

D. M. PFAUTZ & L. STERNBERGER.
Hoisting Apparatus.

No. 158,976.

Patented Jan. 19, 1875.

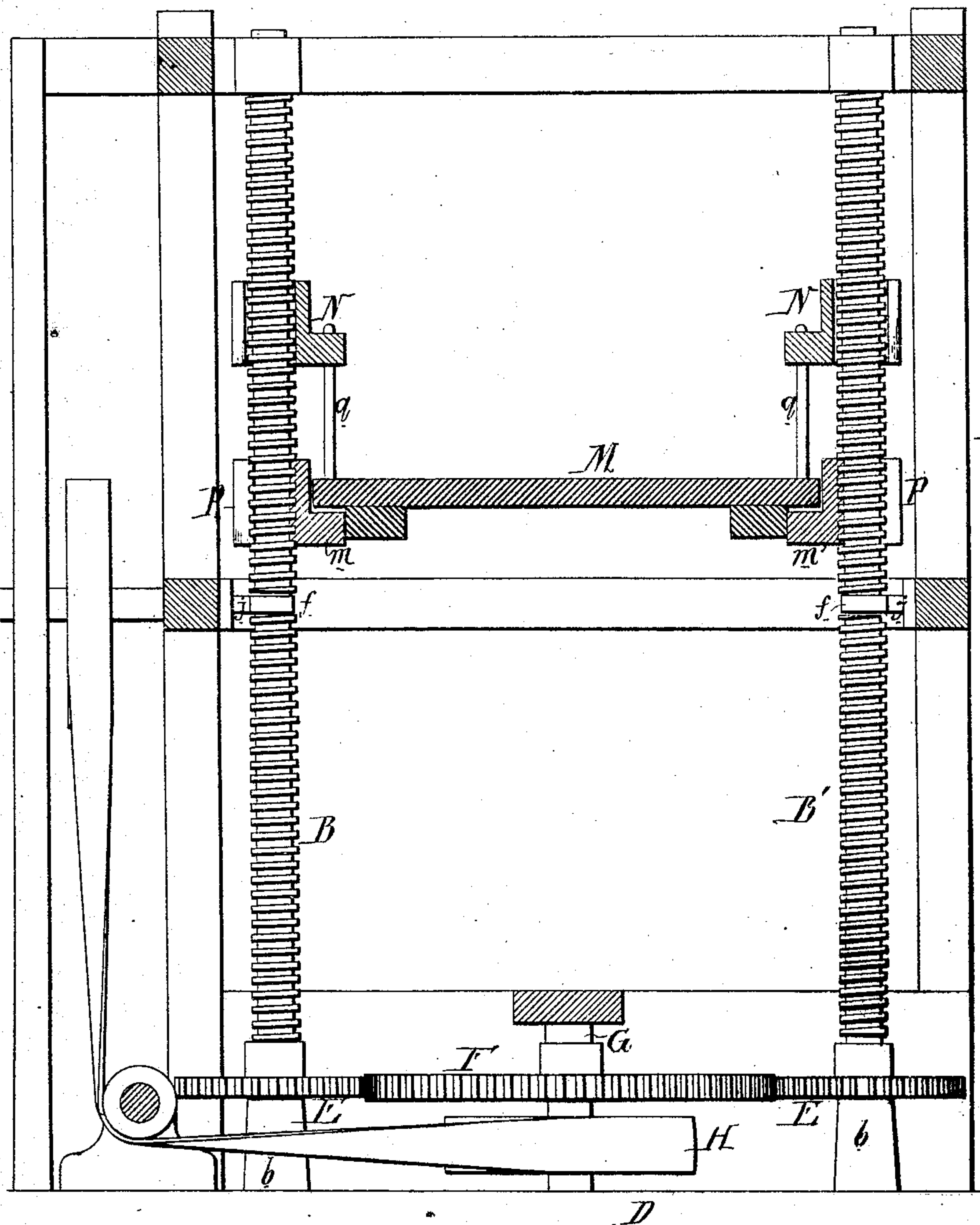


FIG. 1.

FIG. 2.

