

No. 702,005.

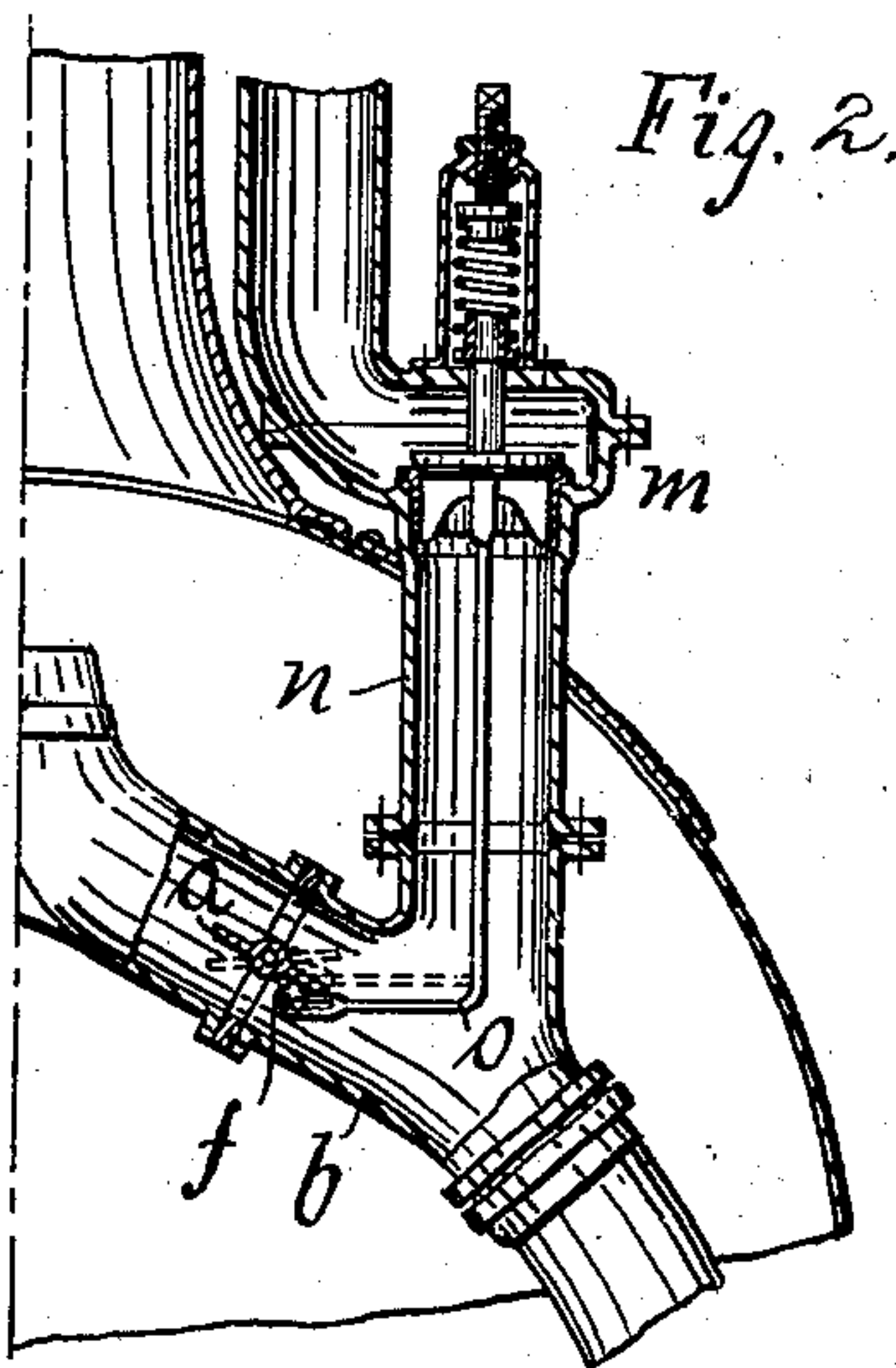
