G. H. REYNOLDS.

Guide-Pulley for Ropes and Bands.

No. 196,250. Patented Oct. 16, 1877.

Fig. 2.

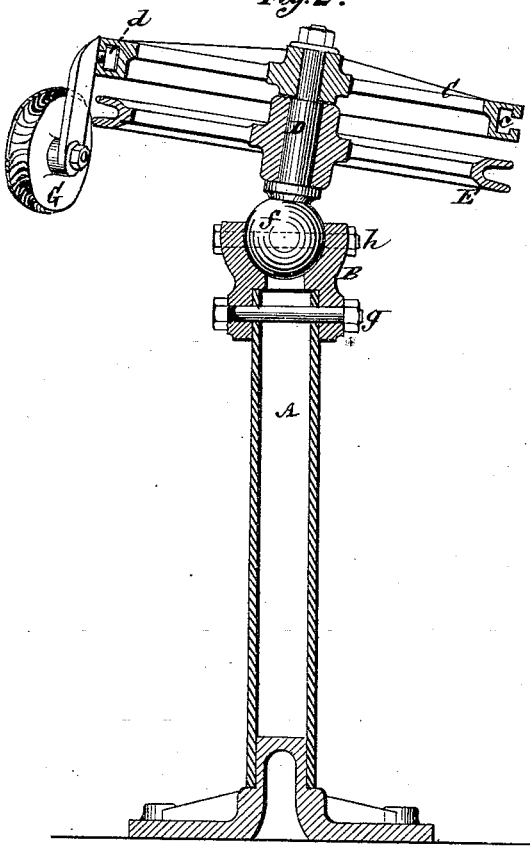


Fig. 1.

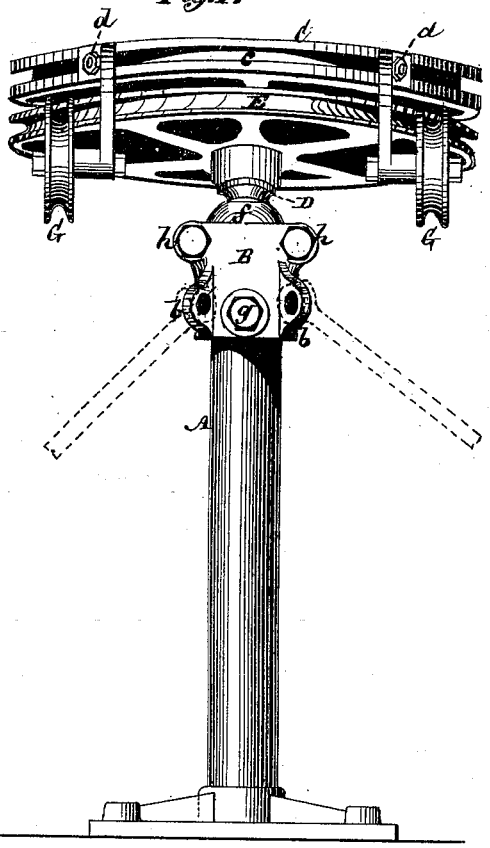


Fig. 4

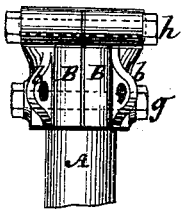
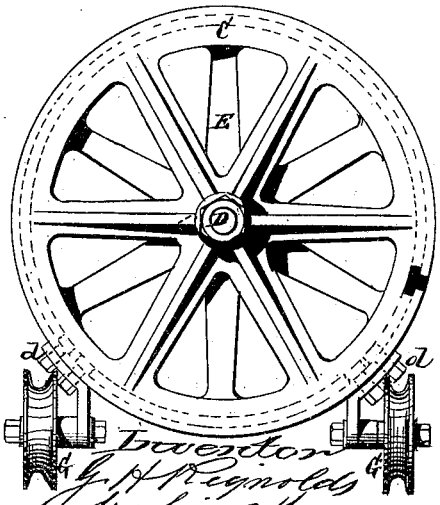


Fig. 3.



Witnesses:

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Inventor

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UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO CORNELIUS H. DELAMATER AND GEORGE H. ROBINSON, OF SAME PLACE.

IMPROVEMENT IN GUIDE-PULLEYS FOR ROPES AND BANDS.

Specification forming part of Letters Patent No. **196,250**, dated October 16, 1877; application filed April 3, 1877.

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, of the city, county, and State of New York, have invented certain new and useful Improvements in Angle-Sheaves for Bands or Ropes used in Transmitting Motion, which improvements are fully set forth in the following specification and accompanying drawing.

This invention, although applicable to supporting and guiding bands or ropes for transmitting motion generally, is more particularly designed for supporting and guiding the ropes used to drive or transmit motion to machinery in mines, and it will here be described more particularly with reference to such use.

