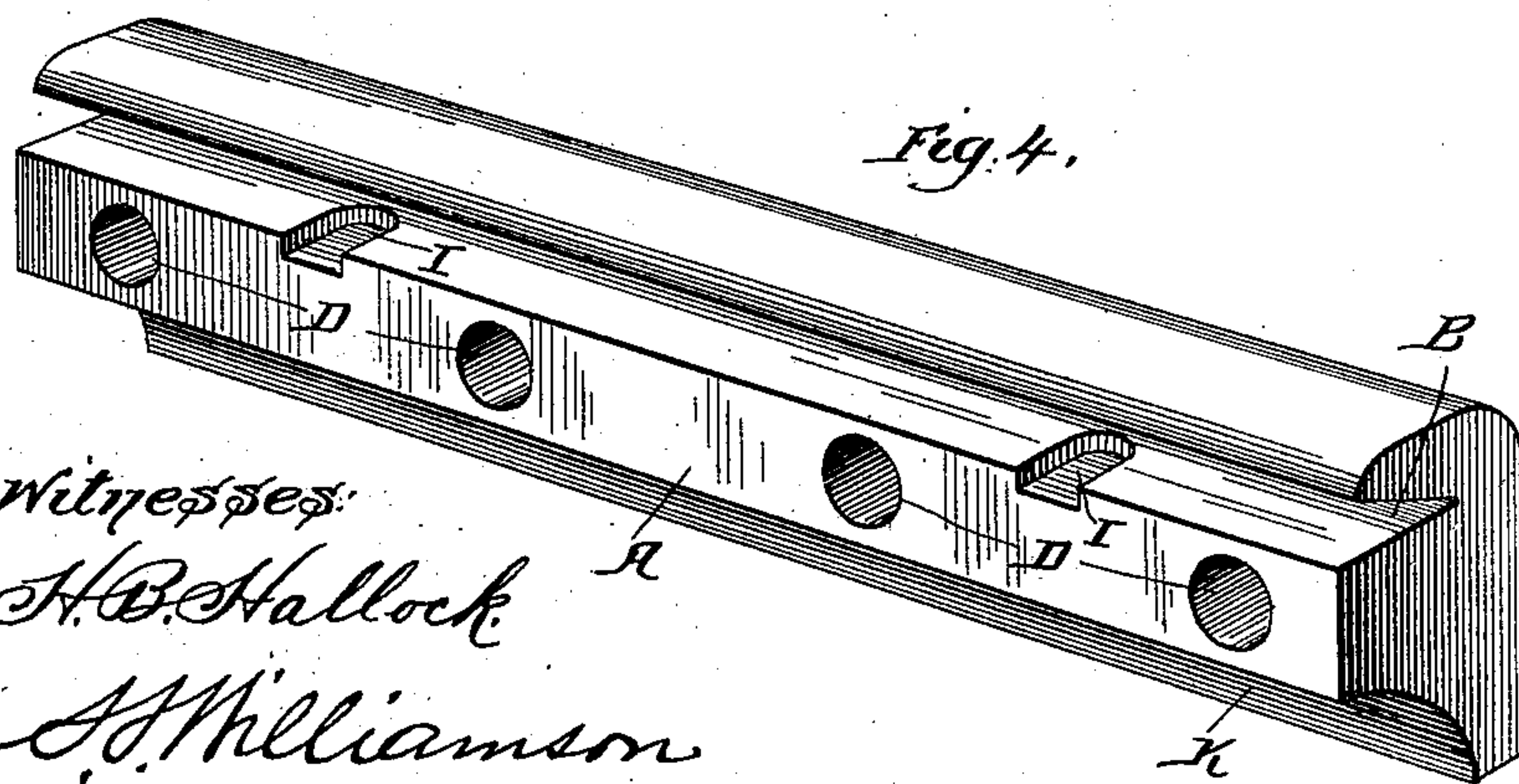
