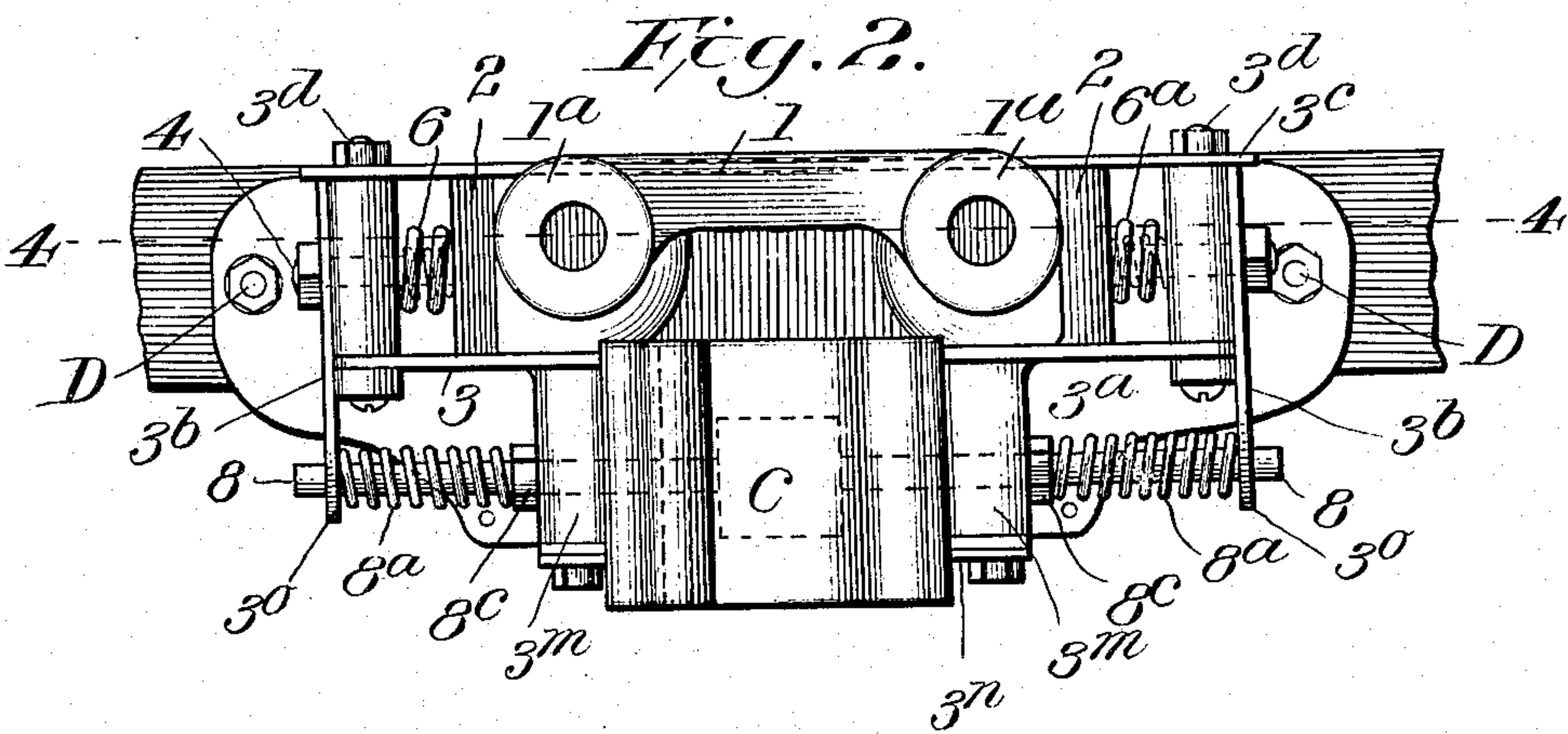
