No. 868,087. PATENTED OCT. 15, 1907.

A. HARROLD.

CABLE FEED MECHANISM FOR SAWMILLS.

APPLICATION FILED NOV. 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

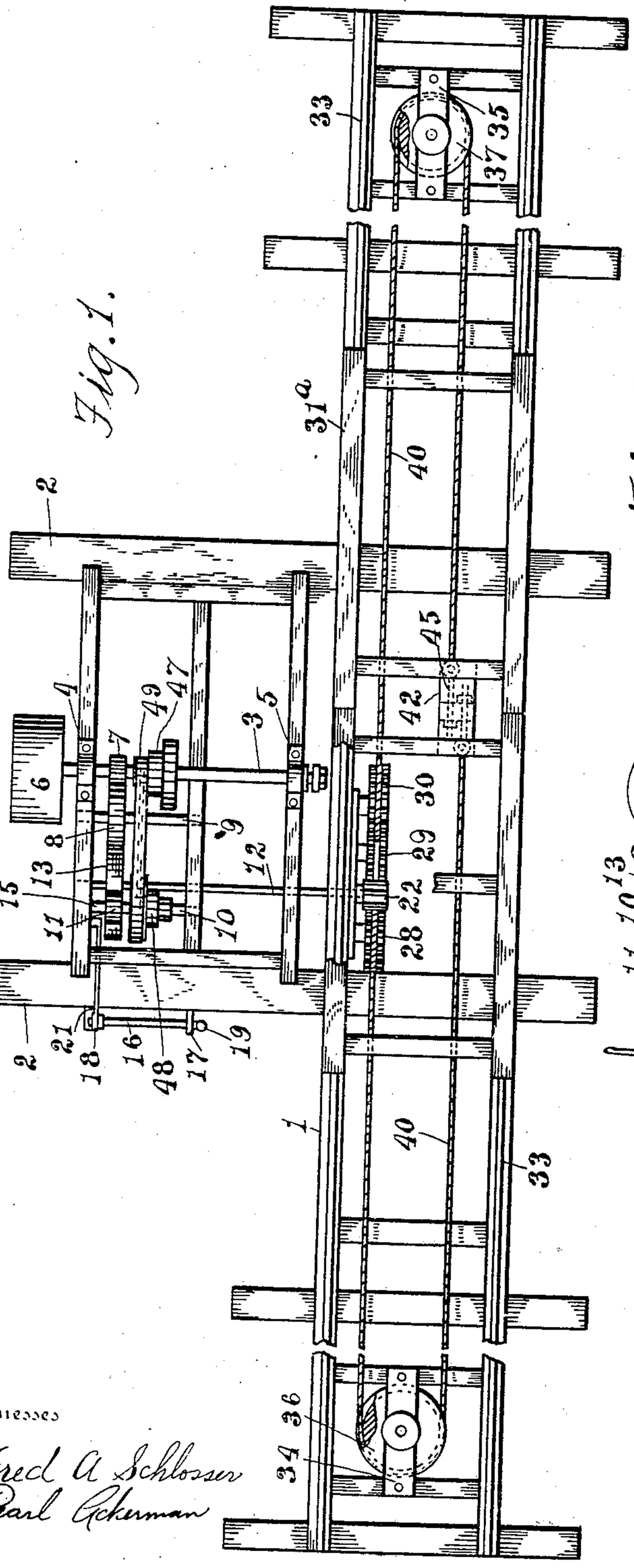
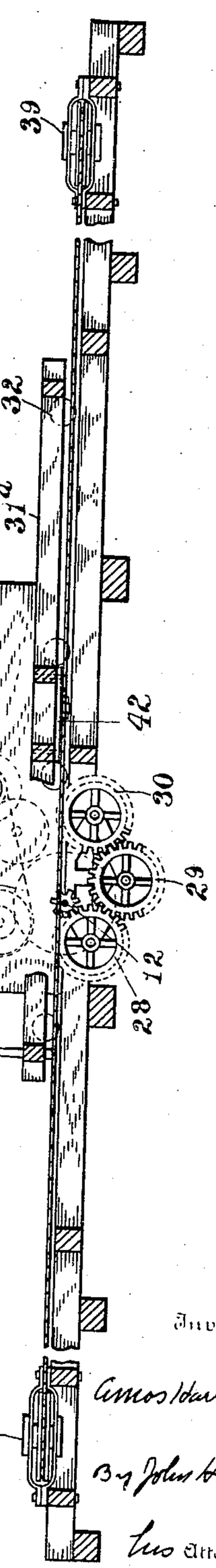


Fig. 2.



