

P. SCHOFIELD.
Steam-Gauge Cocks.

No. 154,090.

Patented Aug. 11, 1874.

Fig. 1.

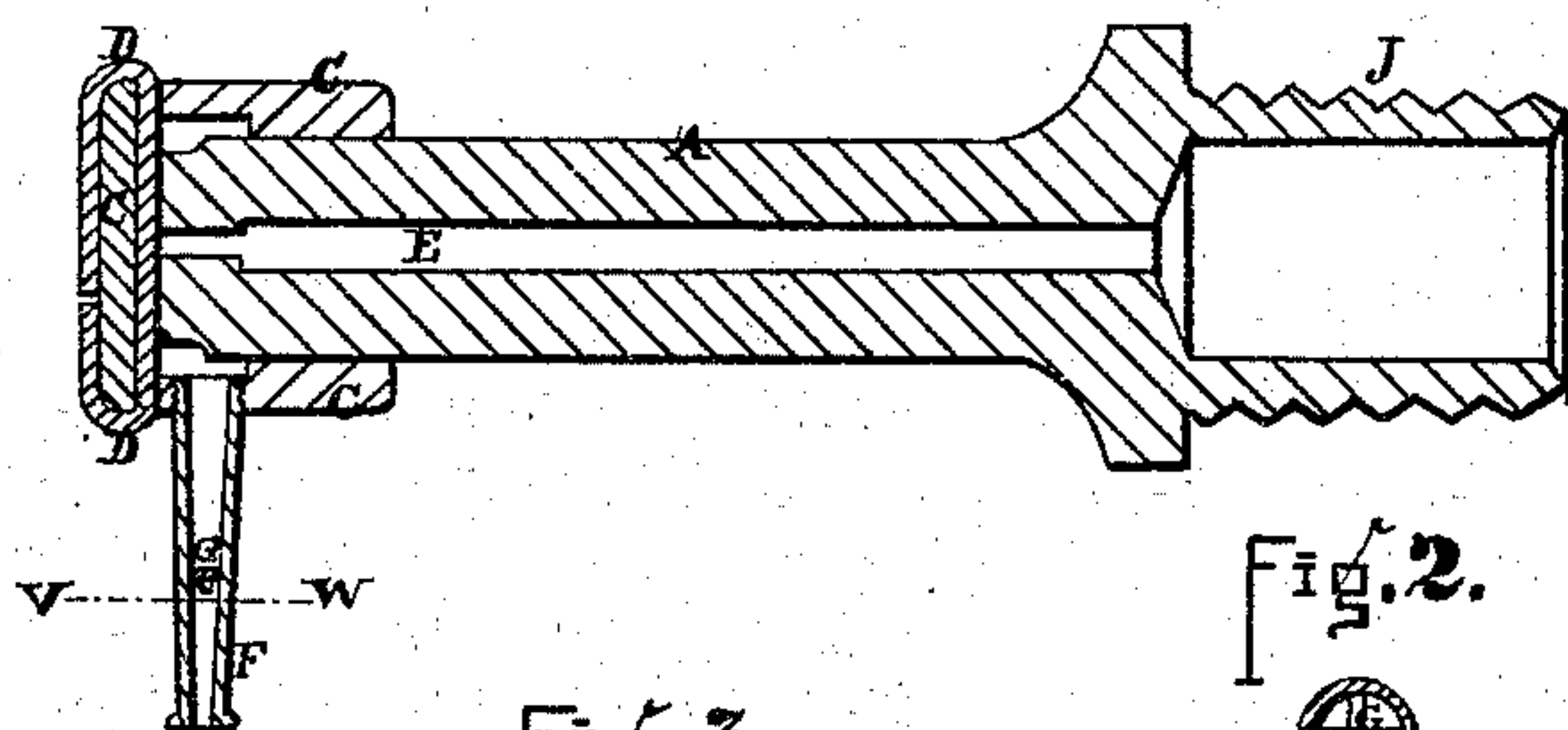


Fig. 2.



