Oct. 25, 1938. K. BERGER 2,134,243

LOGGING EQUIPMENT

Filed Aug. 22, 1936 2 Sheets-Sheet 1

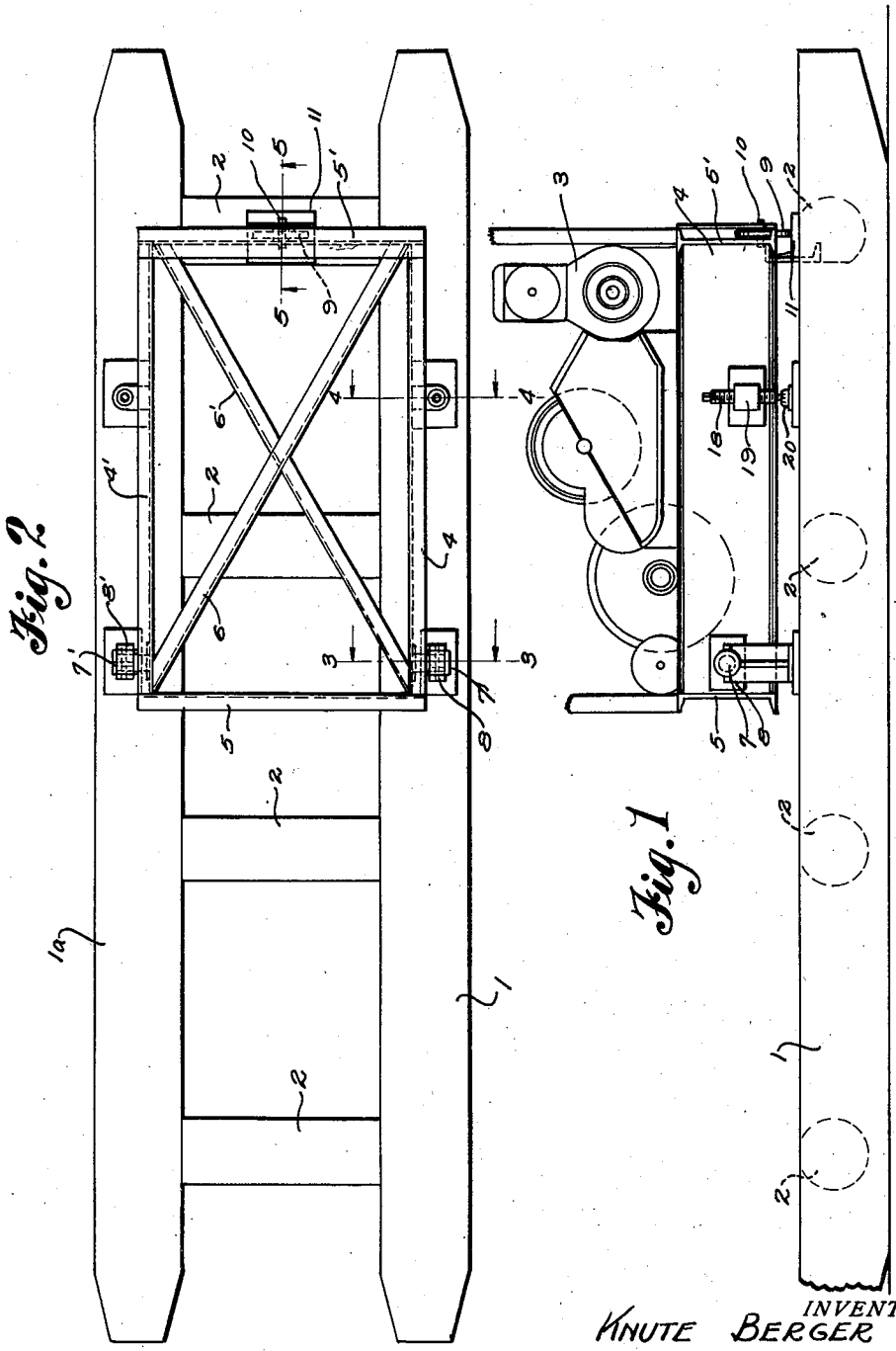


Fig. 2

Fig. 1

INVENTOR
KNUTE BERGER

BY Cook & Robinson
ATTORNEY

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Fig. 5

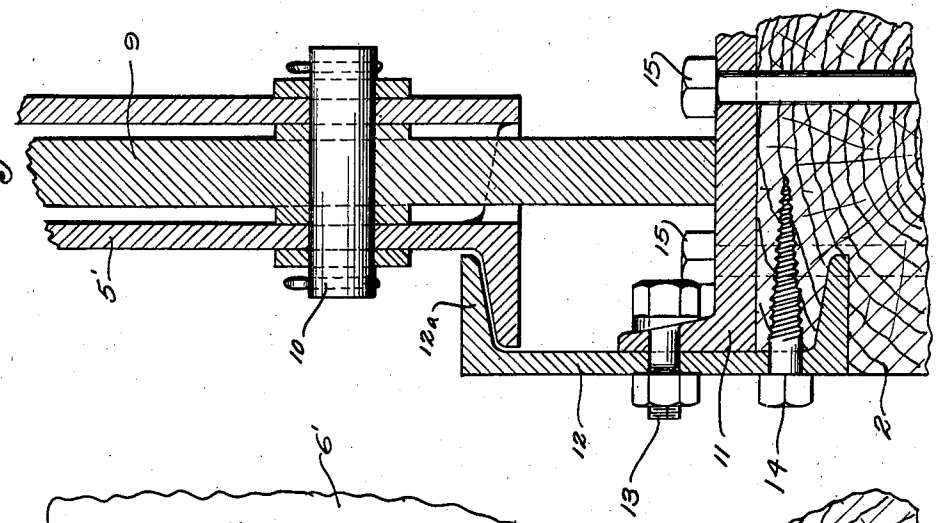


