(No Model.)

H. G. ASHTON.

SAFETY VALVE.

No. 301,079. Patented July 1, 1884.

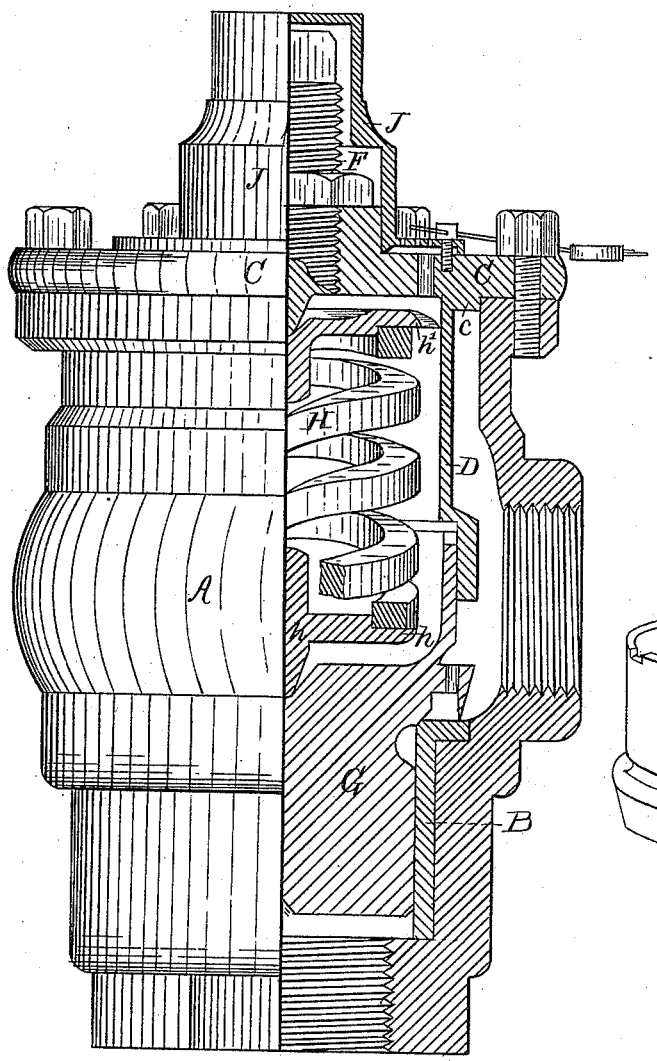

Fig. 1.

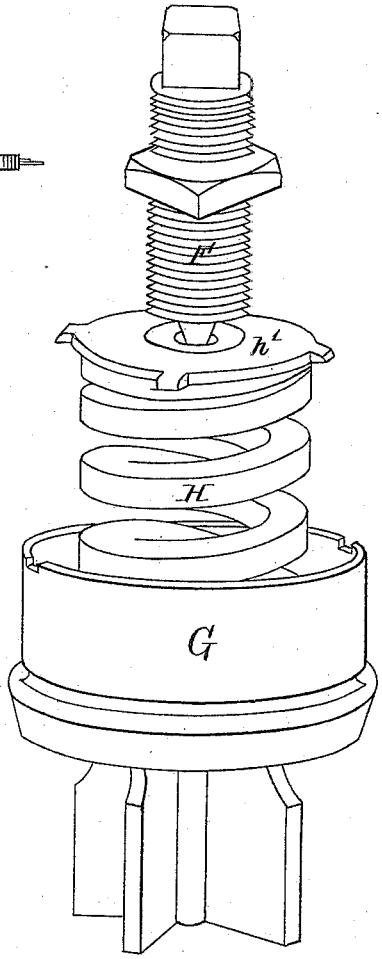

Fig. 2.

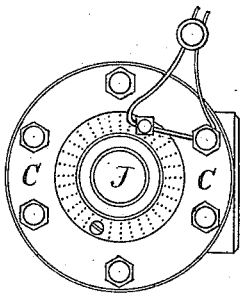

Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY G. ASHTON, OF SOMERVILLE, MASSACHUSETTS.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 301,079, dated July 1, 1884.