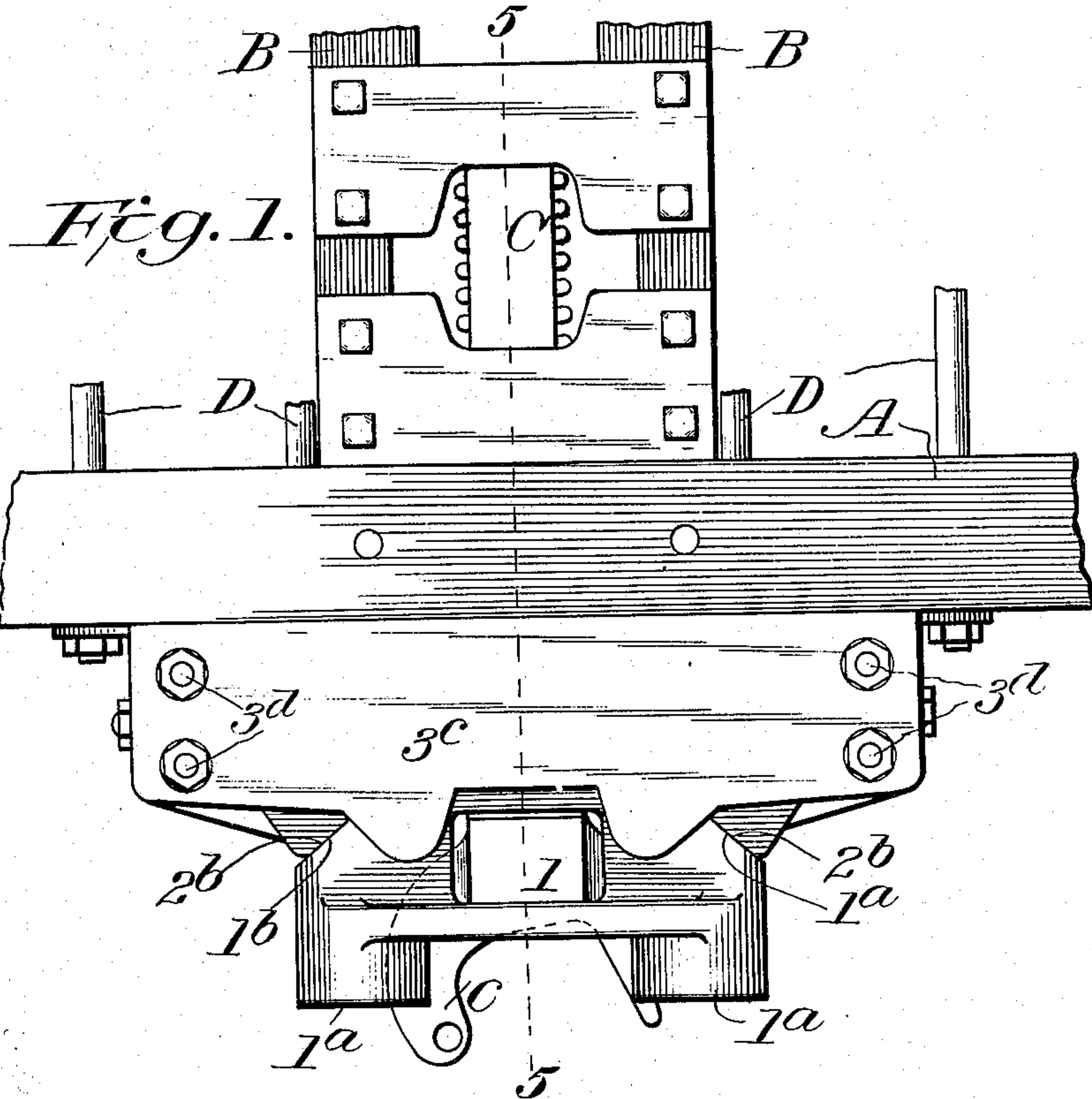


