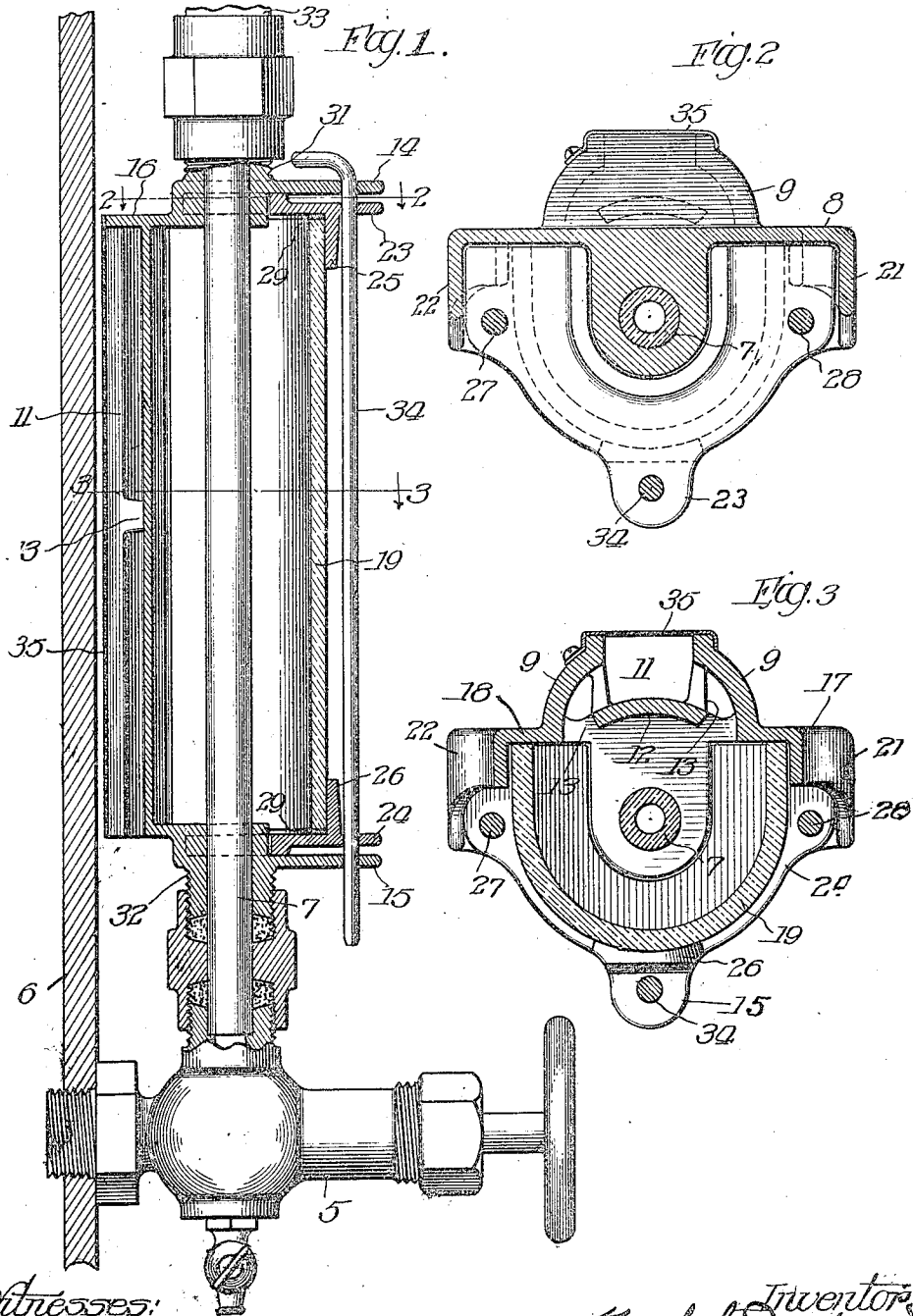


F. G. DUNBAR.
GAGE GLASS PROTECTOR.
APPLICATION FILED JUNE 3, 1912.

1,050,927.

Patented Jan. 21, 1913.



Witnesses:
C. E. Banett
Chas. J. Wilson

Inventor:
By Frank G. Dunbar
Litchman, Ralston & Lyle
Attorneys

UNITED STATES PATENT OFFICE.

FRANK G. DUNBAR, OF CHICAGO, ILLINOIS, ASSIGNOR TO SARGENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

GAGE-GLASS PROTECTOR.

1,050,927.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed June 3, 1912. Serial No. 701,313.

