(No Model.) 2 Sheets—Sheet 1.

J. T. PERKINS.

AIR BRAKE COUPLING.

No. 598,887. Patented Feb. 8, 1898.

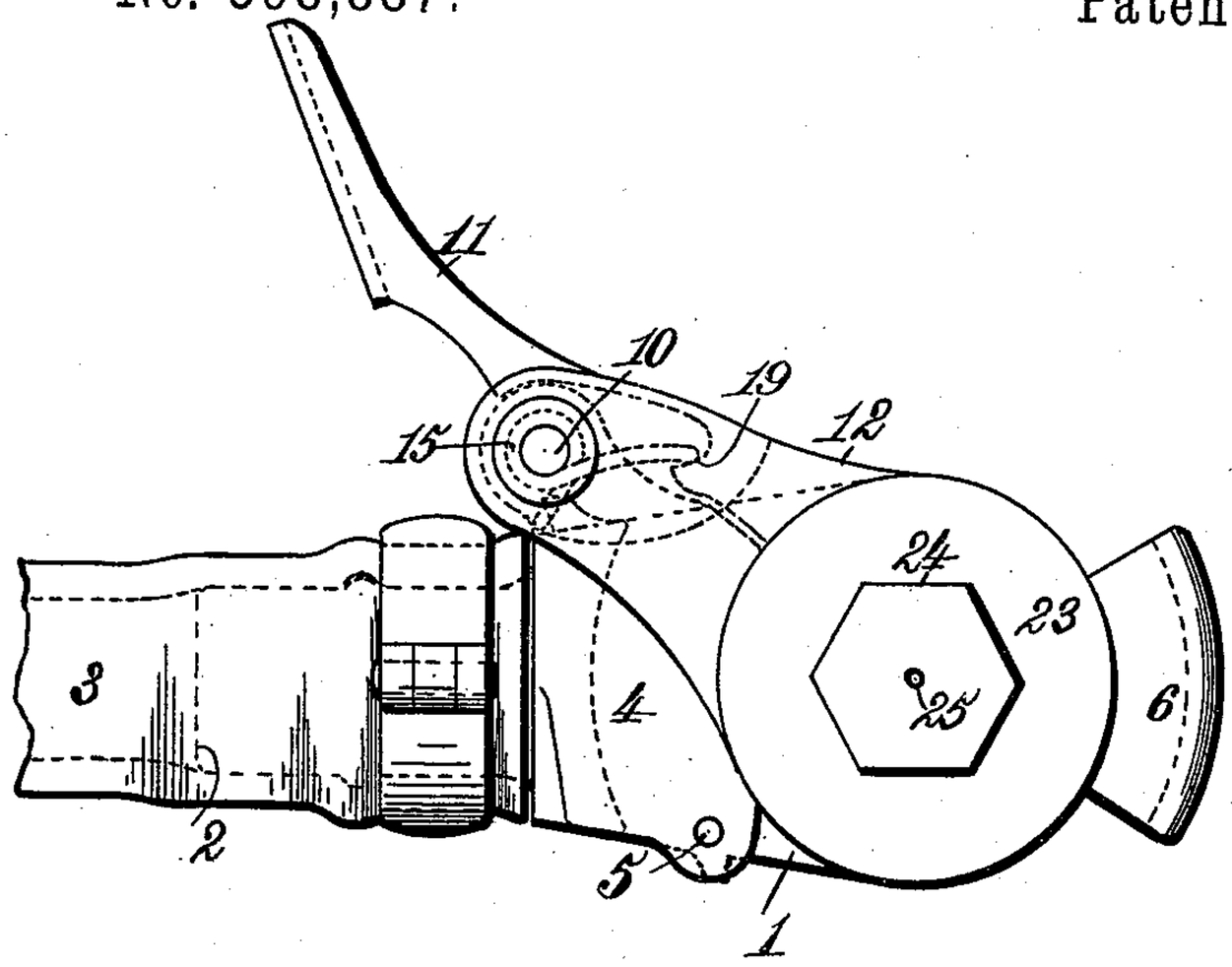

Fig. 1.

