

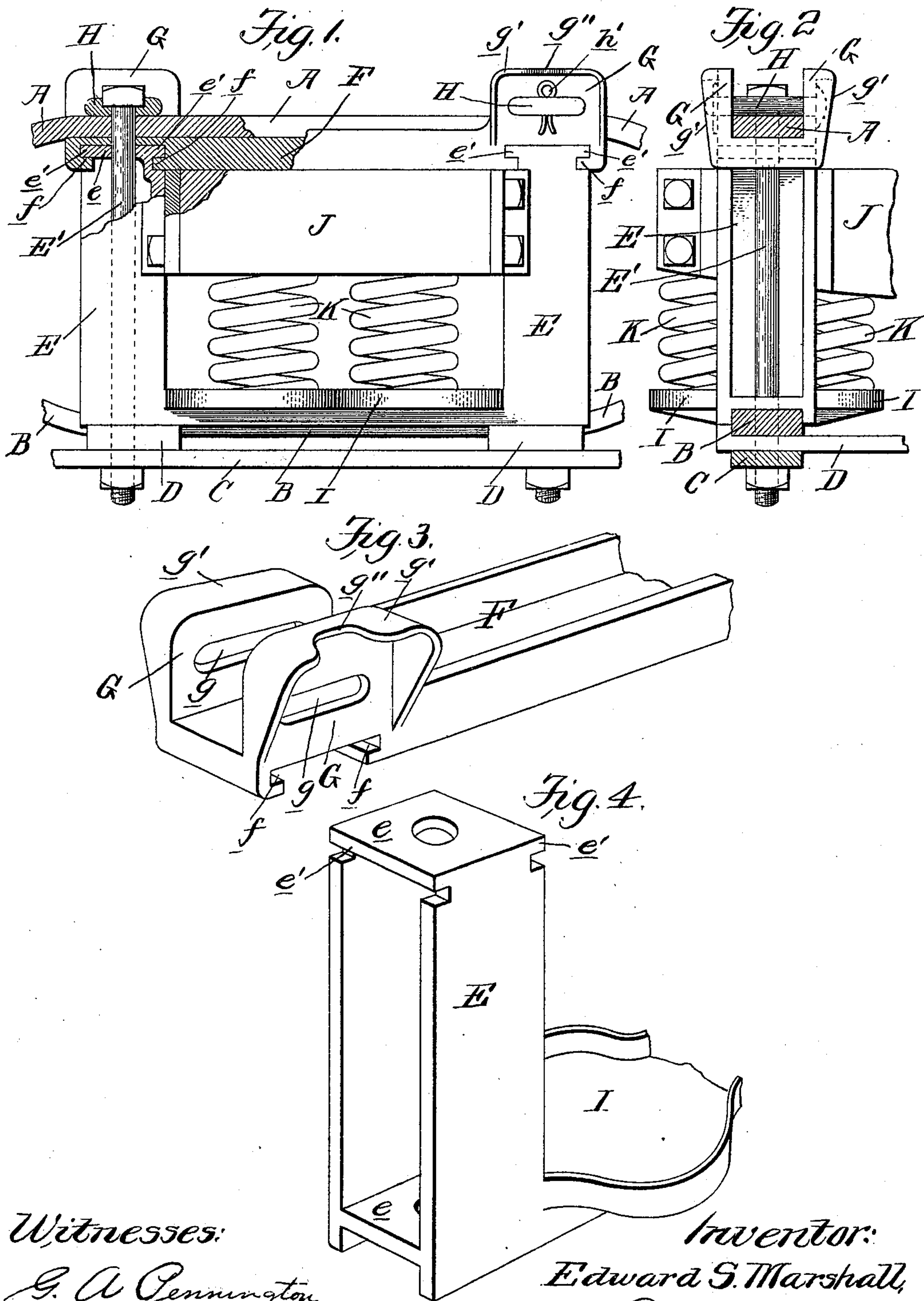
(No Model.)

2 Sheets—Sheet 1.

E. S. MARSHALL.
TRUCK END CASTING.

No. 587,266.

Patented July 27, 1897.



