

A. CUNNINGHAM.

CARRIAGE FEED MECHANISM FOR SAW MILLS.

No. 357,582.

Patented Feb. 15, 1887.

Fig. 1.

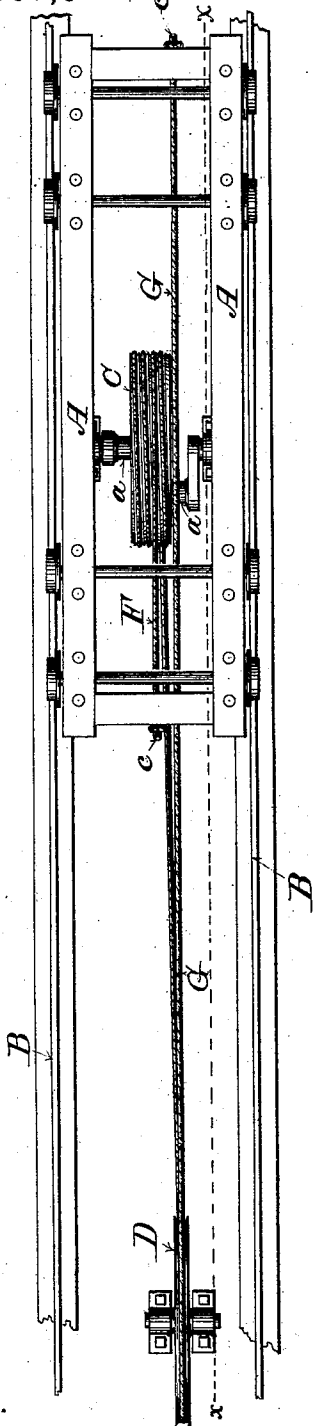
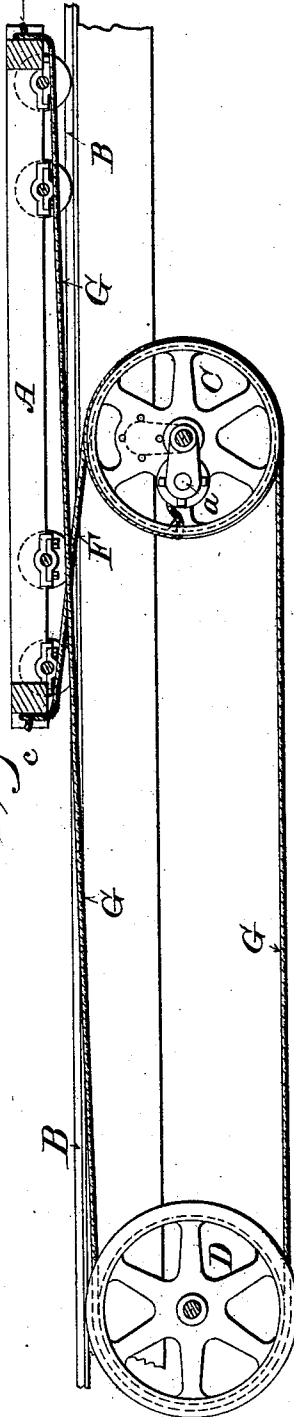


Fig. 2.