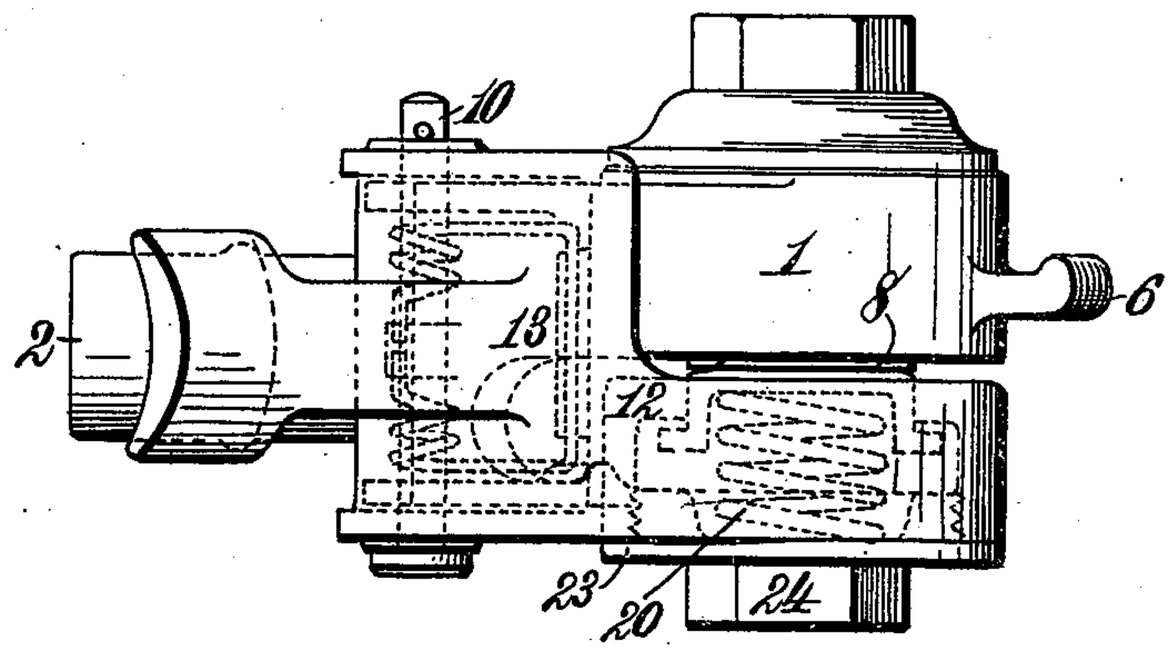

Fig. 2.

