H. C. HILKE.

SAWMILL CARRIAGE.

APPLICATION FILED NOV. 22, 1921.

1,437,846.

Patented Dec. 5, 1922.

2 SHEETS—SHEET 1.

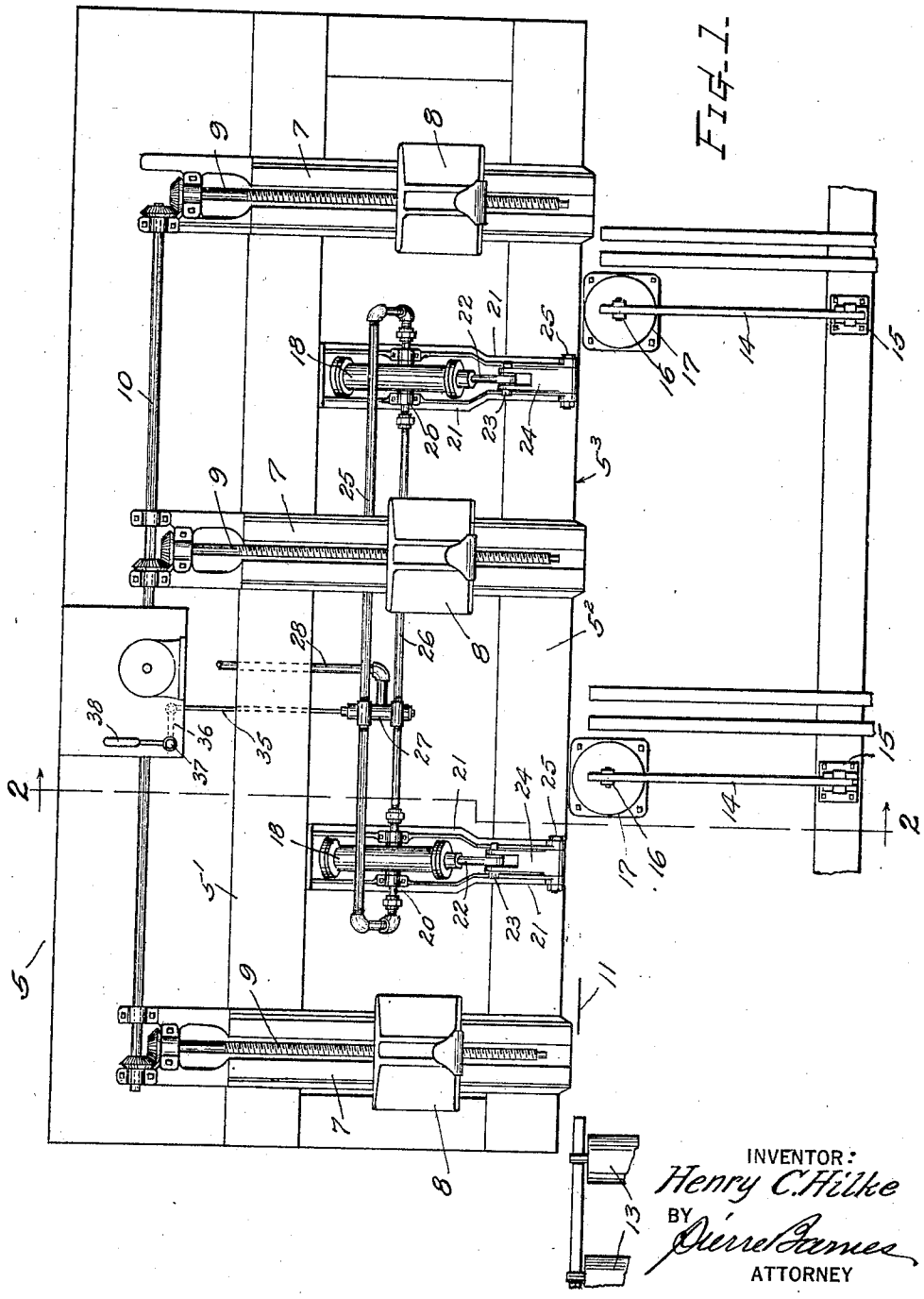


Fig. 1.