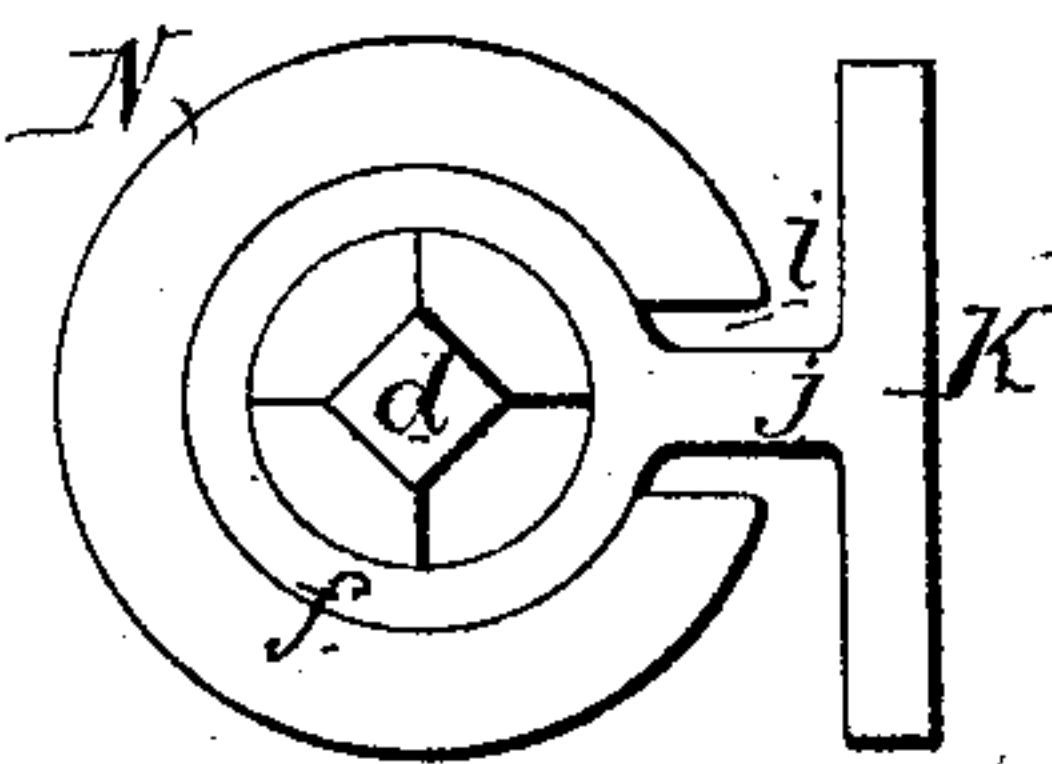
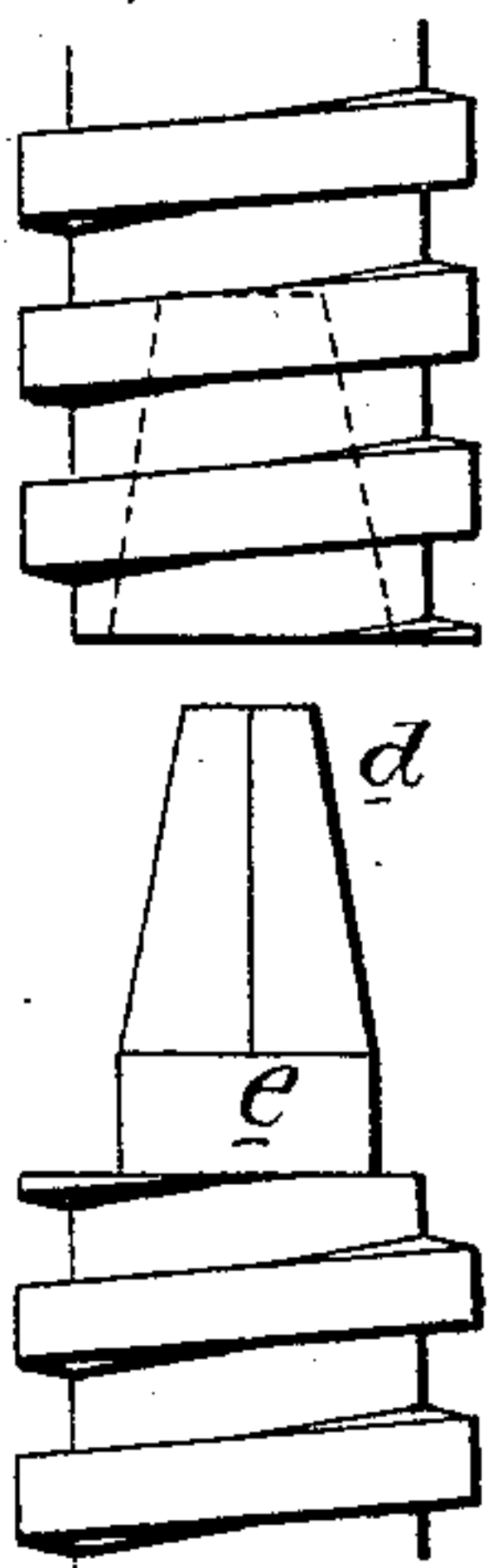


