

(No Model.)

J. B. ST. LOUIS.

STEAM FEED FOR SAW MILL CARRIAGES.

No. 376,169.

Patented Jan. 10, 1888.

Fig. 1.

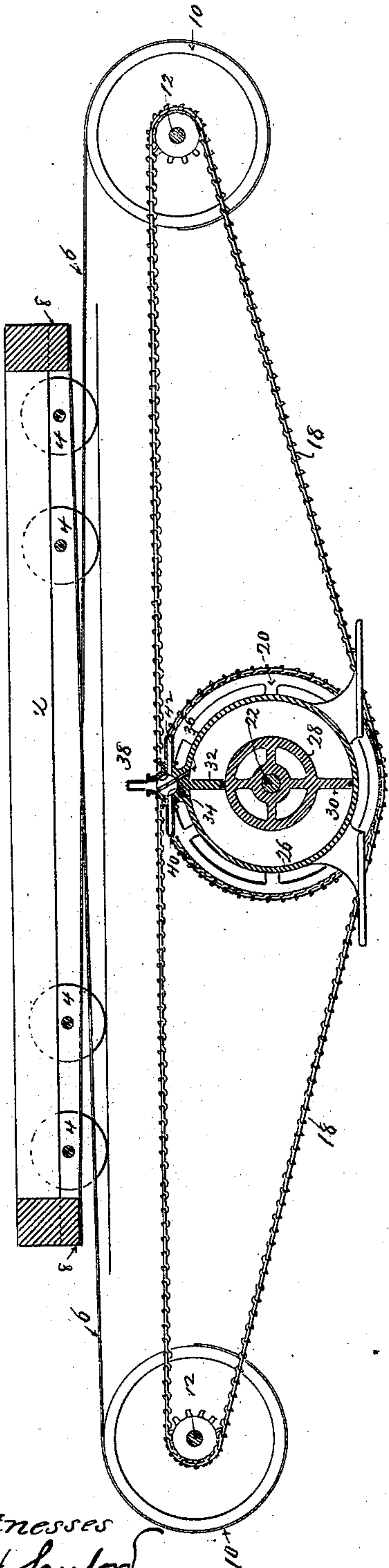


Fig. 2.