Fig. 3.

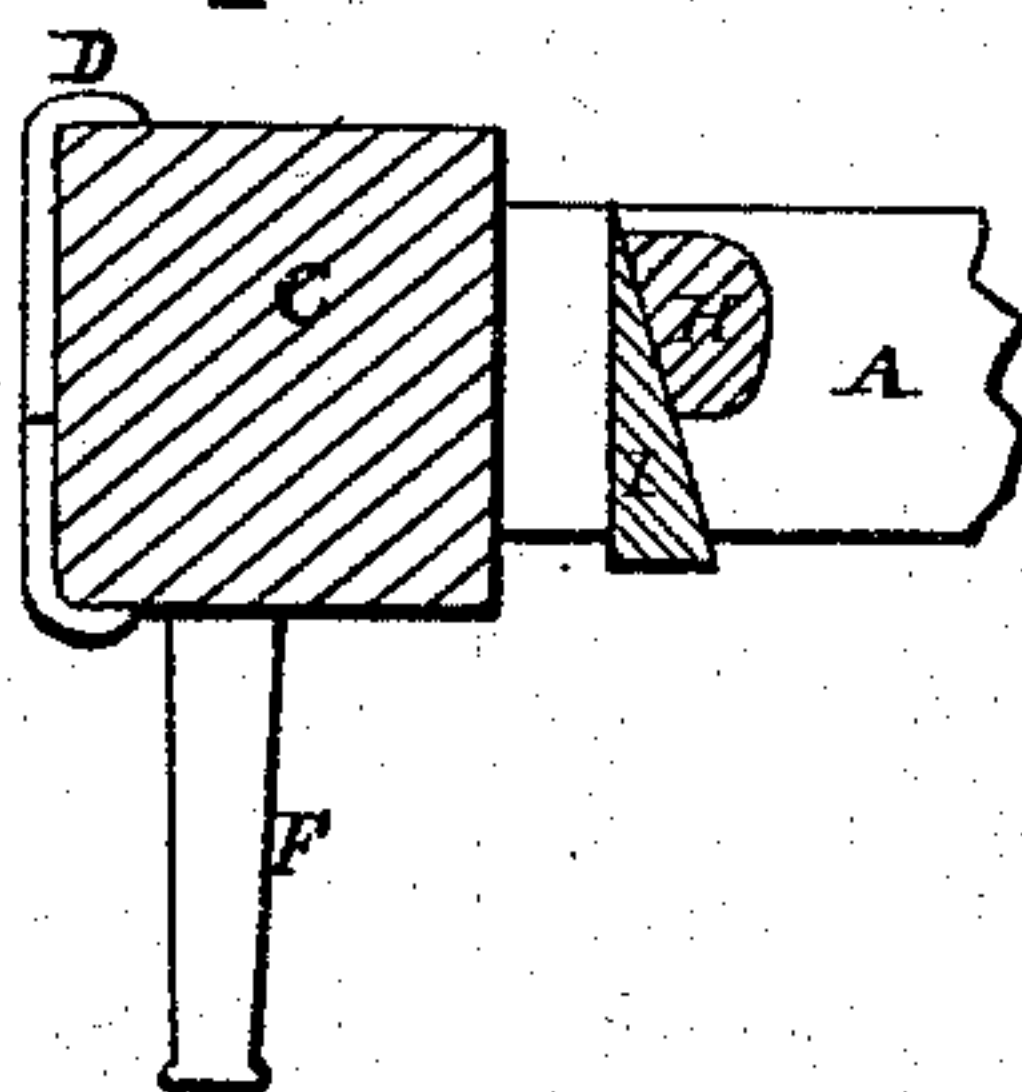
