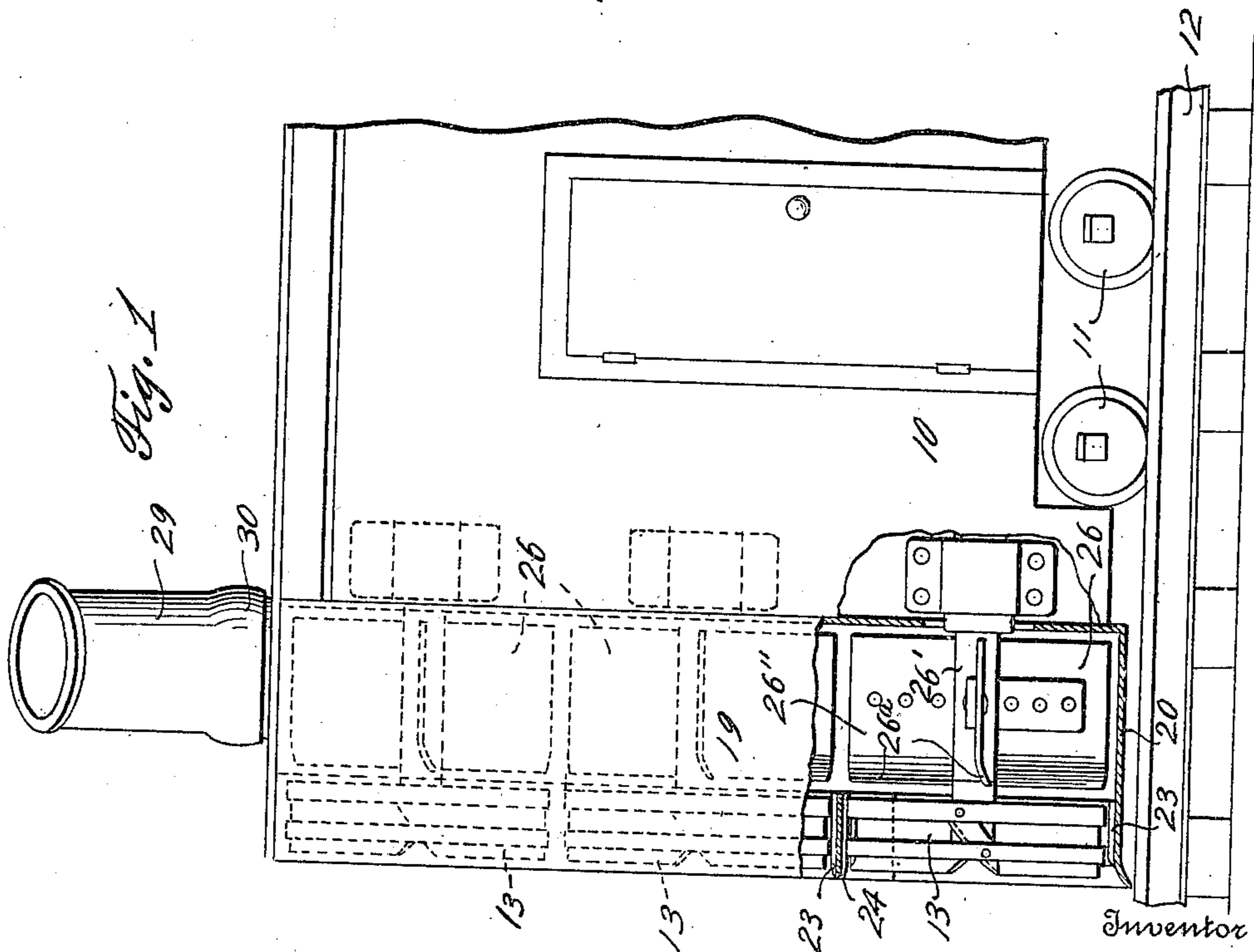