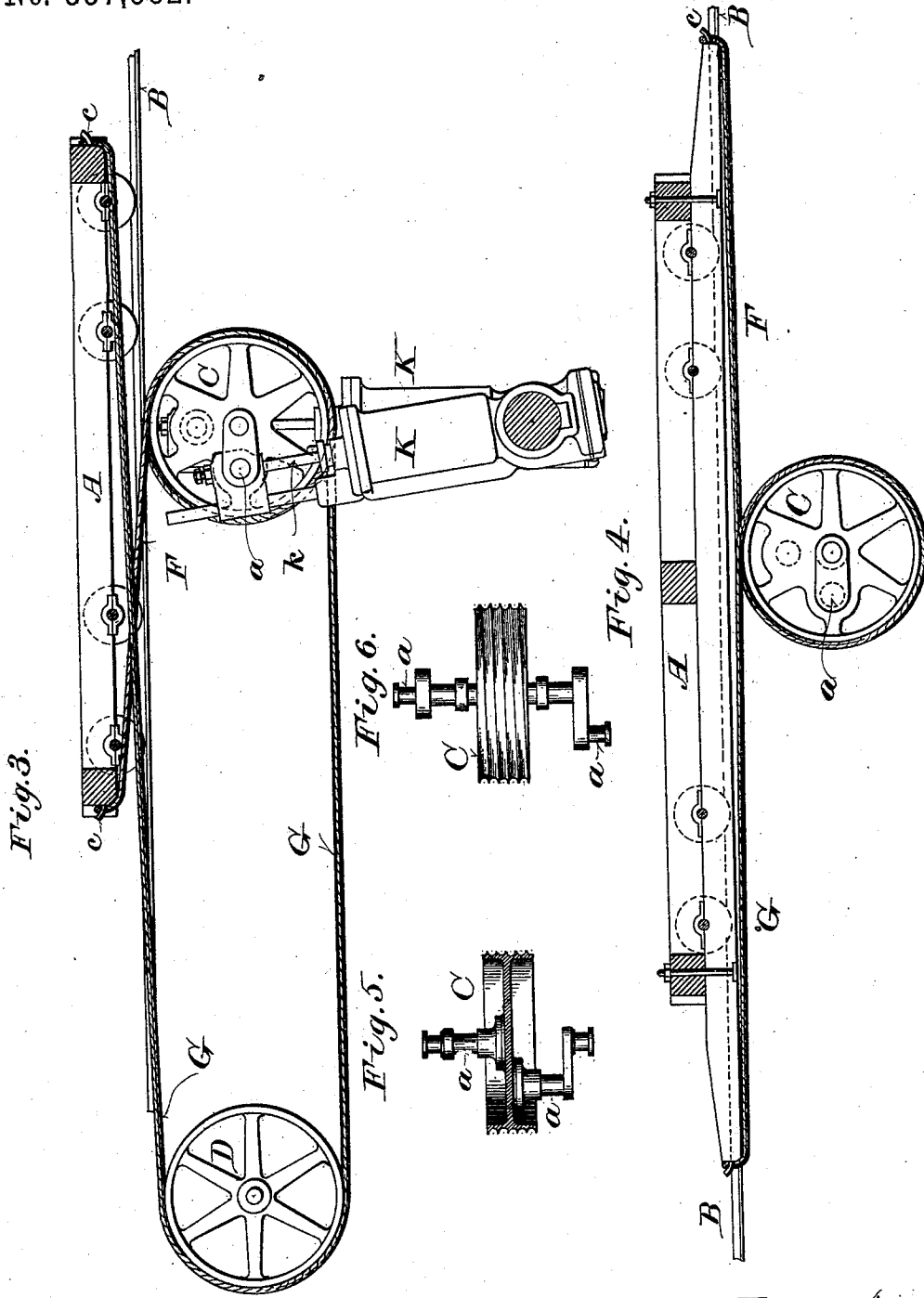
Witnesses:
 Chas. R. Cross.
 George Goll

Inventor:
 Albert Cunningham,
 By Q. M. Zottum
 Attorney.

A. CUNNINGHAM.
CARRIAGE FEED MECHANISM FOR SAW MILLS.

No. 357,582.

Patented Feb. 15, 1887.



Witnesses:
Chas. D. Gos.
George Solt

Inventor,
Albert Cunningham,
 By *A. J. Putnam*
 Attorney.

UNITED STATES PATENT OFFICE.

ALBERT CUNNINGHAM, OF MILWAUKEE, WISCONSIN.

CARRIAGE-FEED MECHANISM FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 357,582, dated February 15, 1867.

Application filed June 7, 1884. Serial No. 134,144. (No model.)

To all whom it may concern:

Be it known that I, ALBERT CUNNINGHAM, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Carriage Feed-Works for Saw-Mills; 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.

My invention relates to that class of saw-mill feed-works which employs a cable and drum for moving the carriage.

It consists, essentially, of a rotating drum, about which is wound a cable, the ends of which lead directly to the ends of the carriage, to which they are attached, or one end of which passes first over an interposed sheave, and then to the end of the carriage, where it is fastened. Its objects are, first, to prevent the weakening and breaking of the cable by unnecessary bending; second, to simplify machines of the class to which it relates; and, third, a method of fastening the cable to the carriage, by which the carriage may pass its proper limits of travel without breaking the cable or injuring the machine.

In the accompanying drawings, like letters refer to the same parts in all the figures.

Figure 1 represents a plan view of a saw-mill carriage and its ways together with my improved feeding mechanism. Fig. 2 is a longitudinal vertical section of the same on the line *xx*, Fig. 1. Fig. 3 is a like sectional view of the carriage, with the feed-works and the steam-cylinders connected therewith, shown in side elevation. Fig. 4 is a similar view showing a modified form and arrangement of the feed-works. Fig. 5 is a medial horizontal section of the drum; and Fig. 6 is a plan view of the drum, with a modified form and arrangement of the cranks connected therewith.

I am aware that cables have been used for driving the carriages of saw-mills. I am also aware that the use of a drum, about which said cable is wound, is not new in saw-mill feed-works; but the use of such a cable in connection with a rotating drum without the interposition of two sheaves placed on each side

of the drum for the cable to pass over before it is fastened to each end of the carriage is new and has great advantages over the old combinations and the arrangement heretofore employed.

