No. 651,024. Patented June 5, 1900.

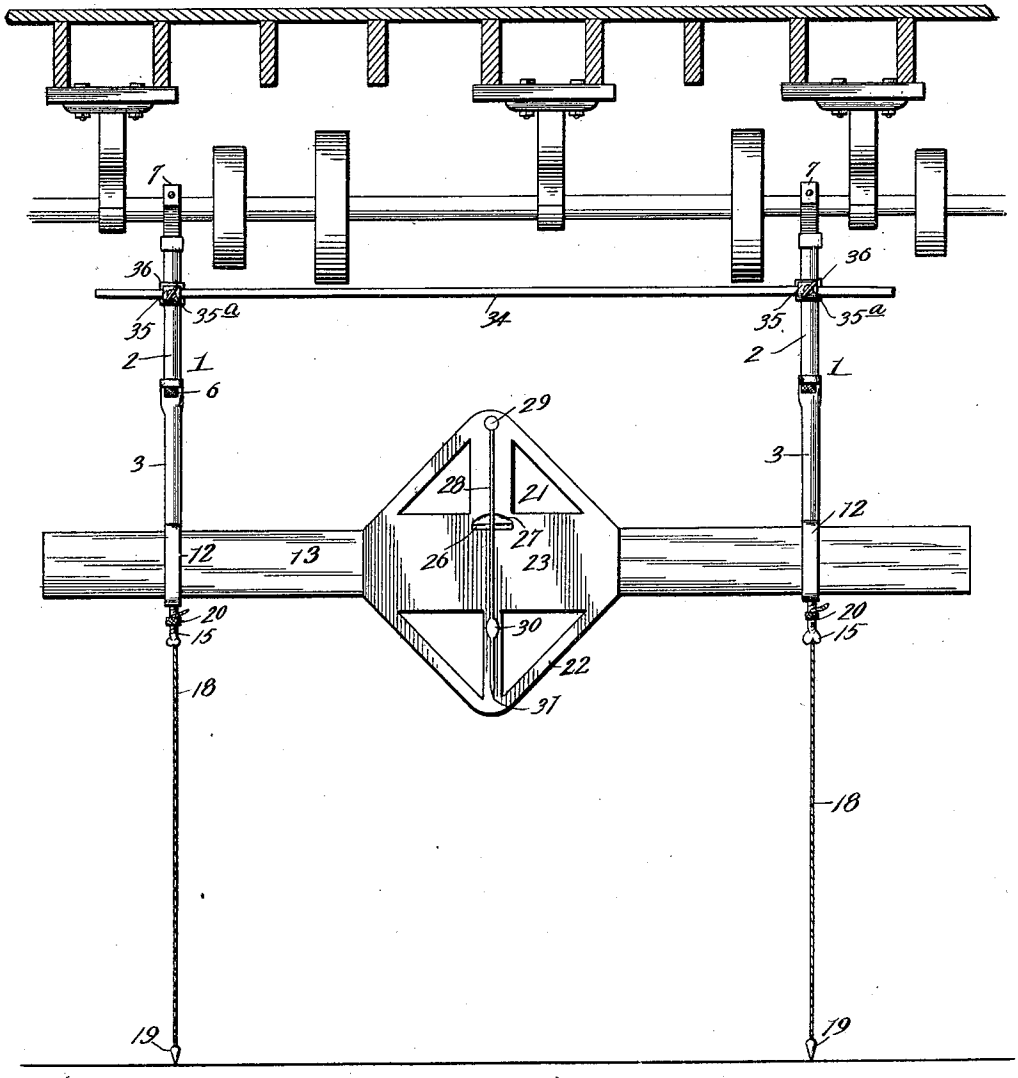
W. E. THOMAS.

ALINING AND LEVELING INSTRUMENT FOR SHAFTING.

