

(No Model.)

2 Sheets—Sheet 1.

O. S. HAWYER.

RAILROAD CROSSING FROG.

No. 375,550.

Patented Dec. 27, 1887.

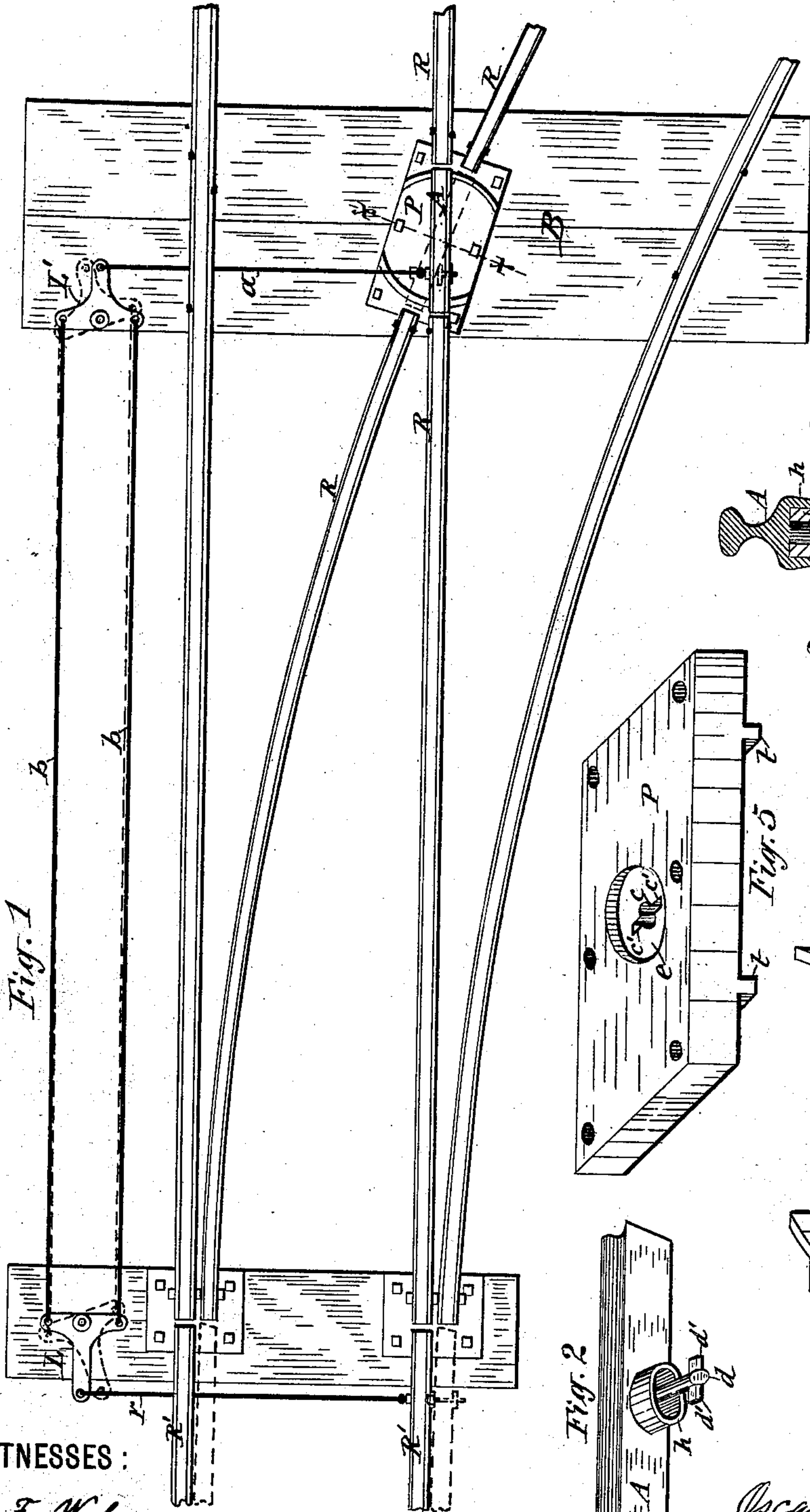


Fig. 1

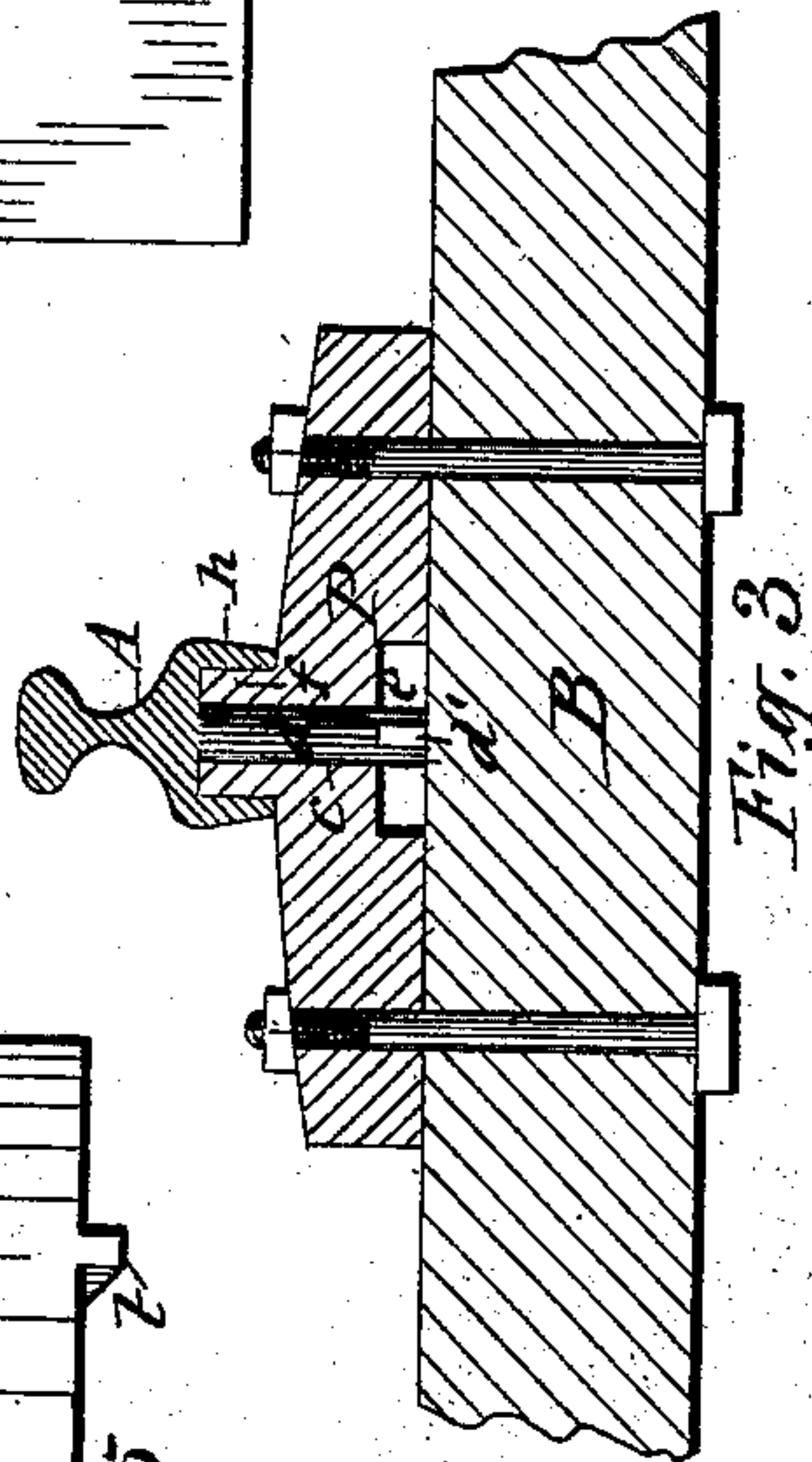


Fig. 3

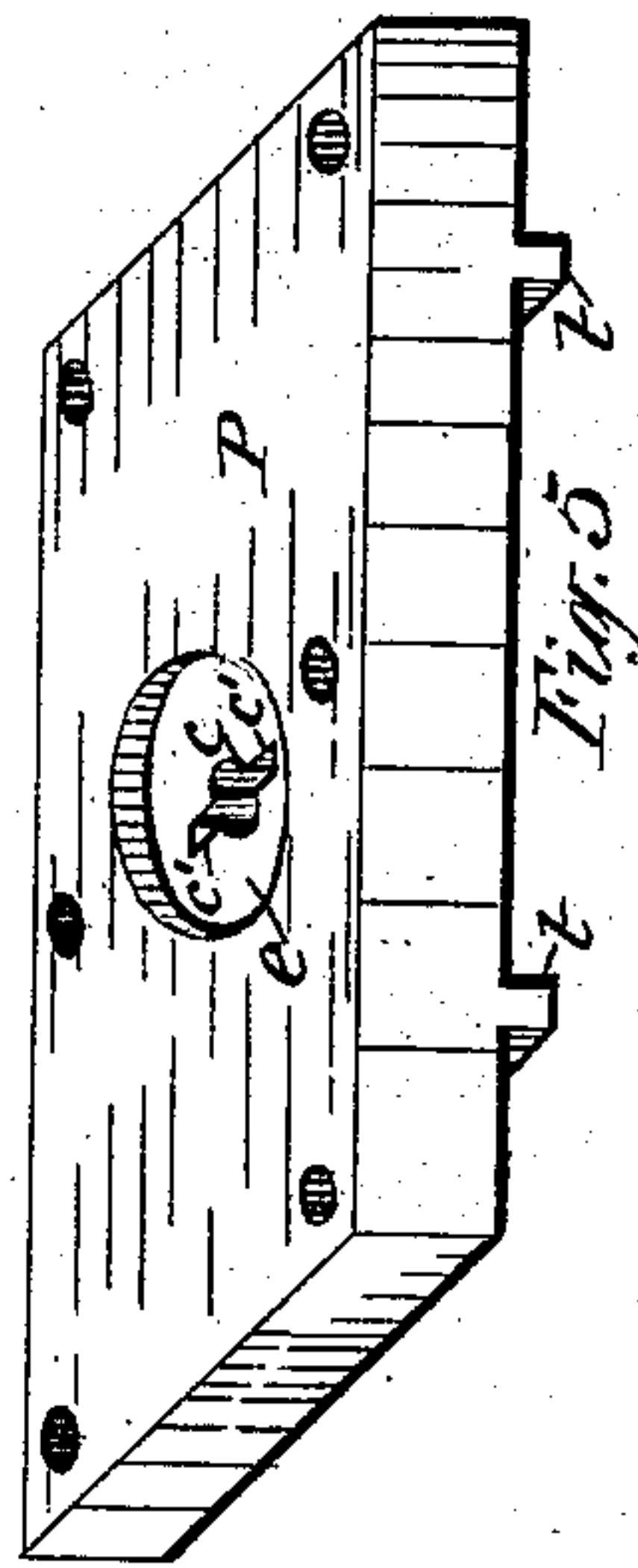


