

P. KÜHNE.  
CENTERING FOR CONCRETE FLOORS.

APPLICATION FILED MAR. 17, 1905.

Fig: 1.

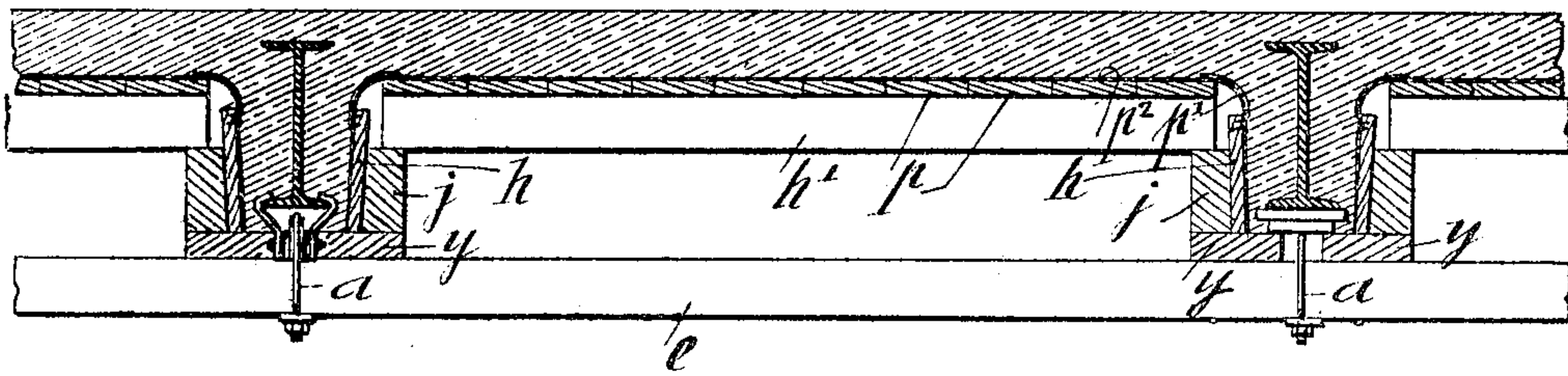


Fig: 2.