FIG. 3.

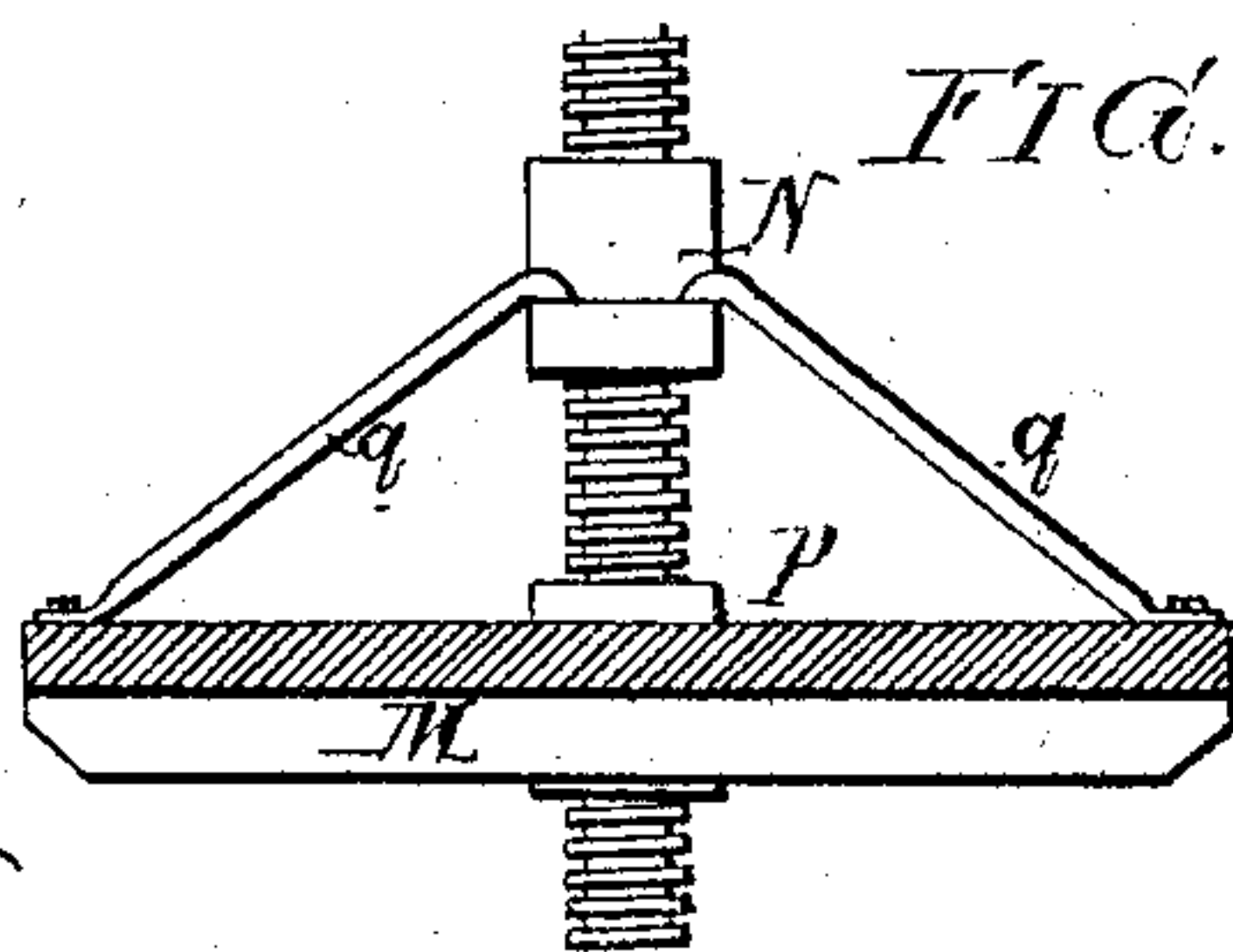


FIG. 4.