Fig. 5

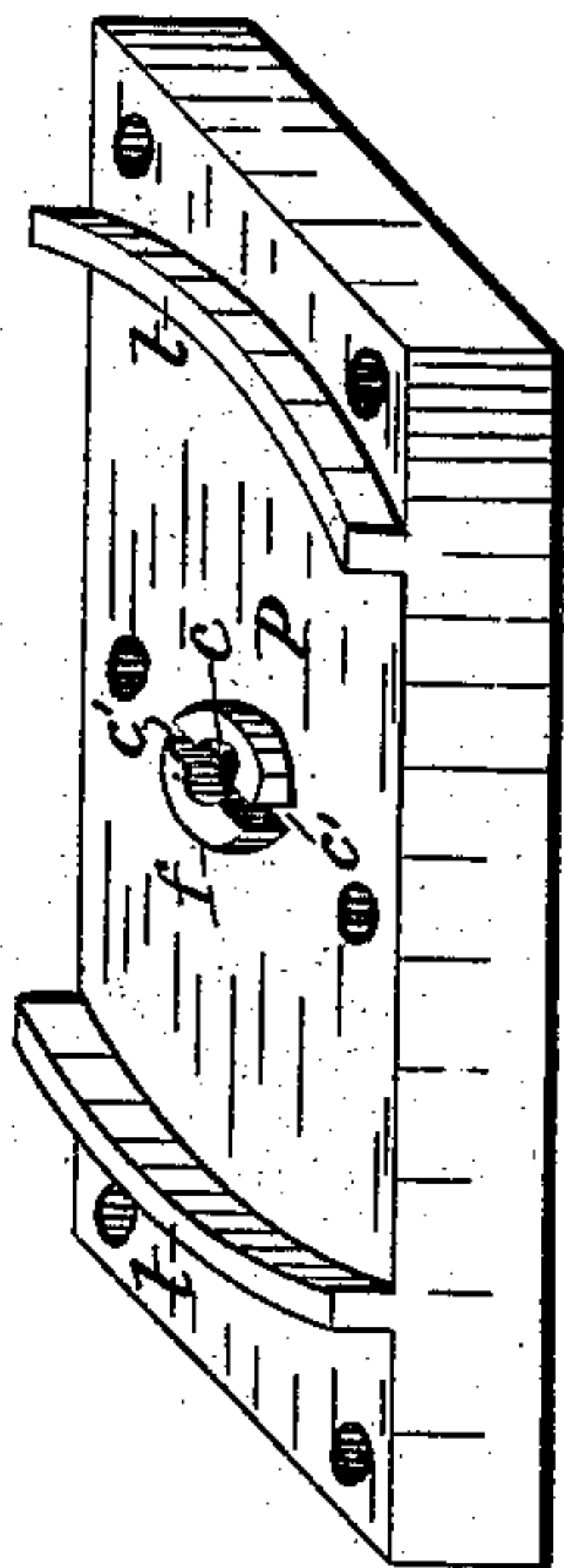


Fig. 4

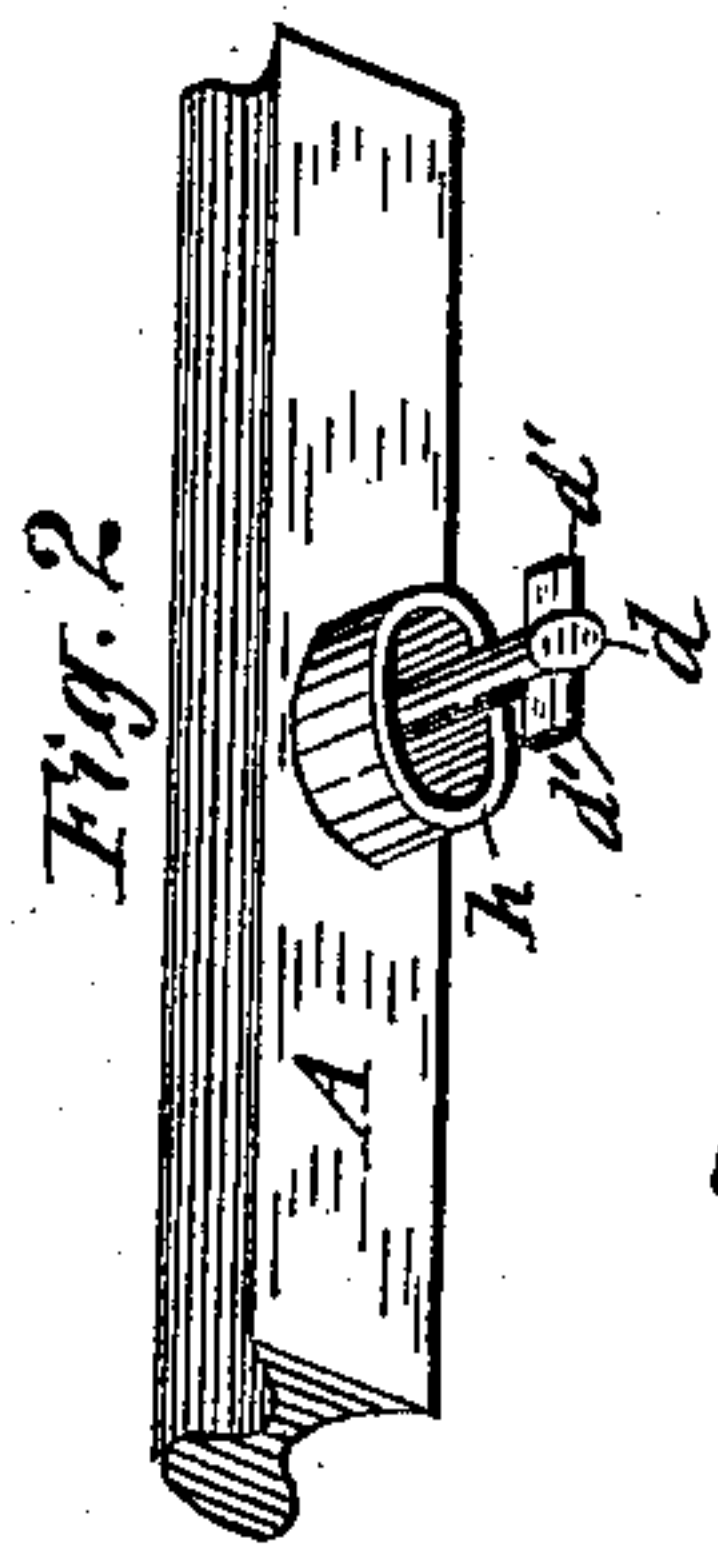


Fig. 2

WITNESSES:

A. F. Waly,

C. Bendixon.

INVENTOR:

Oscar S. Hawyer

BY

Drull, Laass & Drull

ATTORNEYS.

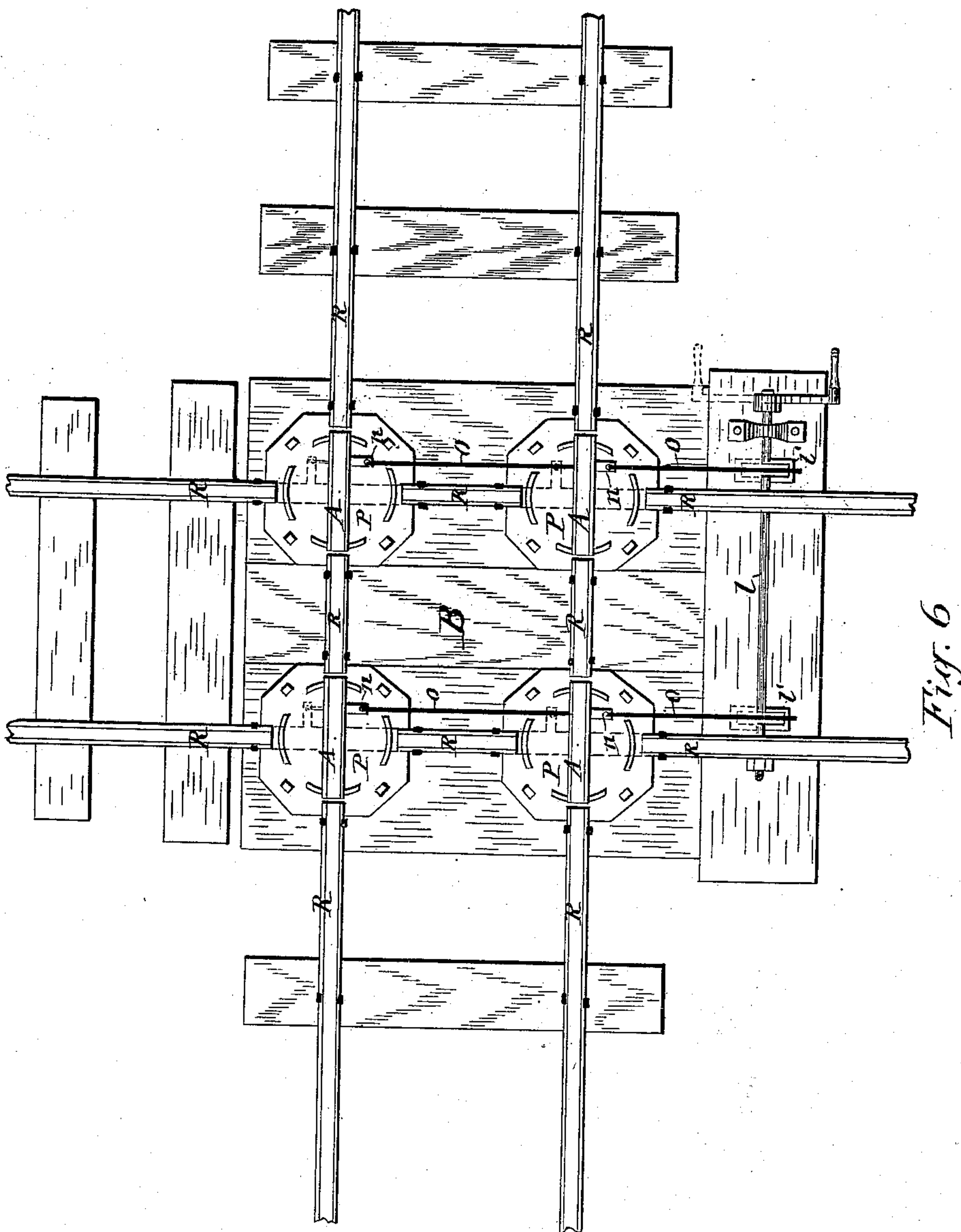
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A. F. Walz,
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BY

