(No Model.)

M. A. BECK.

CABLE FEED WORKS.

No. 457,415. Patented Aug. 11, 1891.

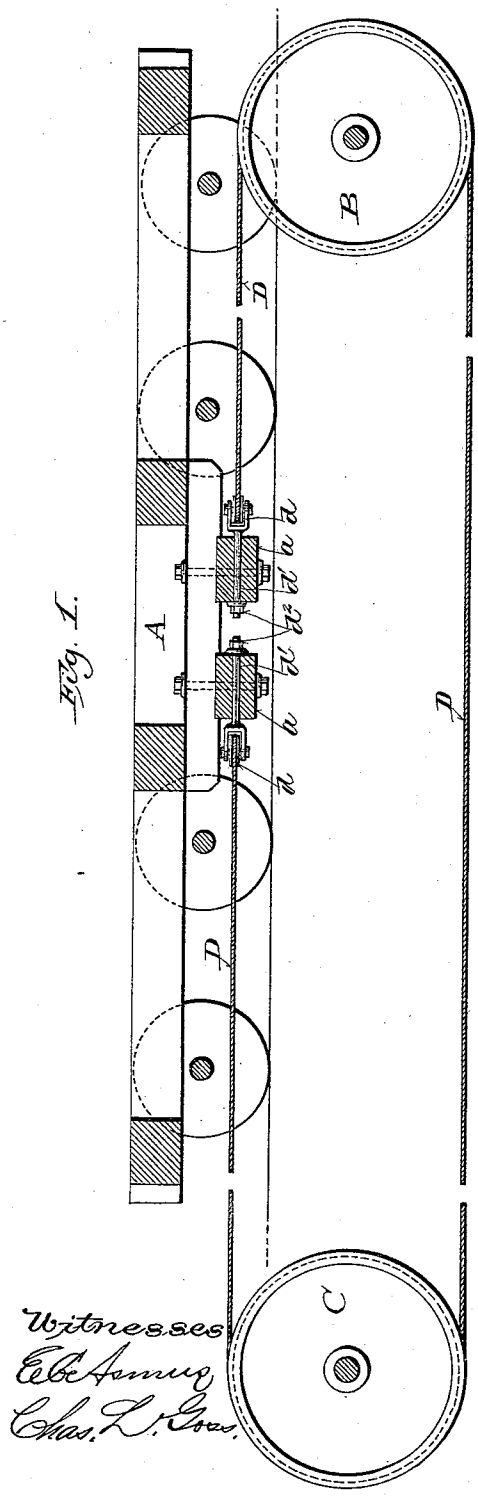


Fig. 1.

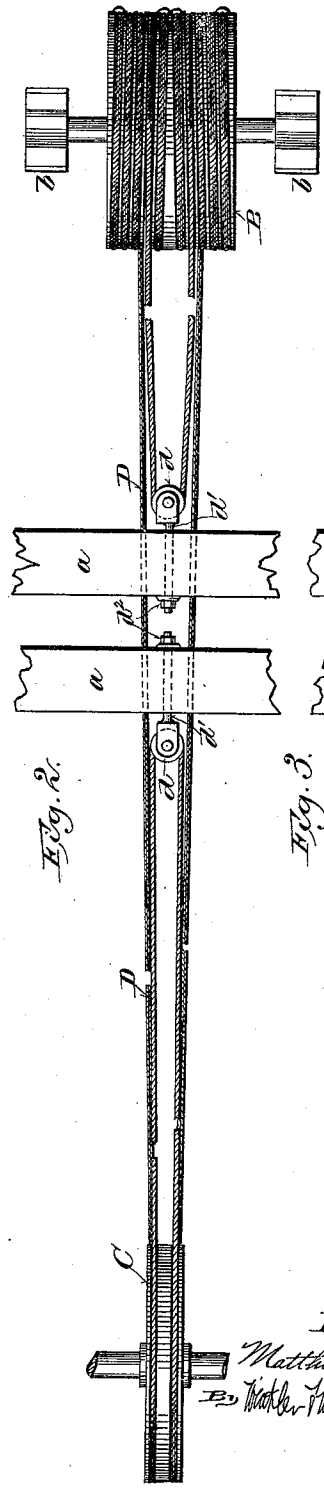


Fig. 2.

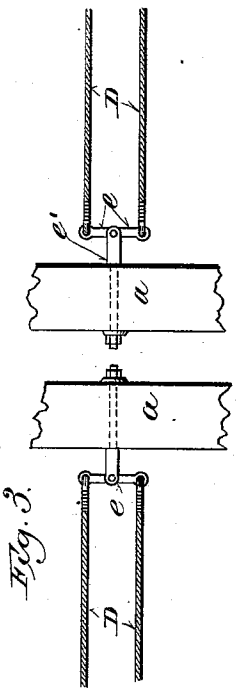


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

MATTHIAS A. BECK, OF MILWAUKEE, WISCONSIN.

CABLE-FEED WORKS.

SPECIFICATION forming part of Letters Patent No. 457,415, dated August 11, 1891.

Application filed February 20, 1891. Serial No. 382,252. (No model.)

