No. 682,083. Patented Sept. 3, 1901.

H. B. JAMES.

MEANS FOR ELEVATING PLATFORMS.

(Application filed June 10, 1901.)

(No Model.)

FIG. 2.

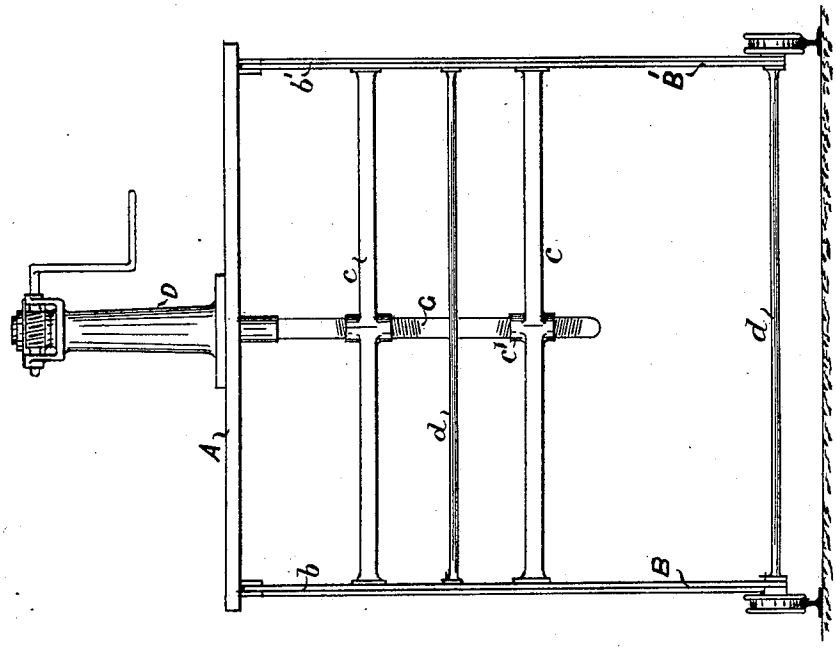
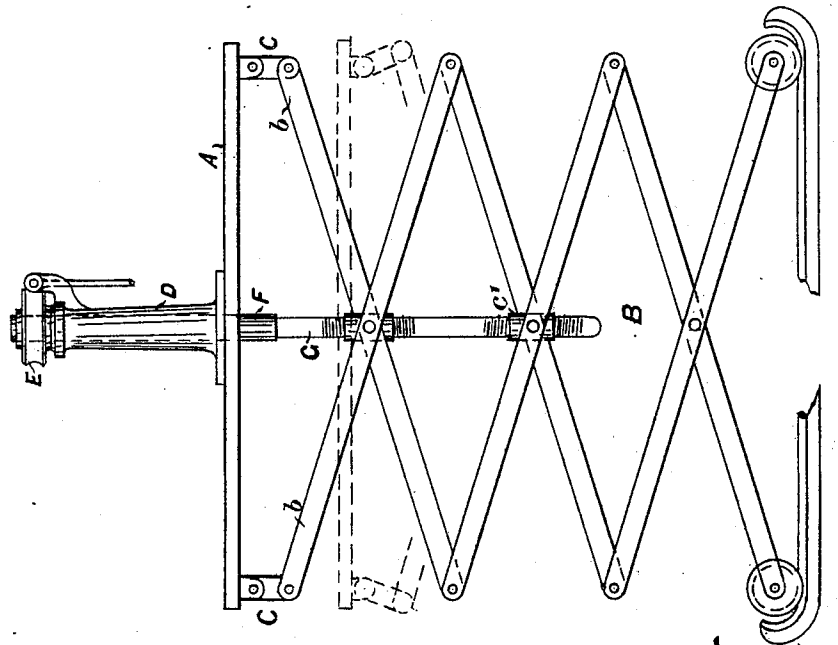


FIG. 1.



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UNITED STATES PATENT OFFICE.

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MEANS FOR ELEVATING PLATFORMS.

SPECIFICATION forming part of Letters Patent No. 682,083, dated September 3, 1901.

Application filed June 10, 1901. Serial No. 63,906. (No model.)

To all whom it may concern:

Be it known that I, HENRY BENSON JAMES, civil engineer, a resident of 69 Victoria street, London, England, and a subject of His Britannic Majesty King Edward, have invented a certain new and useful Improvement in Means for Elevating Platforms, of which the following is a full, clear, and exact description.