Witnesses

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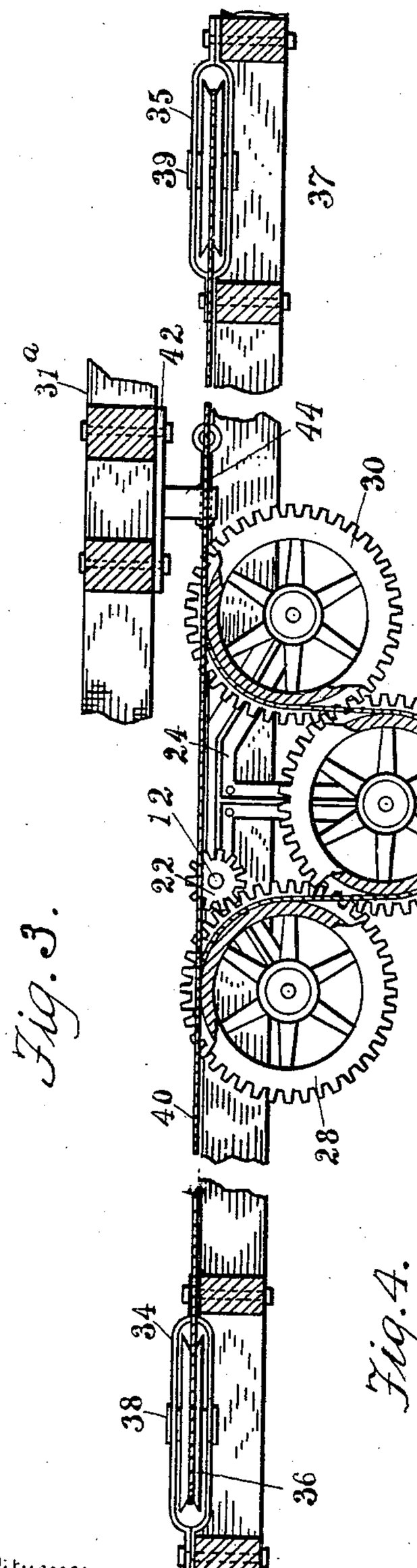

Fig. 3.

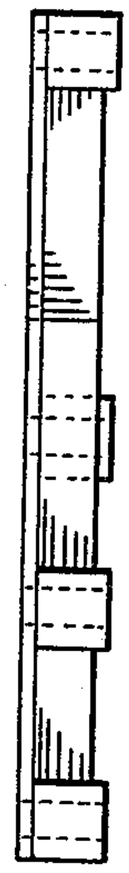

Fig. 5.

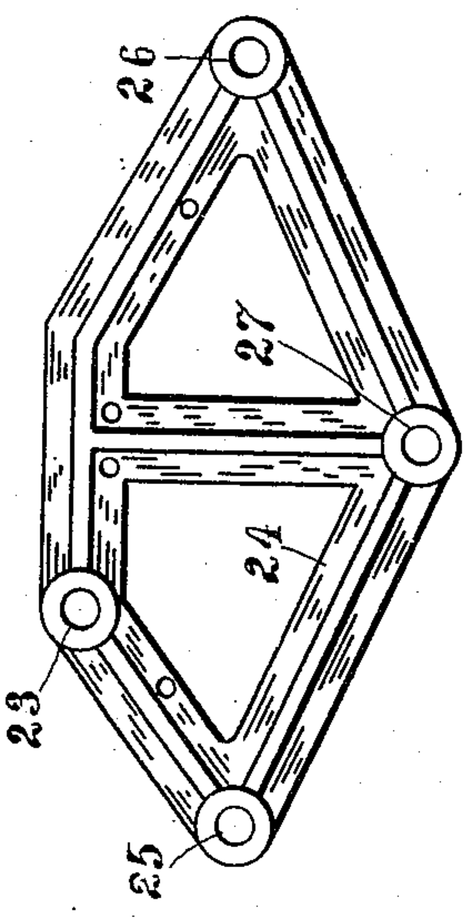

Fig. 6.

