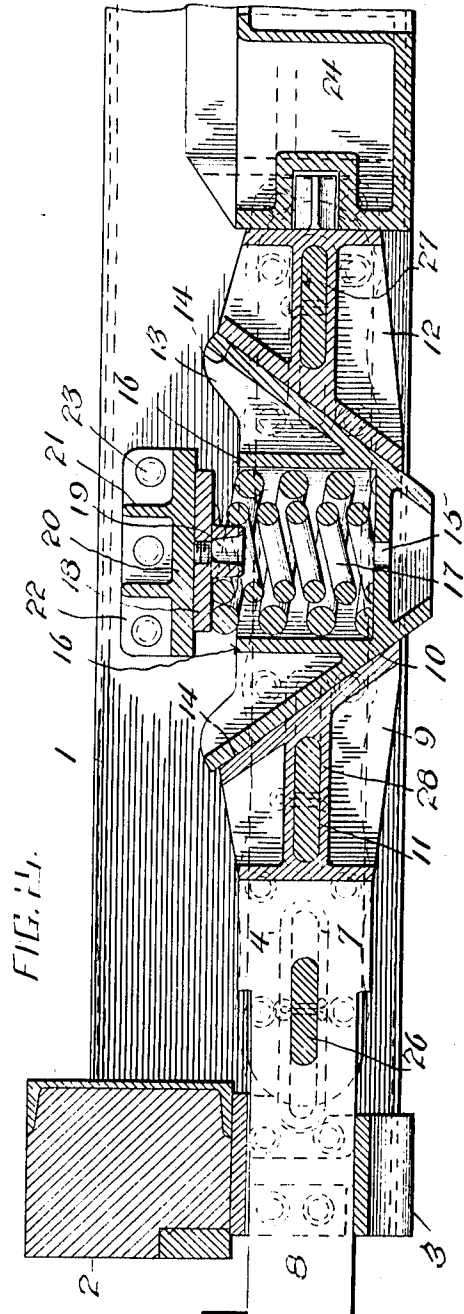
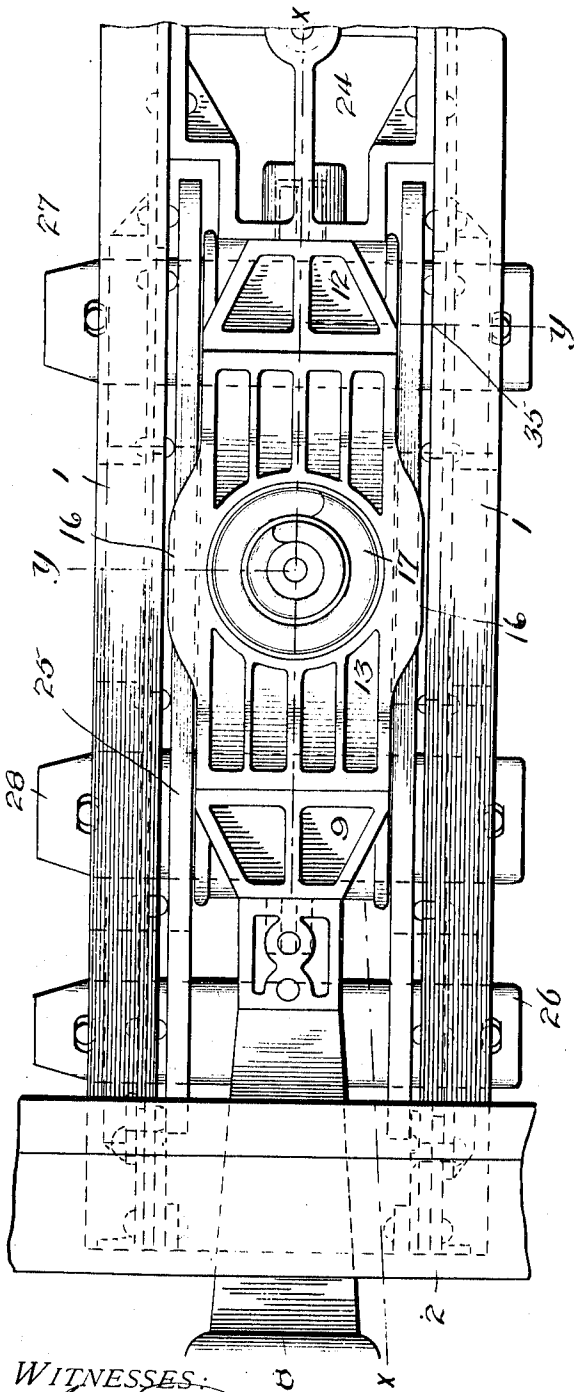