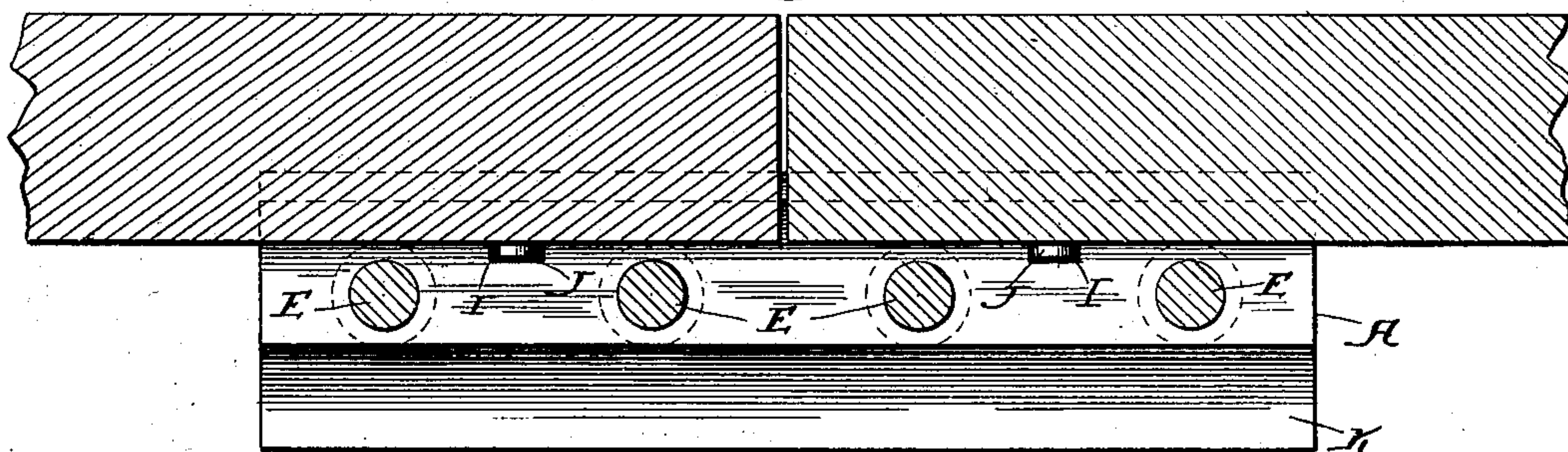
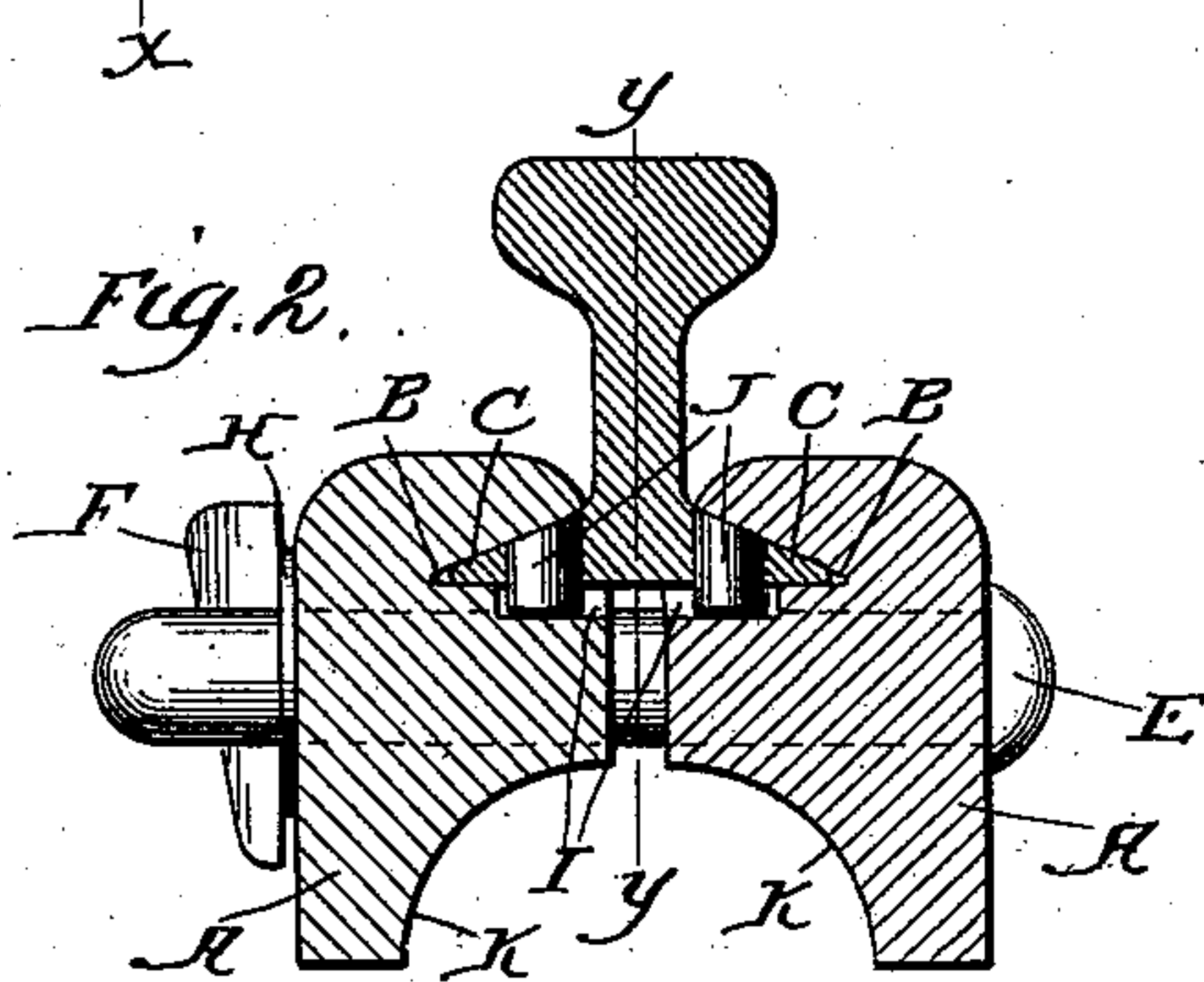
