No. 640,189. Patented Jan. 2, 1900.

J. T. FORGEY.

GAGE FOR STEAM BOILERS.

(Application filed Oct. 14, 1899.)

(No Model.)

Fig. 1.

Fig. 2.

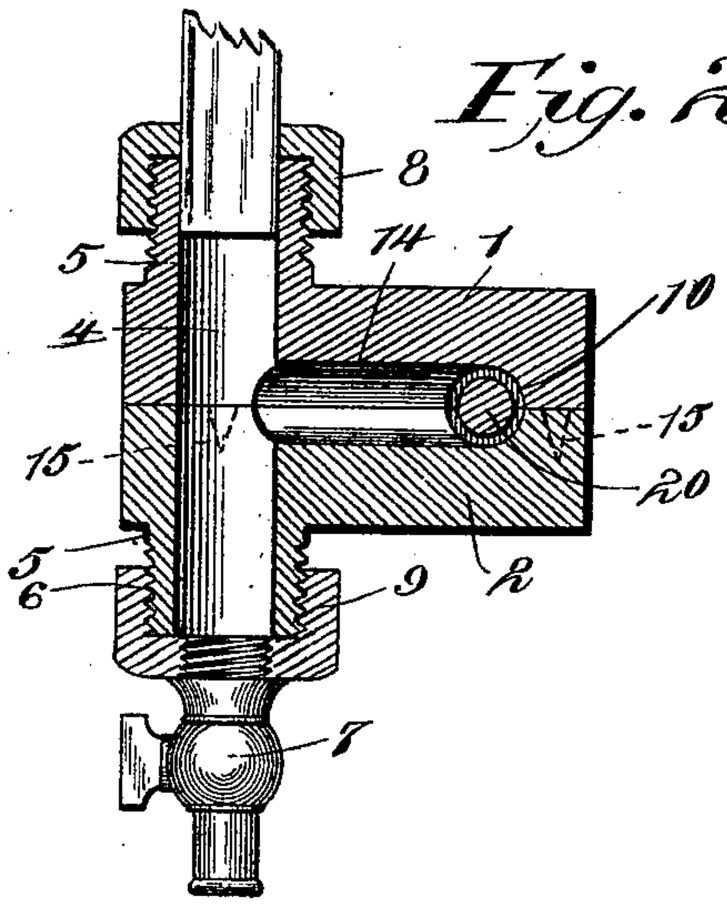
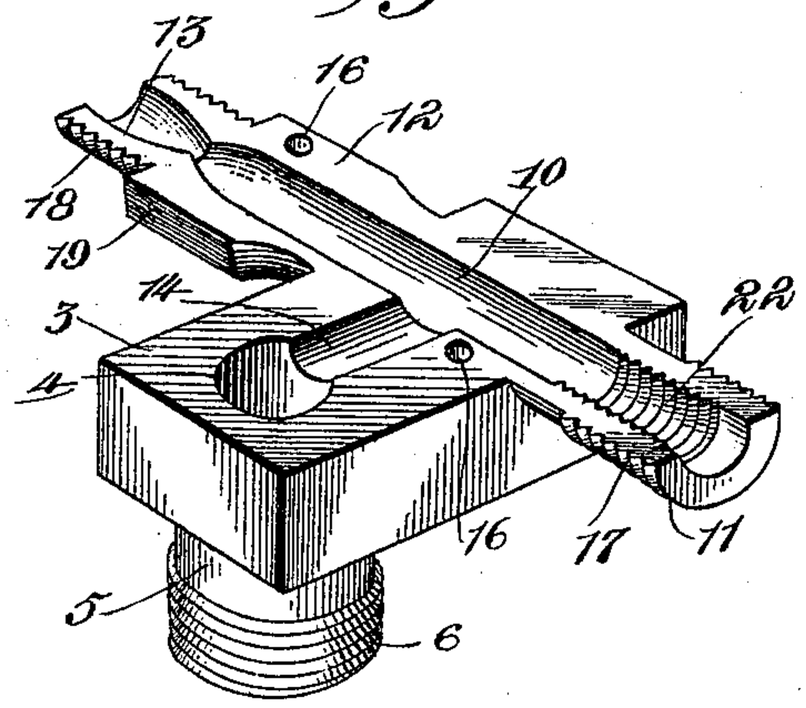


Fig. 3.



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JOHN T. FORGEY, OF OTTAWA, KANSAS.

GAGE FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 640,189, dated January 2, 1900.

Application filed October 14, 1899. Serial No. 733,636. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. FORGEY, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented a new and useful Gage for Steam-Boilers, of which the following is a specification.