This invention relates to those platforms or similar surfaces which are raised or projected by means of lazy-tongs devices; and it consists of improved means for controlling and operating such lazy-tongs.

In the present invention I provide upon rigid cross-bars connecting together a pair of lazy-tongs central bosses forming nuts, and these nuts are engaged by a vertical shaft having a right and left hand threads and operated from the platform or extending end of the structure, this platform being secured to the lazy-tongs by means of pivoted links or arms.

The invention is illustrated upon the accompanying sheet of drawings, in which—

Figure 1 is a front elevation of a platform arranged upon lazy-tongs and fitted with my invention. Fig 2 is a side elevation of the same.

A platform A is arranged upon two sets of similar lazy-tongs B B′, the connection between platform and the uppermost arms or members *b b′* of the lazy-tongs being by means of links or supports C, pivoted to the base of the platform and jointed to the tops of the arms *b b′*. The lazy-tongs B B′ are connected together where they are crossed by rigid arms or cross-bars *c*, having central bosses *c′*, and also by tie-bars *d* at the outer ends of the members. At about the center of the platform is bolted or otherwise arranged a pillar D, surmounted by a worm-wheel E, engaged by a worm and integral with a hollow shaft or sleeve F, passing downward through the platform and fitting around a vertical shaft G. The sleeve F can freely slide upon the shaft G, but when rotated causes the latter to move therewith. For this purpose shaft G may be square-ended, the sleeve being correspondingly shaped internally, or the connection may be made by means of a key or feather, as will be readily understood. The bosses *c′* upon the cross-bars *c* form nuts engaging screw-threads upon shaft G, and these threads are respectively right and left handed, so arranged that upon rotating the shaft by means of the worm-wheel the rigid cross-bars *c* may be either brought together or separated, and according to the well-known action of lazy-tongs the platform A will be correspondingly lowered or raised. The action of the link C is shown in dotted lines on Fig. 1. When the platform is to be lowered, the various arms or members of the lazy-tongs close together and project outwardly, but by reason of the provision of links C of equal length remain coupled with the superposed platform. Shaft G is controllable from the platform at whatever height this latter may be by reason of the sleeve F always sliding upon the shaft G. A worm-wheel being employed to operate the shaft G and a right and left hand thread being also provided for the respective nuts, the members of the lazy-tongs (and therefore the platform) are securely locked in position when the worm-wheel is not being driven. The lazy-tongs B B′ may consist of any suitable number of arms, and while preferably the four uppermost arms are jointed to the links C the lowermost arms may be provided with rollers or flanged wheels traveling upon rails. The whole is operated from the center of the platform and by manual or mechanical power. The platform A may be of larger or slightly-smaller size than the base of the apparatus. It would be possible to dispense with the links C at one end of the platform, and in such case the members *b b′* are jointed direct to the platform at that end. The stroke of the links at the opposite end is then increased.

I have described and shown a vertically-extending device working according to my invention; but the invention may be applied to a horizontally or otherwise extending girder or bridge. In such case the central shaft G becomes horizontal or longitudinal with the lazy-tongs and the platform may be replaced by a cage.

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

1. In combination with the platform, the lazy-tongs B, B′, the swinging links connecting

the lazy-tongs and the platform, rigid cross-bars connecting the lazy-tongs together, right and left hand threaded nuts carried by said cross-bars, a central vertical shaft having right and left hand threads and engaging the correspondingly-threaded nuts, a worm-wheel with means for operating the same, said vertical shaft having a connection with the worm-wheel whereby said shaft is rotated and is permitted vertical movement, substantially as described.

2. In combination with the platform, the lazy-tongs B, B', the swinging links connecting the lazy-tongs and the platform, rigid cross-bars connecting the lazy-tongs together, right and left hand threaded nuts carried by said cross-bars, a central vertical shaft having right and left hand threads and engaging the correspondingly-threaded nuts, a worm-wheel with means for operating the same, said vertical shaft having a connection with the worm-wheel whereby said shaft is rotated and is permitted vertical movement, said connection comprising a sleeve integrally connected with the worm-wheel and having a sliding connection with the shaft, substantially as described.

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

HENRY BENSON JAMES.

Witnesses:
WM. M. JENNER, Jr.,
F. W. PIERSON.