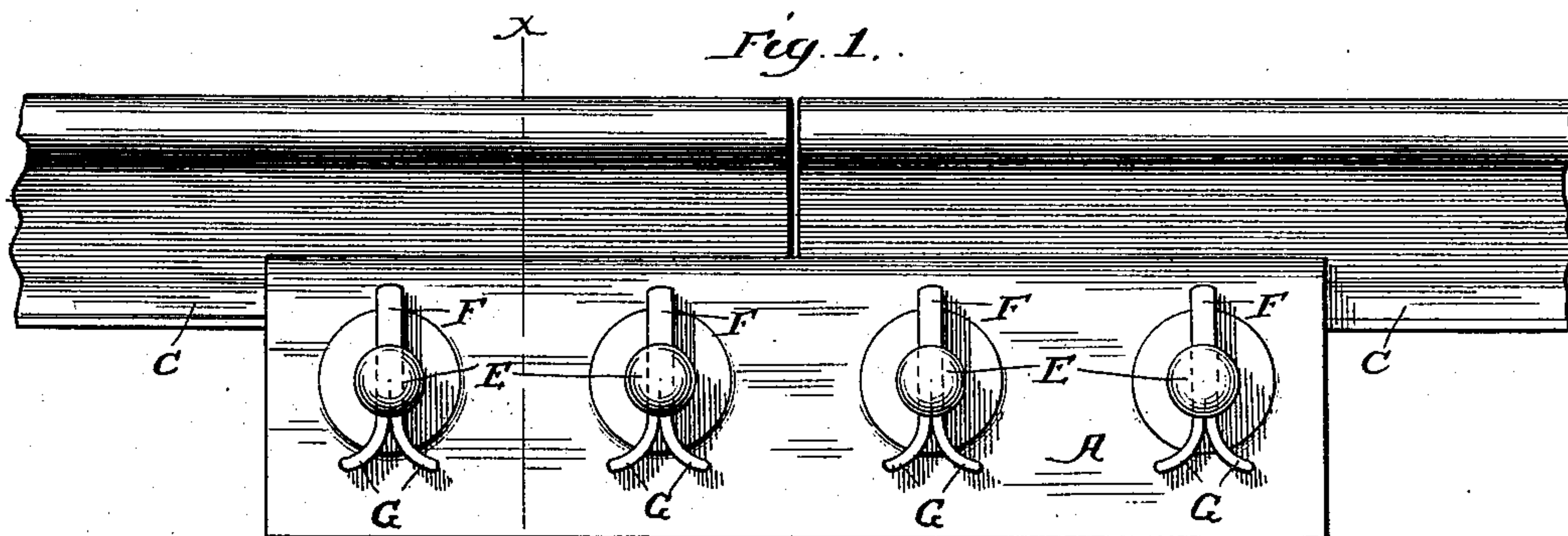


