(No Model.)

C. D LYNCH.

STEAM WHISTLE.

No. 406,454. Patented July 9, 1889.

Fig. 1

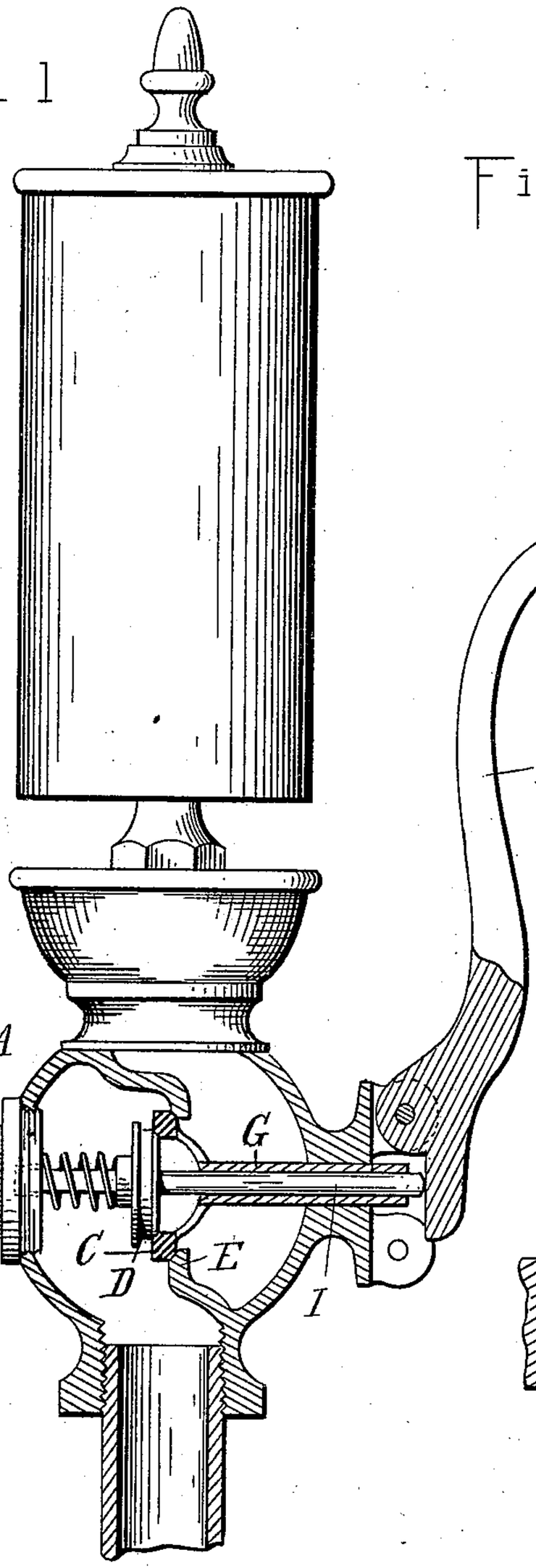
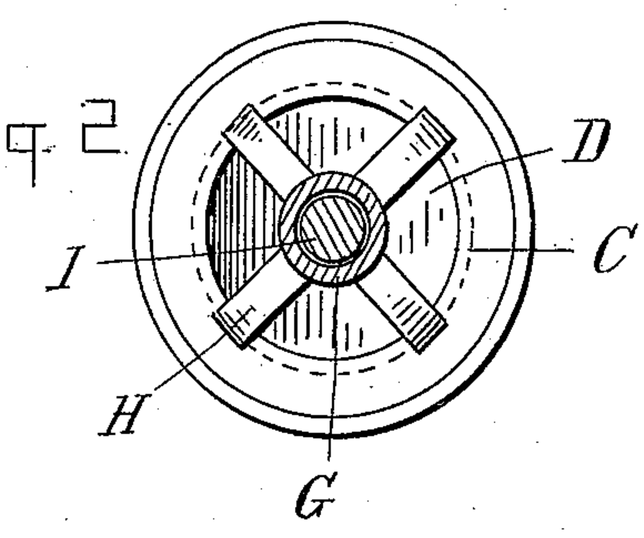