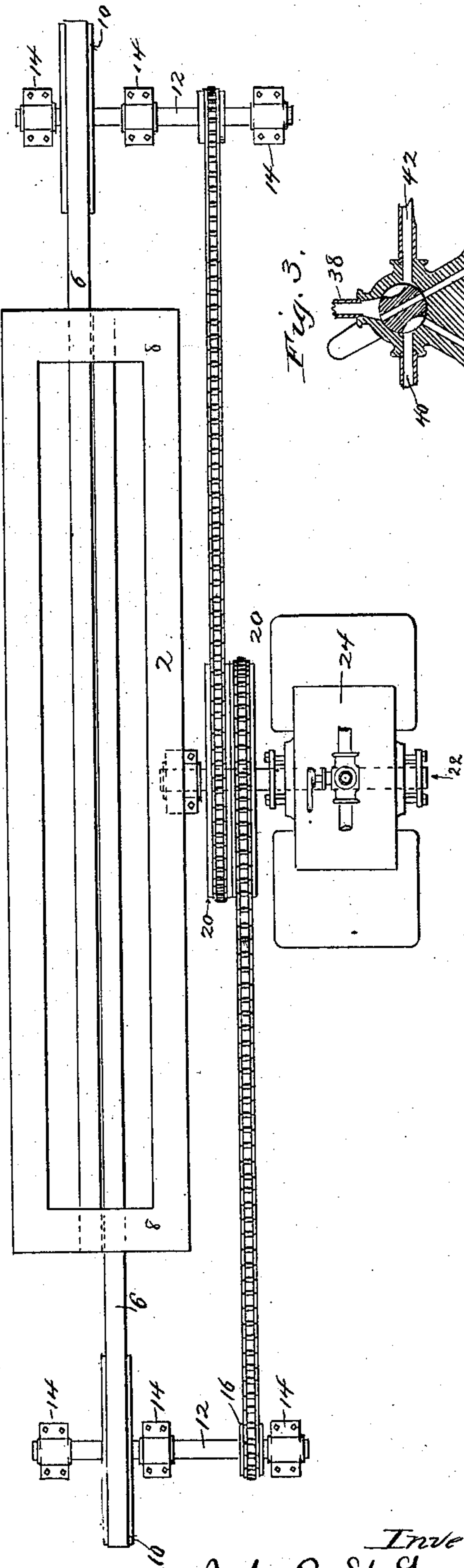
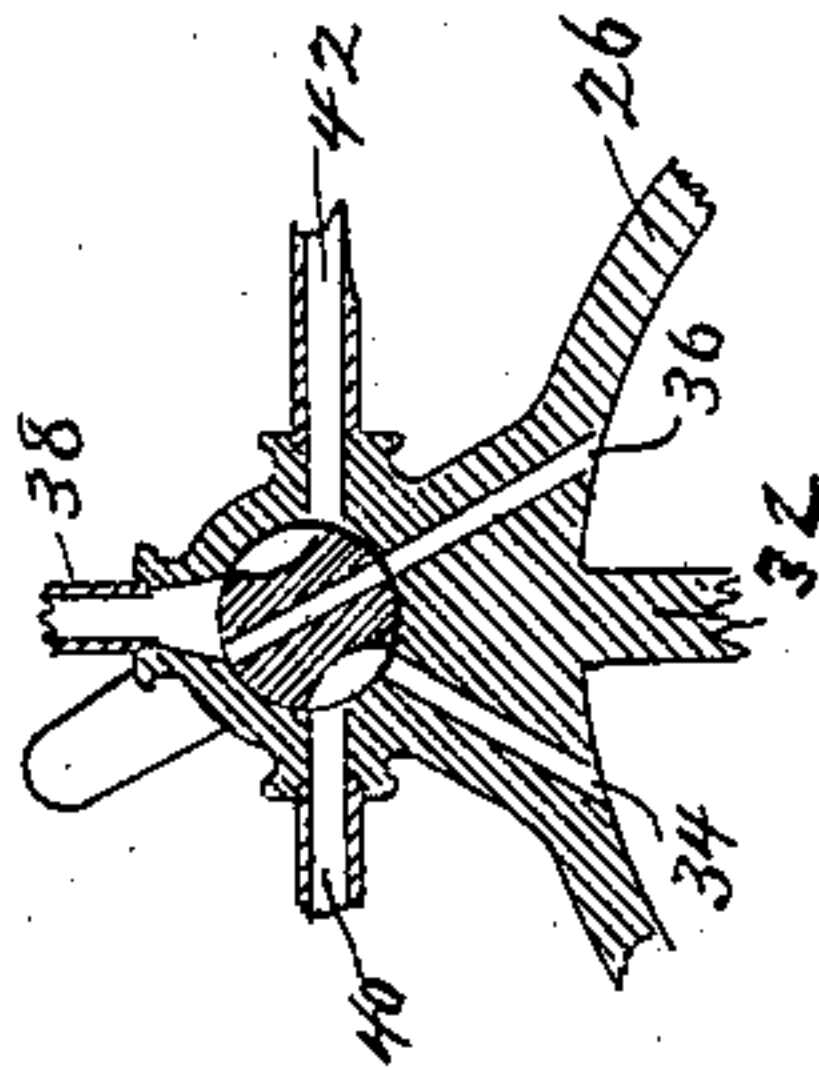


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN B. ST. LOUIS, OF MINNEAPOLIS, MINNESOTA.

STEAM-FEED FOR SAW-MILL CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 376,169, dated January 10, 1888.

Application filed December 13, 1886. Serial No. 221,391. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ST. LOUIS, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Steam-Feeds for Saw-Mill Carriages, of which the following is a specification.

My invention relates to an improved steam-feed as applied to a saw-mill carriage; and it consists generally in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the drawings which form part of this specification, Figure 1 is a side elevation and partial section showing the application of my improvement to the saw-mill carriage. Fig. 2 is a plan of the same. Fig. 3 is a detail showing the valve for operating the engine.

2 represents the carriage of an ordinary saw-mill, supported on the truck-wheels 4, and traveling on a track in the usual manner.