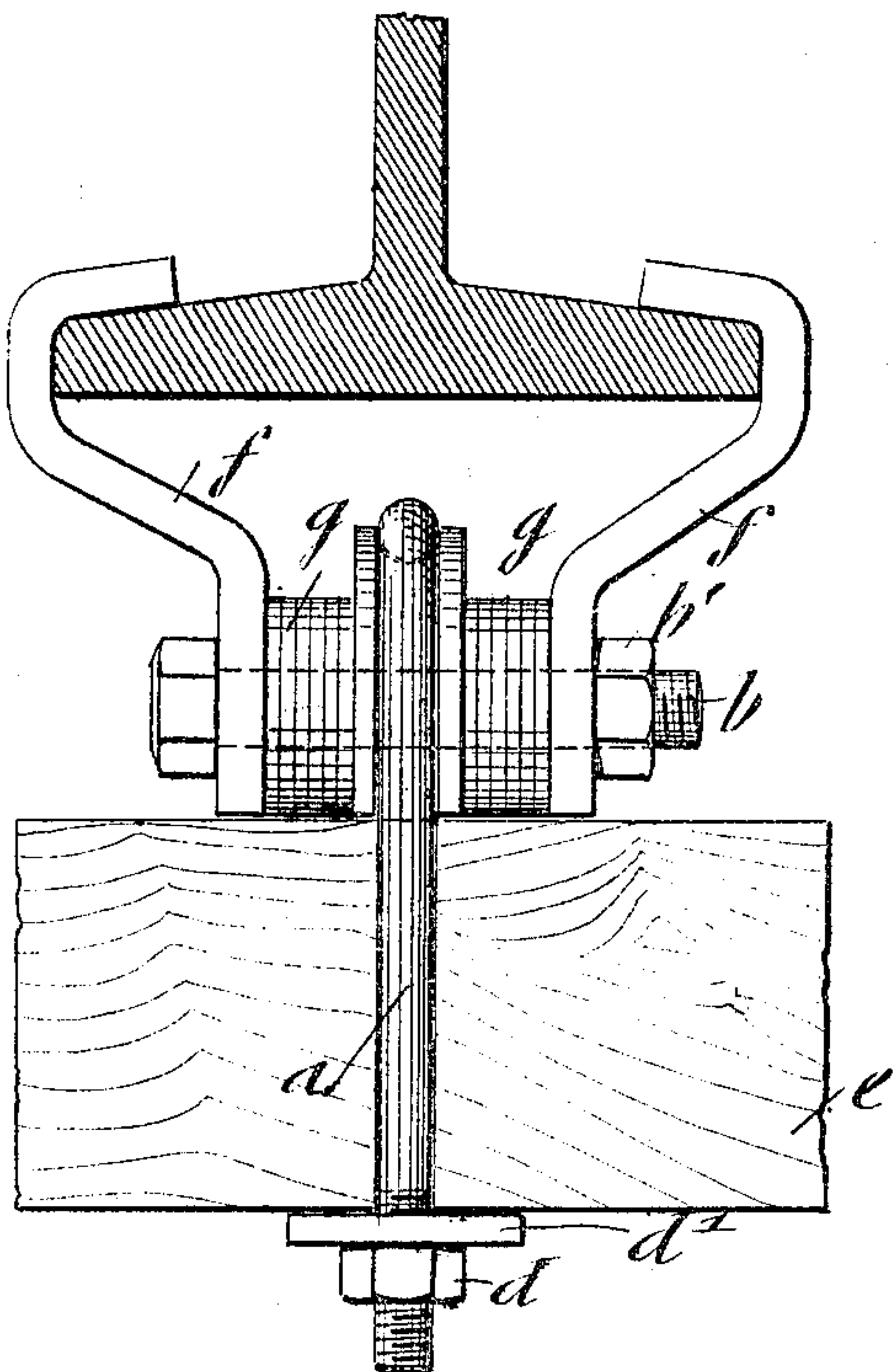


Fig: 3.

