To all whom it may concern:

Be it known that I, JEAN BAPTISTE GYS, manufacturer, a citizen of Belgium, residing at 67 Brogniez street, Brussels, in the King- 5 dom of Belgium, have invented new and useful Improvements in Self-Lighting Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention.

This invention relates to self-lighting gas-burners, and more especially to a cock by means of which a sure and safe operation of the burner and its automatic lighting devices will be attained.

In the accompanying drawings, Figures 1, 2, and 3 are side elevations of a burner equipped with my invention, the cock being shown in axial section. Figs. 4, 5, and 6 show the cock alone in elevation in the same position of the parts as in Figs. 1, 2, and 3. Figs. 7, 8, and 9 show the turning-plug of the cock in relatively-similar positions. Fig. 10 is an end view of the cock when the gas is shut off, and Fig. 11 is an axial section of the cock in this position. Fig. 12 is a cross-section of the cock through the pilot-passage when the gas is turned on. Fig. 13 is a similar section through the main passage with the plug in the same position as in Fig. 12.

The cock is composed of the casing a, screwed upon the upper end of the pipe b, through which the gas is supplied, and having the burner c screwed upon its upper end. The turning-plug d of the cock is chambered at f and has a small channel or passage r leading from said chamber in line with the igniting-tube j, which rises from the shoulder l on the casing a and terminates at a point adjacent to the burner. The plug has also a through- 40 passage intersecting the chamber f in line with the pipe b, the two portions of this passage being lettered k and t. A passage q in line with the passage h conveys the gas up to the burner when the passages h, i, and q are in line with the pipe b.

From the outer end of the passage s runs a small groove p, cut circumferentially in the surface of the plug d and tapering to a point at its farther end. A similar groove o is run from the end of the passage i, extending around the plug toward the groove p, but in a different parallel transverse plane.

The casing has its shoulder or collar l cut away to form abutments m, m', diametrically opposite each other, and on the plug is a pin n, which by coming in contact with these abutments limits the movement of the plug. The relative location of this pin, the passage r, the igniting-pipe j, and the passages h, i, q is such that when the pin rests against the abutment m, as shown in Fig. 4, then the passage r is in line with the igniting-tube, and the gas is cut off from the burner k; but on giving the plug a partial turn, as shown in Fig. 5, the passage r is carried out of line with the tube j, leaving said tube in communication with the chamber f only through the groove p and passage r, and thus cutting off a large part of the gas-supply to said tube. All this time the groove c rides over the end of the main supply-pipe o and insures a supply of gas to the igniting-tube through the passage i and the chamber f.

Just before the groove c is entirely withdrawn from under the end of the tube j the passage h opens up into the passage q and the gas begins to flow in small quantity to the burner k, where it is ignited by the flame which still burns on the igniting-tube; but a continued turning movement of the plug s55 shuts off the gas from said tube and extinguishes its flame, at the same time increasing the supply to the main burner k. When the key of the cock stands as shown in Fig. 6, the burner k is fully lighted. A continued turning of the plug until the pin n strikes the abutment m', as shown in Figs. 10 and 11, cuts off the gas from both the main burner and the igniting-tube as well; but if when the main burner is alight the cock be turned back to the position shown in Fig. 4 the gas is gradually cut off from the burner k; but before it is entirely checked it begins to flow into the tube j through the passage r and the groove p, so that the igniting-flame is lighted by the main burner just before the further movement of the cock shuts off the gas entirely from the burner k.

This invention is evidently applicable to all kinds of gas-burners.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a self-lighting gas-burner, the combina-
tion with a casing adapted to be interposed between the supply-pipe and the main burner, of an igniting-tube mounted on said casing, and a turning plug in said casing having a central chamber, passages $h$ and $i$ intersecting the same in line with the supply-pipe and main burner, a passage $r$ extending from the chamber in line with the igniting-tube, a tapering groove $p$ and a groove $o$ running around the plug toward each other from the ends of the passages $r$ and $i$ respectively but in parallel transverse planes, the arrangement being such that gas will be supplied to the main burner just before it is cut off from the igniting-tube, and to the igniting-tube just before it is cut off from the main burner, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of July, 1899.

JEAN BAPTISTE GYS.

Witnesses:

J. P. H. POHLEY,

GREGORY PHELAN.