Witnesses:

G. A. Pennington
J. P. Conway

Inventor:

Edward S. Marshall,
by Paul Bakewell
his atty

(No Model.)

2 Sheets—Sheet 2.

E. S. MARSHALL.
TRUCK END CASTING.

No. 587,266.

Patented July 27, 1897.

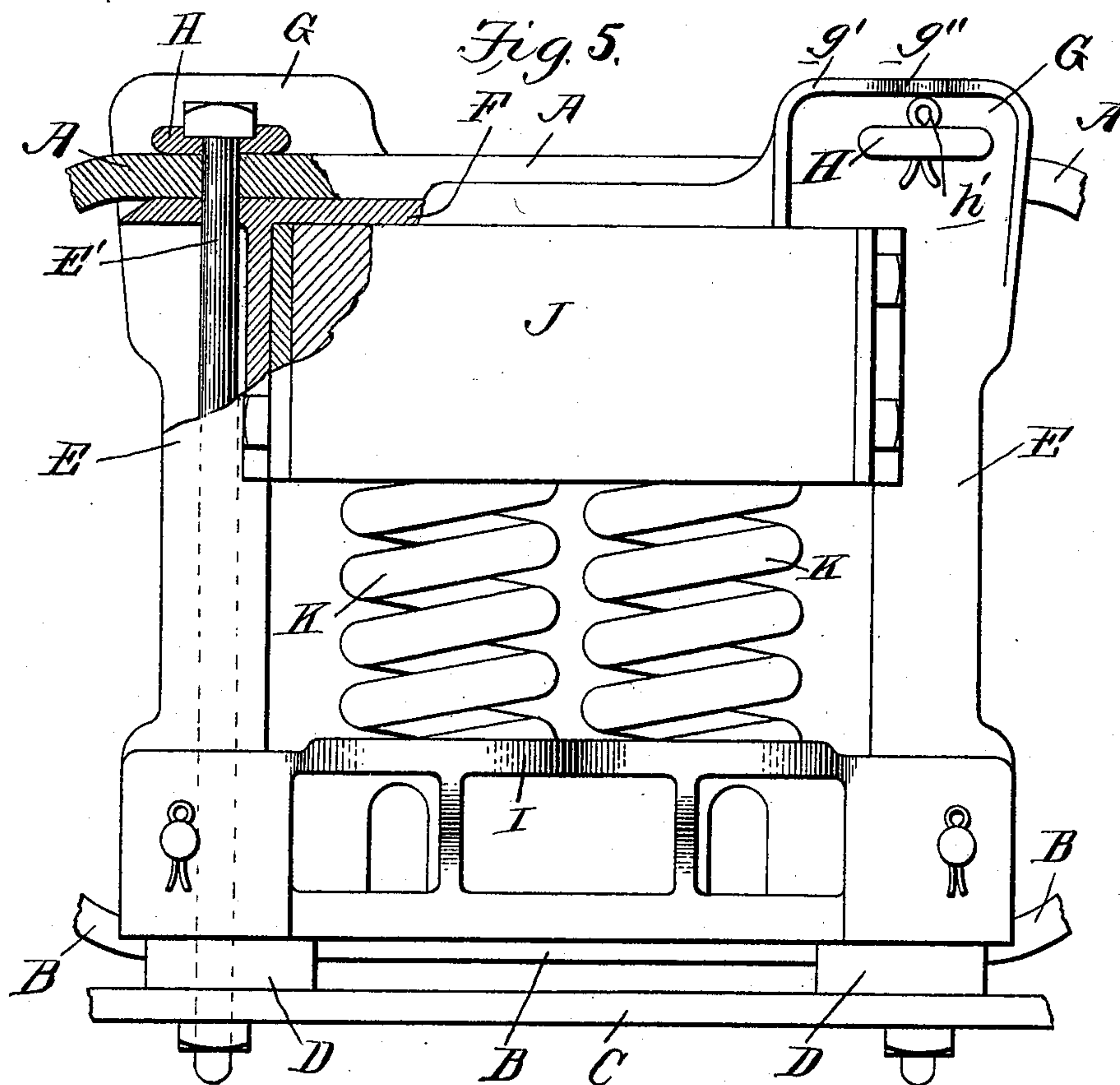


Fig. 6.

