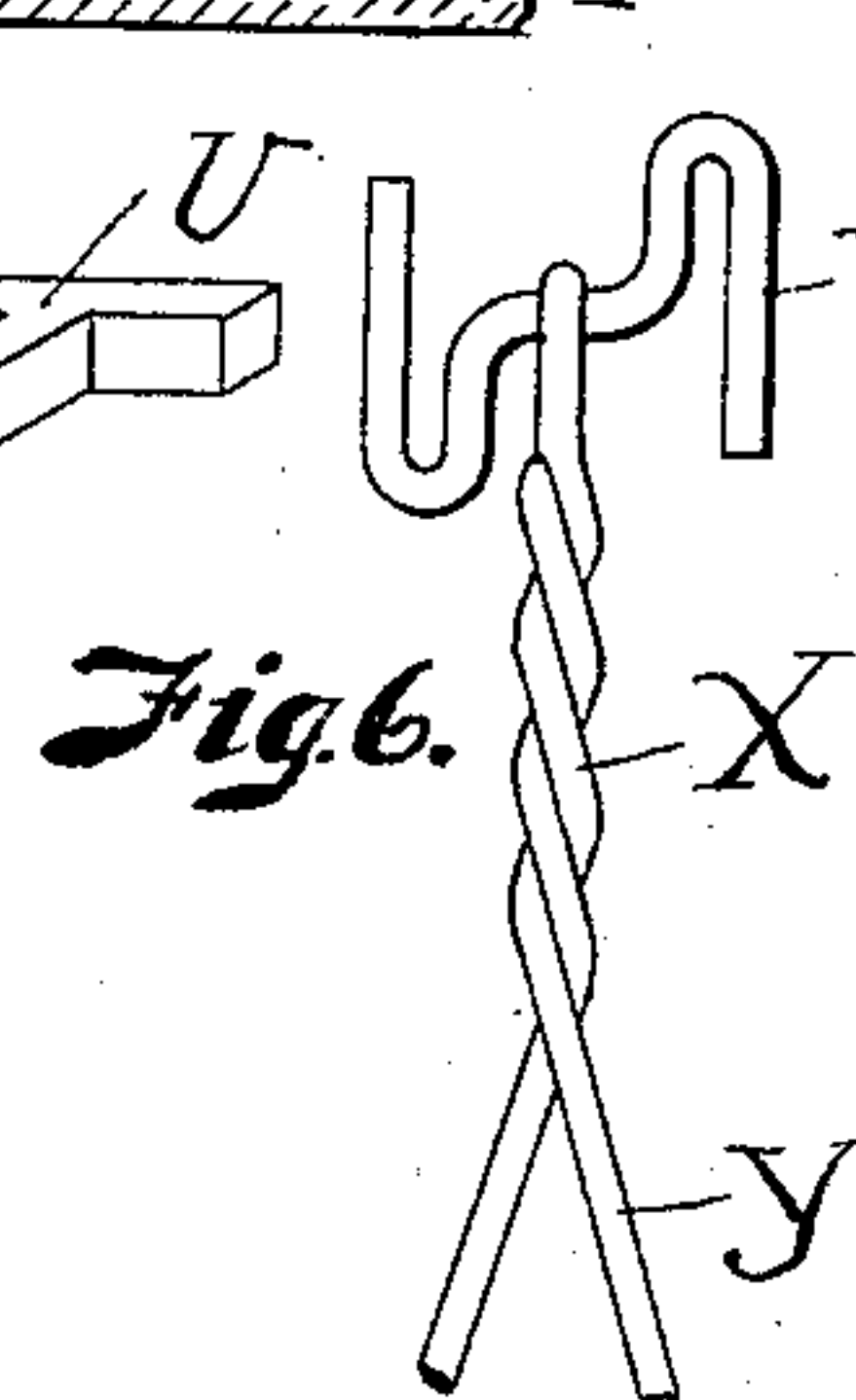