Fig. 4

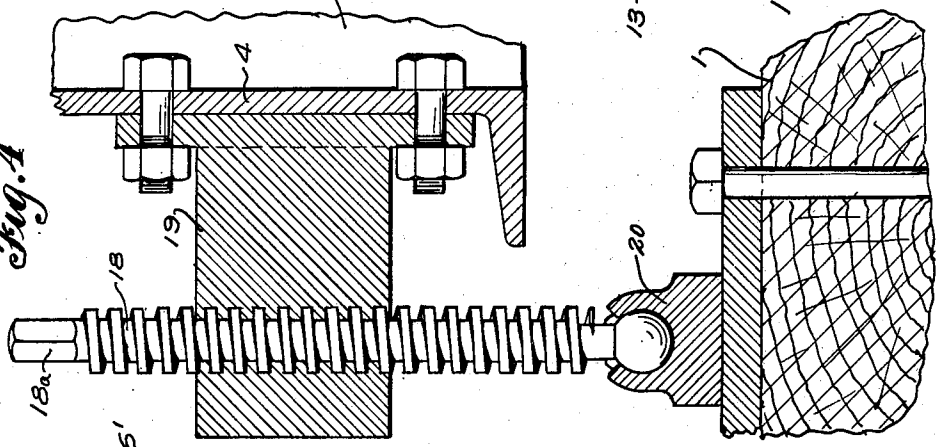
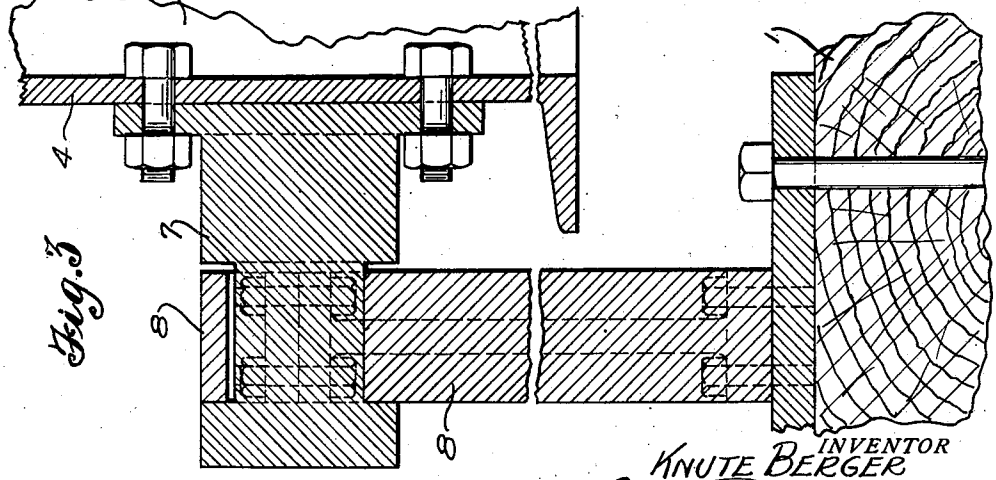


Fig. 3



INVENTOR
KNUTE BERGER
BY Cook & Robinson
ATTORNEY

Patented Oct. 25, 1938

2,134,243

UNITED STATES PATENT OFFICE

2,134,243

LOGGING EQUIPMENT

Knute Berger, Seattle, Wash.

