Feb. 2, 1926. 1,571,375

J. C. ROGERS

CONDENSER

Filed Nov. 11, 1924 3 Sheets-Sheet 1

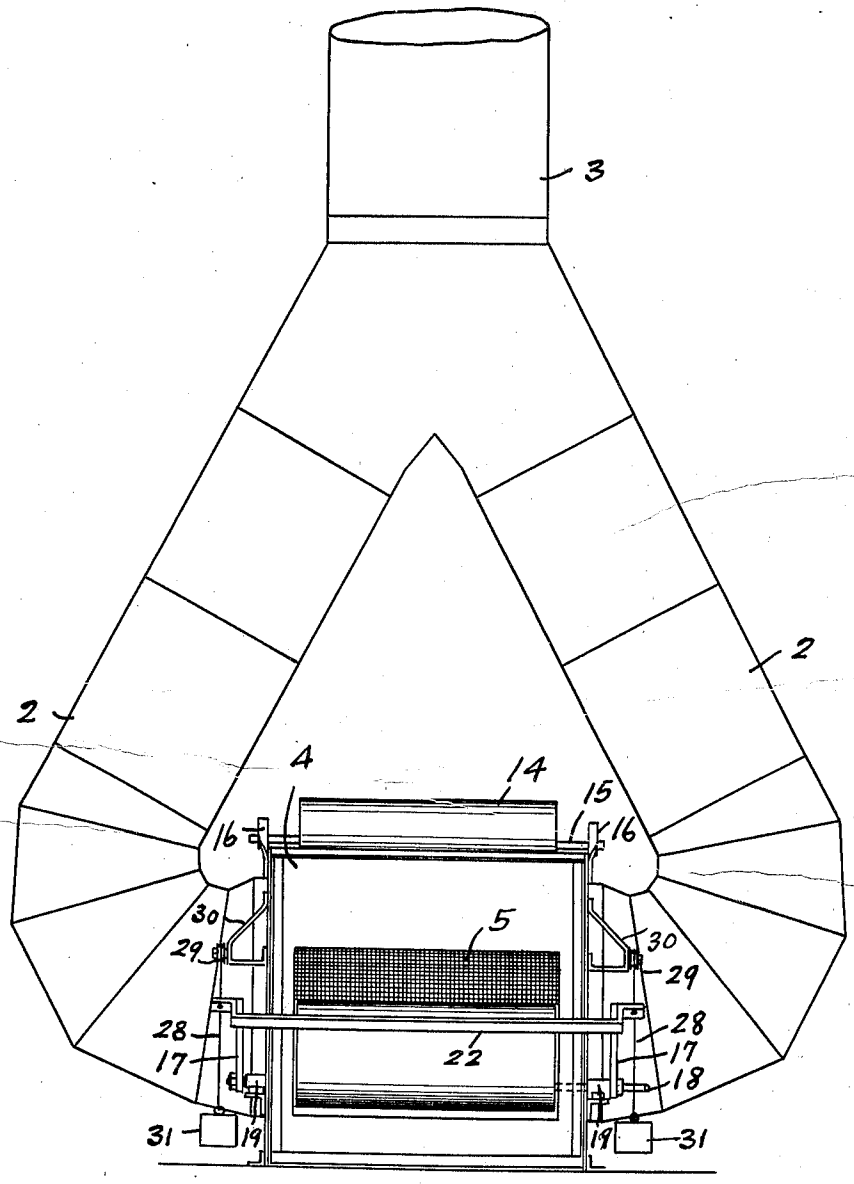


Fig. 1.

INVENTOR.
John C. Rogers
BY
Hardway & Cath
ATTORNEYS.