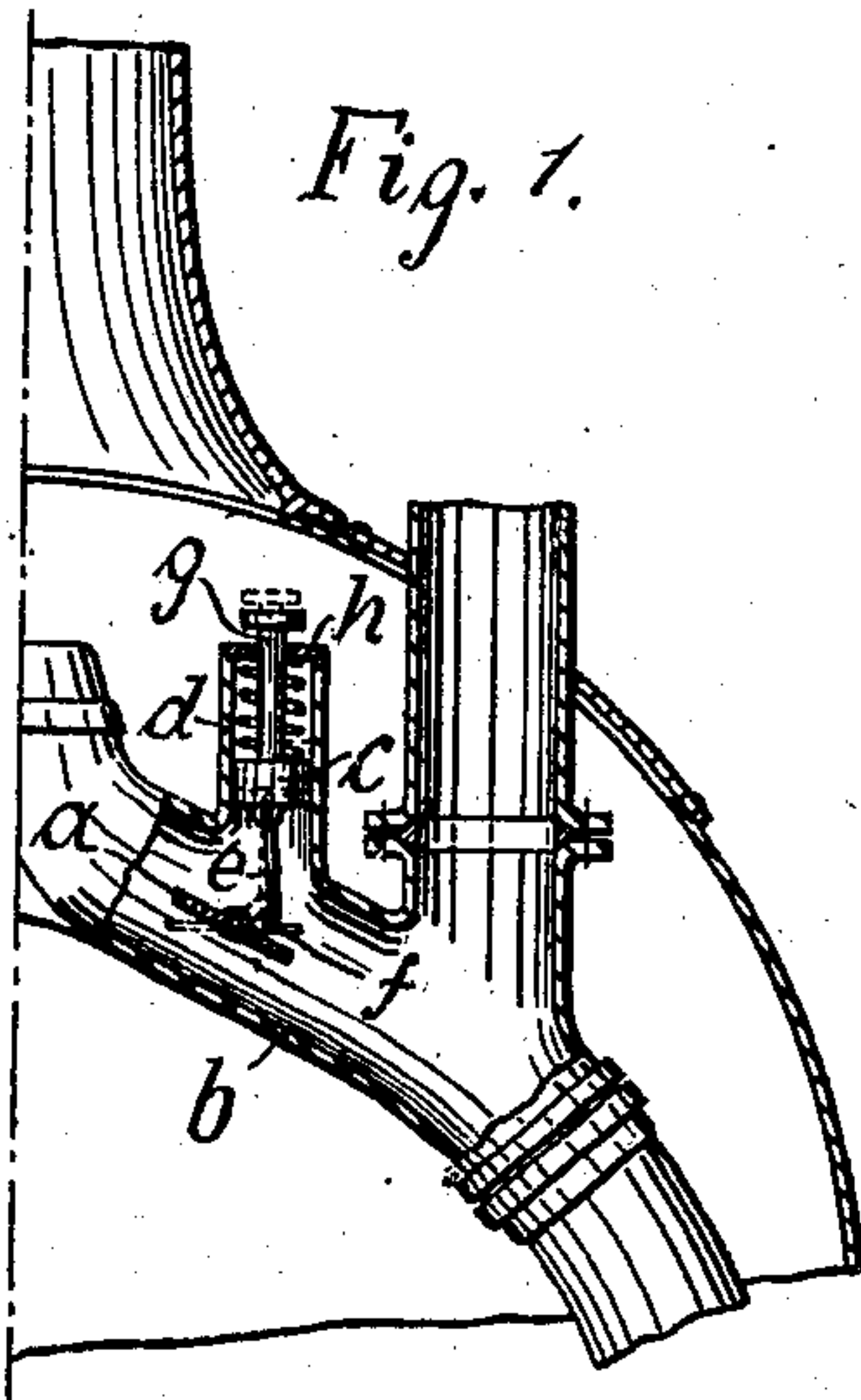
Patented June 10, 1902.