T. H. SYMINGTON.
 FRICTION DRAFT AND BUFFING GEAR.
 APPLICATION FILED MAR. 19, 1910.

1,004,497.

Patented Sept. 26, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
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Ralph Normelle
 FIG. I.

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 BY
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2 SHEETS—SHEET 2.

FIG. 3.

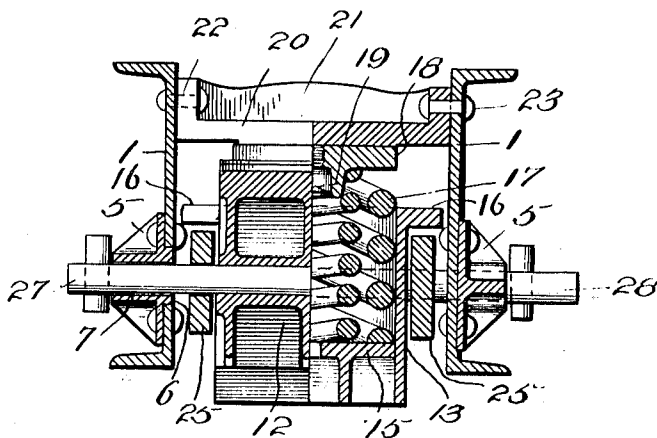


FIG. 4.

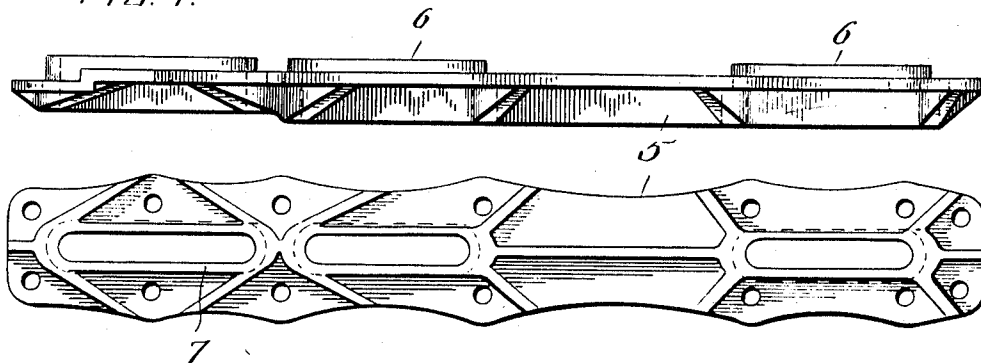
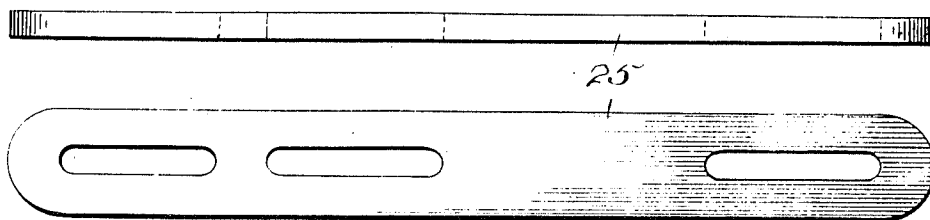


FIG. 5.