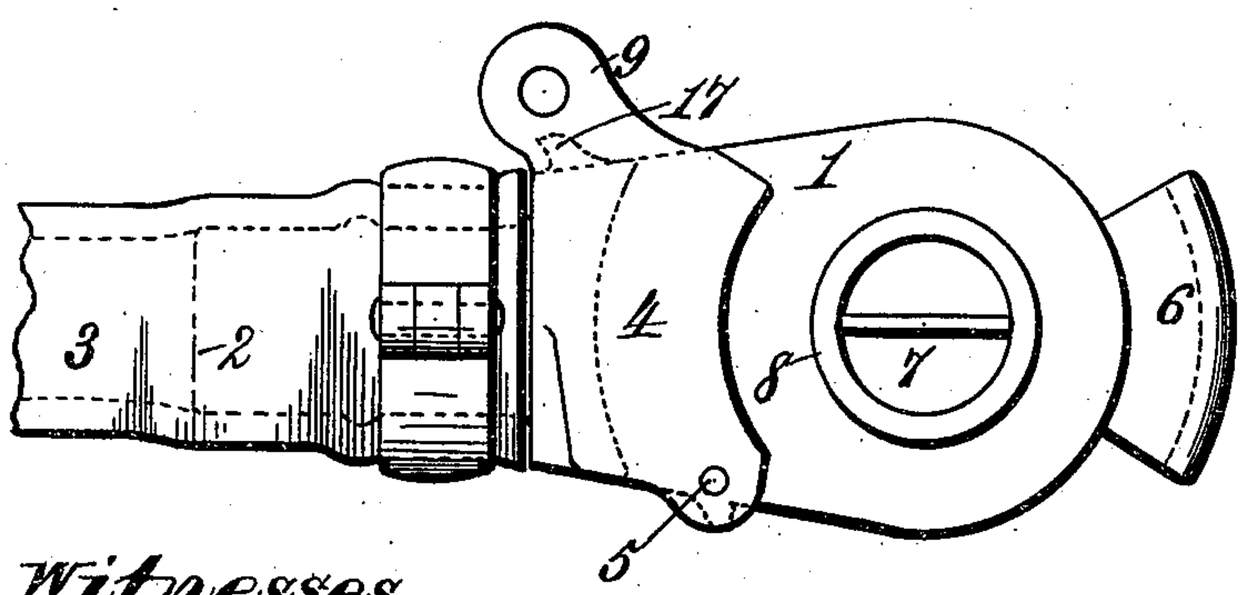

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

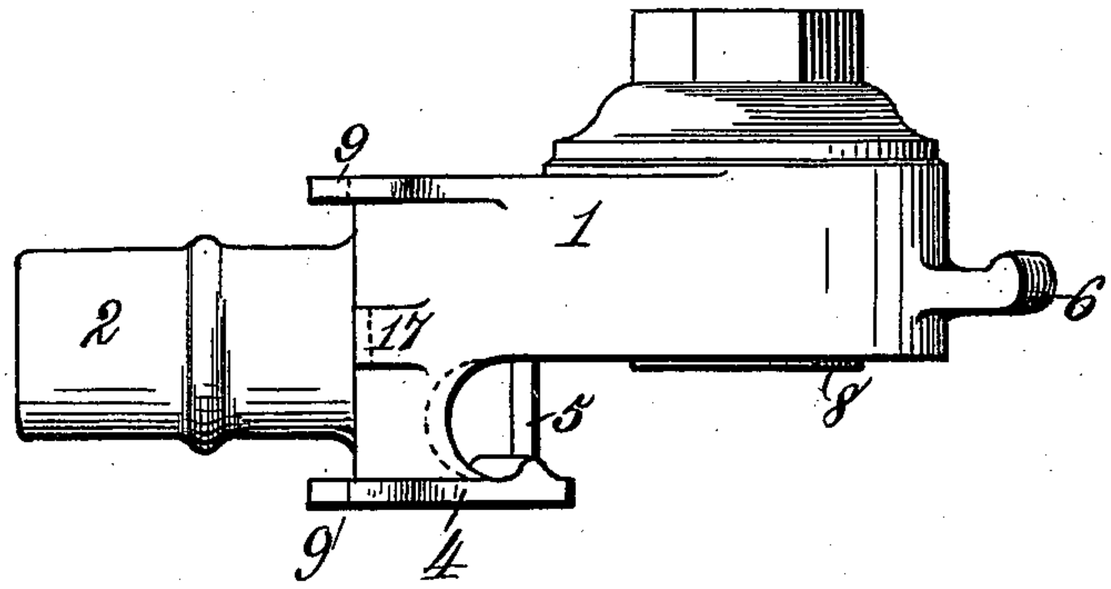


Fig. 5.

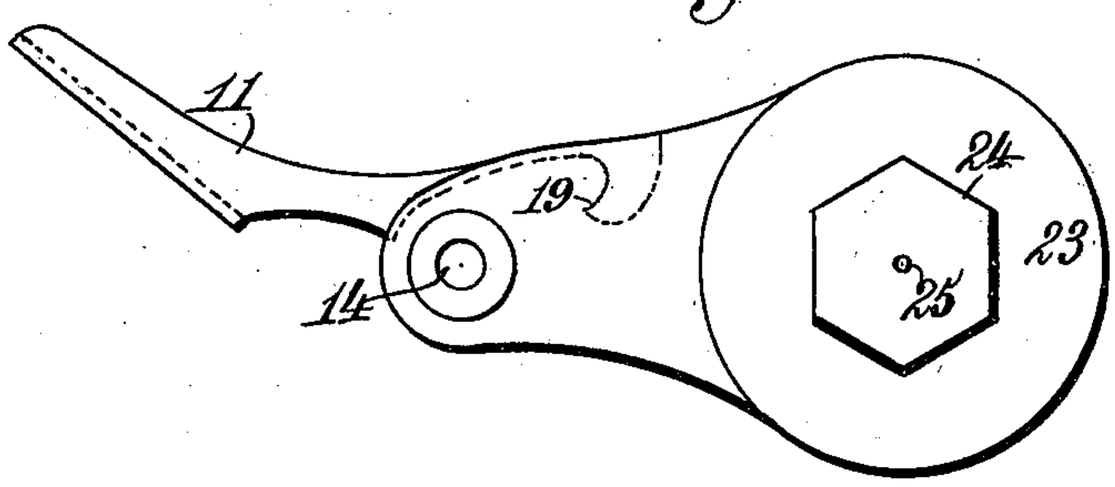


Fig. 6.

