

L. J. BLACK.
STEAM FEED.
APPLICATION FILED JAN. 24, 1911.

993,748.

Patented May 30, 1911.

Fig. 1.

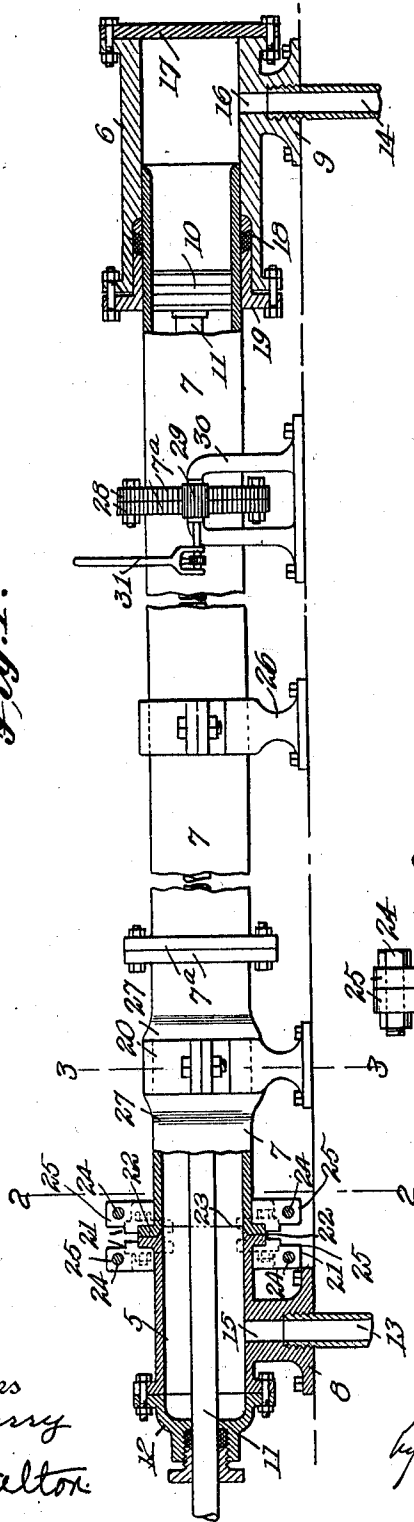


Fig. 3.

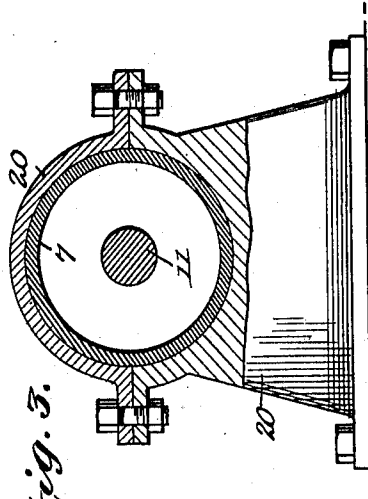
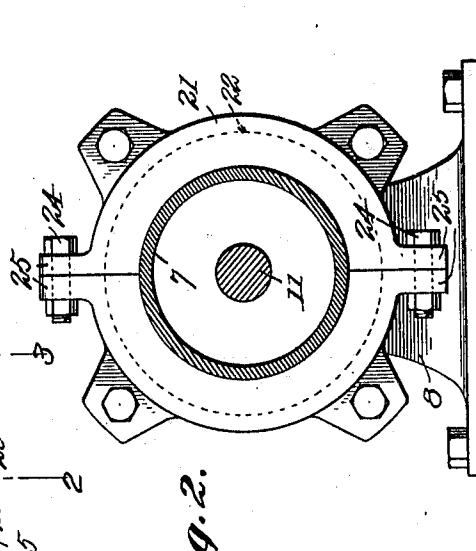


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

LEE JACKSON BLACK, OF BEAUMONT, TEXAS.

STEAM-FEED.

993,748.

Specification of Letters Patent.

Patented May 30, 1911.