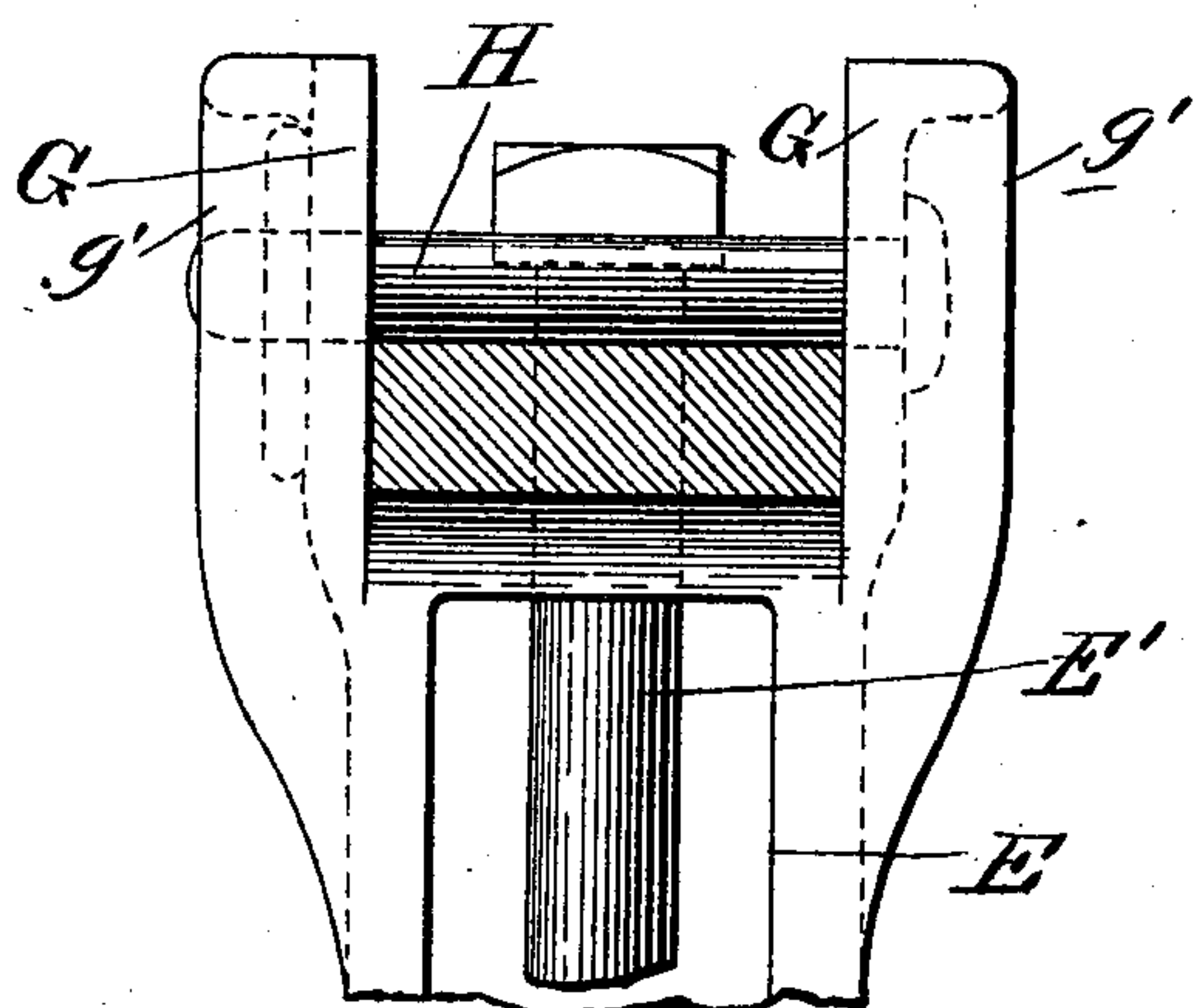