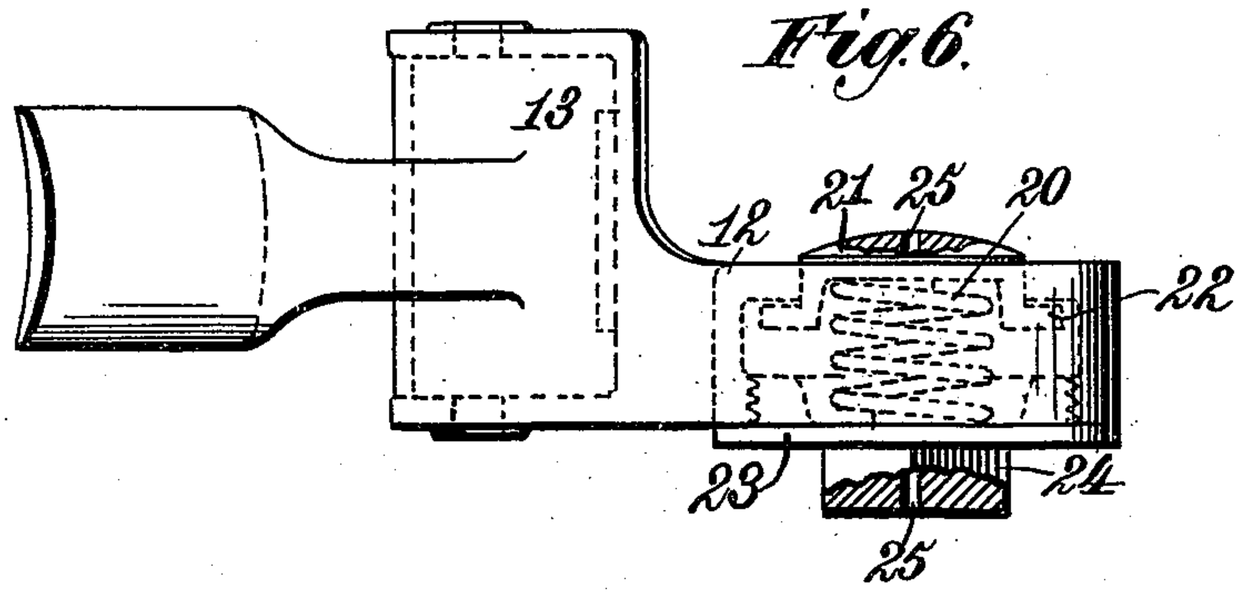
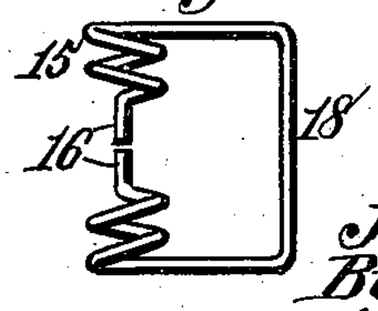


Fig. 8.

Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES T. PERKINS, OF UNION CITY, TENNESSEE, ASSIGNOR OF TWO-THIRDS TO WILLIAM J. EDWARDS, OF SAME PLACE, AND JOHN A. PERKINS, OF NASHVILLE, TENNESSEE.

AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 598,887, dated February 8, 1898.

Application filed October 1, 1897. Serial No. 653,736. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. PERKINS, a citizen of the United States, residing at Union City, in the county of Obion and State of Tennessee, have invented new and useful Improvements in Air-Brake Couplings, of which the following is a specification.

This invention relates to air-brake couplings, and has for its object to provide an improved automatic dust-guard that will effectually exclude, dust, dirt, cinders and foreign matters likely to cut, clog, or otherwise injure the interior parts of the pneumatic apparatus when the hose-pipes of an air-brake system are uncoupled, while the said guard will at the same time permit a sufficient escape of air to apply the brakes should the train break in two or part while in motion.