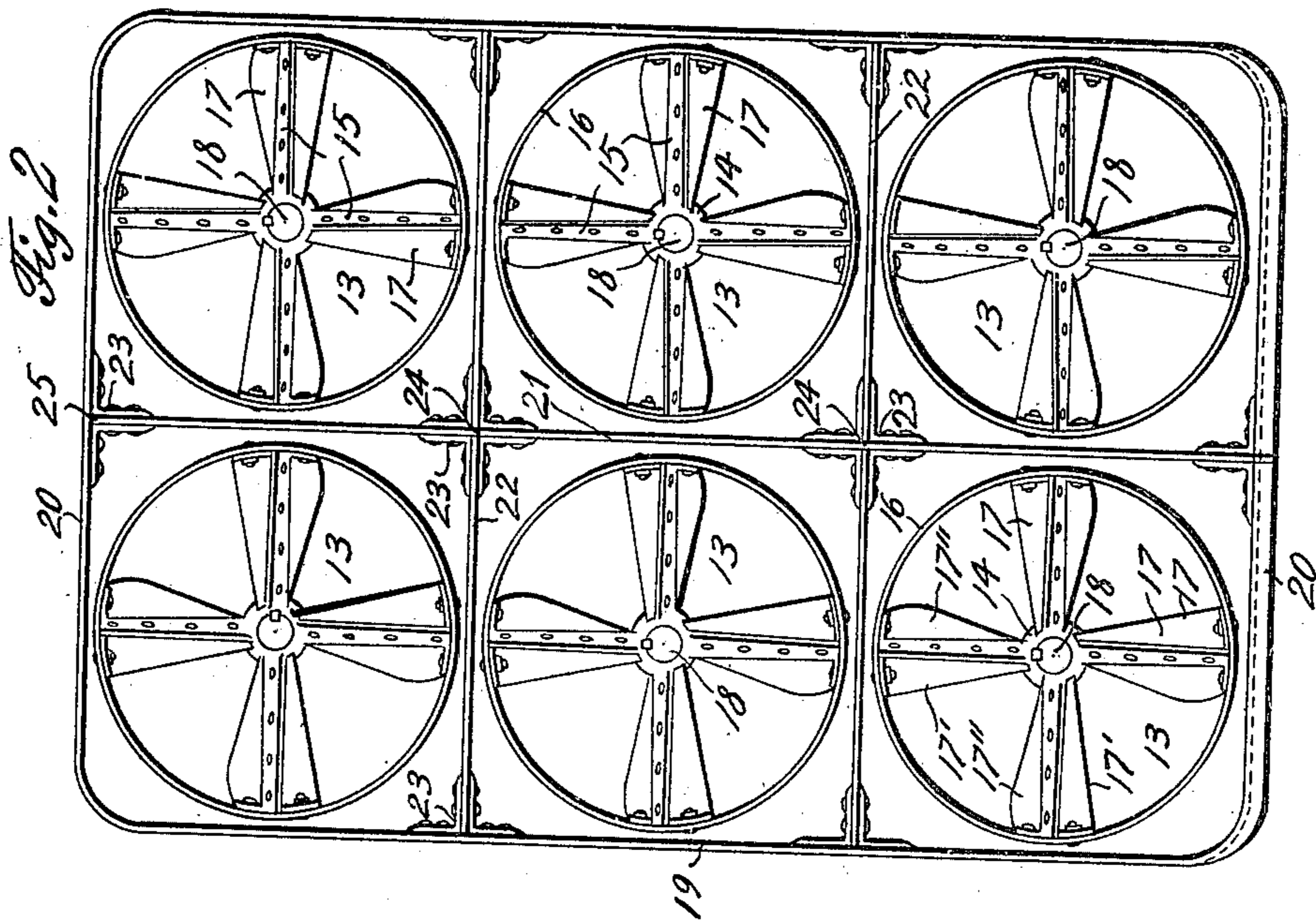


