

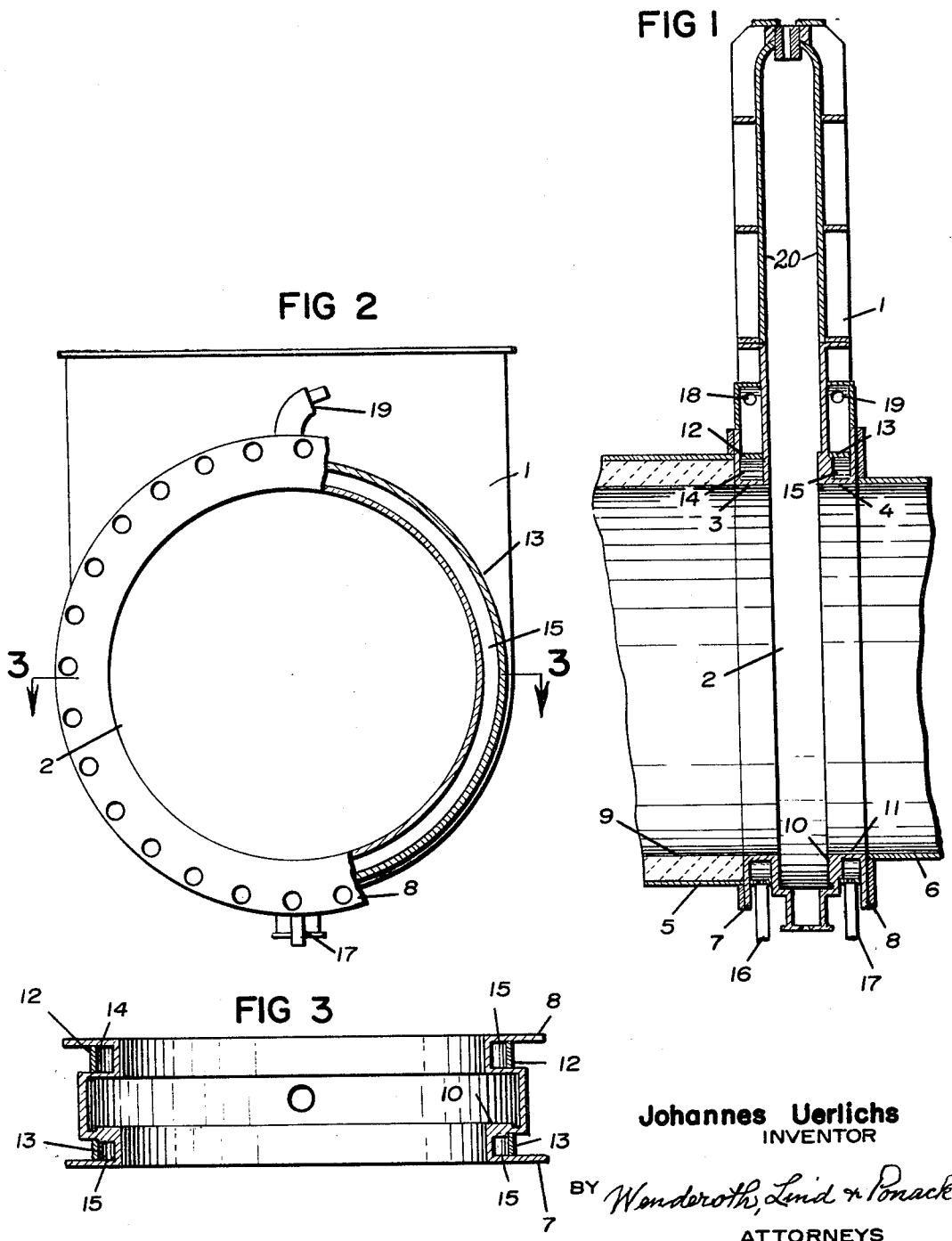
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J. UERLICH'S

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WELDED SLIDE VALVE CASING

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WELDED SLIDE VALVE CASING

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1 Claim. (Cl. 137—340)

ABSTRACT OF THE DISCLOSURE

A welded slide valve casing for hot gases wherein there is a pair of spaced side walls defining a channel for the slide valve tongue. The side walls have a pair of aligned tubular recesses therein and sealing surfaces for cooperating with the tongue are provided on the side walls adjacent the recesses. Flanges are provided on the side walls adjacent the recesses extending outwardly from the channel for the hot gases and sheet metal strips are welded to the exterior sides of the walls and the interior sides of the flanges spaced from the recesses whereby cooling chambers are formed for the sealing surfaces. These cooling chambers have inlets and outlets for the cooling fluid.

The present invention relates to a welded slide valve casing in which flanges are provided having sealing surfaces cooperating with the slide tongue which are cooled and are part of the casing.