The invention consists in various novel constructions of the means used to support and carry the angle-sheave, round which the driving band or rope is passed, and the sheaves which carry said band or rope to the angle-sheave, and conduct it therefrom, whereby the several sheaves may be adjusted to different angles or positions of operation without changing the structure of the column or main support, and numerous other facilities or economies are obtained.

Heretofore it has been customary, in order to transmit motion to machinery in mines, to erect frames having a definite and fixed position, and of a special structure for support of each angle-sheave and the carrying-sheaves connected therewith, to suit a particular and invariable position of the angle-sheave. This necessitated a different main or supporting frame for each one of a series of such sheaves, according to the different angular sets of the angle-sheaves, and different relative positions of the rope-carrying sheaves pertaining thereto, to direct the driving rope or ropes in various lines or directions. By my invention, however, the same main support and same combination of the angle-sheave and its accompanying rope carrying or guiding sheaves will suffice for all variations in direction of the rope, and the entire structure, including the sheaves, may be readily moved from place to place to suit different requirements or changes pertaining to the transmitting of the motion.

Figure 1 represents a side elevation of a main supporting-column, with its angle and rope-carrying sheaves, and means for carrying and adjusting said sheaves in accordance with my invention; Fig. 2, a vertical section of the same in a plane at right angles to the former figure, and Fig. 3 a plan thereof. Fig. 4 is a side view of a clamp on the upper end of the supporting-column, viewed in a direction at right angles to that from which the same device is viewed in Fig. 1.

A is a tubular column, which may have a fixed position given it by setting or shrinking it on a hollow pin or base, which may be bolted to a stone buried in the ground. It is desirable also to brace it by stays or rods attached at their upper ends to ears *b b*, and secured at their lower ends to eyebolts passing through bowlders, which are also buried in the ground.

The ears *b b* may be on a clamp, B, which is mounted and secured on the top of the post or column.

C is the sheave-carrier of the structure, and D the pivot or pintle on which the angle-sheave E is free to turn. The carrier C is of curved or circular form, and is made with a locking-groove, *c*, in its periphery, to provide for the attachment, by means of clamping-bolts *d*, of the brackets or arms which carry the rope carrying and guiding sheaves G G, and for the adjustment of the latter around the carrier C, to set the sheaves G G nearer to or farther from each other. Furthermore, the sheaves G G are adjustable along with the angle-sheave E, as the angular position of the latter is changed, so that said sheaves G G will retain their proper relation with the angle-sheave E. To this end the carrier C is carried by the pintle or pivot B of the angle-sheave E; and not only may said carrier be adjusted around the pivot D, but the pivot D is universally adjustable by means of a ball, *f*, at the lower end of it, and a socket in the clamp B receiving said ball. This ball-and-socket joint provides for changing the angular position of the sheave E, and correspondingly varying the position of the carrier C and the sheaves G G.

The clamp B is a divided one, being built

up in two sections or halves, and is secured to the column A by a screw-bolt, *g*, which passes through both sections of the clamp at some distance below the ball *f*, and through the column, and so clamps and firmly secures the said clamp on the column without making it clamp the ball *b*. Separate screw-bolts *h h* are inserted through the two sections of the clamp, one on each side of the ball, as close as practicable thereto, for the purpose of tightening the said clamp upon the ball, and so securing the pivot at the desired angle. The very slight elasticity of the sections, though they are of cast-iron, is enough to allow them to free the ball sufficiently to allow it to turn when the bolts *h h* are unscrewed, and to allow them to be tightened firmly on the ball by screwing up the bolts *h h*.

From this description it will be seen that not only the whole apparatus or structure may be readily moved and placed in any desired position to adapt it to a variety of circumstances, but the rope guiding and supporting sheaves, and the driving or driven angle-sheave, may be set to any required angle, according to the direction in which it is desired to lead the rope or ropes.

I claim—

1. The combination of the axial pintle or pivot D, upon which the angle-sheave rotates, the supporting post or column A, and the positively-clamping ball-and-socket joint *f* B, connecting the said pintle or pivot directly with the said post or column, and providing for the adjustment and securing of the said pivot or pintle at various angles relatively to the said post or column, substantially as herein described.

2. The combination, with the divided clamping-socket B, which forms part of the ball-and-socket joint connection between the pintle or pivot D and the post or standard A, of the bolt *g*, which clamps the two sections of said socket securely to the post or standard without clamping the ball *f* on the pintle or pivot, and the bolts *h h*, which clamp the said sections on the said ball *f*, substantially as herein described.

3. The carrier C, in combination with the angle-sheave E and the pintle or pivot D, whereby said sheave-carrier is adjustable in concert with the angle-sheave, substantially as specified.

4. The combination, with the sheave-carrier C, of the rope guiding and carrying sheaves G G, made adjustable on and around said carrier, essentially as described.

5. The combination of the angle-sheave E, the carrier C, the rope guiding and carrying sheaves G G, adjustable around said carrier, the universally-adjustable pintle or pivot D, the clamp B, and the post or column A, substantially as specified.

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Witnesses:

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