INVENTOR:
Henry C. Hilke
BY
Pierre James
ATTORNEY

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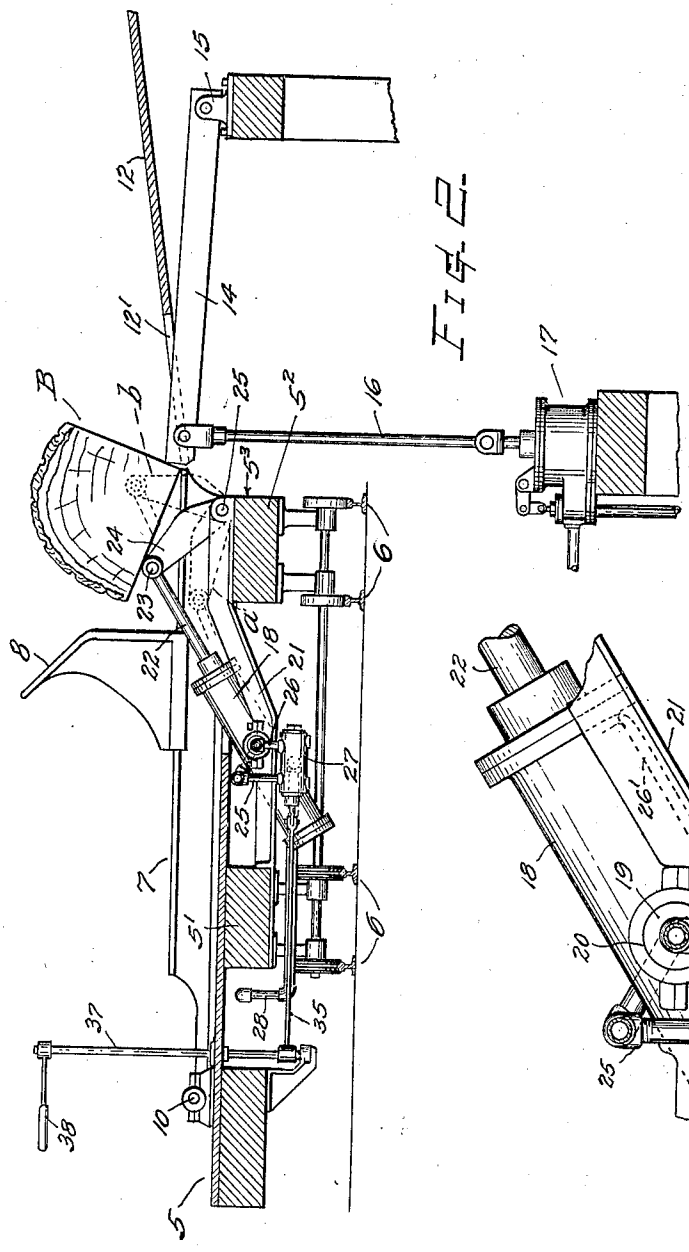


Fig. 2.

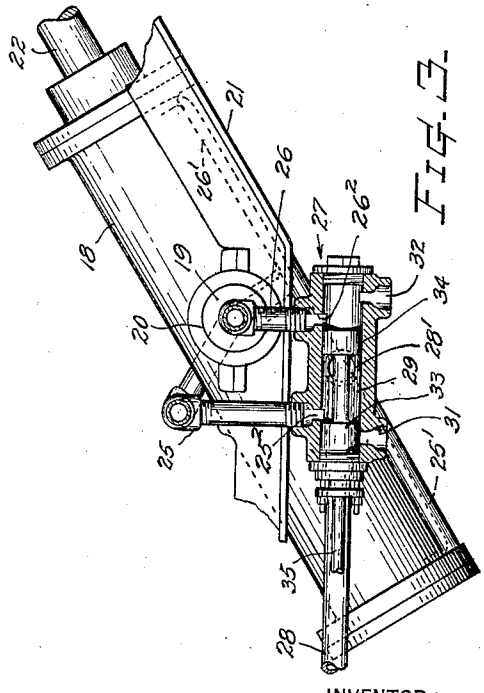


Fig. 3.