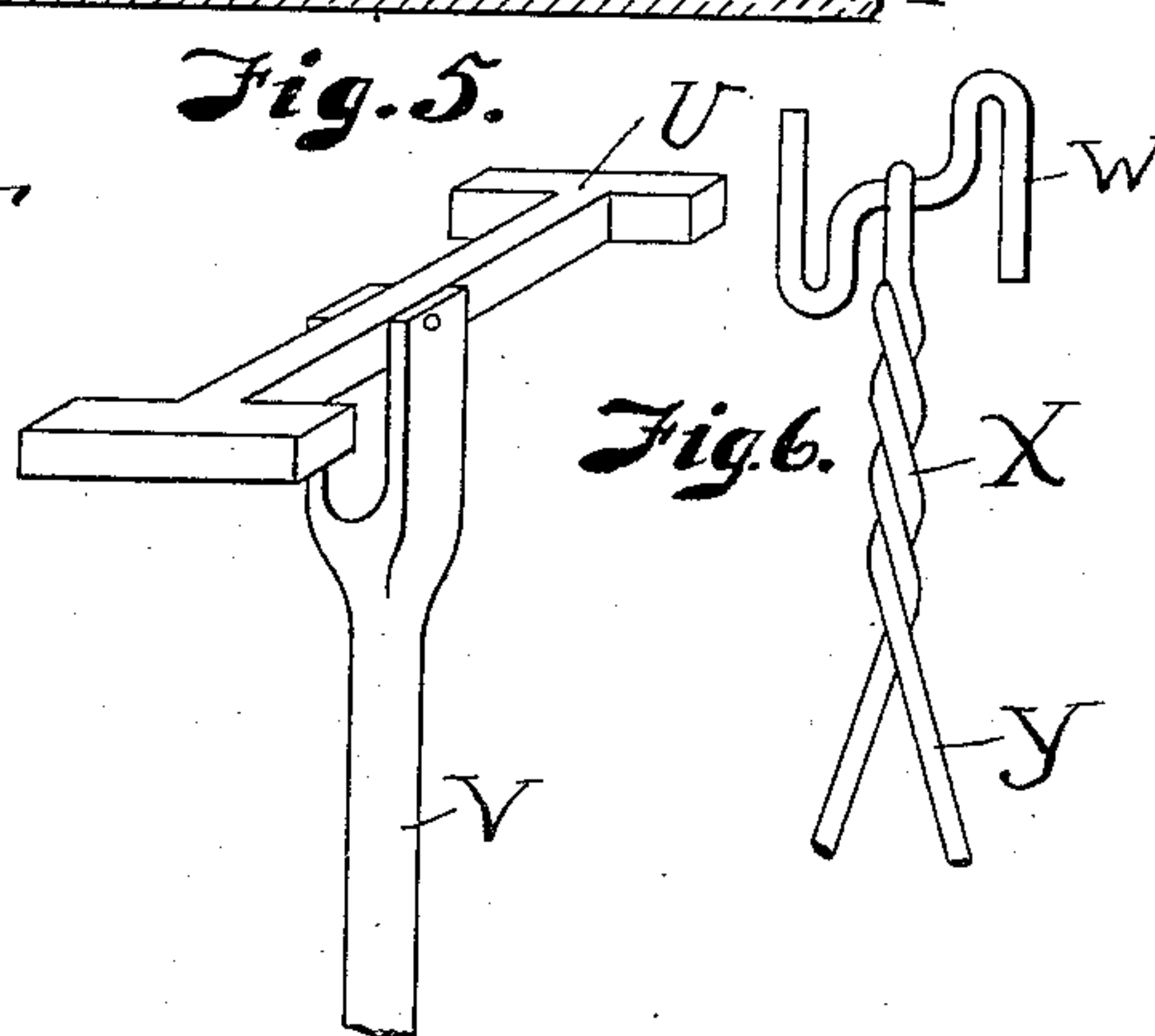
