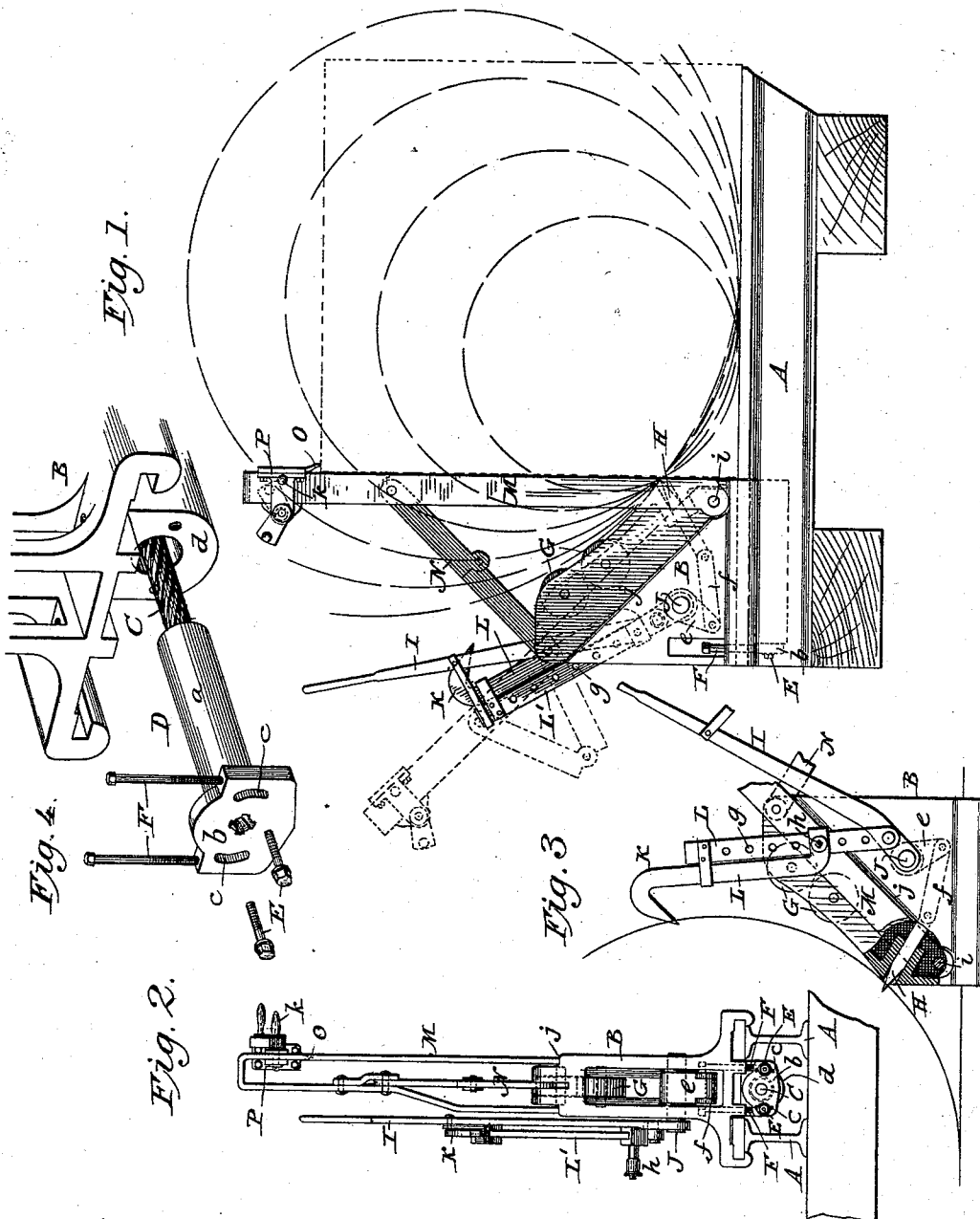


(No Model.)

D. B. HANSON.
KNEE FOR SAWMILL CARRIAGES.

No. 534,644.

Patented Feb. 26, 1895.



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UNITED STATES PATENT OFFICE.

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KNEE FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 534,644, dated February 26, 1895.

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To all whom it may concern:

Be it known that I, DEMPSEY B. HANSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Knees for Sawmill-Carriages, of which the following is a specification.