I am aware, also, of Patents No. 294,442 to W. P. Clark, March 4, 1884, and No. 203,467 to Willard Lamb, May 7, 1878; but I do not claim the devices therein shown, which consist of the combination of a revolving drum, two sheaves or pulleys, located one on each side of said drum at or near the limit of the travel of the carriage, and a cable secured to the drum, leading therefrom in opposite directions around said sheaves, thence back to the carriage, to which it is fastened. In my improved device I dispense with one (at least) of said sheaves, and so locate the drum and remaining sheave as to give the required travel to the carriage, passing one segment of said cable from the drum around the single sheave, thence to the carriage, and the other segment directly from the drum to the carriage, thus saving not only the cost of the extra sheave, but also considerable length and wear of cable.

The constant winding and unwinding of the cable about the central drum and over the two sheaves of the old machines tend to greatly weaken and soon destroy the cable. It is therefore desirable to accomplish the required movement of the carriage with the least possible bending of the cable. This, together with the objects before named, I attain by the mechanism constructed and arranged, as hereinafter more fully and particularly described.

A represents a saw-mill carriage of ordinary construction, and B B the ways or tracks upon which it travels.

C is a drum located midway between the ways B B, at such a point as will permit the required travel of the carriage A. It is preferably formed with a spiral groove about its periphery, and is provided with the cranks *a a*, set on each side thereof at right angles to each other. I prefer to locate the bearings of said drum C just outside of the cranks *a a*, as shown in Figs. 1 and 5, so that said cranks *a a*, by which the drum is turned, may be brought as closely as possible thereto. These cranks are designed for connection with steam-cylinders K K, as shown in Fig. 3, or any other suitable actuating mechanism.

To the opposite edges of the drum C are attached the cables F and G, which are wound about the spiral groove in opposite directions till the drum is filled. The cable G is then carried from the under side of the drum C underneath and over the sheave D, thence back to the farther end of carriage A, to which it is fastened. The cable F is carried from the top of the drum to the opposite end of the carriage A, where it is fastened in like manner.

Where the arrangement of the other machinery of the mill will permit of locating the drum C at or near the center of the travel of the carriage A, I may dispense with the sheave D and carry each cable from the top of drum C to opposite ends of the carriage A, where they are fastened, as shown in Fig. 4.

The cables F and G may be in a single length, the ends of which are passed outwardly through holes drilled near opposite edges of the drum; or they may be two separate pieces, secured to said drum in any convenient manner.

In feed-works of this class it is common to use a single cable coiled two or three times about the drum. It is obvious that if the travel of the carriage required a greater number of turns of the drum than there were coils of the cable about it a portion of the cable would be wound and unwound, and consequently bent twice for each advance or return of the carriage. By winding the drum full from its opposite edges, as hereinbefore described, any part of the cable coming in contact therewith can be only wound or unwound, and therefore but once bent during the movement of the carriage in a single direction. This arrangement consequently saves a great amount of wear in the cable. A still greater saving is effected by dispensing with one or both of the sheaves heretofore employed, since each sheave necessitates twice bending that portion of the cable which passes over it at each movement—advance or return—of the carriage.

To guard against accidents which might occur by the carriage passing the proper limits of its travel, I form the ends of the cables which are fastened to the carriage into loops, which are hung upon the slightly upwardly-curved

hooks *c c*, projecting from the ends of said carriage in such manner that should the carriage accidentally pass beyond its proper limits either cable will be disengaged from the carriage, and injury to the cable or other parts of the mill thereby avoided.

The hooks *c c* may be attached and the cable fastened to any intermediate part of the carriage between the ends without departure from the principle of my invention.

The operation of my improved device is apparent from the foregoing description of its construction and the arrangement of its parts.

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

1. The combination, with a saw-mill carriage, A, of the drum C, cranks *a a*, cable F G, coiled around said drum, one segment, F, leading from said drum directly to the carriage, to which it is fastened, and the other segment, G, leading from said drum around a pulley, D, from thence to said carriage, to which it is fastened, pulley D, and cylinders K K, substantially as and for the purposes set forth.

2. The combination, with a saw-mill carriage, A, of the drum C, and cable F G, wound around said drum and formed into loops at the ends, which are hung upon pins secured in and projecting from said carriage, and pins *c c*, substantially as and for the purposes set forth.

3. The combination, with a saw-mill carriage; A, of the spirally-grooved drum C, provided with the crank-pins *a a*, secured to its opposite faces and in turn provided with arms which return to and support the journals of said drum outside of said cranks, and the cable F G, coiled about the drum and connected with the carriage, 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.

ALBERT CUNNINGHAM.

Witnesses:

CHAS. L. GOSS,
GEORGE GOLL.