An object of the present invention is to provide a simplified construction of the cooling chamber.

In known slide casings provided with cooled chambers, which are used mainly for the sealing off of gaseous media with high temperatures, the cooling chambers are arranged between double plane—and circumferential walls of the slide valve casing, so that the cooling chambers for the most part or at least for a certain portion, extend over the region of the casing between which at an opened slide valve the slide tongue is located. Thereby one obtains a slide valve which is strongly subjected to heat which is especially suitable for installing in hot blast mains of blast furnace operations.

Among others in these operations for instance for the burners of hot blast furnaces, fuel gas- and combustion air slide valves are necessary, the heat stress of which is not so considerable that the installation of a slide with the above mentioned cooling devices would be economically justified. Therefore, in most cases, one uses uncooled unilaterally sealing slide valves which do not quite satisfy the requirements in practice, since especially in so called open hot blast systems in which the burner is arranged within the combustion chamber, and consequently in closed systems between burner and hot blast stoves the necessary combustion slide valve is missing and during the time of the blast hot air advances via the burner to the fuel gas- and the combustion air slide valve, which is thereby subjected to high temperatures. Because of heat tensions resulting therefrom warpings occur at the sealing surfaces which can lead to a porosity of the slide valve which cannot be compensated, whereby on one hand a loss in heat takes place and on the other hand the danger of explosions within the combustible gas main arises.

An object of the present invention therefore is to provide cooling chambers for the sealing rings in the casing which are formed by providing metal strips between the plane sides of the casing and the interior sides of a flange welded to said casing.

A further object is to provide said metal strips in spaced relation to the tubular recesses which support the flanges.

A still further object of the invention is to provide cooling chambers in a valve casing which are built with a minimum of constructional expense to provide an easy cooling of the slide valve particularly when used especially in an open hot blast stove system since such a valve casing will provide a safe operation for the installation since the cooling effect desired is strong enough to protect the sealing surfaces from warping under the effect of heat.

With the above and other objects in view which will become apparent from the following detailed description, a preferred embodiment of the invention is shown in the drawings in which:

FIGURE 1 is a vertical cross-sectional view showing a slide valve casing or housing provided with cooling chambers.

FIGURE 2 is a front elevational view partly in section and

FIGURE 3 is a cross-sectional view taken upon section line 3—3 of FIGURE 2.

The welded slide valve casing is indicated generally at 1 having the two tubular recesses 3 and 4 which support the ring flanges 7 and 8 to which are connected the pipe lines 5 and 6. The pipe line 5 is connected directly with the hot blast stove and is provided with a fire proof lining 9 while the outlet for the flowing media is led through the pipe or main 6.

The slide valve is constructed only for unilateral sealing so that the sealing surface 10 is provided with a reinforced ring 11 welded to the slide valve casing 1 and the circumferential portion defining the recess 4 which supports the flange 8.

Between the plane sides 20 of the housing 1 forming the space 2 for the slide tongue and the flanges 7 and 8, sheet metal strips 12 and 13 are welded which extend in spaced relation to the tubular recesses 3 and 4 and thereby form cooling chambers 14 and 15. The cooling chamber 14 is provided with a cooling water supply connection 16 and the cooling chamber 15 is provided with a similar connection at 17. The cooling water discharge connections are shown at 18 and 19 respectively.

The cooling chambers 14 and 15 cool that portion of the slide valve casing which is strongly subjected to heat and particularly the sealing ring 11 so that any warping of the slide valve casing and the slide tongue or valve resulting from heat tensions are extensively eliminated.

As shown in the drawings the sheet metal strips 12 and 13 are arranged coaxially around the recesses 3 and 4 but they may be, if desired, arranged eccentrically so as to provide a larger volume for the cooling water at the discharge side of the cooling chambers.

As shown in the drawings the sheet metal strips 12 and 13 are in the form of short pipe pieces.

It is thought that the invention and its advantages will be understood from the foregoing description and it is apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing its material advantages, the form hereinbefore described and illustrated in the drawings being merely a preferred embodiment thereof.

I claim:

1. A welded slide valve casing for hot gases comprising a pair of spaced side walls defining a channel for the slide valve tongue and having a pair of aligned tubular recesses therein, sealing surfaces on said walls adjacent said recesses to cooperate with said tongue, flanges on said side walls adjacent said recesses extending outwardly from said channel, sheet metal strips connected to the exterior sides of said walls and the interior sides of said flanges spaced from said recesses to form tubular recesses forming cooling chambers for said sealing surfaces and said cooling chambers having inlets and outlets for cool-

ing fluid, one of said sealing surfaces on said wall at the outlet side of said valve being thickened.

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