the stock to be shredded. Washers E are mounted upon the arbor, adapted to hold the saws spaced apart. Said arbor is journaled in the pillow blocks F movable upon a horizontal portion of the frame and adjusted by means of the screws

F' which are mounted in threaded apertures in upwardly projecting lugs F² of the frame and affording means whereby a lateral movement may be imparted to said blocks for the purpose of adjusting the saws relative to the steel bed plate G, which forms a part of the frame of the apparatus and upon which the stock rests as it is being shredded. A pulley Q is mounted upon the shaft J' and a belt Q² passes about the pulley Q and a pulley N which is fixed to the arbor B, forming means whereby rotary motion may be imparted to the shaft J'. A gear wheel Q³ is fixed to the shaft J' and is in mesh with the teeth of the gear wheel R' fastened to the shaft Q' upon which the feed roll A³ is mounted. An idler P is journaled upon a stub shaft P' mounted upon the lever S, which latter is pivoted upon a pin S'. Said idler is adapted to bear against the belt Q² and to be thrown out of contact therewith by the depression of outer end of the lever.

Arms K are pivotally mounted upon pins K' carried by the projecting portions of the frame and said arms are provided with openings K² in which the bearing blocks K³ are adjustably held and which latter carry the spindle ends K⁴ of the feed roll A². Adjusting screws J' are mounted in the threaded apertures in the walls about said opening and their inner ends bear against the boxes K³ and affording means whereby the latter may be held in different adjusted positions. A suitable hood, designated by letter X, is mounted over the saws and is hinged at X'. In order to regulate the pressure of the feed roll A², a foot lever J⁴ is pivotally mounted upon a pivot J⁵ upon the frame and is connected pivotally by means of the rods J⁷ with said arm K.

Fastened to the upright portions of the frame is the T-iron W, and secured at its lower end to said T-iron is a diagonally disposed plate W', fastened to the frame by means of bolts W³. Said plate W' has lugs W⁴ projecting from the upper face thereof and upon which the swinging member W⁵ is pivoted by means of the pins W⁶. The member W⁵ is adjusted to different positions by means of the set screws W⁸ and held in such adjusted positions by means of the bolts W⁹ passing through apertures in the flange W¹⁰ of said member and also through

apertures in the plate W', suitable nuts W¹¹ coöperating with the bolt to hold the member in adjusted position.

A bed plate Y is mounted upon the member W⁵ and is held thereto by means of the screws Y' which engage threaded holes in said bed plate and also threaded apertures in the member W⁵. The upper surface of the bed plate Y has a concaved recess Y² and the ends of said recess are undercut and are adapted to receive a series of serrated shredding members Y³. Intermediate said shredding members Y³ are spacing blocks Y⁵.

The various shredding members Y³ are inserted in the recess in the shoe, having dove-tail connection therewith. As the shredding members Y³ are held stationary and as the saws D are adapted to rotate intermediate said members, the coarse particles of the stock to be shredded will either be held stationary between the shredding members Y³ or held stationary by the teeth Y⁴ thereon, while the gang saws have a wobbling motion intermediate said shredding members, thus affording means for thoroughly shredding the stock.

The operation of my apparatus will be readily understood.

The coarse particles of the paper stock to be shredded are fed forward by the conveyers and held on the table by the idler. The rapidly rotating shredding knives or saws catch the stock upon the marginal edge of the table and carry the same forward and the coarse particles of the stock which enter the spaces intermediate the stationary shredding knives, or which coarse particles happen to lodge upon the teeth of the stationary shredding knives, will be held thereby as the saws or shredding blades have a wobbling, rasping effect upon said coarse particles, thus reducing the same to proper shredded condition. Through the medium of the adjusting means, it will be noted that

the member carrying the shoe upon which the stationary blades are mounted may be raised or lowered to regulate the depth at which the shredding knives will rotate between the stationary knives.

It will thus be apparent that, after stock has been shredded by the apparatus embodying the features of my invention, the fiber will all be uniform and of greater strength than fiber obtained by apparatus where the saws rotate at right angles to the length of the fiber.

What I claim to be new is:—

1. A paper stock shredding apparatus comprising, in combination with a rotatable arbor and frame in which the same is mounted, a series of shredding saws fixed to the arbor, parallel one to another and at inclinations to said arbor, a bed plate underneath the shredding saws, a series of stationary shredding knives mounted upon said bed plate and spaced apart parallel to one another and between which the saws of the arbor are adapted to have a wobbling motion as the arbor rotates, as set forth.

2. A paper stock shredding apparatus comprising, in combination with a rotatable arbor and frame in which the same is mounted, a series of shredding saws fixed to the arbor, parallel one to another and at inclinations to said arbor, a bed plate pivoted to the frame and positioned underneath the saws, means for adjusting said bed plate, a shoe upon the latter, stationary shredding knives mounted upon the shoe and spaced apart and between which the saws are adapted to have a wobbling motion as the arbor rotates, as set forth.

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

GEO. D. RYTHUR.

Witnesses:

STANLEY S. LINNEY,
GEORGE S. LUBELL.