To all whom it may concern:

Be it known that I, MATTHIAS A. BECK, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Cable-Feed Works; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main objects of my invention are to secure a greater flexibility for a given tensile strength of cable, and thereby to admit of the use of a smaller drum and an engine of less power for the performance of the required work and to distribute the load or pull equally upon the bearings of the drum.

It consists, essentially, of a driving-drum, a sheave located at or near one end of the travel of the carriage, and a double cable attached at the ends to said carriage, both strands of the cable passing around said drum in the same direction, thence over said sheave to the carriage, and of certain other peculiarities of construction and arrangement hereinafter specified.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 represents a side elevation of the apparatus applied to a saw-mill carriage. Fig. 2 is a plan view of the feed-works, and Fig. 3 a detail showing a modification of the device for attaching the cable to the ends of the carriage.

A represents a saw-mill or other reciprocating carriage, for the operation of which my improved feed-works is specially designed.

B represents the drum, which in the present instance is located at or near one end of the travel of the carriage and takes the place of the extra sheave which is required when the driving-drum is located at an intermediate point in the travel of the carriage. It is formed on the periphery with right and left grooves, each occupying approximately one-half of the cylindrical face of the drum, as shown in Fig. 2. The drum B is supported in the usual manner in bearings *b b*, preferably located at equal distances from either side thereof, so as to sustain equally the load or pull through the cable upon the drum.

C represents a sheave or pulley located at or near the other end of the travel of the carriage, and formed at its periphery with two grooves, as shown in Fig. 2.

D represents the cable, which is doubled, one section being wound around one groove in the drum B and the other section being wound in the same direction around the other groove, the two sections passing from the under side of the drum around the sheave C, and thence to the carriage, to which they are attached.

To distribute the pull or load equally on both sections or strands of the cable D, I prefer to attach it to the carriage by means of small sheaves *d d*, which may be secured, as shown, to cross-pieces *a a* at or near the middle of the carriage, or to the cross-pieces at the ends of the carriage-frame. These sheaves *d d* are preferably provided with threaded bolts or rods *d'*, by which they are adjustably secured in the cross-pieces of the carriage-frame, so as to afford means for taking up slack in the cable. By means of the nuts d^2 on the inner ends of the rods *d'* the sheaves *d d* are drawn toward each other in the direction of the travel of the carriage, and the cable is thereby tightened. In place of the sheaves *d d* levers *e*, fulcrumed at the center to screw-threaded rods *e'*, adjustably attached to the cross-pieces of the carriage-frame in the manner specified, may be employed, as shown in Fig. 3, the cable in this case being severed and secured to the ends of the levers *e e* equidistant from their fulcrums.

The cable, as shown in Figs. 1 and 2, may be continuous and unbroken, or it may be severed and the ends attached at the proper points to the drum B to permit of the required movement of the carriage and to cause the proper winding and unwinding of the sections in the manner hereinbefore specified.

It will be seen that by employing a double cable, as shown, a much smaller one for a given load may be used. Greater flexibility is thus secured and in consequence a smaller drum and sheaves and an engine or motor of less power may be employed for a given amount of work, the leverage of a small drum

being obviously greater than a larger one on the cable.

By employing a two-strand or double cable I am enabled to distribute the pull or load equally upon the bearings of the drum at all times in the manner previously described. This is a marked advantage in the operation of the apparatus, inasmuch as unequal wear of the bearings of the drum is avoided and the true and easy working of the drum is insured.

Various modifications in the details of the apparatus may be made within the spirit of my invention.

I claim—

1. In cable-feed works, the combination, with a reciprocating carriage, of a driving-drum formed with right and left grooves in its periphery, a double cable having a self-adjusting connection at the ends with the carriage, by which the load is equally distributed through both strands of the cable, one strand of said cable passing around one groove and the other around the other groove of said drum, and a sheave over which both strands of the cable pass, located at or near one end of the travel of the carriage, substantially as and for the purposes set forth.

2. In a cable-feed works, the combination of a reciprocating carriage provided with sheaves, a driving-drum provided with right and left grooves on its periphery, a sheave located at or near one end of the travel of the carriage, and a double cable passing around the sheaves on said carriage, both strands passing thence around said sheave, thence around the driving-drum, one strand in one groove and the other in the other groove of said drum, substantially as and for the purposes set forth.

3. In cable-feed works, the combination of a reciprocating carriage provided with sheaves adjustably secured thereto, a guiding-sheave located at or near one end of the travel of the carriage, a driving-drum formed in its periphery with right and left grooves, and a double cable passing around the sheaves on said carriage, thence around the guiding-sheave, and thence around said drum, substantially as and for the purposes set forth.

4. In cable-feed works, the combination of a reciprocating carriage, a sheave located at or near one end of the travel of said carriage, a driving-drum, and a double cable attached to said carriage at the ends, both strands passing over said sheave and around said drum in the same direction, substantially as and for the purposes set forth.

5. In a cable-feed works, the combination, with a reciprocating carriage, of a driving-drum, a sheave located at or near one limit of the travel of the carriage, and a double cable having an equalizing connection with the carriage, by which the pull is equally distributed through both sections of the cable, which pass over said sheave and thence around the drum, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MATTHIAS A. BECK.

Witnesses:
CHAS. L. GOSS,
EDWARD POLINZ.