Witnesses,
Hubert Howson
Chas. M. Howson

D. M. Pfautz &
Leopold Sternberger
by their Attys.
Howson and Son

UNITED STATES PATENT OFFICE.

DANIEL M. PFAUTZ AND LEOPOLD STERNBERGER, OF PHILADELPHIA, PA.

IMPROVEMENT IN HOISTING APPARATUS.

Specification forming part of Letters Patent No. **158,976**, dated January 19, 1875; application filed November 20, 1874.

To all whom it may concern:

Be it known that we, DANIEL M. PFAUTZ and LEOPOLD STERNBERGER, of Philadelphia, Pennsylvania, have invented certain Improvements in Hoisting Apparatus, of which the following is a specification:

The object of our invention is to construct a perfectly safe and simple hoisting apparatus, in which screw-shafts are the mediums through which the platform of the apparatus is raised and lowered; and this object we attain in the manner we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a side view, partly in section, of our improved hoisting apparatus; Fig. 2, an enlarged view of part of the elevating-screw; Fig. 3, an enlarged plan view of the bearing for the elevating-screw; and Fig. 4, a sectional view of the platform.

A represents the frame-work of the hoisting apparatus, this frame extending from the lowest to the highest story of a building, and two vertical screw-shafts, B and B', continued from the bottom to the top of the frame-work. The lower end of each screw-shaft has a journal adapted to a bearing in a step, b, secured to the foundation D; and to each shaft, above this step, is secured a cog-wheel, E, gearing into a larger central cog-wheel, F, on a shaft, G, which turns in suitable bearings on the lower portion of the frame, and which is furnished with a pulley, H, for receiving a driving-belt.

The vertical screw-shafts are made in sections, coupled together in the manner illustrated in Fig. 2, where it will be observed that the upper end of the lower section terminates in a square projection, d, which is of a tapering form and adapted to a socket of a corresponding shape in the lower end of the next section above.

Between the square termination and the commencement of the screw of the lower section is formed a journal, e, adapted to a bearing, f, forming a part of a bracket, K, a plan view of which is shown in Fig. 3, and which is secured to the frame-work A, there being one of these bracket-bearings at every junc-

tion of one section of each screw-shaft with another section. M is the platform of a hoisting apparatus, and, when heavily loaded only, is supported by projections m on the nuts P, one of these nuts being adapted to one screw-shaft, and the other to the other screw-shaft.

Each nut is slotted at i, so that it is free to pass the web j of the bracket K, as shown in Fig. 3, the different brackets consequently presenting no obstruction to the free traversing of the nuts from section to section of the screw-shafts.

The platform M when unloaded or lightly loaded is not in contact with the projections m of the lower nuts, P, but is supported entirely by the upper nuts, N, and steadied laterally by the lower nuts, the platform being suspended from the said upper nuts by the diagonal rods q.

The platform is free to move laterally to a limited extent independently of the nuts, which are consequently more at liberty to accommodate themselves to the screw-shafts than if they were rigidly connected to the platform.

When heavily loaded, or if it should become detached, or partially detached, from the upper nuts, the platform will bear on the lower nuts. In other words, when the load is light the hoisting is effected through the medium of the upper nuts only, and the friction on the screw-shafts will consequently be comparatively small; but when a heavy load has to be carried, there are four nuts to support it.

Another advantage of the two nuts on each screw-shaft, when viewed in connection with the screw-thread interrupted in its continuity by the bearings where the shafts are coupled together, is, that when one of the nuts is passing the point where the interruption takes place, and its hold of the screw-shaft is consequently lessened, the other nut embraces the shaft at a point where the thread is not interrupted.

We claim as our invention—

1. The combination of the two screw-shafts, B and B', the upper and lower nuts, N and P,

and the platform M, suspended from the upper nuts and adapted to the lower nuts, all as set forth, for the purpose specified.

2. The combination of the upper and lower slotted nuts, N and P, with brackets K, at the junction of the sections of each shaft.

In testimony whereof we have signed our

names to this specification in the presence of two subscribing witnesses.

D. M. PFAUTZ.

LEOPOLD STERNBERGER.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.