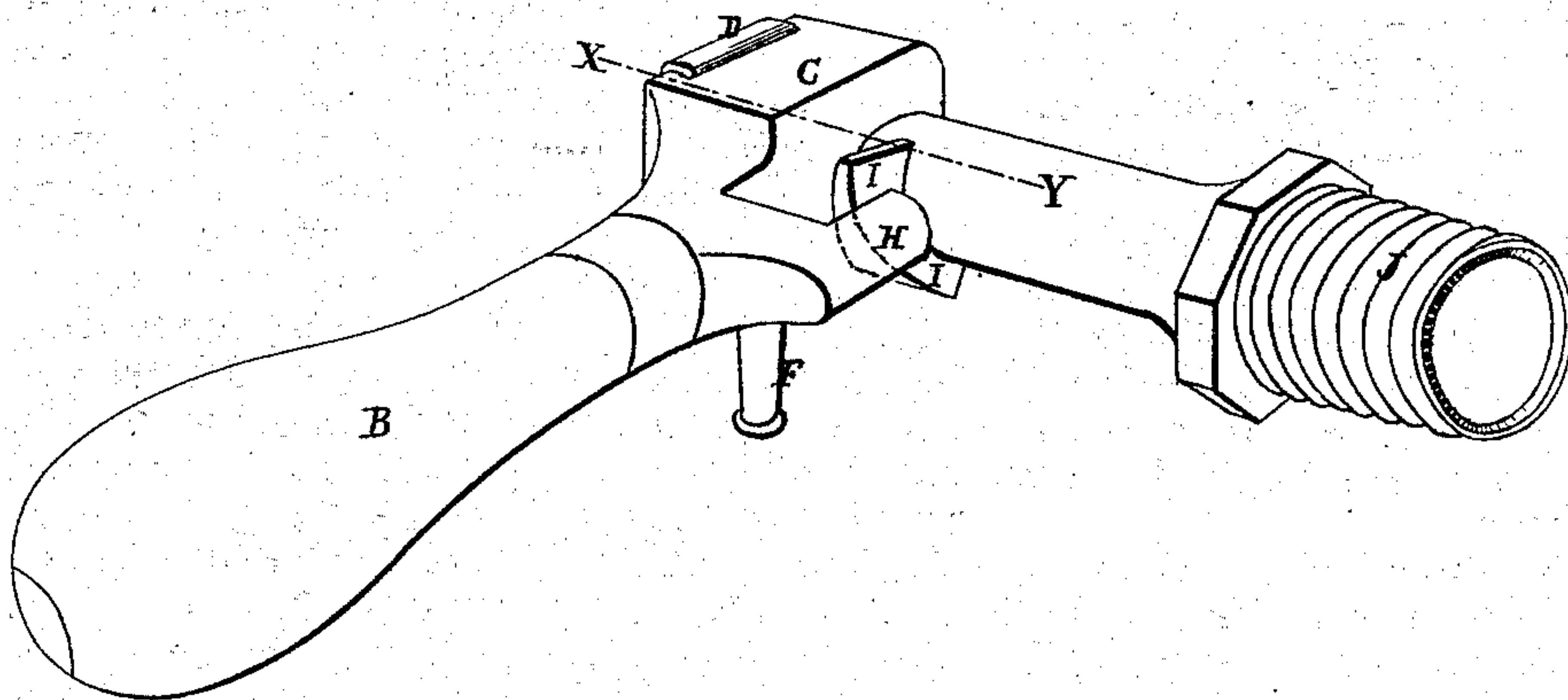