Application August 22, 1936, Serial No. 97,411

5 Claims. (Cl. 248—19)

This invention relates to logging equipment, and it has reference more particularly to a mounting base structure for a log yarding engine, or the like, when such engine is used in connection with a sled, or on skids, upon which it is moved from place to place over a logging area and upon which it is operatively supported for its working operations.

Explanatory to the present invention, it will here be stated that in the usual logging operation, the "donkey" engine, or other engine used, is mounted on a sled, or skid, usually comprising two heavy, parallel logs joined by cross struts. This sled is skidded from place to place, usually under the power of the engine mounted thereon by the winding in of a cable that is extended from the winding drum of the engine through a pulley block at some distant point and then brought back and attached to the sled.

Heretofore it has been the practice to bolt the engine base structure solidly to the longitudinal logs of the sled so as to additionally brace the latter as well as to hold the engine in place, and this bolting has been very effective for these purposes, but there is, in such cases, the undesirable effect of causing the engine frame, bearings, etc., to be sprung out of alinement due to the fact that, when the sled is skidded from place to place over rough surfaces, it is wracked from side to side with a consequent twisting or misalinement of parts that must necessarily be withstood by the engine frame and is detrimental thereto.

In view of the above, it has been the principal object of this invention to provide an engine mounting which is rigid and substantial and which is attached to the sled in a manner whereby the engine, in operation, will be adequately mounted but which will not cause the twisting or any other strain to be transmitted to the engine frame by reason of the movement of the sled from place to place.

More specifically stated, the present invention resides in the provision of a pivotal mounting for the engine base structure at one end and movably supporting it at the opposite end so that any lateral play or twisting in the sled will permit the base to move in a manner that it will be relieved of that strain which otherwise would be imparted to it.

It is also an object of the invention to mount the engine base at one end by supporting trunnions extended from its opposite sides, and to support it at the opposite end by means of a supporting roller arranged for transverse travel on the sled.

Other objects of the invention reside in the details of construction and in the combination of parts, as will hereinafter be fully described, whereby the mounting is made substantial and operable, as intended.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Fig. 1 is a side elevation of a skidding sled with a yarding engine mounted thereon in accordance with the present invention.

Fig. 2 is a plan view of the sled showing the engine mounting base as supported thereon; the engine being removed for purpose of better illustration.

Fig. 3 is an enlarged cross sectional view on the line 3—3 in Fig. 2, showing a supporting trunnion.

Fig. 4 is an enlarged cross sectional view on the line 4—4 in Fig. 2, particularly illustrating a supporting jack.

Fig. 5 is an enlarged, cross sectional view on the line 5—5 in Fig. 2, showing the base supporting roller and associated parts.

Referring more in detail to the drawings:

1 and 1a designate the spaced, parallel logs forming the runners of the sled, or skid, upon which the engine is to be mounted. These logs are joined in spaced relation by a plurality of cross members 2. Mounted upon the sled is an engine, designated in its entirety by reference numeral 3, and this engine, in turn, is supported upon a base frame structure shown best in Fig. 2, which base is of rectangular form and composed of channel iron opposite side beams 4 and 4' and opposite end beams 5 and 5'. These frame beams are rigidly and permanently joined at the corners of the frame and the latter is additionally braced by diagonal brace beams 6 and 6'.