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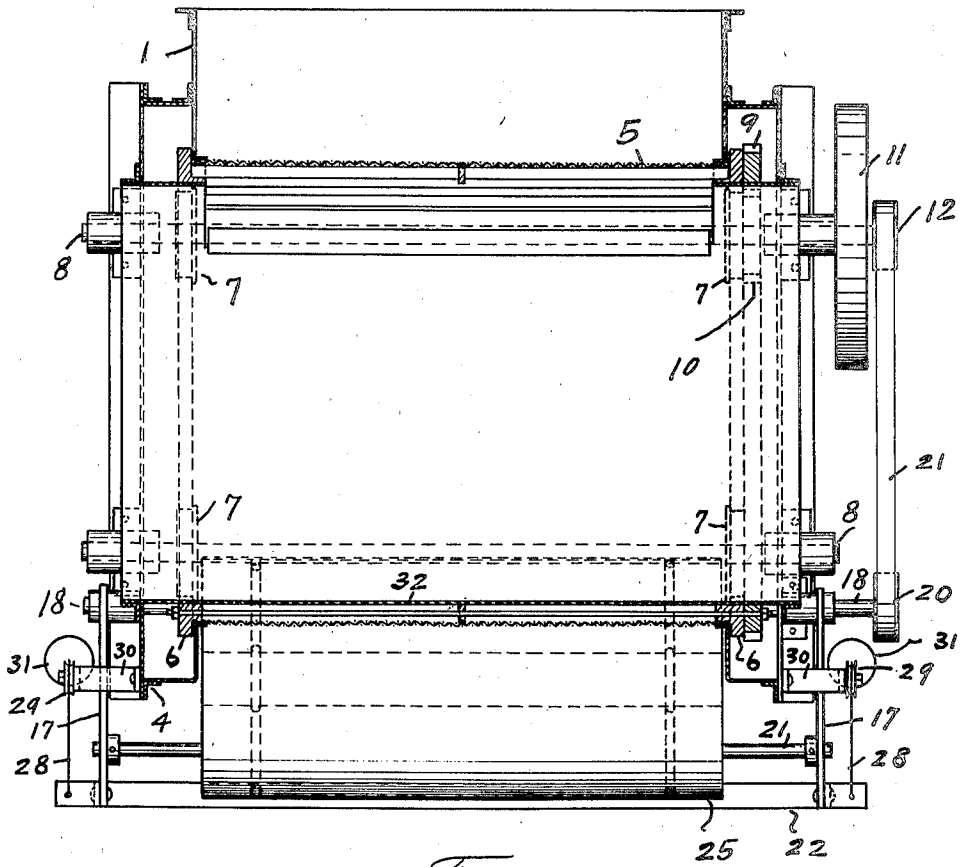


Fig. 2.

INVENTOR.
John C. Rogers

BY

Hardway & Cathey
ATTORNEYS.

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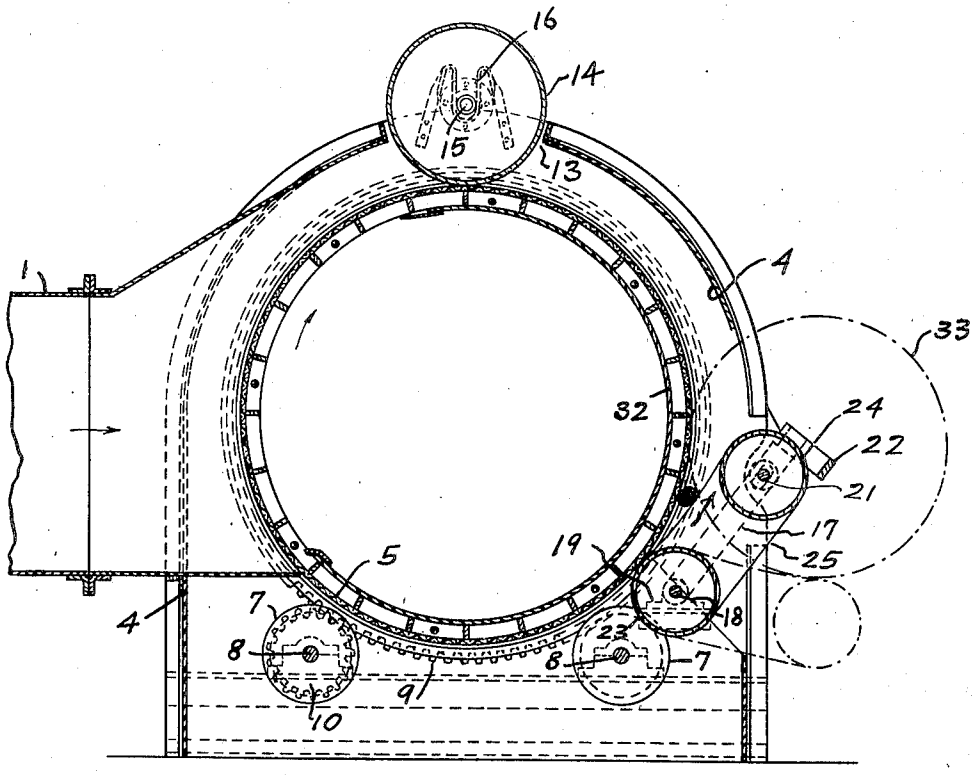


Fig. 3.