952,453.

E. B. LOCKREM.
TRACK CLEANER.
APPLICATION FILED DEC. 30, 1909.

Patented Mar. 22, 1910.
3 SHEETS—SHEET 1.



Witnesses

E. Larson
W. J. Taylor

By

E. B. Lockrem,
Beeler Cobb

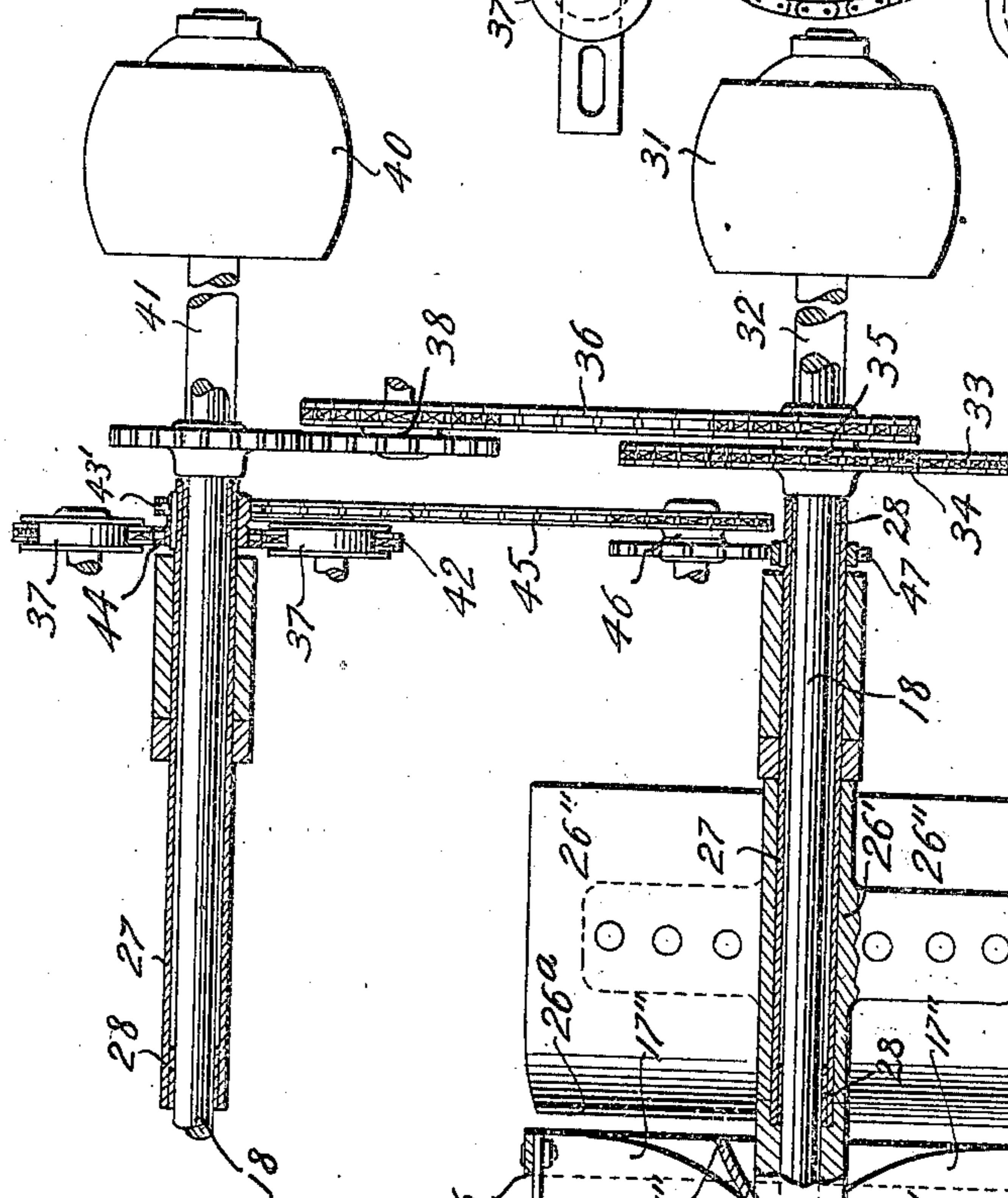
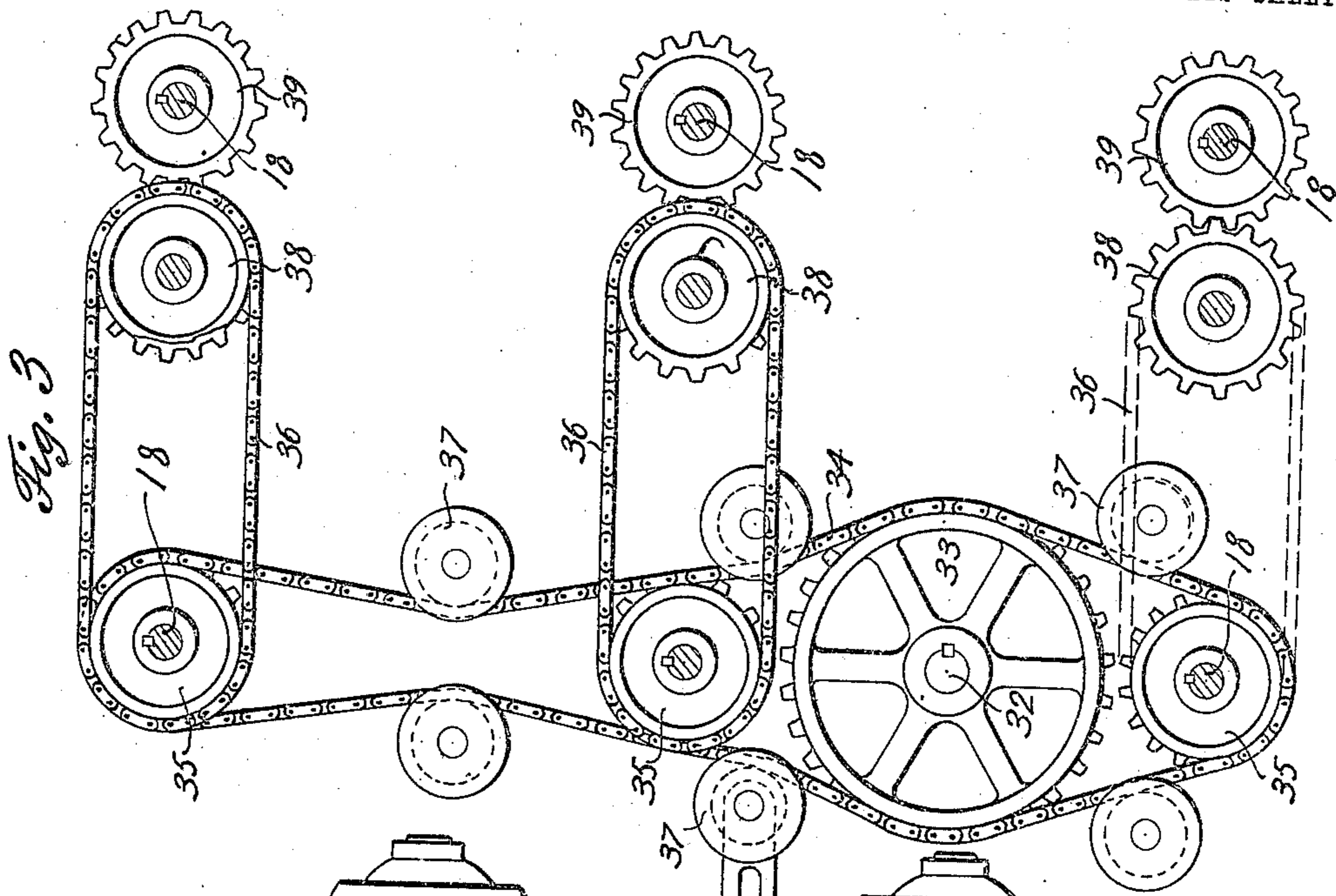
Attorneys

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3 SHEETS—SHEET 2.