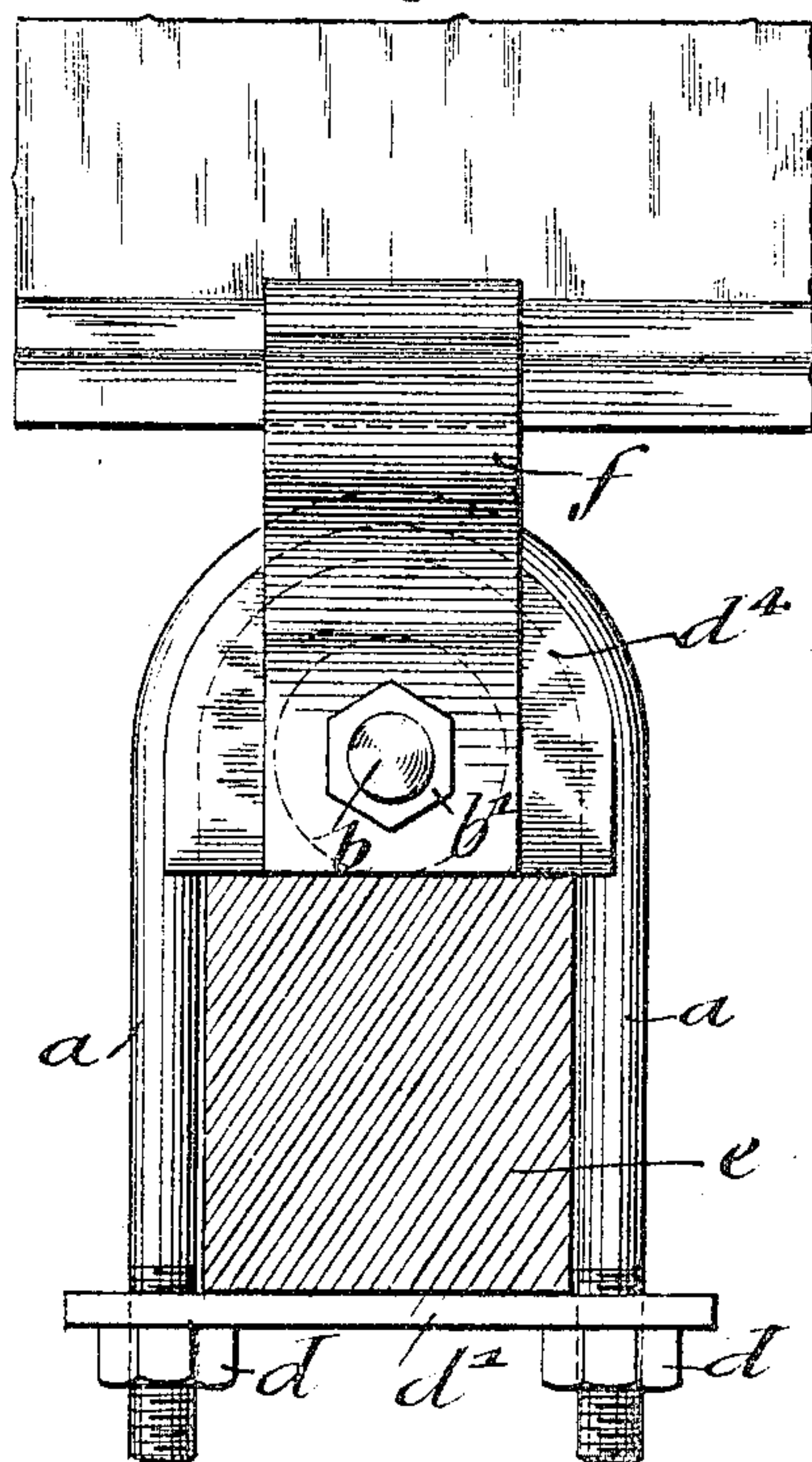
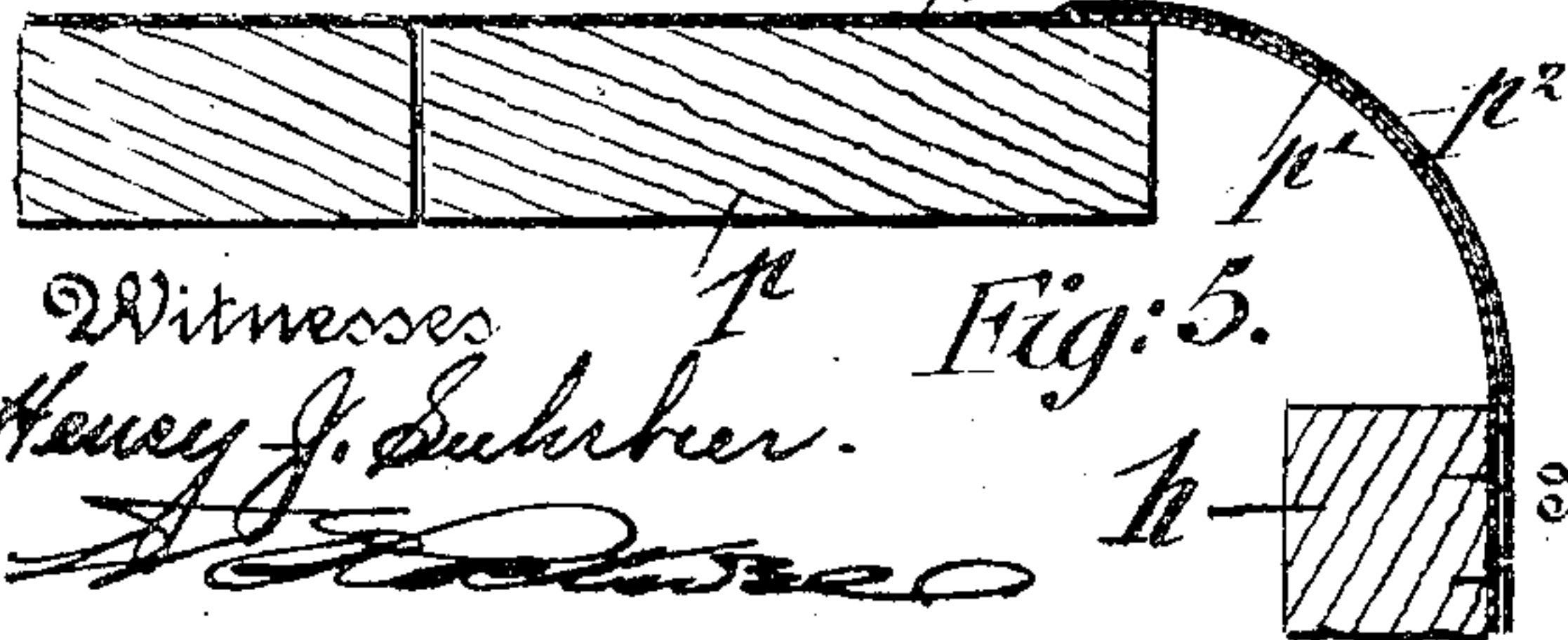