My invention relates to knees of saw mill carriages, and is designed to better adapt them for use with large and heavy logs, such as are found on the Pacific coast, among other places. Owing to the large size and great weight of such logs, ordinary knees are found unsuited for use with them, since they do not extend sufficiently under the log and are very liable to be broken by the log falling upon or against them. As hitherto constructed, the knees have been difficult of relative adjustment or alignment with each other upon the carriage, this difficulty being increased by reason of the very quick pitch given to the adjusting screws by which the knees are moved upon the head blocks. It is obvious that with such quick threads a very slight rotary movement of a screw will cause appreciable or material movement of the knee, and it is consequently difficult to adjust all of the screws exactly alike or to bring them into identically the same relation to the common set shaft. To overcome these difficulties by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a head block provided with my improved knee; Fig. 2, a rear end view of the same; Fig. 3, a view of the dogging mechanism, the main knee or knee base being shown partly in section; and Fig. 4, a perspective view illustrating the means for adjusting the knee upon or relatively to its setting screw.

A indicates a head block of a saw mill carriage of any approved construction, and B a knee sliding thereon.

C indicates a setting screw journaled in the head block in any usual manner, and designed to be turned either independently or through connection with a common set shaft, as found expedient in any given instance.

The screw C passes through an internally

threaded sleeve or nut D, which is formed with a cylindrical barrel *a* and a head *b* of the form shown in Figs. 2 and 4; that is to say, there are laterally projecting portions extending beyond the sides of the barrel *a* and constituting short arms as shown. The head *b* is provided with curved slots *c*, concentric with the longitudinally threaded opening.

The sleeve *a* is seated within a hollow barrel or depending portion *d* of the knee B, and is free to turn therein when not clamped in place; but is shown withdrawn from the barrel in Fig. 4 for the purpose of more clearly illustrating the construction and relation of the parts. When the sleeve *a* is properly inserted within the barrel *d*, tap bolts E are passed through the curved slots *c* and screwed into threaded holes formed in the barrel *d*, as seen in Fig. 4. The nut or sleeve D, when in working adjustment, occupies the position indicated by dotted lines in Fig. 1, and shown by full and dotted lines in Fig. 2.

F F indicate adjusting screws passing through suitably tapped vertical holes in the knee B, their lower ends bearing upon the projecting arms of the head *b* of nut or sleeve D. By slightly loosening the tap bolts E, the barrel *a* of the nut or sleeve D is made free to turn in the barrel *d* of the knee, and by backing one of the screws F and advancing the other, the nut or sleeve D may be turned to the right or to the left a sufficient distance to bring the knee into alignment with the other knees on the carriage, whether the requisite movement be forward or backward. When the knee is thus adjusted the bolts E are turned tight, and the knee is ready for use.

It will of course be understood that the several knees are approximately aligned in mounting them upon the carriage, and that the provision just described is designed to afford an accuracy of adjustment difficult or impossible of attainment under prior constructions.

As shown in Figs. 1 and 3, the knee base B is of but moderate height, and slopes or inclines backward from a point a short distance above the head block. Its forward or in-

clined face is provided with one or more rollers G projecting slightly beyond the face of the knee, and designed to prevent a log from "climbing up" the same. By thus inclining backward the face of the knee, it is enabled to pass well under a log of large size and to give a large bearing or support thereto, thus making the operation of setting out the log much easier than at present.

By referring to Fig. 1 it will be seen that logs of varying size will touch the knee B at the point from which it begins to slope backward, the different sizes of logs being indicated by dotted circles or lines. At the point at which the logs thus touch the knee, I locate a spud dog H, which is enabled by reason of such location, to take a firm hold upon logs of all sizes. The dog H moves longitudinally within a socket formed for it in the knee B, and is operated by the lever mechanism illustrated in Figs. 1, 2 and 3. Said mechanism comprises a hand lever I firmly secured upon a short rockshaft J journaled in the knee B, said shaft carrying a radial arm e, which is connected by a link f with the rear end of the spud dog H.