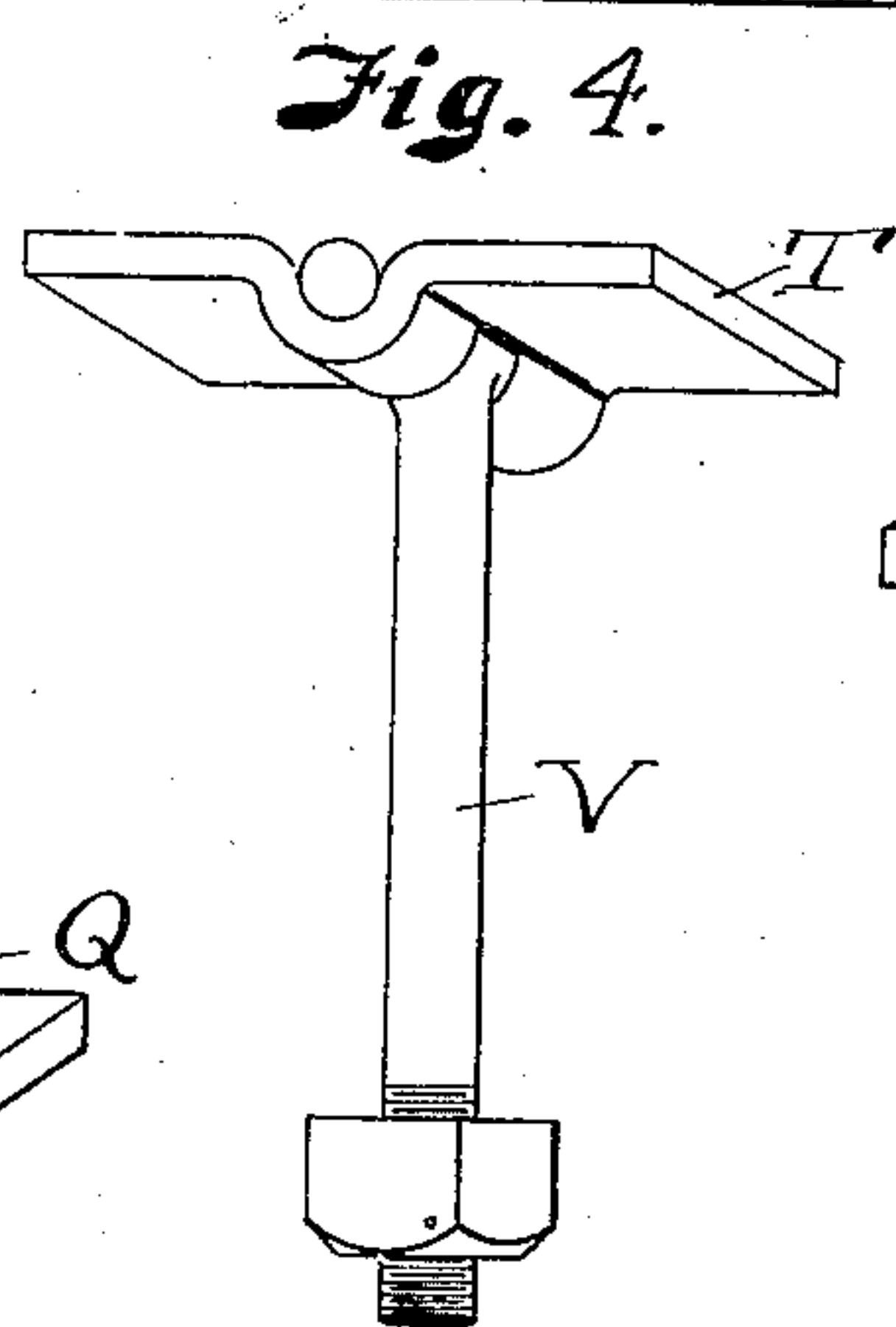