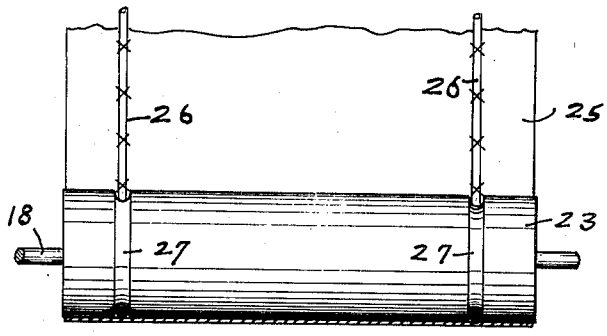


Fig. 4.

INVENTOR.
John C. Rogers

BY

Hardway & Cather
ATTORNEYS

Patented Feb. 2, 1926. 1,571,375

UNITED STATES PATENT OFFICE.

JOHN C. ROGERS, OF HOUSTON, TEXAS, ASSIGNOR OF ONE-HALF TO HOUSTON BLOW PIPE & SHEET METAL WORKS, OF HOUSTON, TEXAS, A CORPORATION.

CONDENSER.

Application filed November 11, 1924. Serial No. 749,142.

To all whom it may concern:

Be it known that I, JOHN C. ROGERS, citizen of the United States, residing at 1201 Enid Street, Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in a Condenser, of which the following is a specification.

This invention relates to new and useful improvements in a condenser.

One object of the invention is to provide a condenser for cotton and similar fibrous material adapted to receive the fiber from the gin and form the same into a bat which is formed, by the condenser, into individual units, or rolls, of the lint, which are then delivered into the press for formation into a bale.

Another object of the invention is to provide a condenser, of the character described, which will also relieve the lint of dirt and small particles of foreign matter contained therein.

A further object is to produce a condenser for cotton line which is of simple construction and may be cheaply produced, and which, at the same time, is very effective in accomplishing the purpose for which it was intended.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts an example of which is given in this specification and illustrated in the accompanying drawing, wherein:—

Figure 1 shows a rear side view of the condenser.

Figure 2 shows a horizontal sectional view.

Figure 3 shows a vertical sectional view, and

Figure 4 shows a fragmentary sectional view of the delivery apron employed.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates an inlet lint flue which is separated into branches 2, 2 which converge and unite in a common suction pipe 3. At the juncture of the branches 2 with the lint flue 1 they are formed into a casing 4 in which there is mounted a rotatable foraminated drum 5. This drum consists of a tubular skeleton surrounded, preferably, by mesh wire, or other suitable foraminated material. As stated the drum is rotatable, and for the purpose of rotation is formed with the peripheral annular tracks 6, 6, one at each end, which ride on the flanged wheels 7, 7. These wheels are fixed on the transverse shafts 8, 8 which rotate in end bearings in the casing 4. Adjacent one of the tracks 6 the drum has an annular gear face 9 in mesh with, and driven by a spur gear 10 on the corresponding shaft 8. This shaft 8 has a belt pulley 11, fixed thereon, through which it is driven from any suitable power, and beyond this pulley there is a smaller pulley 12, fixed on said shaft, for a purpose to be hereinafter explained.

The drum 5 spans the lint flue and its ends have a running fit around the adjacent ends of the branches 2.

The upper part of the casing has a lengthwise opening 13 in which there is located a pressure roller 14. This roller fits snugly in its opening and is fixed on a shaft 15 whose ends rotate in the long vertical bearings 16, 16 fastened to the casing ends. This compression roller is held, by gravity, in rolling contact with the bat formed on the drum 5.

There is a frame formed with the side members 17, 17. The lower ends of these side members have bearings on the transverse shaft 18, which in turn, is mounted in fixed bearings 19, 19, carried by the casing. This shaft 18 carries a fixed pulley 20, aligned with the pulley 12 and driven therefrom by the belt 21. The upper ends of the members 17 have the ends of the transverse shaft 21, journaled therein and said upper ends are connected by a cross brace 22.

On the respective shafts 18 and 21 the supporting rollers 23 and 24 are fixed and operating over them there is the endless apron 25. The inside of the apron 25 has the welts, or ribs, 26, 26, secured thereto which run in annular grooves 27, 27 around

said rollers 23 and prevent the side movement of the apron and hold it in a true course.