K indicates a hook or dog designed for use with a log previous to its being squared or slabbed. The hook or dog K is formed upon the end of one member of a two-part extensible bar L L', one of which bars is provided with a series of holes g, while the other carries a locking bolt h to enter one or another of the holes and maintain the two parts of the bar in proper working relation. By this construction the bar is adapted to be lengthened or shortened to bring the hook or dog K into proper relation to logs of varying size. The lower end of the extensible bar L L' is pivotally connected to hand lever I at a suitable distance from the axis of shaft J, as indicated in Figs. 1 and 3, so that as the lever I is pressed down to force the spud dog H outward, the dog K is drawn down and caused to engage firmly with the log. After the log is squared or slabbed on two faces, it is desirable that the knee shall have a firm bearing against the same from bottom to top, and that the log be dogged firmly at a point close to the knee. To meet this requirement I provide the knee with an upright or standard M, which is hinged or pivotally connected with the knee B at the front lower portion of the latter. The location of the hinge pin i is such that the upright M may be thrown back below the face of the knee B, as indicated by dotted lines in Fig. 1, or brought to a vertical position with its front edge or face flush with the front of the knee B, as shown in Fig. 1.

The upright M is advisably made of bar iron or steel, bent into the shape indicated in Fig. 2, and the knee B is cast or formed with shoulders or ledges j, against which the upright M may rest when dropped back to the position indicated by dotted lines in Fig. 1.

N indicates a rule-jointed brace or toggle,

the ends of which are pivotally attached to the knee B and the upright M, respectively. This brace is of a length to bring and hold the upright M in a true vertical position when the brace is straightened, and by reason of the rule-joint, or the location of the joint-pin to one side of and below a line passing through the end pivots of the brace, it is adapted to sustain the upright M against any pressure which may be brought upon it.

O indicates a dog carried by a block P, adapted to slide upon the upright M, and provided with an eccentric or other clamping device, as shown in Fig. 1. The block P is provided with a hand piece k by which to lift it or to force the dog into the log.

It will be seen from the foregoing description that the improved knee is admirably adapted for handling logs of all sizes, and that it is simple, cheap and strong in construction. By reason of its low front and sloping face, the knee is adapted to pass well beneath a large log, and to apply the power or force exerted in setting up the log, to the best advantage. Being low and strong, the knee B is not liable to be broken by the falling of heavy logs upon or against it, and the sloping face and the rollers greatly facilitate the operation of returning a log, while precluding the same from riding up the knee.

During the operation of placing a log upon the carriage, and until the same is squared or faced on two or more sides, the upright M is out of the way and below the face of the knee, hence is entirely protected against injury by a log, but may be readily brought into position for use after the log has been squared or faced.

The precise details may be departed from without exceeding the scope or spirit of my invention, the precise construction of the dogging devices being relatively unimportant, and the employment of two screws for rotating the nut or sleeve D being subject to variation, as will be apparent to the skilled mechanic.

A single screw, a worm, or equivalent means may be adopted for turning the nut, or it may be turned manually and clamped in any convenient manner.

Having thus described my invention, what I claim is—

1. In combination with a saw mill knee having its forward or log face permanently inclined backward, an upright or log support pivotally connected with said knee and adapted to be thrown to a vertical position or dropped to an inclined position below the log face at will.

2. In combination with knee B having its log face inclined backward or away from the log, upright or support M pivoted to the knee, and a brace N extending from the knee to the support, substantially as described and shown.

3. In combination with a saw mill knee B

having its log face inclined outward or backward substantially as described, a spud dog mounted in the knee at the lower end of the inclined face, substantially as shown and described.

4. In combination with a saw mill knee and with a setting screw therefor, a nut carried by the knee and adapted to be rotated a limited distance and then securely clamped to the knee, substantially as and for the purpose set forth.

5. In combination with a saw mill knee, a swiveled or rotatable nut D, means for clamping said nut firmly to the knee, and a setting screw passing through said nut.

6. In combination with a saw mill knee provided with a barrel or socket *d*, a nut D having a sleeve *a* to enter the barrel, and a head *b* provided with lateral projections, adjusting screws F passing through threaded openings in the knee and bearing upon the head *b*, and fastening bolts E for securing the nut to the knee.

In witness whereof I hereunto set my hand in the presence of two witnesses.

DEMPSEY B. HANSON.

Witnesses:

NORMAN A. ROOT,
JOHN SIMONDS.