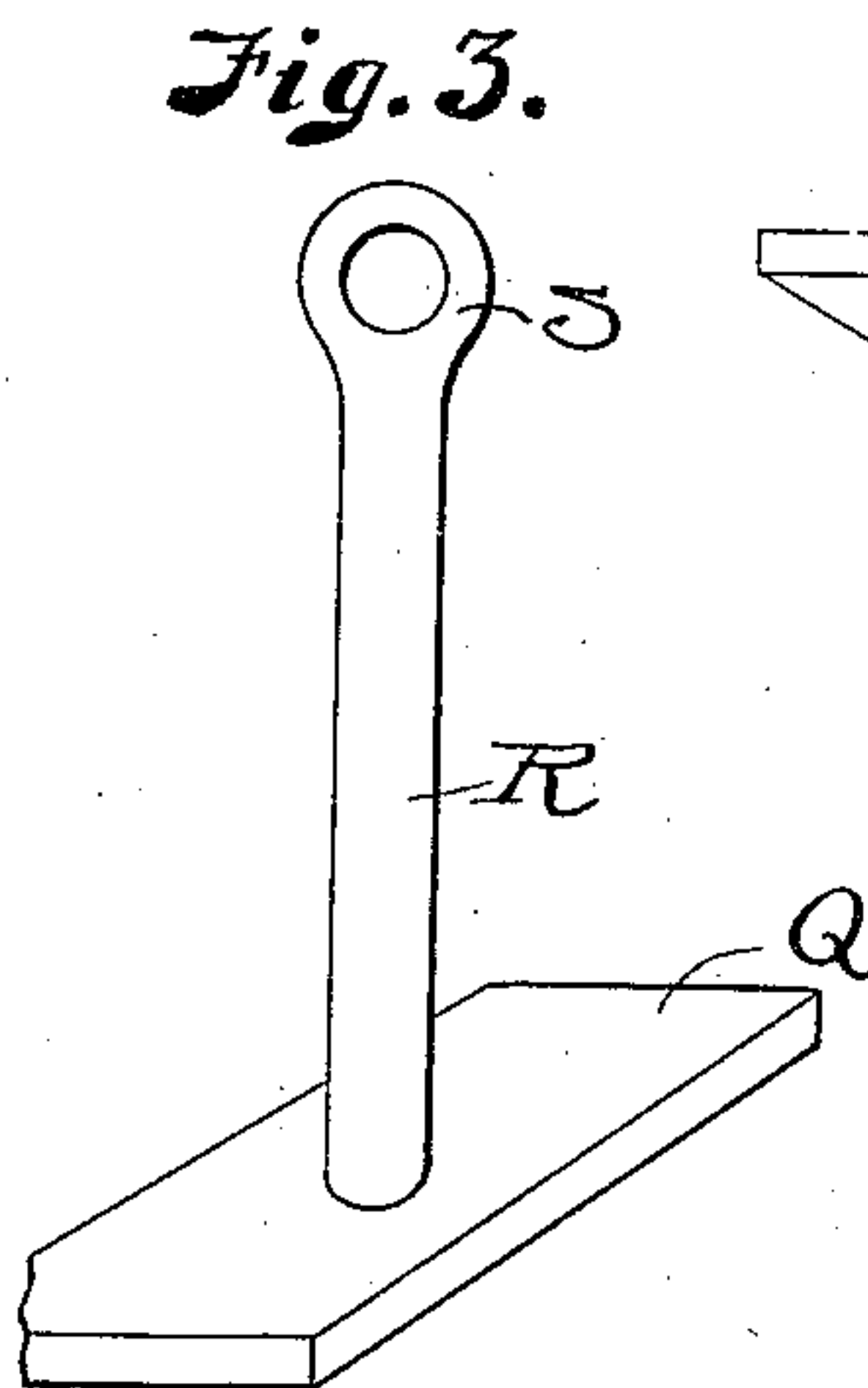