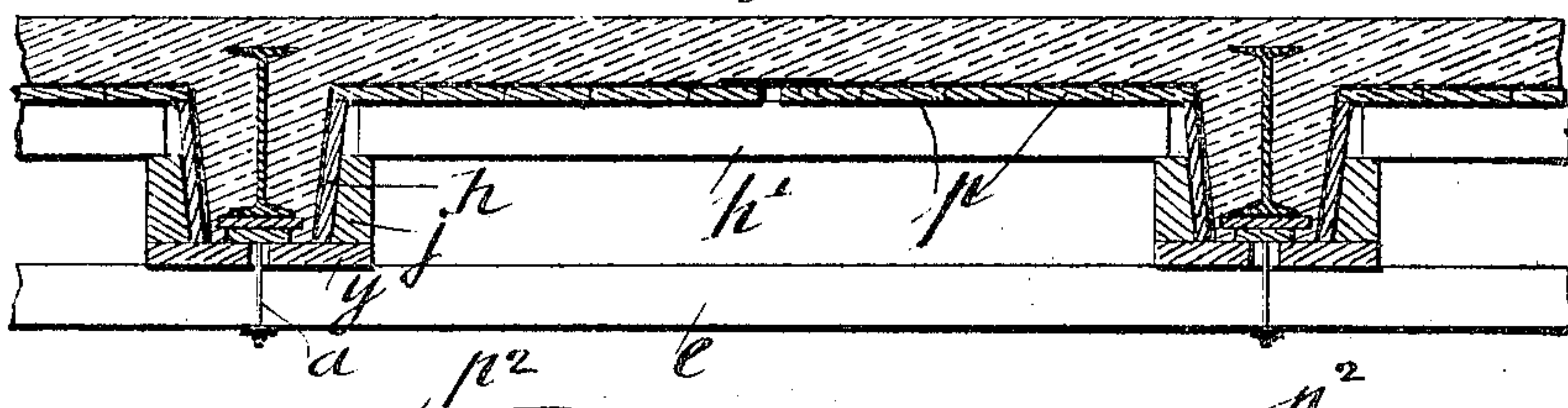