Application filed July 1, 1880. (No model.) Patented in England September 22, 1880, No. 3,849; in Belgium September 27, 1880, No. 52,656; in Canada September 28, 1880, No. 11,789; in France September 29, 1880, No. 138,867, and in Germany October 3, 1880, No. 13,446.

To all whom it may concern:

Be it known that I, HENRY GEORGE ASHTON, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Safety-Valves, of which the following is a specification.

This invention relates to improvements in the safety-valve described in my Patent No. 200,119, dated February 12, 1878.

The object of this invention is to provide a safety-valve that shall embody all the best features of construction and arrangement of parts that tend to make up a reliable and free acting device for preventing the pressure from exceeding a certain limit; and my invention consists, mainly, in a safety-valve having a spring-chamber closed at the top, with its bottom formed by the close-fitting upper part of the valve, and containing a spring held between two disks centrally mounted on pivotal points above the valve-seat.

I am aware of Patents No. 193,411, of 1877, and No. 162,831, of 1875, to Kunkle, and also of the Patent No. 122,756, of 1872, to Camerer, and disclaim all that is therein shown, my invention being a combination of elements, all of which are old, the spring-chamber, with its top closed and its bottom formed by a close-fitting valve, being shown in my Patent No. 200,119, and the spring between central disks being shown in Camerer's patent, and other patents also; but I am nevertheless, so far as I have any reason to believe, the first inventor of the combination of these two elements, and this combination is a very important and practical improvement in safety-valves.

In the drawings, Figure 1 is a side elevation, partly in section, of the improved safety-valve. Fig. 2 is a perspective view showing the valve and its spring. Fig. 3 is a plan on a smaller scale.

A is the shell of the valve. It is tapped at its lower end for connection with the boiler, and at one side for connection with a pipe, through which the waste steam passes from the shell A, so that the waste steam may be discharged at a point at a distance from the shell A; but when this is not desired the steam escapes directly into the air through one or more holes in shell A. The lower part of shell A is bored out for the bushing B, which is usually of a different metal from the shell A, as will be well understood without further explanation. This bushing, after being turned and bored, is forced into its place in shell A. The upper surface of shell A is turned off in a lathe, and the upper inner portion is bored true. The bushing B should be rebored after it is forced into its place in the shell A, as it is necessary that the axis of the bore of shell A and the axis of bushing B shall be in line. Even an apparently trifling deviation will produce a bad effect.

The cap C and cylinder D are cast in one piece, and finished so that the axes of the cap and cylinder shall be in line; and the cap is turned true at the shoulder *c*, which is accurately fitted to the mouth of shell A, so that when the cap is put on this shoulder *c* will bring the axes of the bushing B, shell A, cap C, and cylinder D in the same line. The screw F passes through the center of cap C, so that its axis is in the same line with all the other axes above mentioned.

The valve G is turned true, so that its guides will fit in the bushing B and its upper part in the cylinder D, and thereby the axis of the valve, when on its seat, is brought in line with the other axes.

The spring H is supported between the disks *h h'*. The lower disk, *h*, is pivoted directly upon the center of the valve G, and the upper disk, *h'*, directly upon the center of the adjusting-screw F.

The cover J serves to prevent tampering with the adjusting-screw F, and also to prevent cinders, dust, and dirt from entering the holes in the cap C. The flange of the cover is perforated, as shown in Fig. 3.

What I claim as my invention is—

1. In a safety-valve, the combination of a spring-chamber having its top closed and its bottom formed by the close-fitting upper part

of the valve, with a spring held between two disks centrally mounted on pivotal points, and adjustable by means of a screw in the cap of the chamber, substantially as set forth.

2. The improved safety-valve above described, having the outer shell, A, cap C, cylinder D, adjusting-screw F, valve G, with its upper part fitted in the cylinder D, and spring H, held between two disks, *h h'*, centrally mounted on pivotal points, all arranged together as and for the purposes set forth.

HENRY G. ASHTON.

Witnesses:
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