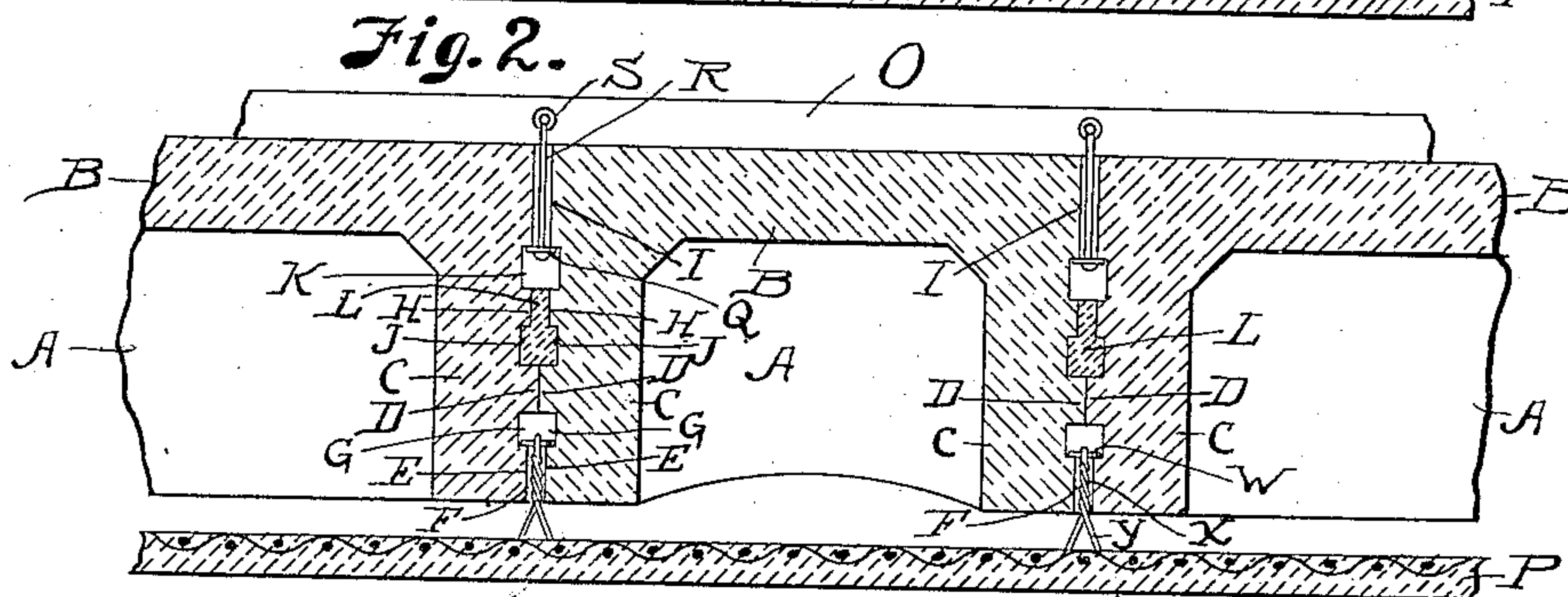