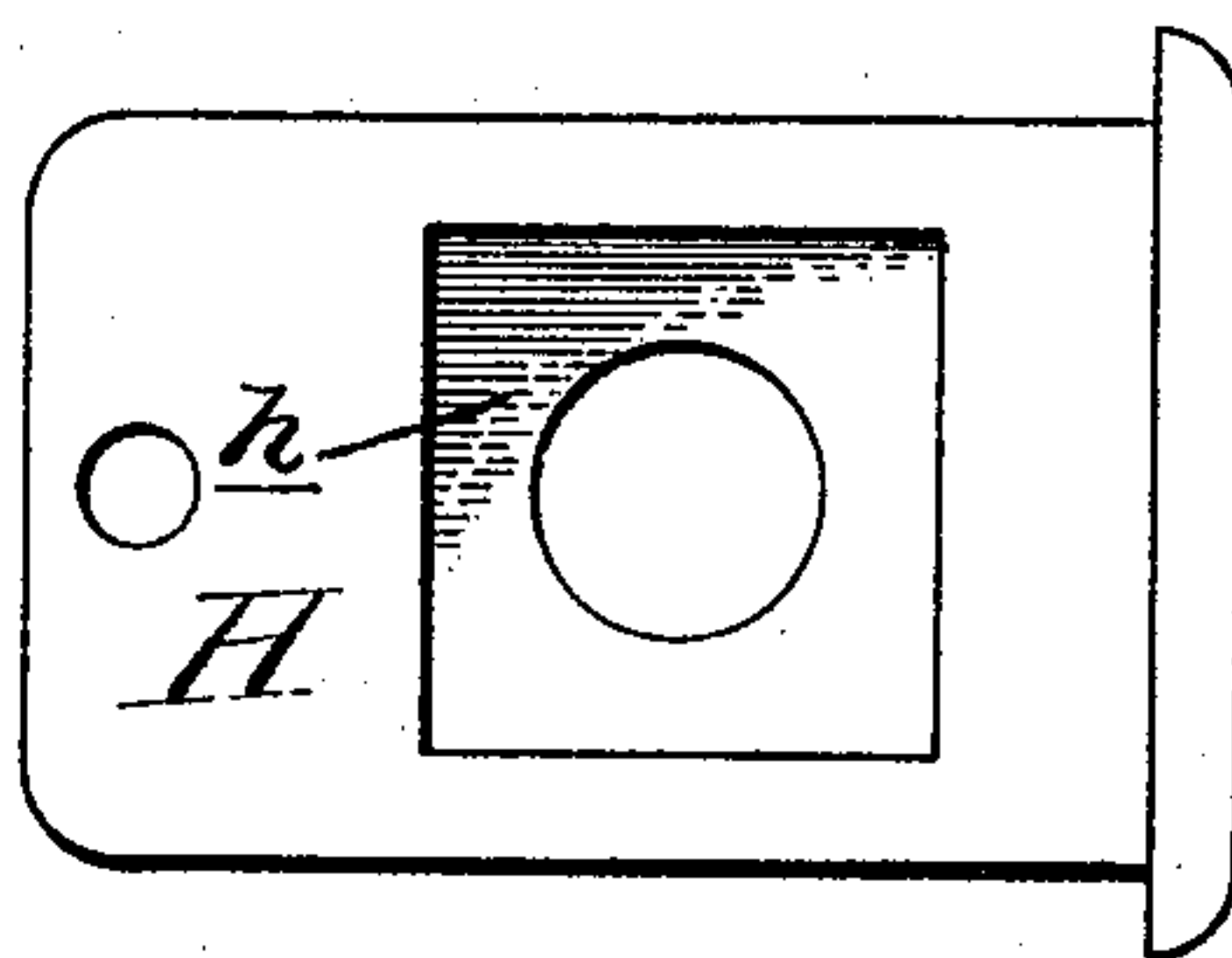