The purposes of my invention include the provision of means for securing an immediate, perfect, and reliable seating of the automatic dust valve or guard when the air-pipes are uncoupled; also, to fully inclose the springs concerned in the automatic operation of the guard, shield, or valve and thereby protect said springs from moisture, rust, and deterioration; also, to permit escape through said dust-guard of sufficient air to apply the brakes in case the train should part, and generally to improve and simplify the parts of an automatic shield or guard for pneumatic pipe-couplings, to which ends my invention consists in the features of construction and novel combinations hereinafter described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a side elevation of a pneumatic hose or pipe coupling provided with my improved automatic dust-guard in operative position. Fig. 2 is a plan or top view of the same. Fig. 3 is a side elevation of one coupling-head or half-coupling with the dust guard or valve removed and showing that surface of the half-coupling in which is formed a lateral air-opening to be brought into juxtaposition with a corresponding air-opening in a fellow half-coupling. Fig. 4 is a plan or top view of a half-coupling with dust-guard removed. Fig. 5 is a side elevation of the dust-guard detached, showing its outer surface. Fig. 6 is a plan or top edge view of the dust-guard, partly in section. Fig. 7 is a plan of a spring for automatically actuating the dust-guard lever to seal the half-coupling when disconnected from its fellow. Fig. 8 is a side elevation of said spring.

Although I have shown in Figs. 1 to 4 only one half-coupling, (designated by reference-numeral 1,) it will be readily understood that each is a counterpart of the other and that both have the same features of construction.

Each half-coupling 1 may be provided with the usual tubular part 2 for attachment of the flexible hose-pipe 3 commonly employed in the connections of a train-pipe in air-brake systems. As a part of each half-coupling there is provided on its coupling-face the usual segmental hook-flange 4, Figs. 3 and 4, together with its stop-pin 5 to be engaged with and support the usual segmental lug 6 on a peripheral portion of the companion half-coupling.

In the coupling-face of each half-coupling there is provided the usual circular air-opening 7, Fig. 3, having a gasket or packing-ring 8, of rubber or other suitable material. The construction of the coupling-heads or each half-coupling as so far described is substantially that of couplings at present in use, each half of the coupling being adapted to closely engage and interlock with its fellow to form a continuous fluid-pressure passage, as for air-brakes and other pneumatic purposes.

On the top of each half-coupling are lugs 9, Figs. 3 and 4, constructed and arranged to serve as bearings for a transversely-placed pin 10, Figs. 1 and 2, that constitutes the fulcrum for a suitably-formed lever 11, by which an automatically-acting dust guard or shield 12 is carried. The lever 11 and guard 12 are formed on and supported by a cored connecting web or body 13, Figs. 5 and 6, that fits over the lugs 9 and adjacent part of each half-coupling. In this cored connecting-body 13 are formed openings 14 for passage of the pin 10, that is secured therein and which journals

in the lugs 9, so as to pivotally connect the several parts and serve as a fulcrum for the guard 12 and its lever.

Upon the pin 10 there is mounted a doubly-spiral spring 15, Figs. 7 and 8, having depending portions 16, that find a bearing against the rear of a hooked lug 17, Figs. 1, 2, 3, and 4, formed on the upper part of each half-coupling. This doubly-spiral spring 15 is formed with a forward-projecting bail-shaped portion 18, through which the acting pressure of the spring is exerted on a ledge 19, carried by and depending within the upper part of the cored body 13, so that by the operation of said spring-bail the guard 12 will be normally carried into operative position to close or cover the half-coupling when disconnected from its fellow.

When the half-couplings 1 are disconnected from each other, as in uncoupling cars, the spring 15 and bail 18 will immediately carry the dust-guard 12 downward in position to cover the air-opening 7 of each half-coupling, thereby excluding foreign matters from the train-pipe. The guard 12 does not, however, so closely cover the air-opening 7 as to interfere with such a sufficient escape of air from the train-pipe as will automatically apply the brakes in case the train should be accidentally parted while in motion.