6 are flexible bands, preferably of steel, attached to cross-ties 8 at the front and rear of the carriage.

10 are pulleys or drums, to the circumference of which one end of the bands 6 are attached. The said pulleys are hung on shafts 12, supported in suitable boxes, 14. As the pulleys revolve, the bands 6 are wound or unwound upon their circumference.

16 are sprocket-wheels on the shaft 12, by which power is transmitted to the said shafts by means of the endless chain 18 and sprockets 20 upon the main or driving shaft 22.

An oscillatory motion is imparted to the shaft 22 by the motor 24, which is constructed, preferably, as follows:

26 is a circular steam-tight case, in which the shaft 22 is centered. A core, 28, having a wing or float, 30, is keyed or rigidly attached to the shaft 22 and placed within the casing 26, the float 30 extending to the inner circumference of case 26. A packing-strip may be provided in the edge of this float to prevent any leak between it and the case.

32 is a partition extending from the case 26 to the core 28. This may also be provided with a packing-strip upon its lower edge to prevent a leak between it and the said core.

34 and 36 are steam-ports extending through the casing and opening into the steam-chamber on either side of the partition 32. These

ports are used alternately as steam and exhaust ports, and are covered by a valve which changes the direction of the steam from one side to the other as the carriage is moved forward or back.

The valve which I have shown, and which I prefer to use, is a rotary or oscillatory valve having three ports. The center port is open to the live-steam inlet 38, and as the valve is partially revolved connects this inlet with either the port 34 or 36, as the case may be. When the center opening connects with the port 36, the side opening or cavity connects the port 34 with the exhaust-pipe 40, and when the center opening connects with the port 34 the side opening on the opposite side connects the port 36 with the exhaust-pipe 42.

Any other form of valve may be used to accomplish this result without departing from my invention.

The operation is as follows: Steam from the inlet-pipe 38 is admitted through the valve and port to one side of the partition 32, and fills the space between this partition and the float 30. The pressure upon the side of the float causes it to revolve in the casing 26 and carry with it the shaft 22, to which it is secured. This movement will be kept up until the steam-pressure is released, or until nearly a full revolution of the shaft has been made, when the float will be brought to the end of the stroke against the partition 32. The ports 34 and 36 may be set at a short distance from the partition to allow a certain amount of steam to be confined between the float and the partition to act as a cushion. The sprockets 20 are revolved with the shaft 22. The endless chains 18, passing over the sprockets, impart motion to the shafts 12 and pulleys or drums 10 upon said shafts. This motion winds the band 6 upon one drum and unwinds it from the other. The band 6, being attached to the end sill or cross-tie of the carriage, draws the said carriage in the direction in which the band is wound. It will be seen that the relative sizes of the pulleys and sprocket-wheels may be varied to suit the length of the feed required.

I claim as my invention—

1. A steam-feed for saw-mill carriages, comprising an oscillating steam-motor arranged below said carriage, with its shaft at right an-

gles to the line of travel of said carriage, shafts 12 upon opposite sides of said motor, gearing connecting said shafts with said motor-shaft, whereby they are oscillated with said motor-shaft, and independent flexible bands 6, connecting the opposite ends of said carriage with said shafts 12, substantially as described.

2. The combination, with a saw-mill carriage, of the shafts 12, arranged at the opposite ends of the carriage and provided with the pulleys 10, the independent flexible bands 6, attached to the opposite ends of the carriage, extending under said carriage, and having their ends attached to the pulleys 10, and means for simultaneously driving said shafts 12 in the same direction, substantially as described.

3. The combination, with the saw-mill carriage 2, of the flexible bands 6, attached to the opposite ends of the carriage and extending in opposite directions under said carriage, the shafts 12, having pulleys 10, to which said bands 6 are attached, the oscillating motor 24, having the shaft 22, provided with the sprocket-wheels 20, and sprocket-chains 18, extending from said shaft 22 to each of said shafts 12, substantially as described.

In testimony whereof I have hereunto set my hand this 8th day of December, 1886.

JOHN B. ST. LOUIS.

In presence of—

A. C. PAUL,

R. H. SANFORD.