H. E. PAGET.

STRAINER.

APPLICATION FILED JULY 3, 1915.

1,273,656. Patented July 23, 1918.

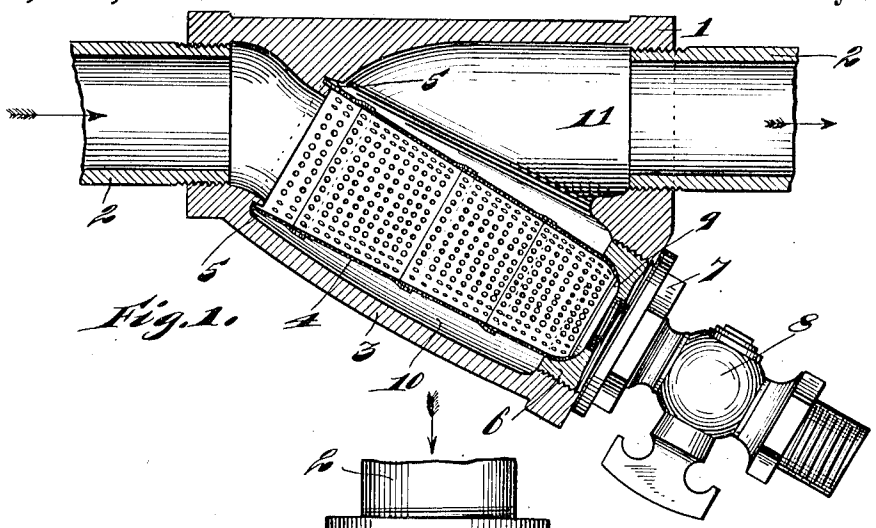


Fig. 1.

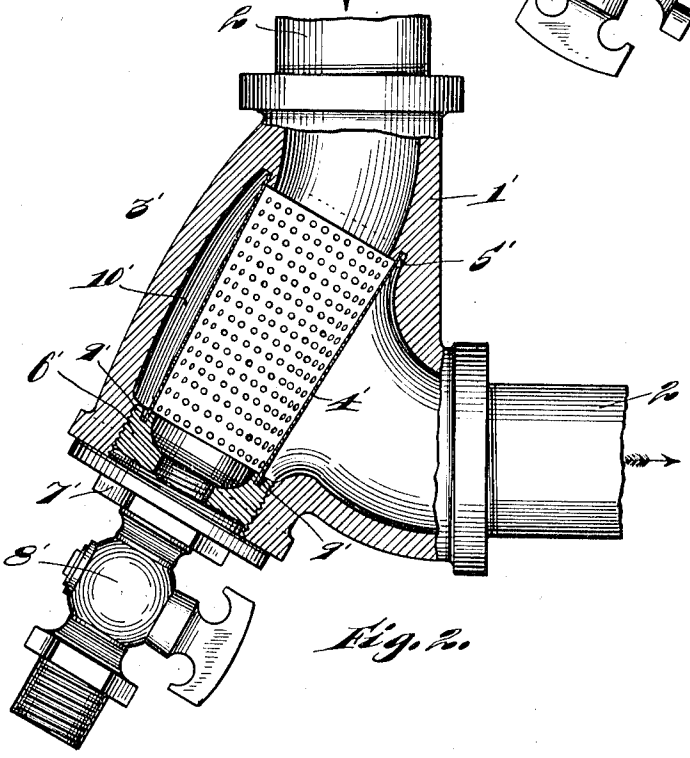


Fig. 2.

Witnesses:
C. E. Wessels.
A. A. Olsen

Inventor:
Harry E. Paget,
By Joshua R. H. Potts
his Attorney.

UNITED STATES PATENT OFFICE.

HARRY E. PAGET, OF CHICAGO, ILLINOIS.

STRAINER.

1,273,656. Specification of Letters Patent. **Patented July 23, 1918.**

Application filed July 3, 1915. Serial No. 37,964.

To all whom it may concern:

Be it known that I, HARRY E. PAGET, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Strainers, of which the following is a specification.

My invention relates to improvements in strainers such as are used in connection with steam, water or other fluid pipes, to strain the fluid passing therethrough and thus prevent the entrance of foreign matter into the machine, device or apparatus with which the pipe, in which the strainer is employed, communicates.

The object of my invention is the production of a strainer of the character mentioned which will be of durable and economical construction, one which may be readily and easily installed, one which will permit of ready cleaning of the same, that is of ready removal of the foreign matter collected thereby, and one which will be highly efficient in use.

Other objects will appear hereinafter.

With these objects in view, the invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which,

Figure 1 is a central section of a strainer embodying the invention, showing the same arranged in a pipe, and

Fig. 2 is a view similar to Fig. 1 of another form of construction.