V. V. MOORE.
 FRICTION BUFFER AND HEAD BLOCK FOR RAILWAY CARS.
 APPLICATION FILED MAR. 12, 1909.

930,779.

Patented Aug. 10, 1909.
 2 SHEETS—SHEET 1.



Inventor

V. V. Moore

Witnesses

C. M. Walker
 James Mansfield

Alexander & Lowell
 Attorneys

V. V. MOORE.

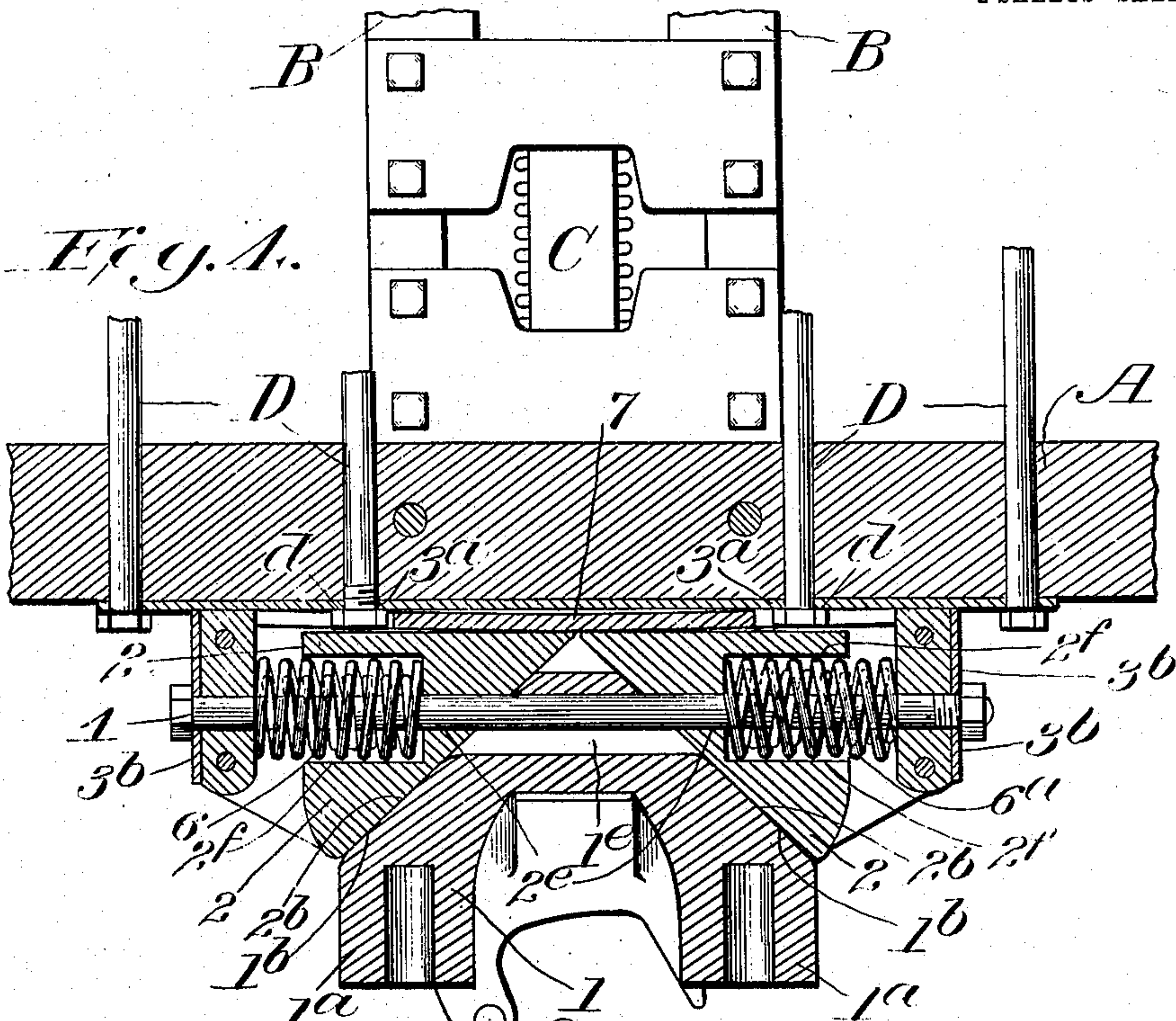
FRICION BUFFER AND HEAD BLOCK FOR RAILWAY CARS.

APPLICATION FILED MAR. 12, 1909.

930,779.

Patented Aug. 10, 1909.

2 SHEETS—SHEET 2.



Witnesses
C. M. Walker.
James Mansfield

Valloo V Moore

By Alexander & Furl
Attorneys

UNITED STATES PATENT OFFICE.

VALLOO V. MOORE, OF BARABOO, WISCONSIN.

FRICTION-BUFFER AND HEAD-BLOCK FOR RAILWAY-CARS.

No. 930,779.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed March 12, 1909. Serial No. 482,940.

To all whom it may concern:

Be it known that I, VALLOO V. MOORE, of Baraboo, in the county of Sauk and State of Wisconsin, have invented certain new and useful Improvements in Friction - Buffers and Head-Blocks for Railway-Cars; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improved friction buffer and head block for railway cars.

The device acts as a buffer to receive the impact and shocks to which the cars are subjected in coupling; and it acts as a head block to keep the forward end of the draw-bar or coupler in proper position and relieve the draw-bar springs of part of the strain of the impact to which the draw-bars are subjected in the act of coupling.

My improved buffer and head block is to be fastened to the end of the car directly over the coupler, and is preferably secured in position by means of the truss-rods which are usually employed in cars and which extend from one end of the car to the other and serve to tie the car frame together longitudinally, as well as to stiffen it in the center.

My buffer receives the initial shock of the cars, as they come together; and after the draw-bar is forced back a certain distance it comes into contact with the central friction block of my buffer which thereupon reinforces the draw-bar springs and relieves them of shock.