The base frame 4 is supported upon the sled with its opposite side beams overlying and disposed lengthwise of the runners 1 and 1a. At the forward end, the base frame has trunnions 7 and 7 bolted to and extending from the opposite side beams. These trunnions are pivotally supported in bearings 8 and 8' that are fixed upon the sled runners, as will be understood best by reference to Figs. 1 and 3. At the rearward end of the base frame, it is equipped centrally with a supporting roller or wheel 9; this wheel being mounted by an axial pin 10 which is mounted by the cross frame member 5' at that end in such

manner that the wheel will have rolling support for movement in a direction transversely of the sled and upon a plate 11 that is fixed upon the top surface of an underlying transverse member 2. By reason of this arangement of supports, should the sled be wracked in a manner to cause relative endwise movement of the skid runners, the frame 4 of the engine may move back and forth at the roller supported end, without damage or strain being imparted to the frame structure.

In order that the base frame may be held against any possible upward movement at its roller supported end, the cross member 5' at that end preferably would comprise an I-beam member as shown in Fig. 5, with its lower edge flange 4a extended beneath the flange 12a of channel beam 12 that is fixed along the underlying cross member 2. The flange of the I-beam is just slightly spaced beneath the flange 12a of the channel member when the roller is in normal rolling contact with plate 11 so that it is free for the ordinary or usual lateral play, but will engage therewith should there be any tendency of that end of the base frame to lift upwardly.

The preferred arrangement of parts at the rearward end of the sled is illustrated best in Fig. 5, which shows the channel member 12 and the track plate 11 as being bolted together by bolts 13 and both of these members secured to the cross member 2 by screws, as at 14, and bolts, as at 15.

In order that the base frame may be adequately supported during operation of the engine and while the sled is not being moved from place to place, I have provided supporting jacks at its opposite sides and near its rearward end. These jacks, as illustrated best in Fig. 4, comprise vertical, threaded screws 18 mounted in bearings 19 that are bolted or otherwise fixed to the side beams 4 and 4' of the base frame. At their lower ends the shafts have ball and socket connection with bearings 20 adapted for bearing against the side members 1 and 1a of the sled. These jack screws have wrench heads 18a at their upper ends whereby they may be rotated and thus extended so as to support the base against any lateral tilting and relieve the roller of the weight at that end of the frame.

It is understood that in this arrangement, the two trunnions 7 and 7 would have sufficient looseness in their bearings that neither would be sprung or caused to bind by reason of any lateral play of the frame that is incident to the movement of the sled.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. In combination, a skidding sled and an engine mounted thereon, comprising a base frame, alined supporting trunnions at opposite sides of the base frame at one end thereof, bearings fixed on the sled and receiving said trunnions, a roller mounted on the frame at its other end, to support it for rolling travel in a direction transversely of the sled, and a transverse member on the sled for travel of the roller thereon.

2. In combination with a skidding sled comprising opposite side runners and cross members joining said runners; an engine mounted on the sled comprising a rigid, base frame structure having alined trunnions at one end at opposite sides thereof, supporting bearings on the sled for said trunnions, and a supporting roller at the opposite end of the frame mounted for rolling support on the sled in a direction transversely of the sled, and means on the sled and frame for limiting the extent of lifting of that end of the frame relative to the sled.

3. In combination with a skidding sled comprising opposite side runners and cross members joining said runners; an engine mounted on the sled comprising a rigid, base frame structure having alined trunnions at one end at opposite sides thereof, supporting bearings on the sled for confining said trunnions therein, and a supporting roller at the opposite end of the frame mounted for rolling contact on the sled in a direction transversely of the latter, and jacks mounted on the sides of the frame toward the roller supported end for adjustment into frame supporting contact with the sled.

4. In combination with a skidding sled comprising opposite side members and transverse connecting members; an engine mounted on the sled and comprising a rigid base frame structure having a flexible pivotal support at one end, and having a rolling support at its opposite end for movement transversely of the sled upon one of said transverse members, means on said transverse member engageable with the frame to sustain it against lifting relative to the sled, and jacks on the frame at its roller supported end adapted to be extended into engine supporting contact with the sled.

5. A skidding sled comprising opposite side runners and cross members joining said runners, an engine mounted on the sled comprising a rigid base frame structure having alined trunnions at one end at opposite sides thereof, supporting bearings on the sled confining said trunnions therein, a supporting roller centrally mounted at the opposite end of the frame for rolling travel on the sled in a direction transversely of the latter, means on the sled for engaging with the roller supported end of the frame to limit the extent of lifting of that end of the frame, and jacks mounted on the sides of the frame adjustable into frame supporting contact with the sled and for lifting the roller supported end of the sled against said limiting means.

KNUTE BERGER.