(Application filed Feb. 24, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses
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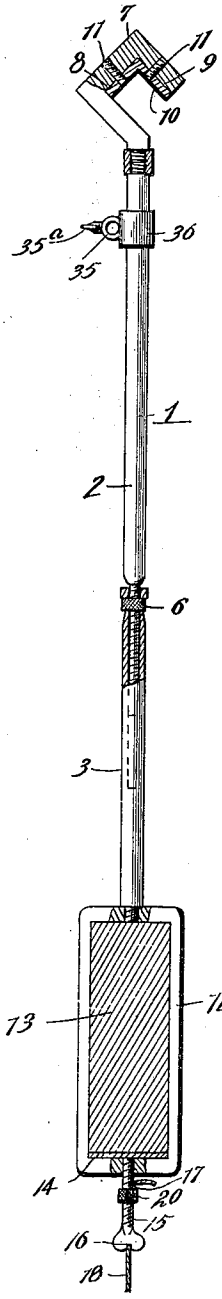


Fig. 2.

Fig. 3.

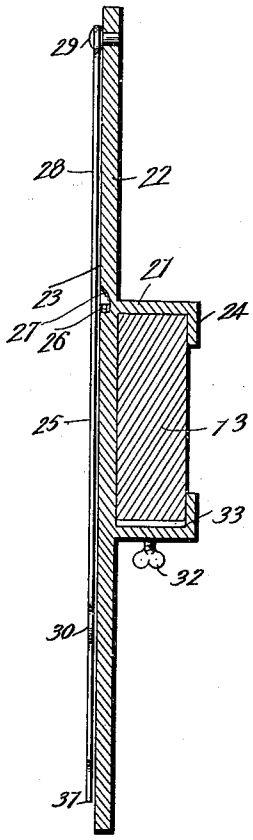


Fig. 4.

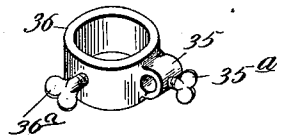
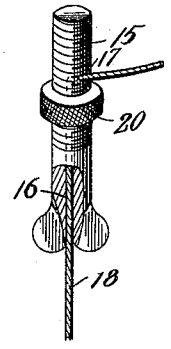


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM EDMOND THOMAS, OF DANVILLE, VIRGINIA.

ALINING AND LEVELING INSTRUMENT FOR SHAFTING.

SPECIFICATION forming part of Letters Patent No. 651,024, dated June 5, 1900.

Application filed February 24, 1900. Serial No. 6,365. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EDMOND THOMAS, a citizen of the United States, residing at Danville, in the county of Pittsylvania and State of Virginia, have invented a new and useful Alining and Leveling Instrument for Shafting, of which the following is a specification.

My invention is an improved instrument for alining and leveling lines of shafting and the like; and it consists in the combination of a pair of pendent bars adapted to be attached to and suspended from a shaft or line of shafting and having plumbs for alining the same, and, further, provided with adjusting devices for compensating for unequal diameters in the line of shafting, with a leveling straight-edge bar connecting said pendent bars, means for vertically adjusting said leveling-bar, and a level and plumb on said leveling-bar, adapted to be moved endwise thereon.

My invention further consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an improved alining and leveling instrument embodying my improvements, showing the same suspended from the line of shafting and in operative position. Fig. 2 is a detail elevation, partly in section, of one of my improved pendants provided with a self-centering hook at its upper end, a compensating device, a yoke to receive the leveling-bar, and the adjustable plumb and cord tightening and adjusting devices therefor. Fig. 3 is a vertical transverse sectional view taken through the center of the leveling-bar and the level and plumb thereon. Fig. 4 is a detail perspective view of the adjustable collar and socket for connecting the pendent bar to the connecting brace-rod. Fig. 5 is a similar view of the hollow screw for securing the leveling-bar in the yoke of one of the pendent bars and the thumb-nut thereon for securing the adjustable plumb-cord.

In the embodiment of my invention I provide a pair of pendent bars 1, each of which comprises the upper and lower members 2 3, which are provided at their proximate ends with right and left hand screws, respectively, and are connected together by a turnbuckle or other suitable device, as at 6, the function of said turnbuckle and said screw-threaded portions of the pendant being to permit the latter to be lengthened or shortened, so as to compensate for inequalities in the size or diameters of shafts which may be included in the line of shafting to be leveled and trued or alined. Each of the said pendants is provided at its upper end with a hook 7 for engaging a shaft and suspending the pendant therefrom, the said hook having the right-angled faces 8 9, forming the self-centering suspending device whereby the pendants may be automatically adjusted to shafts having diameters no greater than the distance between the bases of these right-angled faces. The said right-angled self-centering faces of the hooks of the pendent bars are covered with plates 10, of case-hardened steel or any other suitable material which are secured in position by means of machine-screws 11 or other suitable devices. Said plates protect the self-centering right-angled faces from wear resulting from friction with the revolving shaft from which the pendants are hung when the instrument is being used. The said plates 10 when they become worn are discarded and new ones employed in lieu thereof.