In the accompanying drawings I have illustrated a practical embodiment of the invention; and I will now describe the invention more in detail as illustrated in the said drawings, in which—

Figure 1 is a top plan view of the friction buffer and head block as applied to one end of a railway car. Fig. 2 is a front view thereof. Fig. 3 is a side elevation thereof. Fig. 4 is a horizontal section on line 4—4, Fig. 2. Fig. 5 is a vertical section on line 5—5, Fig. 1.

A represents one of the end beams or sills of a car-body or frame; and B the parallel longitudinal bars between which the shank of the draw-bar C and draft rigging may be mounted in the usual manner; the coupler head on the bar may be of the usual type.

Above the coupler head and attached to the outer side of bar A is my buffer device.

This comprises a casting 1 which is shown as provided with two forwardly projecting cylindrical buffer-heads 1^a on its front face which lie in about the position ordinarily assumed by the ordinary buffers on railway cars so that my new buffing devices can co-act with the old style buffers now in use. The block 1 is beveled at each of its rear corners or sides, as shown at 1^b, and the bevel faces 1^b of block 1 fit against correspondingly beveled faces 2^b of wedge blocks 2, which lie at opposite sides of the center line of the car, and together with block 1 are supported upon the bottom plate 3 of a housing or casing attached to the outer face of the end sill A above the coupler head. This housing is provided with end plates 3^b, and top plate 3^c and these plates 3^b 3^c may be detachably attached to the end plates 3^b by means of bolts 3^d, or in other suitable manner. The construction however should be such that the friction blocks 1 and 2 are suitably supported in this housing above the coupler-head and are allowed the necessary movements. Preferably the housing is attached to the end sill A by means of the truss-rods D, which connect the end sills of the car, and tie the car frame longitudinally, and truss it centrally. The housing can be provided with suitable openings in its rear wall 3^a for the passage of the ends of said rods and the nuts *d* which secure the rods in place will also fasten the housings securely to the end sills. I do not however consider my invention restricted to this particular means of securing the housings to the end sills of the car.

The blocks 1 and 2 are kept in proper relative position in the housing by means of a through-bolt 4 which passes through slots 1^e, 2^e, in blocks 1 and 2 and through the end walls 3^b of the housing; the slots permit blocks 2 to move longitudinally of the bolt 4 and also allow block 1 to move transversely of the bolt. The blocks 2 are normally held in innermost positions as shown in Fig. 2 and 4 by means of stout helical springs 6, 6^a, surrounding the bolt 4, and interposed between the blocks 2 and the end walls 3^b of the housing. These springs are preferably nested as shown and they are seated in annular recesses 2^f in the blocks 2 so as to permit longer springs to be used. The bolt 4 not only serves to keep the blocks 1 and 2 in position in the housing but also serves as a strong reinforce or bond between the end walls 3^b of the housing and largely relieves them of the

outward pressure of the springs 6 when the blocks 2 are forced apart by the inward movement of block 1.

Owing to the engagement of the bevel faces of the blocks 1 and 2 and the action of the springs 6, 6^a, the block 1 is normally held in outwardmost projected position; but if it be pushed inward, as by the impact of another car buffer thereagainst in coupling the inclined faces 2^b on blocks 2 wedge against the inclined faces of the block 1 which acts as a wedge and forces the blocks 2 laterally apart compressing springs 6, 6^a. Rearward movement of the block 1 is however resisted both by springs 6, 6^a, and by the frictional contact of the beveled faces of blocks 1 and 2 and thus a much more powerful resistance can be obtained by this construction from springs of a given strength than would be possible if such springs were directly acted against by the block 1.

In addition to the springs 6, 6^a, a spring may be interposed between the rear face of the block 2 and the back of the housing. A leaf spring 7 is shown in this position and relieves the beveled faces of the blocks 1 and 2 of some of the shock of impact, and prevents direct transmission of shock through blocks 1 and 2 to the back of the housing. If block 1 should be forced excessively rearward the spring 7 would come into operation to cushion and resist such rearward movement of block 1. The spring 7 is particularly intended to protect the back wall of the buffer casing from injury and to resist the excessive rearward movement of the block 1 and measurably to cushion the blow on the blocks.

On the lower side of the block 1 is a depending lug 1^f which lies behind the head *c* of the draw-bar and in position to be engaged by said head; if the coupler is driven sufficiently inward. In such case the strain on the coupler head is transmitted direct to the buffing devices and the draw-bar cushioning springs are relieved in their work.