Witnesses
E. Larson
W. T. Taylor

Inventor
E. B. Lockrem
 By *Beeler & Cobb*
 Attorneys

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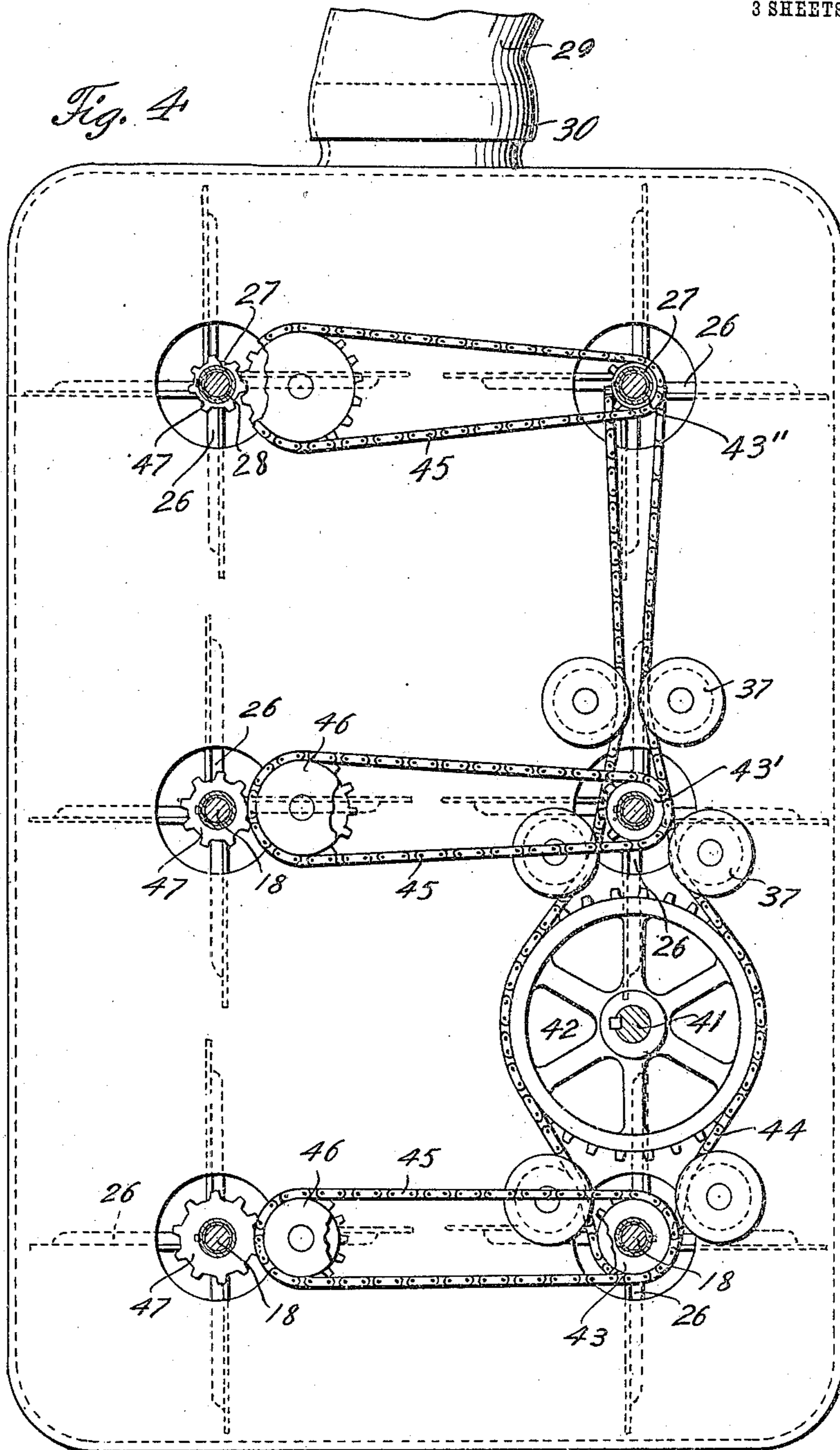
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3 SHEETS—SHEET 3.