Fastened to the respective ends of the cross brace 22 are the cables 28, 28, which run over the pulleys 29, 29, carried by the brackets 30, 30 which are fastened to the ends of the casing 4. The lower ends of these cables carry the weights 31, 31 which tend to hold the apron 25 yieldingly against the bat.

As stated suction is created through the pipe 3, by a suction fan (not shown) or other conventional means, and an inlet current is thus created in the flue 1. A stationary semi-cylindrical apron 32, is located within the drum 5 opposite the inlet flue, with its ends extending outwardly, and fitting closely in the adjacent ends of the branches 2, so as to exclude the inlet of air except through the flue 1.

The lint, or fiber, is carried in by the air current, from the cotton gin, and will be deposited on the surface of the drum, as it rotates, the air, dust and foreign matter passing on into said drum and out through the branches 2. The drum rotates in the direction indicated by the arrow, in Figure 3, and carries the deposited lint underneath the roller 14 by which it is compressed into a loose bat. This bat is carried on around with the drum until it is engaged by the oppositely moving apron 25 by which it is engaged and formed into a loose roll, as 33, the upper or free end of the apron supporting frame moving away from the drum 5, as the roll enlarges, until it assumes the position indicated in dotted lines in Figure 3, said apron, however, remaining, at all times in cooperating relation with the drum. The roll 33 enlarges until it becomes overbalanced and drops off of the apron 25, severing the bat, and a new roll is then started. The rolls, as thus formed, are delivered into the press, in the formation of the cotton bales therein.

What I claim is:—

1. A condenser including a flue, a rotatable foraminated drum spanning the flue, a compression roller adjacent the drum, an endless traveling apron adjacent the drum and cooperating therewith to form a roll, the cooperating parts of the drum and apron being movable in opposite directions.

2. A condenser including a flue, a rotatable foraminated drum spanning the flue, a compression roller adjacent the drum, an endless traveling apron adjacent the drum and cooperating therewith, the cooperating parts of the drum and apron being movable in opposite directions adapted to form a roll, and means holding the apron yieldingly in operating position.

3. A condenser including a suction flue adapted to convey lint cotton, a rotatable foraminated drum spanning the flue and provided to receive the cotton and form the same into a bat, a compression roller adjacent the drum provided to compress said bat, an endless traveling apron adjacent the drum and movable in opposition to the movement of said bat, around the drum, and adapted to form said bat into a roll between the drum and apron.

4. A condenser including a suction flue adapted to convey lint cotton, a rotatable foraminated drum spanning the flue and provided to receive the cotton and form the same into a bat, a compression roller adjacent the drum provided to compress said bat, an endless traveling apron adjacent the drum and movable in opposition to the movement of said bat, around the drum, and adapted to form said bat into a roll between the drum and apron, and means for holding the apron yieldingly against said roll.

5. A condenser including a flue, adapted to convey fibrous material by air current, a rotatable foraminated drum spanning the flue, and forming a moving surface on which said material is deposited, a compression roller, movable toward and from the drum, and provided to compress said material into a bat, a traveling apron movable in opposition to the movement of the bat, around said drum, and adapted to form said bat into a roll between the drum and apron.

6. A condenser including a flue, adapted to convey fibrous material by air current, a rotatable foraminated drum spanning the flue, and forming a moving surface on which said material is deposited, a compression roller, movable toward and from the drum, and provided to compress said material into a bat, a traveling apron movable in opposition to the movement of the bat, around said drum, and adapted to form said bat into a roll between the drum and apron, and means holding the apron yieldingly against the roll.

7. A condenser including an inlet flue, a rotatable foraminated drum spanning the flue, a suction pipe leading out from the end of the drum, a stationary apron within the drum opposite the inlet flue, arranged to expose only a limited area of the drum to the air current through said flue, bat compression means adjacent the drum, and a traveling apron arranged to cooperate with the drum, the cooperating parts of the drum and apron being movable in opposite directions.

8. A condenser including an inlet flue, a rotatable foraminated drum spanning the flue, a suction pipe leading out from the end of the drum, a stationary apron within the drum opposite the inlet flue, arranged to expose only a limited area of the drum to the air current through said flue, bat compres-

sion means adjacent the drum, and a traveling apron arranged to cooperate with the drum, the cooperating parts of the drum and apron being movable in opposite directions, and means holding said apron yieldingly in said cooperating relation.

9. In a condenser an endless traveling apron, rollers on which the apron is mounted, said rollers having peripheral grooves and a welt-like rib on the apron which runs in said grooves.

In testimony whereof I have signed my name to this specification.

JOHN C. ROGERS.