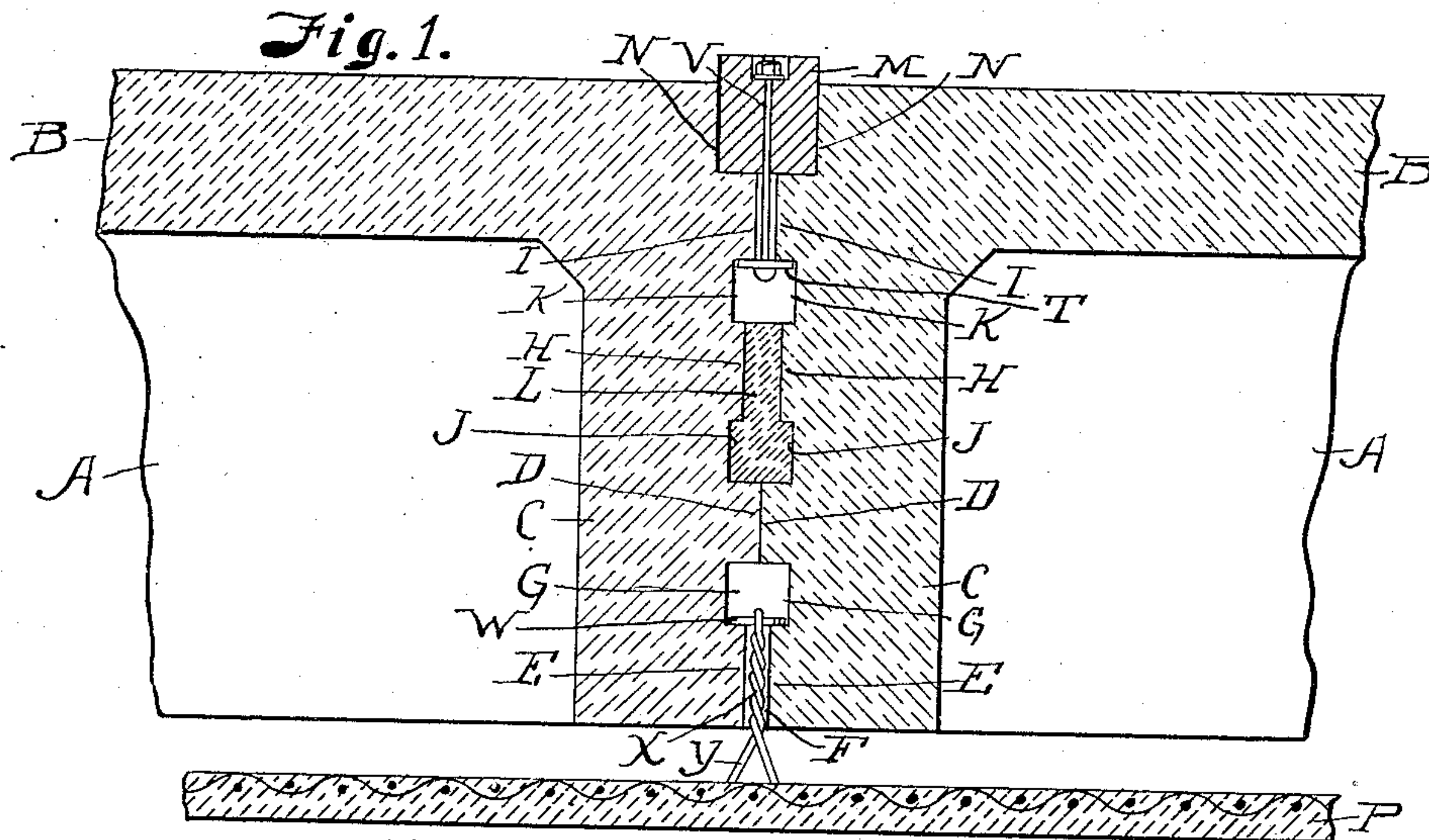