This invention relates to steam-gages, and particularly to casings or connections for the same; and the intent and purpose of the improved arrangement is to provide simple and effective means for applying the casings or connections to a boiler and also for setting and securing the gage glass or tube without breakage or difficulty of any nature and wherein the parts can be easily dissembled for cleaning purposes or other manipulations, the said casings or connections being each composed of two duplicate main parts having an exact coinciding assemblage and securely fastened by easily-operated means.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a sectional elevation of the improved device and a part of a boiler, showing the application to the latter. Fig. 2 is a longitudinal vertical section through one of the improved casings or connections. Fig. 3 is a detail perspective view of one of the duplicate sections of the improved casing or connection.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Each of the casings or connections has a construction corresponding to that of the other, with the exception of a minor difference, which will be hereinafter specified, and only one will be referred to in describing the construction of the same. Each casing or connection consists of duplicate main sections 1 and 2, having the form clearly shown by Fig. 2, and each comprises a substantially rectangular body 3, having a vertical opening 4 near one end communicating with a gage glass or tube seat 5, which is exteriorly screw-threaded, as at 6. As shown by Fig. 1, instead of using the part 5 as a gage glass or tube seat it may have a petcock 7 connected thereto, and in all uses of said part a clamping-nut 8 engages the exterior screw-threads 6, and the uppermost nut 9 when not used for supporting purposes may be plugged or otherwise closed and merely serve as a cap-nut. The object of this similarity in the construction of the seats 5 is to adapt each casing or connection to any position and avoid the usual special construction necessary for upper and lower devices of this character. Extending transversely through the inner face of the body 3, adjacent to the end opposite that near which the opening 4 is formed, a semicircular valve-seat groove 10 is constructed and continued through a semicircular valve-neck 11 and also through an opposite valve-end seat 12, with which a seminipple is integrally formed, and has a channel therein, as at 13. The seminipple is smaller in dimensions than the valve-end seat 12, and running from the opening 4 to the groove 10 in a plane at right angles to the latter is a semicircular channel 14. When the sections 1 and 2 having the particular structural features just set forth are united, they coincide with accuracy and are so held by dowel-pins or analogous devices 15 in one section, entering openings or sockets 16 relatively arranged in the opposite section. These dowel-pins and sockets afford means for temporary jointure only and are particularly intended to hold the parts or sections in exact joined relationship until permanent fastening devices are applied.

When the semicircular necks 11 are joined, as well as the nipple 13, they present a circular contour, and said necks have external screw-threads 17 and the nipples similar threads 18. The joined nipple parts in each section are held in secure engagement by unitedly screwing them into the boiler, as shown in Fig. 1, nut-faces 19 being provided adjacent thereto for facilitating their attachment in the manner set forth. Before the casing or connection in each instance is applied to the boiler a valve 20, of the needle type, is adjustably fitted in the united grooves 10 and has on an intermediate part screw-threads 21, which relatively coact with screw-threaded surfaces 22 in the necks 11, which slightly reduce the dimensions of the groove at this point. The inner reduced end 23 of the valve 20 is adapted to bear against or

operatively move with relation to the valve-end seats, as clearly shown in Fig. 1, and control the communication between the united grooves 10 and the united channels of the seminipples 13, and consequently with the interior of the boiler.

What may be termed the "stem" 24 of the valve 20 is freely movable in a packing 25, held by a binding-sleeve 26 against the outer united ends of the necks 11, the said stem of the valve also moving freely in and projecting through the said sleeve and having a turn-wheel or other analogous device 27 on the outer end for obvious purposes. The valve 20 can be easily and quickly operated to control or feed the gage, and the latter is held in the opposing seats 5, without leakage or other disadvantageous mounting, by the nuts 8. The united channels 14 communicate with the openings 4 through the seats, and the operation of the gage will be similar to other devices of this character so far as the general functions of such devices are concerned.

The advantages of the present construction of the casing or connection are numerous, and particularly the convenience afforded for quickly separating the parts or sections for the purpose of cleaning and facilitating the removal of sedimentary deposits. A further convenience is at once apparent in a simple mode of disposing and connecting the gage glass or tube in a water and steam tight manner and without the annoyance frequently encountered in other devices of a similar character.

A further and very important feature is the initial preparation of the sections 1 and 2 in exact duplicate form, whereby the cost of manufacture is materially reduced and expense of time and labor saved in the assemblage as well as in avoiding the usual operation of boring or reaming out and interiorly dressing up the channels and grooves as carried on in solid cast devices or those in the main formed of one piece. This can be accomplished in the present instance with a very small amount of labor and with considerably more accuracy. It will also be observed that there are but two main parts, and these are held in steam and water tight coincidence by inserting the united seminipples in the boiler and running the sleeve 26 over the necks 11. The form of valve which is used in the present casing or connection also has a very simple, positive, and accurate operation and is capable of a very sensitive adjustment.

In shipment the parts may be stored or packed closely and compactly and in separate condition or bulk. Owing to the simplicity of the construction, skilled knowledge will not be required in the assemblage of the several parts, and on the whole the utility of the class of devices to which the present invention appertains is materially increased by the improved construction.

Changes in the form, proportions, and minor details may be resorted to without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed is—

1. A casing or connection for a gage of the character set forth consisting of duplicate sections having their inner opposing faces provided with coinciding grooves and channels, each section also having a semineck and a seminipple at opposite portions thereof, a valve mounted between said sections, a connecting-sleeve for the sections, and means for attaching a gage glass or tube thereto.

2. A casing or connection for a gage of the character set forth comprising duplicate sections each provided with a semineck and a seminipple at opposite portions and a gage glass or tube seat, the inner opposing faces of the sections being provided with coinciding grooves and channels forming communicating ways between the boiler and gage-glass, a valve adjustably mounted between the sections, a connecting-sleeve fitted to the necks, and a nut on the gage glass or tube seat.

3. A casing or connection for a gage of the character set forth composed in the main of two duplicate sections each of which comprises a body having a vertical opening therethrough communicating with a gage glass or tube seat, a semicircular neck and a seminipple disposed at opposite points on each section and unitedly forming, respectively, a valve-support and a valve-end seat, a groove being formed transversely of the body and extending through the semicircular neck and the valve-end seat and having communication with the vertical opening of the body by means of a channel of semicircular form disposed in a plane at right angles thereto.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN T. FORGEY.

Witnesses:
JOHN H. HARRISON,
S. V. RICE.