At the lower end of each pendent bar is a yoke or keeper 12, adapted to receive the leveling-bar 13, which fits snugly therein and on which said keeper or yoke is adapted to slide when adjusting the pendent bars laterally on the leveling-bar. A clamp-plate 14 is in the lower side of each yoke or keeper 12, interposed between the same and the lower edge of the leveling-bar. Each of the yokes or keepers 12 is provided at its center in its lower side with an adjusting vertical thumb-screw 15, adapted to clamp the pendent bars and leveling-bar together when properly adjusted with relation to each other. Each of the said thumb-screws is provided with a vertical central bore 16, open at its lower end and communicating with a lateral slot 17. Plumb lines or cords 18 have their upper ends passed upward through the bores 16 of said thumb-screws and pass outwardly through the slots 17 thereof, whereby said plumb-lines may be drawn up or down, as may be required to adjust the plumb-bobs 19, attached to the lower ends thereof and which depend from the cen-

ters of the lower ends of the pendants, and when properly adjusted said plumb-lines are secured by clamping thumb-nuts 20, with which the screws 15 are provided, as shown in detail in Fig. 5.

A combined plumb and level 21 is provided and adapted to be adjusted longitudinally on the leveling-bar. Said plumb and level comprises a frame or casting 22, preferably of the form here shown, having a plane surface 23, which extends vertically above and below one side of the leveling-bar, a keeper 24 on the rear side thereof, at the center, to receive the leveling-bar, a plumb 25 on the face of said frame or casting, and a spirit-level 26, secured in a horizontal recess 27 in the face of said casting, near the center thereof and substantially on the level of the upper edge of the leveling-bar. The plumb 25 comprises an arm 28, pivoted at its upper end on a stud 29, which projects centrally from the upper side of the frame or casting 21, said pivoted arm having a plumb-weight 30 near the lower end thereof and terminating in a needle-point, as at 31. The keeper 24 of the frame or casting 21 is provided on its lower side with a set-screw 32 for engaging a clamp-plate 33, interposed between the lower side of said keeper and the lower edge of the leveling-bar and serving to secure the said frame or casting midway between the pendent bars when the instrument is in use, as shown in Fig. 1.

For the purpose of bracing the pendent bars and securing them in parallel vertical alinement when swung or suspended from a line of shafting I provide a connecting-rod 34, which is secured in horizontal sockets 35, which project laterally from collars 36, which are vertically adjustable on the pendent bars, said keepers and said collars being respectively provided with thumb-screws 35^a and 36^a for securing the connecting-rod to said pendent bars at any appropriate vertical adjustment and permitting lateral adjustment of said pendent bars on said connecting-rod.

Having thus described my invention, I claim—

1. In a shaft alining and leveling instrument, a pendent bar having a tubular thumb-screw at its lower end and a plumb-line secured and adjustable in said tubular thumb-screw, substantially as described.

2. In a shaft alining and leveling instrument, the combination of the compensating pendent bars adapted to be suspended from a line of shafting, a leveling-bar connecting said pendent bars, a combined plumb and level on said leveling-bar, and plumbs depending from the lower ends of said pendent bar, substantially as described.

3. A shaft alining and leveling instrument, comprising the pendent bars having the plumbs, connecting brace-rods between said pendent bars, the leveling-bar connecting said pendent bars, the latter being laterally adjustable on said leveling-bar and connecting-rod and the combined plumb and level on said leveling-bar.

4. A shaft alining and leveling instrument, comprising the pendent bars having the plumbs, the connecting brace-rod between said pendent bars, and the leveling-bar, connecting the lower ends of said pendent bars, the latter being laterally adjustable on said leveling-bar, and connecting-rod, substantially as described.

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

WILLIAM EDMOND THOMAS.

Witnesses:
B. S. MOTLEY,
EUGENE COUSINS.