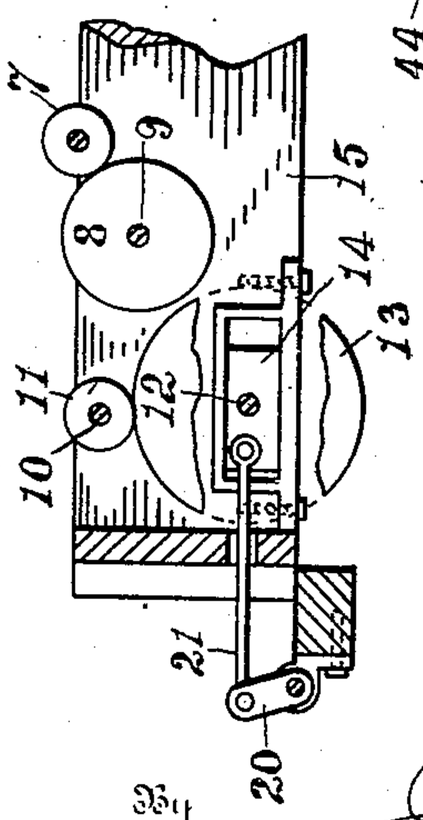

Fig. 4.

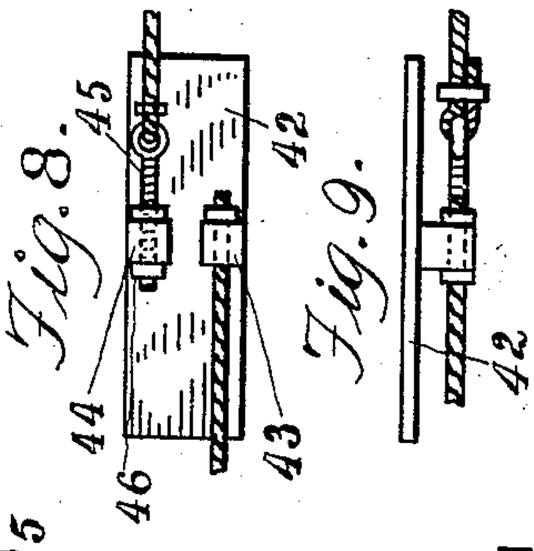

Fig. 8.

Fig. 9.

Fig. 10.

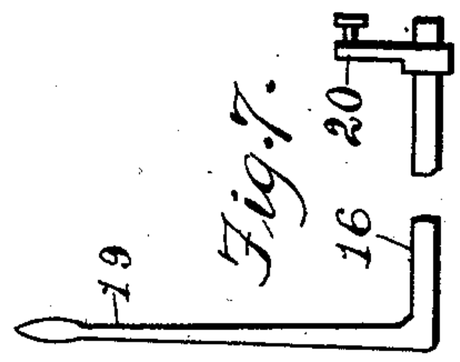

Fig. 7.

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UNITED STATES PATENT OFFICE.

AMOS HARROLD, OF MANSFIELD, OHIO, ASSIGNOR TO THE AULTMAN & TAYLOR MACHINERY COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF OHIO.

CABLE-FEED MECHANISM FOR SAWMILLS.

No. 868,087. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed November 5, 1906. Serial No. 342,031.

To all whom it may concern:

Be it known that I, AMOS HARROLD, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Cable-Feed Mechanism for Sawmills, of which the following is a specification.

My invention relates to a cable feed mechanism for imparting direct and reverse movement and is especially designed to be used in the operation of saw-mill carriages.

One of the objects of my invention is to construct a cable feed in such a manner as to dispense with the use of the drum upon which the cable is wound and unwound and using in its place sheave gears over which the cable is transmitted running in grooves of such a shape that the cable is made to contact with the sides of the grooves, imparting movement to the carriage in either direction according to the rotation of a driven shaft which has a pinion mounted thereon meshing with one of the sheave gears.

A further object of my device is to provide a cable feed that can be operated successfully although the cable is more or less slack, and means to attach the cable to the carriage whereby lateral movement of the carriage is substantially eliminated.

A further feature of my invention is that the track upon which the carriage travels can be made of any desired length without any change in the mechanism except to increase the length of the cable to conform to the length of the track, permitting the carriage to travel in either direction to such an extent as to avoid additional handling of the logs.