(No Model.)

G. W. BENNUM.
RAILWAY JOINT.

No. 601,220.

Patented Mar. 22, 1898.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE W. BENNUM, OF GEORGETOWN, DELAWARE, ASSIGNOR OF THREE-EIGHTHS TO EDWARD RUSHTON, WILBUR F. TUNNELL, ROBERT H. FOOKS, FRANK M. JONES, ANDREW J. LYNCH, JOHN C. SMITH, AND ALFRED B. ROBINSON, OF SAME PLACE.

RAILWAY-JOINT.

SPECIFICATION forming part of Letters Patent No. 601,220, dated March 22, 1898.

Application filed June 18, 1897. Serial No. 641,320. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BENNUM, a citizen of the United States, residing at Georgetown, in the county of Sussex and State of Delaware, have invented a certain new and useful Improvement in Railway-Joints, of which the following is a specification.

My invention relates to a new and useful improvement in railway-joints, and has for its object to provide a simple and effective device of this description by means of which the meeting ends of two railway-rails may be securely clamped and held in perfect alignment, while at the same time affording said ends the necessary support to prevent them from sagging when not resting upon a cross-tie, and also to provide means for preventing the rails from crawling lengthwise; and a further object of my invention is to facilitate the mending of rails that have been broken or the placing of short lengths in a line of tracks, as well as to greatly facilitate the removal of a rail when occasion requires and the substitution of another therefor.

With these several ends in view this invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the meeting ends of two rails, showing my improved joint-block applied thereto; Fig. 2, a section at the line *x x* of Fig. 1; Fig. 3, a section at the line *y y* of Fig. 2, and Fig. 4 a perspective of a section of the joint-block.

In carrying out my invention as here embodied I construct the joint-block A of two sections by casting, forging, or rolling, and these two sections are counterparts of each other in all respects, and therefore do not have to be rights and lefts, but either one thereof will fit upon either side of the rail.

Each of these sections has a wedge-shaped groove B formed lengthwise thereof and adapted to receive one side of the flange C of the rails, as clearly shown in Fig. 2, and said grooves are preferably somewhat deeper than said flanges in order that the latter may not reach the bottom thereof, and consequently permit the increased hold upon the rail when drawn tightly against the same. A series of holes D (here shown as four in number, but which may be of any desired number) are formed through the blocks at a point below the flanges of the rail, and through these holes are passed the bolts E, which latter have formed in their ends slots for the passage of the keys F, said keys being wedge shape and preferably having their ends split, as indicated at G, in order that when they have been driven home they will be held against retrograde movement by the supporting of their ends, as clearly shown in Fig. 1, and in order that a firm bearing may be had by these keys washers H are interposed therebetween and the face of the block.

While I have here shown the bolts as held in place by the wedge-shaped keys, it is obvious that the same result may be had by nuts run upon said bolts, the latter being threaded for the reception of such nuts; but on account of the impossibility of the wedge-shaped split keys being jarred from either position by the vibrations of the track they have been found to be very serviceable for this purpose.

Since there is often a tendency for the rails of a track to crawl either by expansion or retraction or from the fact that the track is placed upon a grade, I have provided against this independent movement of the rails by forming notches I in the sections of the block, in which the pins J, projecting downward from the flanges of the rails, are adapted to fit, and these pins may be either formed upon the rails or they may be secured within the same by forming holes therethrough or riveting or screwing said pins therein; but I do not wish to be limited to the method of securing these pins, as the only essential feature is that they be made rigid with said rails.