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To all whom it may concern:

Be it known that I, LEE J. BLACK, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Steam-Feeds, of which the following is a specification.

This invention relates to steam feeds for sawmill carriages characterized by a steam cylinder, and a piston operating in the cylinder and having its rod connected to the sawmill carriage.

In ordinary steam feeds, owing to the great length of the cylinder, there is a tendency of the piston rod to sag and strike the lower part of the cylinder, soon wearing a groove therein. This difficulty is entirely obviated by providing the cylinder with a rotatable portion. A cylinder of this kind is illustrated in Patent No. 932914, dated August 31, 1909, the present invention being an improvement thereon, and having for its object to provide a better connection between the stationary and movable portions of the cylinder and also to provide a structure which permits longitudinal expansion and contraction.

With these objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the accompanying drawing forming a part of this specification, in which drawing—

Figure 1 is an elevation of the cylinder partly in section. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Referring specifically to the drawing, 5 and 6 denote, respectively, the stationary sections of the cylinder, they being located at the ends thereof, and located therebetween is the rotatable portion of the cylinder, the same consisting of several sections 7 according to the desired length of the cylinder, said sections being connected in any suitable manner, preferably by two sets of flanges 7^a and ground joints made male and female. The stationary section 5 has a foot or bracket 8 and the stationary section 6 has a foot or bracket 9, whereby said sections of the cylinder are securely fastened to a suitable foundation or to the floor of the mill. In the cylinder operates a piston 10 which has its rod 11 connected to the sawmill carriage (not shown). This connection forms

no part of the present invention, and therefore has not been illustrated. The stationary section 5 of the cylinder is provided with a suitable stuffing box 12 through which the piston rod passes. Steam is supplied alternately to the ends of the cylinder by pipes 13 and 14, the latter being connected, respectively, to bores 15 and 16 in the feet or brackets 8 and 9, said bores opening into the stationary sections of the cylinder.

The stationary section 6 is closed at its rear end by a removable head 17 so that the piston may be inserted or removed, and at its opposite end it is open and entered at a sliding fit by the end section of the intermediate rotary portion of the cylinder, said section being turned on the outside to make a smooth fit. The open end of the section 6 is counterbored to form a stuffing box 18 containing a junk ring and a suitable packing, and closed by a gland 19. This connection forms an expansion joint between the stationary section 6 and the rotary portion of the cylinder, and permits the cylinder to expand and contract in the direction of its length.

The section of the rotary portion of the cylinder which is adjacent to the stationary section 5 is supported in a bearing 20 secured to the floor of the mill or to any other suitable foundation. This section of the rotary portion of the cylinder is connected to the stationary section 5 by means of rings 21 which encircle said sections and are bolted together behind flanges 22 thereof, the sections also having a ground joint 23. Each ring 21 is in two sections which are connected by bolts 24 passing through ears 25 on the abutting ends thereof. The rings are thus divided diametrically so that they may be slipped on or off the cylinder without disconnecting the several sections of which it is composed. The cylinder is also supported midway between its ends by a bearing 26. The section 7 which is supported by the bearing 20 has circumferential flanges 27 located on opposite sides of said bearing. The section 7 which is supported in the bearing 26 is without such flanges so that the cylinder is left free to expand and contract.

One set of flanges 7^a is formed with gear teeth 28 which mesh with a pinion 29 supported on standards 30, said pinion being

arranged to be operated by a ratchet lever 31 applied to the shaft thereof, or by any other suitable means.

I claim:

- 5 A steam cylinder comprising an intermediate rotatable section and stationary sections at each end thereof, a piston working in the cylinder, means for rotating the intermediate section, an expansion joint
10 between the intermediate section and one of the end sections, a connection between the other end section and the intermediate sec-

tion permitting rotation of the latter, supports for the end sections, and a bearing for the intermediate section in which said section is loosely supported to permit rotation and linear expansion. 15

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

LEE JACKSON BLACK.

Witnesses:

C. P. COLLINS,

C. K. GREEVES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