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CONCRETE FLOOR CONSTRUCTION.
APPLICATION FILED APR. 26, 1909.

966,120.

Patented Aug. 2, 1910.



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WALTHER RASTER, OF CHICAGO, ILLINOIS.

CONCRETE FLOOR CONSTRUCTION.

966,120.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Original application filed June 22, 1908, Serial No. 439,730. Divided and this application filed April 26, 1909. Serial No. 492,286.

To all whom it may concern:

Be it known that I, WALTHER RASTER, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Concrete Floor Constructions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel construction in a concrete floor and consists more particularly in the construction of floor beams, the object being to provide beams which when assembled in a floor provide means for securing floor sleepers, ceilings and the like to the same and provide for the insertion of keys between adjacent beams for the purpose of distributing the load, and consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating this invention: Figure —1— is a fragmentary transverse section of a floor constructed in accordance with my invention. Fig. —2— is a similar section on a slightly reduced scale showing a modification in the construction. Figs. —3—, —4—, —5— and —6— are respectively perspective views of anchors and hangers adapted for use in securing floor sleepers and hanging ceilings and the like from the floor.

The present application is a division of the application filed by me June 22, 1908, Serial No. 439,730 covering improvements in reinforced concrete constructions.

The object of the present invention is to provide floor beams provided on their meeting faces with ribs and grooves respectively whereby ducts and slots are formed between adjacent beams in which anchors and hangers are received by means of which floor sleepers, ceilings, etc., are removably secured to the floor.

The beams A are preferably U-shaped in cross-section and inverted so as to provide the slab B and depending flanges C. The outer faces of the latter are provided between their ends with horizontally disposed ribs D, the free outer faces of which are adapted to abut against each other when the beams are assembled in a floor. Below said

ribs D ribs E of less projection are provided between which when opposed in adjacent beams a slot F is formed which extends longitudinally between the same. Between the ribs D and E grooves G are provided which when opposed in adjoining beams form what may be termed ducts extending longitudinally of the beams in which the heads of hangers are received, the latter being adapted to rest upon the upper faces of the ribs E and be supported thereby.

Above the ribs D two pairs of ribs H and I respectively are provided which also project a lesser distance than said ribs D and between the opposing faces of which longitudinal slots are formed. Grooves J and K respectively separate the ribs H from the ribs D and the ribs I from the ribs H thus forming additional ducts extending longitudinally of the beams and between opposing faces thereof. The ducts formed between the opposing grooves J and the slots formed between opposing ribs H are adapted to be filled with plastic cement which, when set, forms a key L extending the entire length of the beams locking the same together and serving as a means for distributing stresses from each beam to the next adjacent beams. The heads of anchors are adapted to be received in the ducts formed between opposing grooves K and are adapted to engage the lower faces of the ribs I, the shanks of said anchors passing through the slot between opposing ribs I and being secured to the sleepers M upon which the wood flooring is adapted to be laid. As shown in Fig. —1— the sleepers M may extend longitudinally of the beams and are received in recesses N in the upper corners of opposing beams, or as shown in Fig. —2— the sleepers O may extend transversely of the floor beams.

By mounting the floor sleepers as shown in Fig. —1— I gain very decided advantages in that the said sleepers cover the slots between adjacent beams and further that the said sleepers may be so disposed as to leave less space between the slabs of the beams and the lower face of the wood flooring to be filled with cinders or sound deadening material. Thus the cost of filling and the weight and thickness of the floor are all materially reduced without incurring any disadvantage to offset the same. I am also enabled to employ heavier floor sleepers

than are ordinarily employed thus affording far better anchorage for the flooring.

By means of my construction the floor sleepers are easily and quickly secured upon the upper faces of the beams while the ceiling P is easily hung therefrom at any suitable distance below the free ends of the flanges C of the beams, and, as will be obvious, conduits of any kind may be similarly hung from said beams between said ceiling and the free ends of said flanges C.

Any desired style of hanger or anchor may be employed and in Figs. —3—, —4—, —5— and —6— I have shown various forms of construction of the same suited to my purpose. The device shown in Fig. —3— consists of an oblong plate Q to which the shank R is secured, the latter being provided at its free end with an eye S through which a nail or screw or the like is adapted to be passed into the sleeper to be anchored thereby. The width of the plate or head Q is slightly less than the width of the slot through which the same is adapted to be passed, but the length of said plate is greater than the width of said slot so that after passing the same through the slot and turning it through an arc of 90 degrees the end portions of said plate will engage the lower faces of the ribs I and thus prevent said head from being withdrawn. I have illustrated the manner of use of this form of anchor in Fig. —2—.

In Figs. —4— and —5— I have shown two different forms of hangers or anchors in each of which the heads T and U respectively are pivotally secured to the shank V, said heads being adapted after insertion through the slots to be turned on their pivots so as to engage the upper faces of the ribs E or the lower faces of the ribs I in order to thus securely hold said shanks B against withdrawal.