Fig. 7.



Witnesses:
G. A. Pennington,
J. B. Cornwall

Inventor:
Edward S. Marshall,
by Paul Bakewell
his atty

UNITED STATES PATENT OFFICE.

EDWARD S. MARSHALL, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE
MISSOURI RAILWAY EQUIPMENT COMPANY, OF SAME PLACE.

TRUCK END CASTING.

SPECIFICATION forming part of Letters Patent No. 587,266, dated July 27, 1897.

Application filed April 29, 1897. Serial No. 634,383. (No model.)

To all whom it may concern:

Be it known that I, EDWARD S. MARSHALL, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Truck End Castings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevational view of my improved truck end casting, parts being shown in section. Fig. 2 is an end view of my improved casting. Fig. 3 is a fragmentary detail view in perspective of one end of the top cross-bar. Fig. 4 is a detail view of a column-guide and a portion of the spring-seat. Fig. 5 is an elevational view of a modified form of end casting, showing the adaptation of the key-seat for the column-bolt. Fig. 6 is an enlarged end view. Fig. 7 is a detail view of the key-seat.

This invention relates to a new and useful improvement in truck end castings; and it consists in the construction, arrangement, and combination of the several parts, all as will hereinafter be described, and afterward pointed out in the claims.

Generally stated, this invention may be said to be an improvement upon the truck end casting forming the subject-matter of United States Letters Patent No. 569,964, dated October 20, 1896, and granted to the American Railway Equipment Company, of East St. Louis, Illinois, assignee of Thomas Eubank.

In the above-mentioned patent the top cross-bar is cast integral with the column-guides, while the spring-seat is formed separate and bolted to the column-guides after the bolster and springs are in position.

In my invention the spring-seat is cast integral with and forms substantially the bottom cross-bar for the column-guides, while the top cross-bar is cast separate and is adapted to be interlocked at its ends with cooperating parts upon the upper ends of the column-guides, thus making a solid end casting which has practically the virtues of being in one piece.

I also contemplate the substitution of keys in lieu of the bolts which pass through the ears on the upper ends of the column-guides,

said keys affording seats for the reception of the heads of the column-bolts, and an extended bearing-surface across the top arch-bar, and thereby serve to retain the arch-bar in proper relation to its seat in the top cross-bar should the column-bolt become broken or displaced.

In the drawings, A indicates the top arch-bar, B the lower arch-bar, C the tie-rod, and D the cross tie-rod, all of usual or well-known construction.

E indicates the column-guides, which are formed hollow and open at one side, (the outer,) while the top and bottom are closed by webs *e*, which are perforated to permit of the passage of the column-bolts *E'* therethrough. The upper ends of these column-guides are recessed or notched, as shown, thereby forming ribs or flanges *e'*, which are adapted to cooperate with converse seats *f* in the upper cross-bar F.

G indicates ears projecting upward from the ends of cross-bar F, said ears being slotted, as at *g*, for the reception of a flattened key H, which key is formed with a seat *h*, in which the head of the column-bolt is adapted to fit snugly, so that it is prevented from turning.

Ears G are formed with strengthening webs or flanges *g'*, the flange on one of said ears being cut away, as at *g''*, to permit of the passage of a cotter-pin *h'*, which is adapted to be inserted through a perforation in the end of key H to lock said key in position.

I indicates the spring-seat for supporting the bolster-springs, said spring-seat being cast integral with the column-guides and forming substantially the bottom cross-bar of the end casting, said casting being substantially in the form of a letter U. In the under side of the spring-seat is formed a seat for the lower arch-bar, said arch-bar seat being extended beyond the spring-seat to beneath the column-guides.

J indicates the truck-bolster, and K the bolster-springs.

In assembling the parts above described the tie-rod C, cross tie-rods D, and lower arch-bar are placed in position. The U-shaped casting is now placed in position above the arch-bar, the arch-bar fitting snugly in the seat in the under side of the spring-seat and lower ends of the column-guides. The bolster and springs are then placed in position, the springs

being seated upon the spring-seat and the bolster fitting between the column-guides. Pressure is now brought to bear upon the bolster to compress the springs to permit the
 5 bolster to pass below the plane of the upper ends of the column-guides, when the top cross-bar may be slid into position, as shown in Fig. 1. After the top cross-bar is secured in position the top arch-bar is fitted in its seat
 10 in the upper side of the cross-bar, and the keys H are then introduced through their respective slots in the ears G and secured by the cotter-pins h'. The column-bolts are now inserted—that is, passed downward through
 15 registering openings in the key-seats, top arch-bar, webs of the column-guides, and lower arch-bar, cross tie-rods, and tie-rod—until the head of the bolt fits snugly in the key-seat, whereby the bolt is prevented from
 20 turning. A suitable nut is then screwed upon the lower ends of the column-bolts and turned up against the tie-rod until the parts are tightly locked against independent movement.