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UNITED STATES PATENT OFFICE.

THOMAS H. SYMINGTON, OF BALTIMORE, MARYLAND.

FRICITION DRAFT AND BUFFING GEAR.

1,004,497.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed March 19, 1910. Serial No. 550,375.

To all whom it may concern:

Be it known that I, THOMAS H. SYMINGTON, a citizen of the United States, residing at Baltimore city, State of Maryland, have
5 invented certain new and useful Improvements in Friction Draft and Buffing Gear, of which the following is a specification.

My invention relates generically to friction draft and buffing gear for cars, the object being the provision of a specific form of
10 such gear which shall operatively embrace friction elements in connection with slotted supports or sills, draft links, and keys, thus eliminating the yoke which, as is well known,
15 occasions much trouble in actual service.

A further object is the provision of a gear in which the energy or force in buffing and drawing shall be transmitted through parts
20 or elements of the gear to the draft beams or central stringers of the frame, and at a plurality of points or places.

With these ends in view, the invention consists in combining with a slotted draw bar, slotted supports, draft links, and keys,
25 of slotted follower or friction blocks, and a spring pressed intermediate friction block in contact with the follower blocks and movable vertically and longitudinally in buffing and drawing.

It further consists in certain novelties of construction and combinations of parts as
30 hereinafter set forth and claimed.

The accompanying drawings illustrate one example of the physical embodiment of the invention constructed according to the
35 best mode of procedure I have so far devised for the purpose.

Figure 1 is a top plan view of the several parts of the gear at one end of a car applied
40 to channel center sills or stringers. Fig. 2 is a vertical section of Fig. 1 on line $x-x$. Fig. 3 is a cross section of Fig. 1 on line $y-y$. Fig. 4 shows top plan and side views of one of the cast cheek plates. Fig. 5
45 shows top plan and side views of one of the draft links.

Referring to the several figures, the numeral 1 designates two center sills or stringers of a car floor frame, or draft members,
50 in this instance of metallic channel beams and suitably spaced apart; 2, an end sill of any desired construction; 3, a carry iron for a draw bar and coupler head; 4, three slots in the web of each channel beam; 5, two cast
55 metal cheek plates riveted to the outer surfaces of the webs of the channel beams, each

cheek plate having three slots which correspond in location with the slots in the webs of the channel beams; 6, projecting
60 flanges upon one face of each cheek plate, which flanges enter the slots in the webs of the channel beams; 7, projecting flanges upon the opposite face of each cheek plate defining the slots; 8, a slotted draw bar, the slot being in line with the adjacent slots in
65 the cheek plates; 9, a front metallic follower block having a vertical surface to engage the end of the draw bar, an inclined surface 10, and a slot 11 in line with the adjacent slots in the cheek plates; 12, a rear
70 metallic follower block of the same shape and construction as the front block; whereby said blocks may be interchangeable in location, the slot therein being in line with the adjacent slots in the cheek plates; 13, a
75 metallic friction block interposed between the front and rear follower blocks and having two inclined surfaces 14, 14, engaging the inclined surfaces 10, 10 of the follower blocks, a seat 15 to receive a helical spring,
80 and guide flanges 16, 16 at the top side edges; 17, a spring fitting the seat in the block; 18, a spring cap having a top horizontal surface and a retaining lug 19 located within the coil of the spring; 20, a
85 metallic bearing plate or block having a horizontal lower surface in frictional contact with the cap 18, strengthening ribs 21 and perforated flanges 22 which engage the webs of the channel beams and to which
90 they are fixedly secured by rivets 23, as shown; 24, a metallic filler block located at the end of the rear follower and riveted to the webs of the channel beam; 25, two draft links, in this instance having slots corresponding in location to the slots in the
95 cheek plates, the said links in the present arrangement being interposed between the cheek plates and the draw bar, follower blocks and intermediate block; 26, a front
100 key passed through the slot in the draw bar, the slots at the front ends of the links and the front slots in the cheek plates; 27, a rear key passed through the slot in the rear follower block, the slots at the rear ends of
105 the links, and the rear slots in the cheek plates; and 28 is an intermediate key passed through the slot in the front follower block, the intermediate slots in the links, and the intermediate slots in the cheek plates.
110