O. HÖRENZ.

DRAFT REGULATOR FOR LOCOMOTIVES.

(Application filed Jan. 29, 1901.)

(No Model.)



WITNESSES:

O. F. Blankmeister
Th. Martin.

INVENTOR

Otto Hörenz
BY *Amil Reinelt*
ATTORNEY.

UNITED STATES PATENT OFFICE.

OTTO HÖRENZ, OF DRESDEN, GERMANY.

DRAFT-REGULATOR FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 702,005, dated June 10, 1902.

Application filed January 29, 1901. Serial No. 45,218. (No model.)

To all whom it may concern:

Be it known that I, OTTO HÖRENZ, a citizen of the Kingdom of Prussia, residing at Dresden, in the Kingdom of Saxony and Empire
5 of Germany, have invented certain new and useful Improvements in Draft-Regulators for Locomotives; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 This invention relates to a device for regulating the draft in locomotives, being especially designed to prevent a too strong draft with its consequent evils from arising when an unusually large amount of steam escapes
20 through the exhaust-pipe—as, for instance, in overcoming an upgrade when there is a large consumption of steam by the cylinders or in starting, especially when the wheels slide on the rails.

25 The invention is illustrated in Figures 1 and 2 of the accompanying drawings.

It consists in a valve *a*, arranged in the exhaust-pipe *b* in such a manner that by its operation the surplus of steam accountable for
30 the too strong draft may be directed aside or the effective current of steam so weakened that the draft never exceeds a certain maximum. The automatic operation of the valve may be effected by the increase of the steam-
35 pressure or of the draft with the aid of various devices.

The device shown in Fig. 1 consists of a piston *c*, arranged to move in a cylinder *d*, communicating with the exhaust-pipe *b* and
40 connected through a rod *e* with an arm *f* of the valve *a*. (Here represented as a damper-valve.) A rod *g*, firmly connected with the piston, is fitted through an opening of the cylinder-top *h* to further guide the piston,
45 and a screw-spring acts on the latter to normally press it downward. In this device the piston *c* is raised when the exhaust of steam increases and by means of rod *e* and arm *f* the valve operated, so as to weaken the cur-
50 rent of steam.

The device shown in Fig. 2 consists of a valve *m* in the branch pipe *n* of the exhaust-pipe *b*, which transmits motion by an angu-

lar rod *o* to the arm *f* of the valve *a*. When the amount of steam exhausted increases, the
55 valve *m* is raised and by the intermediate parts *o* and *f* the valve *a* again turned into the position shown by broken lines in Fig. 2, the effective current of steam being thus
60 weakened, as the free opening left by valve *a* is diminished and part of the steam let off through pipe *n*, thus not contributing toward producing draft.

The valve *a* might be operated by still other devices, and I therefore do not restrict
65 myself to those named, but desire my claims to be extended generally to all valves operated by the increase of the draft or the exhaust of steam with the aid of any suitable organ.

Instead of in the smoke-box the valve *a*
70 might be arranged in a part of the exhaust-pipe nearer the cylinder or in the latter and might also be employed for other than exhaust-pipes.

What I claim, and desire to secure by Let-
75 ters Patent, is—

1. An exhaust-regulator for locomotives, comprising an exhaust-pipe, a valve pivoted therein, a branch pipe connected to the ex-
80 haust-pipe, means in the branch pipe to control the valve, and a rod extending through the branch pipe to connect the valve and its controlling means.

2. An exhaust-regulator for locomotives comprising an exhaust-pipe, a valve pivoted
85 therein, a branch pipe connected directly to the exhaust-pipe a valve-seat therein, a valve in the branch pipe, means to hold the said valve in position on the valve-seat, and means
90 extending through the exhaust-pipe and branch pipe to connect the respective valves in the said pipes.

3. An exhaust-regulator for locomotives comprising an exhaust-pipe, a valve located
95 therein, a branch pipe connected to the exhaust-pipe and provided with a valve-seat, a valve in the branch pipe normally held closed by a spring, means to regulate the tension on the spring and means extending through the
100 branch pipe to connect the respective valves.

In testimony whereof I affix my signature in presence of two witnesses.

OTTO HÖRENZ.

Witnesses:

HERNANDO DE SOTO,
EMIL REISHELT.