Fig. 4



Witnesses

E. Larson
M. J. Taylor

Inventor

E. B. Lockrem

By

Beeler Cobb

Attorneys

UNITED STATES PATENT OFFICE.

EDWARD B. LOCKREM, OF BUCHANAN, SASKATCHEWAN, CANADA.

TRACK-CLEANER.

952,453.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed December 30, 1909. Serial No. 535,589.

To all whom it may concern:

Be it known that I, EDWARD B. LOCKREM, a citizen of the United States, residing at Buchanan, in the Province of Saskatchewan, Canada, have invented certain new and useful Improvements in Track-Cleaners, of which the following is a specification.

This invention relates to track cleaners for railways, and has particular reference to a device of this character which is adapted to dig the snow from the drift and deliver it by centrifugal force or a blast of air through a pipe to one side or the other of the railway track.

The invention consists in certain specific novel details of construction hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a part of the device, partly broken away; Fig. 2 is a front view of the cutters; Fig. 3 is a view in elevation of the driving gearing for the cutters; Fig. 4 is a view similar to Fig. 3, showing the driving mechanism for the fans or blowers, and Fig. 5 is a horizontal view of certain of the parts, partly in section on a line or plane through the intermediate pairs of driving shafts.

Throughout the following description and on the several figures of the drawing similar parts are referred to by like reference characters.

This track cleaner mechanism is mounted upon or within a car structure 10 mounted upon track wheels 11, adapted to be propelled on the usual track 12 by means of a locomotive in the rear thereof. The car 10 carries all of the cleaning apparatus, which apparatus are operated by engines or motors carried within the car 10.

At the front end of the car are mounted for rapid rotation a series of cutters 13, shown as six in number, and of such relative arrangement and size as to substantially command the space required for the passage of the train through the cut or snow bank. Each of the cutters 13 comprises a hub 14, a set of spokes 15, a rim 16, and as many cutting blades 17 as there are spokes, one of the cutters being securely bolted or riveted to each spoke and to the hub and rim. Each of the cutters comprises a sharp cutting edge 17' and a rear propelling wing 17''. The operation of the cutter is similar to that of an ordinary auger. The hub of each cut-

ter is mounted upon a shaft 18 extending rearwardly within the car 10.

The casing surrounding and supporting the cutters is of peculiar construction, adapting it for the desired purpose and comprises side walls 19, top and bottom transverse walls 20, and intermediate vertical and transverse partitions 21 and 22 respectively. The intermediate partition walls are connected to each other and to the top, bottom and side walls by means of a strong angle iron structure indicated at 23. Aside from constituting a supporting and bracing framework for the cutters the aforesaid walls constitute means for breaking down the portion of the snow bank not directly reached by the rotary cutters, whereby the same will be caused to be delivered to and through the cutters.

It will be seen that the angle portions of the walls especially at those portions between adjacent cutters will constitute relatively stationary chisel-like cleavers 24 and 25 for the purpose of splitting the parts of the snow bank not reached by the cutters. The motion of the car toward and into the snow bank will cause the latter to be split as above indicated.

Immediately at the rear of the rotary cutters are rotary blowers or throwers 26, preferably of the same number as the cutters, one to receive directly from each of the cutters. Each cutter and its associate blower will preferably be mounted coaxially, the blower being secured to a hollow shaft 27, which should be driven at a higher speed than the cutter shaft. The interior of the hollow shaft 27 may be somewhat larger than the cutter shaft 18 and be spaced therefrom by bushings 28, if desired to reduce the frictional contact between the two independently rotating parts. Each of the blowers comprises a hub 26' and a plurality of wings 26''. Each of the wings 26'' may be curved along its front edge as indicated at 26^a so as to direct the snow rearwardly and inwardly, the said edge of the blade being directed toward the direction in which the fan or blower will be operated. The blowers are so disposed and rotated as to force the snow toward the vertical center of the machine and thence upwardly through an upper dome or tube 29, so arranged as to be directed to either side of the track. The tube may be flexible for this purpose or mounted

on a turn table at 30, as is well understood in this art.