Fig: 4.



Witnesses  
Henry J. Suhrker.  
*[Signature]*

Fig: 5.

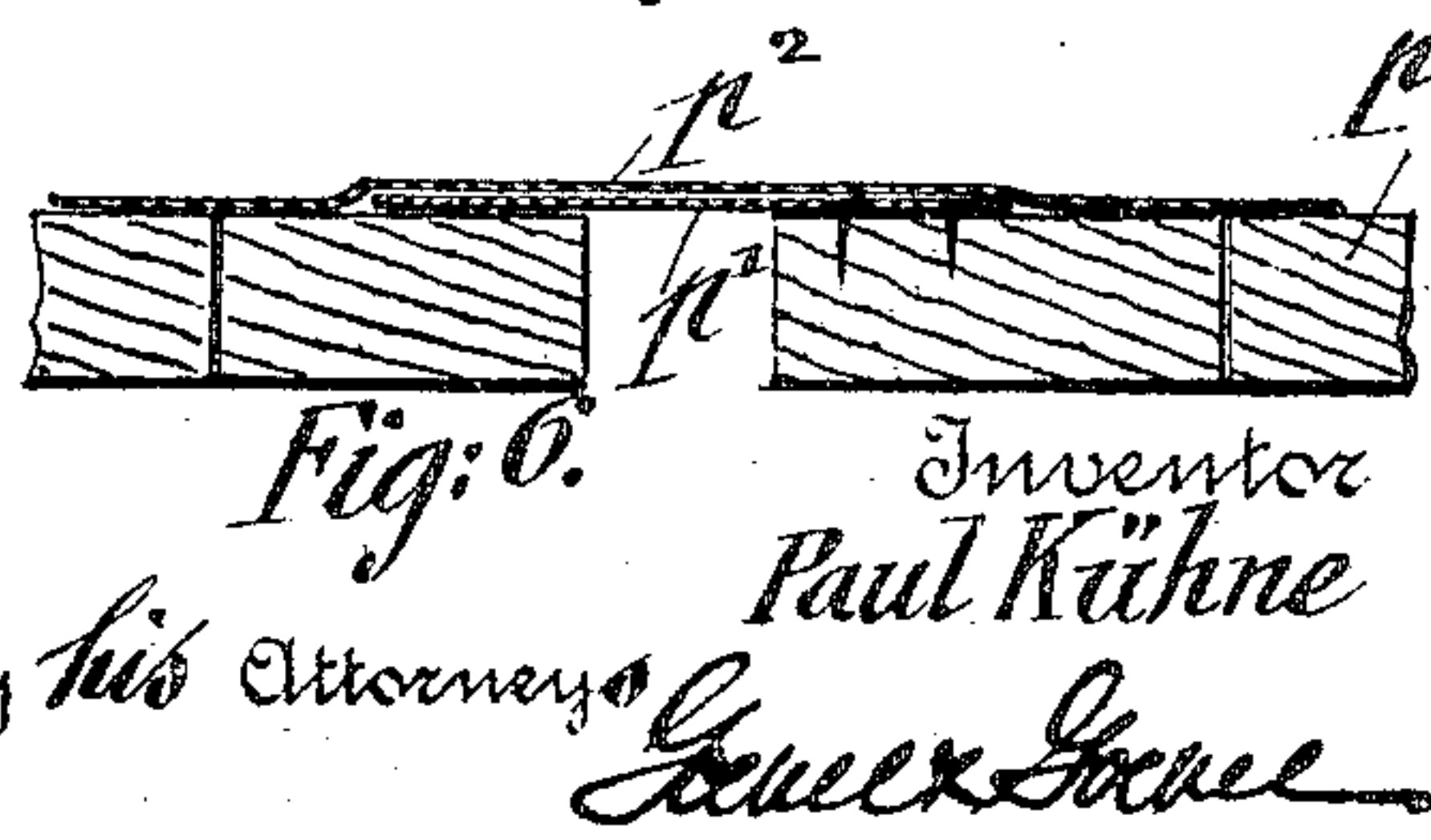


Fig: 6.

Inventor  
Paul Kühne  
*[Signature]*

By his Attorneys  
*[Signature]*



# UNITED STATES PATENT OFFICE.

PAUL KÜHNE, OF NEW YORK, N. Y.

## CENTERING FOR CONCRETE FLOORS.

No. 804,237.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed March 17, 1905. Serial No. 250,519.

*To all whom it may concern:*

Be it known that I, PAUL KÜHNE, a citizen of the United States, residing in New York, borough of Brooklyn, in the State of New York, have invented certain new and useful Improvements in Centerings for Concrete Floors, of which the following is a specification.

This invention relates to an improved centering for concrete floors by which the centering boards can be readily suspended from the beams and supported in position for casting the concrete body over the same and then removed with great facility without injury to the concrete floor; and for this purpose the invention consists in the novel features of construction, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical transverse section through a concrete floor, showing my improved centering in position. Fig. 2 is a detail side elevation, drawn on a larger scale, of a screw-hanger for my improved centering for concrete floors. Fig. 3 is a side elevation of said screw-hanger. Fig. 4 is a detail of the centering, showing the expansion-joint at the center of the same. Fig. 5 is a detail of an expansion-joint located at the corner of the centering, and Fig. 6 is a detail of an expansion-joint located at the center portion of the centering.

Similar letters of reference indicate corresponding parts throughout the several views.

Referring to the drawings, *a* denotes a screw-hanger for my improved centering for concrete floors. The screw-hanger consists of a U-shaped shackle of wrought-iron or other suitable material which is curved at the upper end and screw-threaded at the lower ends. The screw-nuts *d*, which are screwed on the lower ends of the shackle, serve for supporting a transverse plate *d'*, which is supported by nuts at the lower ends of the shackle, so as to support the cross-pieces *e*, on which the centering is supported. The upper curved end of each shackle is supported by a semicircular cast-metal block *d''*, which is provided with a circumferential groove for the shackle. The screw-hanger described is suspended from the base of the I-beams *I* by means of hook-shaped clamps *f*, the lower ends of which are attached, by means of transverse bolts *b* and nuts *b'*, to the semicircular suspension-block at the upper part of the shackle, the space between the suspension-block and the lower parts or shanks of the