Wm. L. Laaseth

ATTORNEYS.

UNITED STATES PATENT OFFICE.

OSCAR S. HAWYER, OF TRUXTON, NEW YORK.

RAILROAD-CROSSING FROG.

SPECIFICATION forming part of Letters Patent No. 375,550, dated December 27, 1887.

Application filed May 26, 1887. Serial No. 239,388. (No model.)

To all whom it may concern:

Be it known that I, OSCAR S. HAWYER, of Truxton, in the county of Cortland, in the State of New York, have invented new and useful Improvements in Railroad-Crossing Frogs, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of railroad-crossing frogs or switch-frogs which are formed of a section of the track-rail pivoted between and reaching to the ends of the rails terminated remote from the point of crossing; and the invention consists in improved means for supporting the frog-rail, as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a plan view of a railroad-switch embodying my invention. Fig. 2 is an enlarged perspective view of the rail-section which constitutes the frog. Fig. 3 is an enlarged transverse section of the frog, taken on line *x x*, Fig. 1. Figs. 4 and 5 are isometric views, respectively, of the upper and lower sides of the plate which supports the frog-rail; and Fig. 6 is a plan view of a railroad-crossing embodying my invention.

Similar letters of reference indicate corresponding parts.

R R represent stationary track-rails arranged lineally at an angle to each other and terminated remote from their point of crossing.

B denotes the usual solid bed-frame placed under the frog and supporting ends of the aforesaid rails. Between the ends of the rails *R R* and at the crossing of the longitudinal central lines of the same I pivot the frog-rail *A*, consisting of a section of a rail similar or of the same shape as the stationary rails and of a length to reach nearly or quite to the ends of the rails *R R*, either of which it is brought in line with by turning it on its pivot. The frog-rail or rail-section *A* constitutes the frog, and in order to properly support the same I mount it on a solid and stout metal plate, *P*, firmly bolted to the bed-frame *B*. This plate I form with an eye, *c*, extending vertically through it and having slots *c' c'* extending laterally from it, and with a boss, *f*, on its upper side surrounding the eye *c*, and segmental

ribs *t t* concentric with the eye, as represented in Fig. 4 of the drawings, and also with a recess, *e*, around the eye *c* in the underside of the plate, as shown in Fig. 5 of the drawings.