As shown in Fig. 6, each automatic dust-guard 12 is recessed or chambered to inclose a spiral spring 20, that bears at one end against the cupped inner side of a valve-disk 21, the outer face of which is somewhat convexed to permit of a close seating in and against the gasket or packing-ring 8, with which the air-opening 7 is provided. This valve 21 projects through a circular opening in the inner face of the guard 12 and is provided with an annular flange 22, that prevents it from being pushed wholly outward by the spring. The other end of the spring 20 has its bearing in the inner cupped face of a screw plug or cap 23, that is screwed into the outer face of the guard 12 after the valve 21 and spring 20 have been inserted. A polygonal boss 24 may be provided on the cap or plug 23 to afford a bearing for a wrench to screw said plug into place or remove it, as desired. By this means the valve 21 can be readily replaced when worn. It is preferable to provide a small central passage 25 through the valve 21 and boss 24 in order to permit escape through the closed guard of a sufficient quantity of air to cause automatic application of the brakes should the train break in two accidentally.

In order to permit connection of the two half-couplings 1, it is only necessary to bring them toward each other and then depress the levers 11, thereby elevating the guards 12 or swinging them upward on the fulcrum-pins 10, so as to allow immediate engagement of the coupling-halves in the usual manner. The springs 15 will then hold the guard 12 of each half-coupling 1 down onto the other half-coupling, thus making the connection even more than ordinarily secure.

The instant that the half-couplings 1 are disconnected the springs 15 and bails 18 will immediately act automatically to throw the dust-guards 12 and their valves 21 into operative position, so as to effectually prevent the access of dust and dirt into the couplings and connected parts; but, as before explained, the closed guards will not prevent an escape of air sufficient to apply the brakes.

It will be observed that the springs 15 and bail 18 are fully covered and inclosed by the cored body 13 and that the spring 20 is wholly inclosed in the chambered portion of the dust-guard, the said springs being thereby completely protected from moisture, rust, or other injury.

This automatic dust guard or valve for air-brake couplings will in no way interfere with what is known as the "emergency-brake." It accomplishes the purpose of excluding foreign matters from the outside when the hose-pipe connections are uncoupled, and at the same time in event of the train breaking in two it will permit automatic operation of the brakes, so as to avoid collision of the rear part of the train with the forward part.

What I claim as my invention is—

1. The herein-described automatic dust-guard for air-brake couplings, consisting of a pivotally-supported body provided with a lever and a chambered or recessed portion in which is mounted a valve to coact with the air-opening in a half-coupling when the latter is disconnected from its fellow, a spring to seat said valve, and a spring to automatically actuate the guard on disengagement of the half-couplings, said springs being wholly inclosed, substantially as and for the purposes specified.

2. The combination with half-couplings that are each the counterpart of the other, of an automatic dust-guard pivotally mounted on each half-coupling and each consisting of a cored body provided with a lever and with a chambered guard portion, a valve mounted in the chambered portion of said guard to coact with the air-opening of the half-coupling on disengagement thereof from its fellow, an inclosed spring acting on said valve, a screw plug or cap to hold said spring and valve in place, a pivot-pin or fulcrum for the guard, and a spring mounted on said pin and provided with a bail projection having a bearing within the cored body of the guard and wholly inclosed therein and adapted to actuate the guard automatically on disengagement of the half-couplings, substantially as described.

3. The combination with half-couplings, each the counterpart of the other and each provided on its upper side with lugs, of an automatic dust-guard for each half-coupling, each of said guards being provided with a cored body having a lever and a chambered or recessed portion in which is mounted a

valve to coact with the air-opening in the half-coupling on disengagement thereof from its fellow, a fulcrum-pin mounted in the said guard and in the said lugs of the half-coupling, a spring on said pin and provided with bearings against the guard and half-coupling to automatically actuate the guard when the half-couplings are disconnected, and a spring inclosed in the chambered portion of the guard to press the valve to its seat, both said springs being wholly inclosed, substantially as described.

4. In an air-brake coupling, the combination with half-couplings that are each the counterpart of the other, of an automatic dust-guard mounted on each half-coupling and each comprising a lever and a chambered guard portion, a valve mounted in the chambered portion of the guard to coact with the air-opening of the half-coupling on disengagement thereof from its fellow, a spring to seat said valve, a cap to hold said spring and valve in place, the said valve and cap being provided with a passage for gradual escape of air through the closed guard, and a spring to automatically close the guard on disengagement of the half-couplings, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES T. PERKINS.

Witnesses:
P. Y. WHITE,
A. J. WILLIAMS.