Upon reference to the figures which show the several parts and elements of the gear

arranged in their proper relative positions, it will be noted that the front key fits the slot in the draw bar and that its ends are located at the centers of the slots in the
 5 cheek plates; that the ends of the intermediate key are located at the front ends of the intermediate slots in the cheek plates; and that the ends of the rear key are located at the rear ends of the rear slots in the
 10 cheek plates. The spring 18 being under compression forces the intermediate friction block 13 downwardly and the follower blocks apart and also downwardly, causing the keys to bear against the horizontal sur-
 15 faces of the flanges 6 and 7 which define the slots. The flanges 6 and 7 may be of any desirable width to secure the required frictional area for the keys. The expansive energy of the spring is transmitted at the
 20 top through the metallic bearing plate, and through the intermediate friction block, followers and intermediate and rear keys to the webs of the channel beams, thus providing five frictional contact points or areas
 25 between the elements.

The operation of the gear is as follows: In buffing the rear follower block and key are stationary, while the draw bar, front key, front follower block, intermediate key,
 30 and intermediate friction block and the spring cap 18 move rearwardly until the ends of the front key reach the rear ends of the slots in the cheek plates. Moreover, when the front follower moves rearwardly
 35 the intermediate friction block 13 is forced upwardly, as well as longitudinally, upon the inclined surface 10 of the rear follower and thus compresses the spring. It will be observed that there are four separate points
 40 or areas of contact of movable friction elements for resisting the rearward movement of the draw bar in addition to the expansive energy of the spring. In drawing the intermediate key and front follower block
 45 are stationary, while the draw bar, front key, links, intermediate friction block, spring cap, rear key, and rear follower block move forwardly till the ends of the front key reach the ends of the slots. The action
 50 of the several friction elements is the same as in buffing and the spring is compressed in a similar manner.

From the foregoing description and illustration of an example of the embodiment
 55 of the invention it will be seen that I have

provided a friction gear which attains the ends set forth as the objects of the invention. The friction elements are effectively combined with the slotted stringers or supports, the draft links, and keys, thus eliminating the use of a yoke, and facilitating the application and removal of a part or parts of the gear; and, further, a gear is provided in which the energy of buffing and drawing is transmitted to the draft beams
 65 or center stringers of the frame at a plurality of points or places. Obviously, modifications of construction and changes in the mode of embodiment may be introduced in practice without constituting substantial
 70 departures.

What I claim is:

1. The combination in a draft and buffing gear, of slotted supports; friction elements comprising oppositely disposed follower
 75 blocks, each with an inclined surface, and an intermediate friction block with inclined surfaces in contact with the follower blocks; a spring engaging the intermediate friction block and longitudinally movable with the
 80 block; a fixed bearing element for the top end of the spring; a slotted draw bar; keys movable within the slots of the supports, one key being passed through the draw bar, and other keys supporting the follower
 85 blocks and friction block; and slotted links connecting the front and rear keys.

2. The combination in a draft and buffing gear, of slotted supports; friction elements comprising oppositely disposed follower
 90 blocks each with an inclined surface, and an intermediate friction block with inclined surfaces in contact with the follower blocks; a spring engaging the intermediate friction block; a fixed bearing element; a cap inter-
 95 mediate the top end of the spring and the fixed bearing element and movable relative to said element; a slotted draw bar; keys movable within the slots of the supports, one key being passed through the draw bar and
 100 other keys supporting the follower blocks and friction block; and slotted links connecting the front and rear keys.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS H. SYMINGTON.

Witnesses:

W. G. HOFFMAN, Jr.,
 E. JOHN NICHOLS.