To all whom it may concern:

Be it known that I, FRANK G. DUNBAR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gage-Glass Protectors, of which the following is a specification.

My present invention relates to protective means and, more particularly, to protectors adapted for use in connection with locomotive gage-glasses and aims to afford protection to the gage-glass from external forces and, also, to shield the engineer and fireman from the flying fragments of glass and the escaping hot water and steam in the event of accidental breakage of the gage-glass when steam pressure is in the boiler.

In order to effectually shield the engineer and fireman against flying fragments of broken gage-glasses it is essential that the protector shall surround, not only the front and sides of the gage-glass but, also, the ends and back, for if the ends be not inclosed the flying glass particles will escape at these points and endanger the eyes of the engineer and fireman and, if the back be not inclosed the glass fragments will strike the end of the boiler and be deflected and scattered throughout the cab.

While the complete inclosure of the gage-glass to prevent broken particles of glass from escaping is of prime importance, another factor must be considered in the construction of a protector, viz: that the steam in the boiler is under a pressure approximating two hundred pounds and, when the gage-glass breaks, some provision must be made for the escape of the steam and water under pressure from the protector, or, otherwise the glass-shield which permits observation of the gage-glass will be broken by the enormous pressure from within, thereby increasing rather than obviating the dangers from flying particles of broken glass.

My present invention has for one of its objects the provision of a gage-glass protector which will effectually prevent flying particles of a broken gage-glass from scattering throughout the cab and, at the same time, will permit the escape of steam and water from the protector so that the glass shield will not be broken.

Another object is to provide novel and improved means for holding the shield in position in such a way that it will not be readily fractured by pressure from within and will also be rigidly held in position thereby obviating the dangers of fracture by jiggling and jarring about.

The invention and its attendant advantages will be understood from the following description when considered in connection with the accompanying drawings illustrating one preferred embodiment thereof.

Referring to the drawings—Figure 1 is a longitudinal sectional view of a protector embodying my invention; Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1; and Fig. 3 is a similar view on line 3—3 of Fig. 1.

By reference to the drawings it will be observed that a gage cock 5 of any well known or preferred construction is threaded into the end 6 of a boiler in the usual way.

The present invention is particularly adapted, although not restricted, to use on boilers wherein the upper connection to the gage-glass is made by means of a flexible tube communicating with the top of the boiler and is adapted to afford a rigid support for the gage glass to prevent breakage of the same and is also constructed to hold a gage-glass shield around the gage-glass for protective purposes. The gage-glass 7, of usual construction and any desired length, has its lower end connected with the gage cock 5 in the usual manner.

The holder, designated generally by reference character 8, is, preferably, for cheapness in manufacture, cast integrally, in one piece, of iron, aluminum, or other material, aluminum being well adapted for the purpose on account of its lightness.

The rear wall of the holder is curved outwardly at 9 preferably throughout its length to form a longitudinally extending passageway 11, opened at its rear side to permit the escape of steam and water under pressure. Between the curved portions 9 and preferably formed integrally with the holder there is disposed a curved baffle-plate 12 reinforced at the sides intermediate its ends by short webs 13. At the upper and lower ends the holder is equipped with forwardly projecting flanges 14 and 15, respectively, and flange 14 is projected rearwardly as in-

5 indicated at 16 to close the top of the passageway 11 while the lower end is left open to permit the particles of a broken gage-glass to drop upon the deck of the cab. At the sides of the body are formed forwardly projecting flanges 17 and 18, spaced to receive between them the rearwardly projecting edges of a curved wire glass-shield 19 of well known construction. Adjacent their ends where the side flanges 17 and 18 connect with the top and bottom of flanges 14 and 15 the side flanges are still further separated throughout a portion of their length indicated by 21 and 22 to form recesses on each side of the shield adjacent its ends for the reception of the ends of curved holding clips 23 and 24. These clips are adapted to fit over the ends of the shield and are provided, respectively, with flanges 25 and 26 which embrace the outer face of the shield at its ends to hold it in position. The clips are held together to clamp the ends of the shield therebetween by a pair of rods 27 and 28 threaded at each end into the clips and, for the purpose of preventing the shield from jarring about within the clips, a suitable packing or composition 29 may be interposed between the clips and the end of the shield, if desired.

30 The end flanges 14 and 15 are equipped with threaded studs 31 and 32, respectively, adapted for connection with the flexible tube 33 and the gage cock 5 by means of any suitable connecting nuts. For the purpose of holding the shield and clips in position, the flanges 14 and 15 and, also, the clips 23 and 24 are provided with alined perforations through which a retaining rod 34 is inserted. It will be obvious that, by employing the clips which embrace the shield at its ends and then securing the clips to the body of the holder, the shield is securely supported against lateral displacement entirely around its periphery at both the top and bottom and is, therefore, much less liable to fracture under internal pressure than if the clips were omitted and it were held in place merely by the rod 34. The inner edges of the shield are also held against outward movement by the lateral flanges 17 and 18.