25 From the foregoing description it will be seen that an end casting is produced which is simple, compact, and when assembled possesses the virtues of a one-piece casting, thus obviating the use of through-bolts; also, the
 30 key-seat, in addition to acting as a lock-nut for the column-bolt, presents an extended bearing-surface for the top arch-bar and serves to hold the arch-bar in its proper relation to the end casting should the column-
 35 bolt be removed or become broken.

In Fig. 5 I have shown an adaptation of my key-seat to the form of end casting shown in the herein-mentioned Eubank patent, with the addition of the strengthening-flanges for
 40 the ears G.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my improved end casting can be made and substituted for those herein
 45 shown and described without in the least departing from the nature and principle of the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent
 50 of the United States, is—

1. The combination with the arch-bars of a truck, of column-guides, an integral cross-bar connecting the lower ends of said column-guides, said cross-bar comprising a spring-
 55 seat and being formed with a seat for the lower arch-bar, and a removable cross-bar adapted to be interlocked with the upper ends of the column-guides, said cross-bar being formed with a seat for the top arch-bar;
 60 substantially as described.

2. The combination with the arch-bars of a truck, of column-guides, an integral cross-bar connecting the lower ends of said column-guides, said cross-bar comprising a spring-
 65 seat and being formed with a seat for the lower arch-bar, a removable cross-bar adapted to be interlocked with the upper ends of the

column-guides, said cross-bar being formed with a seat for the top arch-bar, and column-bolts adapted to be inserted through registering
 70 apertures in the arch-bars, top cross-bar and column-guides, to lock said parts in their proper relative positions; substantially as described.

3. The combination with the arch-bars of a truck, of column-guides, an integral cross-bar connecting the lower ends of the column-guides, said cross-bar comprising a seat for the bolster-springs, a seat in the under side
 80 of said spring-seat for the reception of the lower arch-bar, tie-rods and cross tie-rods beneath the lower arch-bar, a removable cross-bar connected to the upper ends of the column-guides, and formed with a seat for the upper
 85 arch-bar, ears on the ends of said cross-bar, keys adapted to be inserted through suitable slots in said ears, said keys being formed with seats for the heads of the column-bolts, and said keys being adapted to retain the upper
 90 arch-bar in its seat, when the column-bolt is removed, and column-bolts; substantially as described.

4. The combination with the arch-bars of a truck, of column-guides, a removable connecting-bar secured to their upper ends, into
 95 which connecting-bar the top arch-bar is seated, slotted lugs or ears extending up from the ends of the connecting-bar, and keys in said slots and above the top arch-bar; substantially as described.
 100

5. The combination with the arch-bars of a truck, of column-guides, a removable connecting-bar secured to their upper ends, into which connecting-bar the top arch-bar is
 105 seated, slotted lugs or ears extending up from the ends of the connecting-bar, keys in said slots and above the top arch-bar, said keys being formed with seats or pockets for the reception of the ends of the column-bolts, a combined cross-bar and spring-seat integral
 110 with the lower ends of the column-guides, said cross-bar being formed with a seat for the lower arch-bar, and column-bolts; substantially as described.

6. The combination with the arch-bars of a truck, of an end casting arranged therebetween, said end casting comprising column-guides, a cross-bar connection between the
 115 upper ends of said column-guides, a spring-seat connecting the lower ends of the column-guides, and lugs extending above the top arch-bar, keys inserted in said lugs and on top of said arch-bar, said keys being formed with a seat or pocket in their upper faces for receiving the heads of the column-bolts, and
 125 column-bolts; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this
 14th day of April, 1897.

EDWARD S. MARSHALL.

Witnesses:

G. A. PENNINGTON,
 HUGH K. WAGNER.