I attain these and other objects by the mechanism illustrated in the accompanying drawing in which

Figure 1 is a top plan view showing the cable feed mechanism attached to the saw-mill carriage and the means of imparting reverse and direct movement thereto. Fig. 2 is a longitudinal side elevation, partly in cross-section of Fig. 1. Fig. 3, is a side elevation of a portion of the frame and cable mechanism showing the method of transmitting the cable around the sheave gear wheels, and a broken section of the carriage showing one of the lugs depending therefrom to which the cable is attached. Fig. 4, is a side elevation showing arrangement of the friction drive pulleys, also means of imparting a reciprocating movement to the bearing box into which one end of the shaft carrying the large friction wheel is journaled to bring it in contact with either of the friction drive pulleys to impart reverse or direct movement to the carriage. Fig. 5, is a cross-sectional side elevation of the bracket upon which the sheave gear wheels are mounted. Fig. 6, is a plan view of the bracket. Fig. 7, is a plan view of the operating lever with a crank attached, showing means of imparting movement to the movable journal box. Fig. 8, is a bottom view of a plate which is secured to the carriage lugs depending therefrom to which the ends of the cable are attached and means of taking up the slack. Fig. 9, is a side view of Fig. 8. Fig. 10, is a cross-sectional elevation of one of the sheave gear wheels taken through the center showing the cable in contact with the side of the groove and leaving an intervening space between the cable and bottom of the groove.

Referring to the drawings, 1 and 2 represent the bed or frame of the saw-mill upon which the operating mechanism and carriage are mounted. The part 2 upon which the saw-mandrel and operating mechanism are mounted being secured to part 1 at right angles therewith.

A saw-mandrel 3 is journaled in bearing boxes 4 and 5 leaving the end projecting from the frame upon which the driving pulley 6 is mounted.

A small friction drive pulley 7 is rigidly secured to the saw-mandrel (3) with its periphery contacting with and imparting movement to an intermediate friction drive pulley (8) mounted on the shaft (9). The shaft (9) is journaled to the frame below and parallel to the saw-mandrel (3).

A shaft (10) carrying a small friction wheel (11) is journaled to the frame parallel to the shaft (9), but slightly above the plane thereof.

A shaft (12) is journaled to the frame of the saw-mill below the plane of the shafts (9) and (10) and at such a relative position with reference to the friction pulleys 8 and 11 as will permit the large friction pulley 13 (to be brought in and out of contact with said friction pulleys to change the direction of the rotation of the shaft (12) which imparts direct or reverse motion to the carriage as will be described hereinafter.

A bearing box (14) is slidably fitted to the cross piece (15) of the frame and one end of the shaft (12) is journaled therein. The opposite end of the shaft 12 is journaled in a bearing box pivotally secured to the frame which with the flexibility of the shaft permits movement of the friction wheel 13 to and from the friction wheels 8 and 11 for the purpose intended.

A shaft (16) is secured to part (2) of the frame of the saw-mill in suitable bearings (17 & 18), and is provided with an operating lever (19) and a crank (20).

The bearing box (14) and crank (20) are pivotally connected by the link (21) and when movement is imparted the bearing box (14) the friction wheel (13) is alternately brought in frictional contact with the friction wheels (8 & 11) forcing the shaft (12) to rotate in either direction to impart direct or reverse movement to the saw-carriage.

A pinion (22) is keyed to the end of the shaft (12) which passes through an aperture (23) formed in a

bracket support (24) which is preferably made to conform to the shape shown in Fig. (6). The bracket (24) is secured to one side of the frame of the saw-mill by any well known fastening means.

The bracket (24) is provided with apertures (25 & 26) substantially in alinement with each other and an aperture (27) located equi-distant between said apertures but considerably below the plane of the apertures (25 & 26).

Sheave gear wheels (28, 29 & 30) are rotatably journaled to the bracket (24) by collar bolts which pass through the bore (31) of the gear wheels and the apertures provided in the bracket meshing with each other as shown and motion is transmitted thereto by the pinion (22) which meshes with the gear wheel (28).

A carriage (31ª) is mounted on wheels or rollers (32) and travels upon the track (33) to and from and past the saw-mill mandrel (3) according to the rotation of the shaft (12).

Cages (34 & 35) are secured to each end of the saw-mill frame and sheave-pulleys (36 & 37) are rotatably journaled therein upon vertical shafts (38 & 39). The cages are secured to the frame at such a point as will bring the grooves formed in the periphery for the reciprocation of the cable (40) in direct alinement with the grooves (41) formed in the center of the sheave gear wheels. The grooves in the sheave gear wheels and pulleys are so arranged as to be at right angles with each other as shown.

A plate (42) is attached at or about the center of the carriage (31ª) and is provided with a depending lug (43) to which one end of the cable is rigidly secured and the opposite end adjustably secured to the lug by means of a screw-eye (45).