When the gage-glass 7 becomes accidentally broken the flying particles of glass will be prevented from scattering sidewise and forwardly by the shield 19 and their rearward escape will be obstructed by the baffle-plate 12. The steam and water will escape around the baffle-plate and relieve the shield of internal pressure while the glass particles will be obstructed by the plate and deflected by the curved walls 9 so that their projectile force will be greatly diminished. A screen 35 is secured over the rear opening between the curved walls 9 to prevent such glass particles as escape around the baffle-

plate from being discharged against the boiler head and deflecting and scattering into the cab. Such glass particles as strike the screen will drop through the open bottom of the passageway 11 onto the deck of the cab without danger of injury to the occupants of the cab. The screen, however, will afford but little obstruction to the escape of steam and water and the pressure within the protector will not rise sufficiently to break the shield.

It is believed that my invention and its attendant advantages will be understood from the foregoing without further description and, it will be obvious, that the details of construction may be varied within considerable limits without departure from the scope of the invention.

I claim:

1. A gage-glass protector comprising an elongated body provided with outstanding flanges, the rear wall of said body being open to permit the escape of steam and water under pressure, imperforate means for obstructing the escape of glass particles through the opening in the back of the body, and a transparent imperforate shield across the front of the body and between the flanges.

2. A gage-glass protector comprising an elongated body and a transparent shield mounted thereon, the rear wall of said body being open to permit the escape of steam and water under pressure and having a longitudinally disposed baffle-plate for obstructing the escape of glass particles.

3. A gage-glass protector comprising a body, a transparent gage-glass shield mounted on its forward face, the rear wall of said body being extended outwardly and provided with an elongated opening to permit the escape of steam and water under pressure, and a curved baffle-plate disposed in front of said opening to receive the impact of flying particles of glass and obstruct their escape.

4. A gage-glass protector comprising a body, a transparent gage-glass shield mounted on its forward face, the rear wall of said body being extended outwardly and provided with an elongated opening to permit the escape of steam and water under pressure, a curved baffle-plate disposed in front of said opening to receive the impact of flying particles of glass and obstruct their escape, and a screen positioned over said opening.

5. A gage-glass protector comprising an integral body provided at its ends with flanges apertured to receive the ends of a gage-glass, the rear wall of the body being extended outwardly and provided with a centrally disposed longitudinally extending opening, and a baffle-plate formed integrally with the body and disposed between the nor-

nal position of the gage-glass and said opening to obstruct the escape of broken glass particles.

5 6. In a gage-glass protector, the combination of a body provided with top and bottom forwardly projecting end flanges, a glass shield disposed between said flanges, a pair of clips embracing the shield adjacent its ends, and retaining means engaging said flanges and said clips whereby the shield is held at the top and bottom against displacement.

15 7. In a gage-glass protector, the combination of an inflexible body adapted for attachment at its ends to connections with a boiler, the rear wall of said body being extended outwardly and a baffle-plate being positioned in front of said extended portion, a curved glass shield disposed around the gage-glass in front of the rear wall of the body, a pair of clips embracing the shield near its ends, and retaining means connecting the clips with the body whereby to hold the shield in position.

25 8. In a gage-glass protector, the combination of an inflexible body provided with end flanges adapted for attachment to connections with a boiler, and longitudinal side flanges, a curved shield positioned to be embraced by said end and side flanges, a pair of curved holding clips embracing the shield

adjacent its ends and disposed between the side flanges, and means connecting said clips with the end flanges to retain the shield in position.

35 9. In a gage-glass protector, the combination of an inflexible body provided with peripheral flanges, the rear wall of said body being open to permit the escape of steam and water under pressure, a baffle-plate formed integrally with the body being disposed in front of said opening to obstruct the escape of broken particles of a gage-glass, a curved shield disposed between said peripheral flanges, a pair of curved clips embracing the ends of the shield, and means for connecting the clips with the body whereby to retain the shield in position.

50 10. A gage-glass protector comprising an inflexible body adapted for attachment at its ends to connections with a boiler and having an opening in its rear wall, a screen positioned over said opening, a baffle-plate disposed in front of said opening to intercept flying particles of glass, and a shield carried by the body.

FRANK G. DUNBAR.

Witnesses:

IRA J. WILSON,
M. A. KIDDER.