The preferred form of construction, as illustrated in the drawing, comprises a tubular body 1 the opposite ends of which are screw-threaded for connection with the ends of the pipe 2 in connection with which the strainer is employed. The body 1 is formed at one side with an angularly disposed portion 3 in which is mounted a straining element 4. Said straining element is of tubular formation and slightly tapering toward its outer end, the same being formed of a plurality of telescoping sections, as clearly shown in Fig. 1. One end of the straining element 4 rests in an annular groove or seat 5 formed for the reception thereof in the body 1 the opposite end of said straining element engaging against a plug 6 which is threaded in the outer end of portion 3. The plug 6 is formed with an exteriorly positioned portion 7 which may be engaged by a wrench or other tool for rotating the same. Said plug has an axial passage formed therethrough and a drain or blow-off valve 8 is connected with the outer end of said plug in open communication with said passage. The inner end of plug 6 or the portion thereof engaged by the outer end of straining element 4 is formed with a curved seat 9, the curvature of said seat being comparatively gradual, as clearly shown in Fig. 1, so that in adjusting the plug 6 into engagement with said straining element, in the event of too great pressure being applied by the plug upon the straining element, the latter instead of being crushed by this pressure will bend inwardly at its outer end to conform with the curvature of seat 9. Also, with this arrangement, it will be seen that an exceedingly tight joint will be formed between the straining element and the seat 9, since the area of the contacting surfaces at this point is comparatively great. Through the sectional construction of the straining element, resulting in double thicknesses at intervals where the sections overlap, reinforcement results at these points which necessarily lends strength and rigidity to the construction.

In use, the steam, water or other fluid is introduced to the body 1 as indicated by the arrows. Upon entering the device, the fluid passes into the straining element and thence through the perforations therein, entering an annular space 10 formed around said element, the fluid being finally discharged from the device by passage through the exit port 11, as will be readily understood. The circular wall of the space 10 is bulged at its center as seen, in order to allow for a larger quantity of fluid being accommodated at the central portion of said space than at the ends thereof. This is of advantage since the outlet port 11 leads centrally from the space 10 and necessarily the central portion of said space will be taxed the greatest in the flow of fluid into said port 11. In the passage of the fluid through the straining element, it is of course apparent that any solid foreign matter will be retained in said straining element. In order to remove the foreign matter thus collected in the straining element it is only necessary to open the valve 8, since upon so doing, it will be seen, that the flow of the fluid into the device will

carry the foreign matter collected in the straining element out through said valve. Through the annular disposition of the portion 3 a substantially straight-away construction is provided, or one wherein the flow of the fluid through the pipe 2 will not be retarded at the straining element, such as results in devices of this character in use at the present time where the fluid is required to pass around a sharp bend or back upon itself in passing through the straining element.

Also, the straining element, in the present construction, is of such size or proportions that the area of the same is several times that of the inlet or outlet to and from the body 1 which permits the use of very small perforations in said straining element without checking the flow of fluid in the least. Through the tapering construction of the straining element, the pressure of the fluid entering the straining element will be distributed along the entire length of said straining element which will thus assume a considerable portion of the strain or pressure which otherwise would be directed against the plug 6 were a cylindrical straining element employed or one where the sides thereof would offer no resistance to the incoming fluid. Moreover, the tapering formation of the straining element 4 facilitates the removal of the same from the portion 3 when the plug 6 is detached, it being clear that were said straining element of uniform diameter throughout and of a size only slightly less than the diameter of the opening at the outer end of said portion 3, removal of said straining element would be more difficult.

In the form shown in Fig. 2, the body 1′ of the straining element is formed for connection with pipes disposed at right angles to each other, said strainer body being adapted to be substituted for the ordinary pipe elbow. In this construction the relative positioning of the portion 3′ is substantially the same as above described, the straining element 4′ which is arranged therein being, however, of a one piece construction instead of sectional. Said straining element is interposed between seats 5′ and 9′ formed respectively in the body 1′ and the plug 6′. In this arrangement, the seat 9′ which is formed in the plug 6′ is the same as the seat 5′ being simply an annular groove adapted to snugly receive the end of the straining element. The outer end 7′ of the plug 6′ with this construction, however, is of the same formation as that of the plug 6 and a strainer or blow-out valve 8′ is connected therewith in the same manner, as above described. The operation of the form shown in Fig. 2 is precisely the same as that above described, the differences in construction in no way affecting the operation.

While I have illustrated and described the preferred forms of construction for carrying my invention into effect, these are capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A strainer comprising a hollow body; a tubular perforated straining element open at both ends mounted in said body through which the fluid is required to pass in its passage through said body, said straining element consisting of a plurality of tubular sections, the adjacent ends of which are overlapped, substantially as described.

2. A device of the class described comprising a hollow body having an inlet and an outlet and provided with a strainer chamber in communication with said inlet, the end of said chamber adjacent said inlet being provided with an annular seat and the outer end thereof being open and threaded, a plug threaded upon the open end of said chamber and provided with a discharge cock, and a conical strainer element formed of a plurality of sections with overlapping edges, said strainer element having its base resting against said seat, and its opposite end engaged by said threaded plug, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY E. PAGET.

Witnesses:

JOSHUA R. H. POTTS,

HELEN F. LILLIS.