The draw-bar or coupler head may be of the ordinary Janney type; its shank may be provided with cushioning devices and draft rigging of any preferred kind; and in the present instance the housing is shown as provided with depending portions 3^m in rear of the draw-bar head and at each side of the draw-bar; these portions may be connected, under the draw-bar, by a plate 3ⁿ which also supports the outer end of the draw-bar. Supported in these depending portions 3^m and in depending flanges or portions 3^o at the outer end of the housing are rods 8, the inner ends of which lie close to the sides of the draw-bar, and these rods 8 are pressed inward by means of stout springs 8^a, strung on the rods between the parts 3^o and collars or nuts 8^c on the rods, exterior to the portions 3^m. The springs 8^a press the rods

yieldingly inward until arrested by collars 8^c and these rods therefore normally keep the head of the draw-bar in central position, but permit the draw-bar to swing or turn slightly to one side under side draft, the springs 8^a being stiff enough to crowd the draw-bar back to proper place when the side draft thereon is released. Such side draft on the draw-bar occurs when a train is passing around a curve.

My invention is not intended to take the place of friction draft gearing but to help them and to relieve the draw-bar from the heavy blows to which it is ordinarily subjected; and the buffer relieves the work on the draw-bar and draft gearing. My buffer receives the shock of impact when cars are being coupled and this saves the car and draw-bar or coupler from damage and when the draw-bar is forced back a given distance it abuts against the center friction block and the latter thus takes the strain off of the draw-bar cushioning springs.

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

1. In a car bumper, the combination of a bumper block having beveled faces, a pair of wedge blocks at opposite sides of the bumper block and engaging the beveled faces thereof, a through bolt transfixing the wedge blocks and springs for pressing said blocks toward each other, and thereby holding the bumper block in outermost position.

2. In a car bumper the combination of a slotted bumper block having beveled faces, a pair of slotted wedge blocks at opposite sides of the bumper block and engaging the beveled faces thereof, a bolt passing through the slots in said blocks, and springs pressing said blocks toward each other.

3. In a car bumper the combination of a bumper block having beveled sides, a pair of wedge blocks at opposite sides of the bumper block and engaging the beveled faces thereof, springs for pressing said blocks toward each other and holding the same in innermost position, and a spring interposed between the wedge blocks and the rear end of the casing.

4. In a car bumper the combination of a bumper block having beveled faces, a pair of wedge blocks at opposite sides of the bumper block and engaging the beveled faces thereof, springs for pressing said blocks toward each other and holding the same in innermost position, and a through-bolt transfixing the said blocks and springs, said blocks being slotted for the passage of the bolt.

5. In a bumping apparatus the combination of a casing, a buffer block disposed centrally thereof and projecting therefrom and having its rear corners beveled, a wedge block at each side of the buffer block, each having a beveled face engaging the opposed

beveled face of the buffer block, a through-bolt transfixing all said blocks to retain them in the casing, and springs strung on said rod between the wedge blocks and the ends of the casing.

6. In a bumping apparatus the combination of a casing, a buffer block disposed centrally thereof and projecting therefrom and having its rear end beveled or inclined, a wedge block at each side of the central block having an inclined face engaging the inclined face of the bumper block, a through-bolt transfixing all said blocks, springs strung on said rod between the wedge blocks and the ends of the casing, and a spring interposed between the wedge blocks and the rear side of the casing.

7. In a combined buffer and head block for railway cars, the combination of a draw-bar having a coupler head provided with a projection, a buffer above the same comprising a central block having bumpers on its front end and beveled on its sides, and adapted to be engaged by the projection on the coupler head when the draw-bar is unduly retracted, a pair of wedge blocks at opposite sides of the central block having beveled faces engaging the opposed beveled faces of the central block, and springs engaging the wedge blocks.

8. In combination, a draw-bar having a coupler head provided with a projection, a buffer above the same comprising a buffer

block having bumpers on its front end and beveled on its sides and adapted to be engaged by the projection on the coupler head when the draw-bar is unduly retracted, a pair of beveled wedge blocks at opposite sides of the buffer block and engaging the opposed beveled faces of the buffer block, springs for forcing the wedge blocks toward each other, and a through bolt for retaining the wedge blocks in position.

9. In a combined buffer and head block for railway cars the combination of a draw-bar having a coupler head, a buffer above the same comprising a buffer block inclined or beveled at its rear sides and adapted to be engaged by the coupler head when the draw-bar is unduly retracted, a pair of wedge blocks at opposite sides of the buffer block having their inclined faces engaging the opposed inclined faces of the buffer block, a casing for the buffer blocks, springs interposed between the wedge blocks and the ends of the casing, and a through-bolt transfixing all said blocks and holding them in proper relation, said blocks being slotted for the passage of said bolt.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

VALLOO V. MOORE.

Witnesses:

DANIEL RUGGLES,
E. SANDERSON.