INVENTOR:
Henry C. Hilke
BY
Pierre James
ATTORNEY

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UNITED STATES PATENT OFFICE.

HENRY C. HILKE, OF SEATTLE, WASHINGTON.

SAWMILL CARRIAGE.

Application filed November 22, 1921. Serial No. 516,920.

To all whom it may concern:

Be it known that I, HENRY C. HILKE, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Sawmill Carriages, of which the following is a specification.

This invention relates to power log shifting apparatus, and its object is the provision of simple and efficient devices for use upon sawmill-carriages for controlling and shifting logs thereon.

The invention consists in the novel construction, adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawings,—

Figure 1 is a plan view illustrating sawmill apparatus including a carriage with devices embodying my invention applied thereto. Fig. 2 is a transverse sectional view taken substantially through 2—2 of Fig. 1. Fig. 3 is a side elevation to an enlarged scale of one of the power cylinders, with the valve casing shown in longitudinal section.

In said drawings, the reference numeral 5 designates, generally, a sawmill carriage mounted on track rails, such as 6, and provided with transversely arranged head-blocks 7 upon which are mounted knees 8. These knees are advanced or retracted in unison by means of screws 9 operatively connected to an operating shaft 10 of suitable set works. At one side of the carriage track is a saw indicated by 11 and located between a log deck 12, shown only in Fig. 2, and a system of rollers 13 which are shown in Fig. 1. Located below the log deck 12 are transversely arranged skid bars 14 which are fulcrumed at their ends remote from the track to chairs 15 and are supported adjacent to their other ends by connecting rods 16 of power cylinders 17 whereby the last named ends of the bars may be elevated through slots such as 12^1 provided in said log deck.

All of the devices above referred to are or may be similar to what are now employed in sawmill practice.

According to the present invention, I provide upon the carriage a plurality of transversely disposed power cylinders 18, two being shown, of the oscillating type having the trunnions, as 19, journaled in bearings 20 of frame bars 21 which are rigidly secured to the carriage frame members 5^1 and 5^2 and constitute parts of the carriage.

Within the respective cylinders are provided pistons whose rods 22 are pivotally connected by pins 23 with the ends of arms 24 which are fulcrumed by pins 25 to the frame bars 21 in proximity with the inner side 5^3 of the carriage.

The arms 24 are arranged so as to be swung through an arc of about 100°, that is to say—from an approximately horizontal position to a short way beyond a vertical position, the extreme positions of an arm are respectively indicated by dotted lines *a* and *b* in Fig. 2.

Furthermore, the arms when in their retracted or horizontal positions lie entirely below the plane of the tops of head-blocks 7 and in action protrude thereabove.

Said arms are actuated by any suitable power medium, preferably compressed air, which is furnished to either ends selectively of the cylinders 18 through the medium of pipe lines 25 and 26 between the cylinder trunnions 19 and a valve casing 27 which is also connected by a pipe 28 with a source or reservoir of the power medium.

Each of the cylinders 18 is provided interiorly with passages as indicated by dotted lines 25^1 and 26^1 Fig. 3, affording communication from the respective pipes 25 and 26 to the opposite ends, respectively, of both of said cylinders. The valve casing as illustrated in Fig. 3 is provided with a bore 29 having at about its midlength an inlet opening 28^1 from the supply pipe 28.

At opposite sides of opening 28^1 the casing is provided with ports 25^2 and 26^2 which communicate with the pipes 25 and 26. Also provided in the casing are exhaust apertures 31 and 32 which are disposed between each of the aforesaid ports and the adjacent ends of the casing.