In connecting the cable to the carriage, it is first attached rigidly to the lug (43) and then inserted into and passed around the sheave pulley (36) thence back toward the carriage into the groove and over the upper portion of the sheave gear (28): thence downward into and around the lower portion of the sheave gear (29): thence upward into the groove nd over the upper portion of the sh ve gear (30) forming a loop, (see Fig. 3). The cable then passes into the groove and around the sheave pulley (37): thence back to the carriage and is attached to the lug (44) by means of the screw-eye (45) which affords facilities for taking up the slack in the cable or giving the necessary tension to make it travel over the sheave gear wheels and sheave pulleys properly. The screw eye (45) is adjustably fastened to the lug 44 by the nut (46). The saw-mandrel (3) is provided with a stepped cone pulley (47) which is secured to the shaft in alinement with a similar stepped cone pulley (48) secured to the shaft (10). Movement is transmitted to the cone pulley (48) through the medium of the belt (49).

Having fully described my invention, what I claim and desire to secure by Letters Patent is:

1. In a cable feed mechanism for sawmills, two sheave pulleys journaled to each end of the frame, a supporting bracket, sheave gear wheels mounted on said bracket meshing with each other, a shaft journaled to the frame, a pinion secured to one end of said shaft meshing with one of the sheave gear wheels, a carriage, a cable attached to the carriage and adapted to travel around said sheave pulleys and sheave gear wheels, suitable mechanism to impart reverse and direct movement to the shaft carrying said pinion.

2. In a cable feed mechanism for saw-mills a frame, a carriage mounted on said frame, two sheave pulleys secured to opposite ends of the frame, a bracket secured to the frame, gear sheave wheels rotatably journaled to said bracket meshing with each other with the grooves formed in the center of the periphery, a cable secured to the carriage passing around the sheave pulleys and grooves in the gear wheels, means to impart a rotary motion to said shaft in opposite directions whereby the carriage is made to travel in opposite directions according to the rotation of said shaft.

3. In a feed mechanism for saw-mills, the combination of a reciprocating carriage, of a driving shaft, a driven shaft secured to the frame parallel therewith, a pinion secured to one end of said shaft, means to impart motion to the driven shaft, a frame, two sheave pulleys secured to the opposite ends of said frame, a table adapted to travel over said sheave pulleys á bracket mounted on the frame, sheave gear wheels rotatably secured to said bracket meshing with each other and one of said gear wheels meshing with the pinion on the shaft, means to rotate the driven shaft in opposite directions.

4. In a cable feed mechanism for saw mills, a frame, a reciprocating carriage mounted thereon, sheave guide pulleys secured to opposite ends of the frame, a plate having lugs depending therefrom attached to the carriage, a cable, means to attach the ends of the cable to said plate, a bracket, sheave gear wheels rotatably mounted on said bracket having grooves formed in the periphery to receive the cable, a shaft secured to the frame, a pinion fitted to one end of said shaft, means to rotate said shaft in opposite directions.

5. In a feed mechanism for saw-mills, a frame, a carriage mounted on said frame, a driving shaft, a driven shaft secured to the frame parallel with the driving shaft, a pinion secured to the end of the driven shaft, sheave guide pulleys attached to each end of the frame, a plate having lugs depending therefrom, attached to the carriage, a bracket secured to the frame, sheave gear wheels mounted on said bracket meshing with each other with one of said gear wheels meshing with said pinion, a cable having its ends secured to the plate and passing around said sheave pulleys and gear wheels, means to rotate the driven shaft in opposite directions.

6. In a feed mechanism for saw-mills, the combination with a reciprocating carriage, of two sheave pulleys rotatably secured to each end of the frame, a bracket, a series of gear wheels rotatably mounted upon said bracket, a driving shaft, a driven shaft, a pinion secured to the end of the driven shaft meshing with the sheave gear wheels, a cable attached to the carriage and passing around the sheave pulleys and over and under the sheave gears, means to rotate the driven shaft in opposite directions.

7. In a cable feed mechanism for saw-mills, the combination with a reciprocating carriage, a bracket secured thereto, sheave gear wheels mounted on said bracket meshing with each other, sheave pulleys secured to each end of the frame, a plate secured to the carriage, a cable passing around said sheave pulleys and sheave gear wheels, with its ends attached to the plate, a driving shaft, a driven shaft, a pinion mounted on the end of said driven shaft, means to impart motion to the driven shaft in opposite directions.

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

AMOS HARROLD.

Witnesses:
DAVID J. DAVIES,
JOHN H. COSS.