Fig. 4.



Albert E. Zacherle
Andrew Zacherle } Witnesses.

Inventor.
Peter Schofield
by his Atty.
George E. Duckley

UNITED STATES PATENT OFFICE.

PETER SCHOFIELD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEAM-GAGE COCKS.

Specification forming part of Letters Patent No. **154,090**, dated August 11, 1874; application filed March 21, 1874.

To all whom it may concern:

Be it known that I, PETER SCHOFIELD, of the city of Philadelphia, State of Pennsylvania, have invented a new and Improved Steam-Gage Cock; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings making part hereof.

My invention consists of the combination of a scroll or cam on the stem of a steam-gage cock, a sleeve, chamber, or box, and a handle attached to the box, to open and close the cock; the combination of the detachable box, working laterally by means of the side handle and a scroll or cam on the stem, by sliding upon which the steam or water in the stem is either shut off or opened; the combination of a slotted box (the slots being for the reception of packing) and the nozzle of a steam-pipe, having a scroll or cam upon it.

In the drawings, Figure 1 is a longitudinal section of the stem and box; Fig. 2, a longitudinal section of the nozzle on the line V W of Fig. 1, showing the crossed pins; Fig. 3, a longitudinal section on the line X Y of Fig. 4, through the lug or heel on the handle, and the scroll or cam on the stem; Fig. 4, a perspective view of my gage-cock.

A is the stem; B, the handle, attached rigidly to the box C; D, the packing; E, the orifice or opening of the stem; F, the nozzle; G, the cross-pins; H, a lug or heel on the foot of the handle; I, the scroll or cam on the stem; J, a screw-thread, by means of which the cock is attached to the boiler.

The operation is as follows: The steam or water under pressure from the boiler passes through the interior E of stem A, and is stopped by packing D against the inside of the outer end of box C. The cock is then opened by the operator by raising handle B very slightly. This raises the lug or heel H on cam I, and as the friction-surface of this cam inclines upwardly toward the outer end of the stem A the pressure of the steam or water inside against the packed end D of the box C forces the box outward, and the steam or water escapes through nozzle F; passing the pins G which divide the current of steam or water,

the current unites again below the pins and rushes out a compact close stream. The action of these pins, to describe it more particularly, is as follows: The steam or water meets them and is separated; it then rushes together below them, with a tendency of each division (made by the pins) to pass through its opposite, the currents being equal. This tendency is met and opposed by the opposite current, and the effect is that they tend to the center of the space in the nozzle, and come out a closely united jet or stream. The exit is closed by simply pushing the handle down or dropping it.

I prefer to make my gage-cock of brass, and the packing of lead or rubber.

The nozzle F, though I have shown it as at about right angles to the handle B, I shall in actual manufacture make at a greater angle than this, so as to throw the stream of water or steam away from the hand and person of the operator. The packing D, as shown in the drawings, is passed through a slot in the top of the outer end of the box and clinched through a similar opposite slot in the lower side of the box. I prefer to have but one slot, either on the bottom, top, or side of the outer end of the box, through which the packing may be passed, and a recess opposite to this slot on the inside may receive it, or the recess can be dispensed with, as the packing, being stiff, will retain its place. The steam-pressure being against the end of box G, and said box only working laterally, it is evident that no amount of steam-pressure can open the cock, as the weight of the handle has no part or office in resisting said pressure, the pressure being resisted directly by the scroll or cam I, which rigidly locks the cock. I have already tested it, and found two hundred and fifty pounds to the square inch not to affect it, nor to produce the slightest leak. The handle B and box C can be detached for cleaning at any moment by reversing the handle to the other side and slipping the box off the end of stem A. The cam on the stem, and the lug or heel on the foot of the handle, may be reversed so as to change their respective positions—i. e., the lug may be placed on the

stem and the cam on the foot of the handle. Either the lug or the cam may also be on that end of the stem covered by the box, and either the cam or the lug cast or cut in the interior of the box, instead of being in their present positions.

My gage-cock may be used for hydrants and kindred uses, where cocks are required. The wear is very slight, as such a limited motion of the handle and box is required to open the cock.

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

1. The combination of the handle B, sleeve,

box, or chamber C, and scroll or cam I, for closing and locking a steam-gage cock, substantially as described.

2. The combination of the detachable box C, working laterally, and the scroll or cam I, substantially as and for the purpose described.

3. The combination of the slotted box C, (the slots being for the reception of packing,) and the stem of a steam-pipe, having a scroll or cam, substantially as described.

PETER SCHOFIELD.

Witnesses:

JACOB S. DUVALL,
WILLIAM H. LEWIS.