clamps being filled up by a number of ring-shaped washers *g*, of which a larger or smaller number may be used, according to the size of the base of the I-beams. The screw-hangers *a* are applied to the base of the I-beams at a suitable distance from each other, supporting the cross-pieces braced to the shackle of the hanger. On the cross-pieces are placed boards *y* at both sides of the hanger parallel with the beams and eyebolts, on which are supported joists *j*, the inner faces of which are slightly inclined, so as to hold facing-boards *h* adjacent thereto in slightly-inclined position one at each side and at some distance from the I-beam. On the joists are again supported cross-pieces *h'*, on which are placed the planks *p*, which complete the centering and which are placed at such a position above the main cross-pieces as required by the thickness of the concrete floor to be laid. Between the slightly-inclined side boards *h* and the center planks is interposed a bent plate *p'*, of sheet metal, that is attached to the inclined side boards and curved so as to overlap the edge planks of the center, forming thereby, with the edge planks, an expansion-joint that gives sufficiently when the setting of the concrete floor takes place, so as to prevent the uneven setting of the concrete floor, which was hitherto caused by the rigid construction of the centering and which sometimes exerted an injurious influence on the parts of the floor or columns supporting the same. A single expansion-joint may be formed in the planking in some instances, in which case the joint is arranged approximately in the center thereof, as shown in Figs. 4 and 6.

In order to prevent the adhesion of the cement to the planks and to the sheet metal, it is covered with a layer *p''* of oiled paper, as shown in Figs. 5 and 6. When the centering is placed in position between the beams, the concrete floor is tamped over the same and into the space between the beams and the side boards up to the required height above the beams, being then properly leveled for laying the flooring on the same.

After the concrete floor has set the centering is removed. This is accomplished by loosening the screws at the lower ends of the shackles, so as to gradually lower the cross-pieces and the woodwork supported thereon. As the loosening of the screw-nuts and the lowering of the woodwork takes place slowly, the woodwork is gradually released from the concrete floor, which is thereby kept intact



without cracking. Owing to the slight inclination of the side boards and the timbers supporting the same, the lowering of the  
5      individual parts can be removed. Lastly, the  
    clamps are removed from the base of the  
    beams by breaking away the adjacent pieces  
    of concrete, the small recesses formed thereby  
10     after the clamps are removed being closed  
    again by spreading cement over the same.  
    The clamps are removed by unscrewing the  
    bolts by which they are connected to the fill-  
    ing-pieces of the shackle.

15     The advantages of my improved centering  
    are that the same is readily placed in posi-  
    tion for laying the floor and readily removed  
    after the floors are properly set, that the con-  
    struction of the screw-hangers permits the  
20     convenient support of the woodwork and its  
    removal after the concrete floors are laid, and  
    that by the use of the expansion-joints the  
    woodwork is permitted to expand without  
    injury to the body of concrete formed on the  
    same.

25     Having thus described my invention, I claim  
    as new and desire to secure by Letters Patent—

30     1. A centering for concrete floors, compris-  
    ing in its construction screw-hangers sus-  
    pended from the I-beams, said screw-hangers  
    embodying shackles, cross-pieces supported  
    in said shackles, and woodwork supported  
    on said cross-pieces and provided with expan-  
35     sion-joints for permitting the expansion of  
    the woodwork without injury to the concrete  
    floor formed thereon.

2. A centering for concrete floors, consist-  
ing of screw-hangers embodying U-shaped  
shackles, guide-pieces supported at the upper  
ends of the shackles, bolts attached to said  
guide-pieces, cross-pieces supported by said  
40     shackles, and woodwork supported on said  
    cross-pieces.

3. A screw-hanger for the centering of con-  
crete floors, comprising a U-shaped shackle,  
a bottom plate supported on the lower ends  
45     of said shackle, a semicircular guide-plate  
    supported at the upper part of the same,  
    clamps applied to the hangers, bolts passing  
    through the shanks of the clamps and the  
    guide-piece of the shackle and washers inter-  
50     posed between said guide-piece and the shanks  
    of the clamps.

4. A centering for concrete floors, consist-  
ing of screw-hangers applied to the beams,  
cross-pieces supported on said screw-hangers,  
55     planks and joists supported on the cross-pieces,  
    inclined side boards adjacent the beams, trans-  
    verse pieces supported on the joists, planks  
    placed on said cross-pieces, and a sheet-metal  
    expansion-joint formed between the inclined  
60     side boards and the edge planks, the sheet  
    metal overlapping the edge planks.

In testimony that I claim the foregoing as  
my invention I have signed my name in pres-  
ence of two subscribing witnesses.

PAUL KÜHNE.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.