From the foregoing description it will be

seen that when the meeting ends of two rails are clamped by a block made in accordance with my improvement the bolts passing through the sections of said block below the flanges of the rails tend to draw the blocks inward at their lower ends, thereby causing a gripping or pinching action upon the flanges of the rails, which so increases the hold of the block upon said rails as to preclude the possibility of the latter working loose. Another feature of this arrangement is that the bite of the sections of the block upon the flanges of the rails is increased in proportion to the strain upon the bolts, as a certain amount of leverage is provided in favor of the bolts, so that a tendency to separate the sections of the block from the flanges of the rails does not bring an undue strain upon the bolts.

In practice a joint made by my improved block will not only serve to hold the rails in perfect alinement, which is necessary for the proper construction of a railway, but will also give to the rails a certain amount of support on account of the length of the block and the fact that it grips the rails throughout its length and thus forms practically a continuous rail, since the block is of greater strength than the rails. This fact permits the joint to be placed between two cross-ties, or, when desired, it may be placed directly upon a tie by properly cutting away the latter. The sections of the blocks are here shown as being concaved lengthwise, as indicated at K, the object of which is to lighten the blocks, while at the same time permitting the setting in of ballast, so as to assist in preventing a side-wise movement of the track when used between two cross-ties.

Among the advantages of my improvement is the fact that holes do not have to be formed in a web of the rails for the passage of the joint-bolts, since these bolts pass beneath the rails, thus avoiding the labor and expense of forming such holes, and one of the advantages of this is that short or broken rails may be inserted within a line of track without having to transport the same to a locality where the drilling may be accomplished by machinery or the tedious operations performed of drilling the bolt-holes by hand. For this kind of work when an entire track is fitted with my improved joint-block the drilling of holes for the passing of the pins J may be dispensed with, since the remainder of the track will serve to prevent any undue crawling of the short sections of rails which may be inserted therein, and when this method is followed the insertion of a short length of rails or the mending of a broken rail will be exceedingly simple and quickly accomplished, as it will then only be necessary to cut the rail to the proper length, place it in position, clamp the section of the block thereon, and spike it to the tie.

In the manufacturing of joints made in accordance with my improvement considerable advantage is had from the fact that they may be rolled on account of the peculiar shape of each section, thus greatly reducing their cost, while at the same time providing a superior block.

I do not wish to be limited to the exact details of construction of the shape of the sections of the joint-block, as these are minor details which may be altered to suit the requirements of fancy or the particular work of persons using the blocks.

Having thus fully described this invention, what is claimed as new and useful is—

1. The herein-described combination, comprising the rails the pins adapted to be passed through the flange of the rail, and the joint-block, consisting of two sections each having a longitudinal wedge-shaped groove with notches for the reception of the pins and means for causing the sections to clamp the meeting ends of the rails, as and for the purpose described.

2. As a new article of manufacture the joint-block consisting of two sections each having a wedge-shaped groove for the reception of the side flange of a rail, and notches formed in the walls of the groove for the reception of pins passed through the flange of the rail, as and for the purpose described.

3. The herein-described combination of the meeting ends of two rails, the block A composed of two sections which are counterparts of each other, said sections having bolt-holes formed therethrough and notches formed therein, pins projecting downward from the rails for fitting said notches, bolts passed through the holes, washers fitted over the ends of the bolts, and split keys passed through slots in the bolts and driven against the washers, as specified.

4. The herein-described combination of a joint-block consisting of two sections, each section having a longitudinal wedge-shaped groove B, holes therethrough for the passage of bolts, notches formed therein for the reception of pins, and concaved at its lower portion, substantially as and for the purpose set forth.

5. In combination, the rails, the joint-blocks consisting of two sections, each having a wedge-shaped groove for the reception of the side flange of the rails, and notches in the walls of the groove, pins adapted to be passed through the flange of the rails into the notches, as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

GEORGE W. BENNUM.

Witnesses:

S. S. WILLIAMSON,
JOS. S. CAHALL.