From the bottom of the frog-rail *A* projects the pivot-pin *d*, which is rigidly attached thereto or formed integral therewith. Said pivot-pin is provided at its lower or free end with wings *d' d'*, as shown in Fig. 2 of the drawings, and around the said pin, with a short distance between them, is an annular flange, *h*. The frog-rail *A* is secured to the plate *P* by turning the said rail so as to lie transversely on the plate and with the pin *d* and its wings *d' d'*, respectively, in range with the eye *c* and its slots *c' c'*. Then by inserting the pin into the eye and lowering the frog-rail, so as to cause the flange *h* to embrace the boss *f*, and bringing said boss to bear on the bottom of the rail and the flange to bear on the plate *P*, the wings *d' d'* are carried out of the slots *c' c'* and into the recess *e* in the bottom of the plate. The frog-rail can then be turned on its pivot and brought around to ride on the ribs *t t*, and when in this position the wings *d' d'* of the pin *d* engage the solid face of the recess *e* and thus confine the rail to the plate.

When the described frog is employed at a switch, I turn the frog-rail *A* automatically to its requisite lineal position to correspond to the lineal position of the switch-rail by means of suitable levers and chains or rods connecting the levers with the aforesaid rails. For this purpose I prefer to employ the three-armed levers *L L'*, arranged at the outside of the track and respectively opposite the switch-rails *R' R'* and frog-rail *A*, as illustrated in Fig. 1 of the drawings. Each of said levers is pivoted at the junction of its arm, and one arm of the lever *L* is connected with the switch-rails *R' R'* by the usual switch-rod, *r*. The corresponding arm of the lever *L'* is connected with the frog-rail *A* by a rod, *a*, and the other two arms of one of said levers are connected with the corresponding two arms of the other lever by rods *b b*, when the levers are arranged in the positions represented in Fig. 1 of the drawings. When said levers are placed reverse from the position shown in the said figure, chains may be employed in lieu of the rods *b b*. It will be observed that by the aforesaid

combination of the levers and connecting-rods with the switch-rails and frog-rail the latter is caused to turn on its pivot automatically with the movement of the switch-rails, so that the frog-rail closes or bridges the space between those rails which are in line with the switch-rails. At railroad-crossings I prefer to employ a double-crank shaft, *l*, arranged outside of the tracks and parallel with one of them, and provide each of the pivoted rail-sections A A A with a rigid lateral projection, *n*. Rods *o o* connect the respective cranks *l' l'* with the projections *n n* of the rail-sections A at opposite sides of the track which is parallel with the crank-shaft, and by turning said crank-shaft the rail-sections A A A A are caused to turn in unison on their pivots from the position shown by full lines to the position indicated by dotted lines in Fig. 6 of the drawings or reverse from the latter to the former position, as may be required.

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

1. In combination with the rails R R, terminated remote from their point of crossing, the plate P, provided with the eye *c*, and slots *c' c'*, extending from said eye, and the rail-section A, provided with the pivot-pin *d*, and wings *d' d'*, extending from said pin, substantially as and for the purpose specified and shown.

2. In combination with the rails R R, terminated remote from their point of crossing,

the plate P, provided with the eye *c*, slots *c' c'*, extending from said eye and recess *e*, on its under side, and the rail-section A, provided with the pivot-pin *d*, having wings *d' d'*, substantially as described and shown.

3. In combination with the rails R R, terminated remote from their point of crossing, the plate P, provided with the eye *c*, slots *c' c'*, extending from said eye, boss *f*, surrounding the eye on top of the plate, and the recess *e* in the under side of the plate, and the rail-section A, having integral with it the pivot-pin *d*, provided with wings *d' d'*, and the annular flange *h*, surrounding said pin, substantially as and for the purpose shown and set forth.

4. In combination with the rails R R, terminated remote from their point of crossing, the plate P, provided with the eye *c*, boss *f*, surrounding said eye on top of the plate, and ribs *t t*, concentric with the eye, and the rail-section A, having integral with it the pivot-pin *d*, and annular flange *h*, surrounding said pin, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 10th day of May, 1887.

OSCAR S. HAWYER. [L. S.]

Witnesses:

H. P. DENISON,
C. BENDIXON.