In Fig. —6— I have shown a suitable device made of wire in which a substantially Z-shaped head W is pivotally mounted between its ends upon one end of a shank X composed of a wire bent between its ends both the free end portions Y thereof being adapted to be passed through the perforations in metal lath or bent around conduits or the like to support the latter. The said head W is adapted to be inserted through the slot when disposed in the position shown in Fig. —6— and by then turning the shank X through an arc of 90 degrees the free legs of the head W are thrown into engagement with the upper faces of the ribs E whereupon by releasing said shank said head will turn through an arc of 90 degrees so that said free legs will lie flatly upon said upper faces of said ribs E and thus anchor the device.

By means of this construction it will be noted that floors, ceilings, conduits, etc., are

easily and quickly secured and may be relatively easily and quickly removed and replaced for purposes of repair or alteration.

I claim as my invention:

1. In a concrete floor, floor beams disposed side by side, at least one of the opposing faces of adjacent beams being equipped with ribs of varying projection disposed at different elevations, the rib of greatest projection contacting on its outer face with the adjacent beam, there being a longitudinal groove between adjacent ribs, access being had to said groove through a slot formed between a rib of lesser projection and the opposing face of the adjacent beam, and fastening devices having enlarged heads adapted to pass through said slot into said groove and into engagement with the wall of the latter nearest the mouth of said slot, said fastening devices adapted to secure other devices to said floor.

2. In a concrete floor, floor beams each provided on at least one of its outer side faces with a plurality of horizontal ribs disposed at different elevations and varying in projection from said face, the rib of greatest projection contacting on its free face with the next adjacent beam, there being continuous longitudinal grooves between adjacent ribs and slots formed between the ribs of lesser projection and the next adjacent beam above and below the rib of greatest projection through which access is had to said grooves, said rib of greatest projection constituting a partition wall between the free spaces above and below the same and between adjacent beams, and fastening devices having enlarged heads adapted to pass through said slots and engage the shoulders formed by the horizontal faces of the ribs of lesser projection, said fastening devices adapted to secure other devices to the floor.

3. In a concrete floor, floor beams each provided on its outer side faces with longitudinal ribs of varying projection disposed at different elevations, the ribs of greatest projections of adjacent beams abutting against each other, there being free spaces between adjacent beams to which access is had through slots formed between opposed ribs of lesser projection, sleepers disposed on said floor, and anchors having enlarged heads entering said slots and engaging the shoulders formed by the lower faces of opposed ribs of lesser projection and at their free ends engaging said sleepers to secure the latter.

4. In a concrete floor, floor beams each provided on its outer side faces with longitudinal ribs of varying projection disposed at different elevations, the ribs of greatest projection of adjacent beams abutting against each other, there being free spaces between adjacent beams above and below said ribs of greatest projection to which

access is had through the slots formed between opposed ribs of lesser projection, and hangers having enlarged heads adapted to pass through the lowermost slots and engage the shoulders formed by the horizontal upper faces of the lowermost ribs of lesser projection, said hangers being adapted to engage devices to be suspended from said floor.

10 5. In a concrete floor, floor beams each provided on its outer side faces with longitudinal ribs of varying projection disposed at different elevations, the ribs of greatest projection of adjacent beams abutting
15 against each other, there being free spaces between adjacent beams above and below said ribs of greatest projection to which access is had through the slots formed between opposed ribs of lesser projection, and
20 hangers and anchors respectively each having enlarged heads adapted to pass through said slots and engage the shoulders formed by the horizontal faces of said ribs of lesser

projection, said hangers being adapted to engage devices to be suspended from said floor and said anchors being adapted to engage and secure devices upon the floor, substantially as described. 25

6. In a floor composed of a plurality of concrete beams disposed side by side, sleepers sunk into recesses in the upper corners of said beams, there being slots between adjacent beams covered by said sleepers, said slots being laterally enlarged below their mouths, and anchors having enlarged heads engaging the upper walls of the enlarged portions of said slots and engaging said sleepers to secure the latter. 30 35

In testimony whereof I have signed my name in the presence of two subscribing witnesses. 40

WALTHER RASTER.

Witnesses:

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M. M. BOYLE.