All of the cutters are operated simultaneously and at substantially a uniform speed by a motor 31 of any suitable type. A motor shaft 32 has connected thereto a main drive wheel 33 over which operates an endless chain 34. The rear end of each of the cutter shafts 18 has fitted thereto a gear wheel. The wheels 35 on that side on which the power wheel 33 is located are double, one portion of each receiving the drive chain 34 and the other of each serving to drive an auxiliary drive chain 36. As many idle rollers 37 as may be found desirable may be mounted adjustably along the drive chain 34 for the purpose of maintaining the proper driving connection and tension on said drive chain. Each of the chains 36 operates over a sprocket wheel 38, the same being double in character, having one portion with sprocket teeth and the other portion with spur teeth meshing with the spur gears 39 on the cutter shafts 18 on the side opposite from the power wheel 33. The purpose of the auxiliary wheels 38 is to cause the horizontal pairs of cutters to rotate in opposite directions.

The driving mechanism for the blowers is somewhat similar to that above described for the cutters. An engine 40 is connected by a power shaft 41 to a large power wheel 42 on the side of the machine opposite from the power wheel 33 above described. Each of the blower shafts 27 has secured to its rear end a gear wheel, those on one side being indicated at 43, 43', and 43'', being driven by an endless power chain 44 from the wheel 42. The three wheels 43, 43', and 43'' are of different diameters, whereby they will be driven at correspondingly different speeds from the same source of power, the blower at the bottom, having less service to perform than those above it, may be driven much slower, but it is to be understood that all of the blowers should be operated at a sufficiently higher speed than the cutters to secure the proper delivery of the snow. Each of the last mentioned wheels has connected thereto an auxiliary chain 45 to a wheel 46, double in character, one portion thereof driving a spur wheel 47 on the side opposite the power wheel 42. As in the case of the cutters each horizontal pair of blowers should

be operated at the same speed and in opposite directions.

The various parts of this machine may be constructed of any suitable materials, and the design and proportions thereof may be materially varied within the scope thereof without departing from the spirit of the invention hereinafter claimed.

I claim:

1. In a track cleaner for railways, the combination of a frame, a plurality of pairs of rotary cutters journaled in said frame, portions of said frame extending vertically and transversely between adjacent cutters and constituting cleavers to break down and direct portions of material into the cutters, means to rotate all of said cutters simultaneously, and means to deliver the material from the cutters.

2. In a track cleaner, the combination of a frame, a plurality of pairs of cutters journaled for rotation in said frame, and means to drive all of said cutters simultaneously, the cutters of each pair being operated in opposite directions, said driving means including double sprocket wheels on one side connected to the cutter shafts, an endless power chain driving all of said sprocket wheels, a set of spur wheels connected to the cutter shafts on the other side, intermediate wheels of a double nature, portions of which mesh with said spur wheels, and a set of auxiliary chains operating over other portions of said intermediate wheels and driven by the first mentioned double sprocket wheels.

3. In a track cleaner, the combination of a vertical series of pairs of rotary cutters, means to drive all of said cutters at the same speed, a series of blowers, one for each cutter, receiving directly from the cutters, the cutters and corresponding blowers being arranged in horizontal pairs, respectively, and power means independent of the cutter power means for driving the blowers, each pair of blowers being driven faster than the pair next beneath, and each of the blowers being driven faster than the cutters.

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

EDWARD B. LOCKREM.

Witnesses:

GEO. L. BEELER,
HUGH M. STERLING.