The valve shown is of the spaced piston type having complementary piston elements 33 and 34 rigidly connected with each other and in such relative positions that the valve at one end of its stroke will afford communication between either of the ports and the adjacent exhaust aperture while permitting the flow of the power medium from the supply opening 28^1 and the other of the ports. The valve is operatively connected as by a rod 35 with an arm 36 of a con-

trolling post 37 which is rotatably moved as by means of a handle arm 38.

When it is desired to elevate or swing the arms 24 from positions as *a* Fig. 2 into the *b* position, the operator stationed on the sawmill-carriage 5 manipulates the post 37 to move the valve into the position in which it is represented in Fig. 3.

With the valve thus disposed, the power medium admitted to the back ends of the several cylinders project the piston-rods 22 outwardly to produce appropriate movements to the respective arms, the power medium from the other ends of the cylinders exhausting through pipe line 26, and port 26^2 and aperture 32 into external atmosphere.

To restore the arms 24 to their *a* positions, the operator regulates the valve to reverse the travel of the power medium as above explained to and from the ends of the cylinders.

The above described log shifting apparatus is employed most advantageously when the arms 24 are in their *b* positions to serve as a buffer to cushion the impact of heavy logs when being thrust from the log deck onto the saw carriage to thereby relieve the latter, and more especially the knees 8 thereof, from jars or shocks. Another important function of the apparatus is the rolling of a log, while upon the carriage, into positions to have slabs sawed therefrom to produce what is conventionally known as a cant in the manufacture of lumber.

Such log rolling is most conveniently accomplished by operating my devices in conjunction with the skid bars 14 which are accordingly raised as shown in Fig. 2 to present an abutment or stop for the lower portion of a log as B, for example, in turning the same by means of the arms 24. Another function of the apparatus is the pushing of slabs from the carriage in any position of the carriage, and for transferring cants or sawed lumber from the carriage to the rollers 13 when the carriage is opposite the same. Still other important uses of the apparatus whether used independently of or in conjunction with the knees 8, log handling devices, etc., will it is thought, be apparent to sawmill operatives.

In addition to the advantages above referred to afforded by my invention in controlling logs, cants, etc., it obviates the relatively slow and laborious use of hand tools such as pickaroons, peevies, or the like, which have hitherto been utilized for such purposes.

What I claim, is,—

1. The combination with a sawmill-carriage provided with head-blocks, of devices adapted to be used interchangeably for work shifting and buffer purposes and carried on said carriage intermediate adjacent head-blocks thereof, said devices each comprising an arm pivotally connected adjacent to one of its ends to the carriage, fluid actuating powers means connected to the other end of the respective arm, and means for regulating the action of the aforesaid power means whereby said arms are simultaneously moved into and out of operable positions selectively.

2. The combination with a sawmill-carriage, of a plurality of arms pivotally connected at one end of each to the carriage adjacent to its inner side, power cylinders provided on the carriage, piston rods extending from said cylinders and connected to the respective arms, and means including valve devices whereby a fluid power medium is supplied to and exhausted from opposite ends respectively of all of said cylinders to cause said arms to be moved into or from their operable positions selectively.

3. The combination with a sawmill-carriage provided with head blocks, of log turning and shifting devices mounted upon the carriage, said devices comprising a plurality of arms pivotally connected to one side of the carriage and arranged to be normally below the plane of the tops of said head-blocks, motors for the respective arms, said motors including cylinders connected for oscillatory movements to the carriage and having piston rods connected to the respective arms, and manually controlled means for introducing a fluid power medium into the motor cylinders to influence the piston rods thereof for swinging said arms above said head-blocks.

Signed at Seattle, Washington, this 15th day of November 1921.

HENRY C. HILKE.

Witnesses:
PIERRE BARNES,
M. G. SUPPLE.