Fig. 2



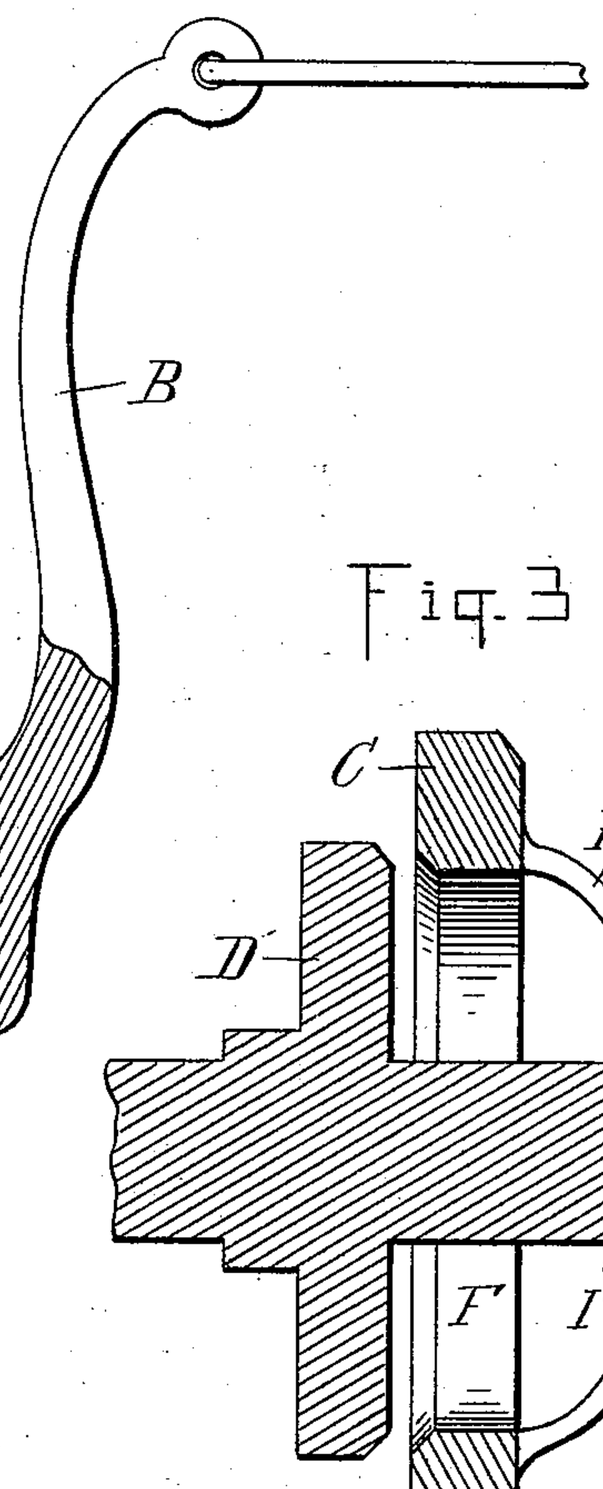


Fig. 3

Witnesses:
P. M. Hulbert
J. Paul Mayer

Inventor:
Charles D. Lynch
By Thos. L. Sprague & Son
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES D. LYNCH, OF DETROIT, MICHIGAN.

STEAM-WHISTLE.

SPECIFICATION forming part of Letters Patent No. 406,454, dated July 9, 1889.

Application filed February 11, 1889. Serial No. 299,468. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. LYNCH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Steam-Whistles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in steam-whistles, and has special reference to that class of steam-whistles provided with a valve and a lever for operating said valve; and the invention consists in the peculiar construction of said valve, whereby it may be opened more readily against a great pressure of steam than in the ordinary construction, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is an elevation of a steam-whistle of known construction and provided with a valve to which my invention is applied. Fig. 2 is a plan of the valve-disk, and Fig. 3 is a vertical central section through the valve disk and stem on a larger scale than shown in Fig. 1.

In Fig. 1 I show a steam-whistle provided with a spring-valve A and the operating-lever B, by means of which that spring-valve is opened against the pressure of the steam when it is desired to sound the whistle, all the parts being of well-known construction and operation, except as hereinafter described.

In the present construction of steam-whistles the valve is provided with a single valve-disk only, and when it is desired to sound the whistle the valve has to be opened against the whole pressure of the steam, which in case of a large whistle is so considerable that it requires great force to open the valve. This difficulty I overcome in the following manner.

Instead of constructing the valve-disk in one solid piece, as in the ordinary construction, I make it in two parts C and D, the valve-disk C being of the ordinary size to operate on the valve-seat E of the valve, while the valve-disk D is of smaller size and operates on a valve-seat formed by a central aperture F in the valve-disk C. The valve-disk C is provided with a hollow stem G, which, by means of spider-arms H, carries the valve-disk C, and the valve-disk D is provided with a stem I, adapted to fit loosely through the tubular stem G. By making the valve-stem I of the valve D project a little distance closer into proximity to the operating-lever B than the tubular stem G it will be evident that if the lever B is pulled to sound the whistle the valve-disk D will be opened in advance of the valve-disk C. Thus, as each valve-disk covers only a fraction of the area of the valve-port, it is evident that it requires only a fraction of the power—say one-fourth, if the two valves are about of equal area—to sound the whistle. It will be obvious that this advantage is obtained without any detriment to the operation of the whistle, as the interval of opening the two disks, provided a vigorous pull is applied to the lever B, is so small that it will make no difference in the sounding of the whistle.

It will be seen, further, that steam-whistles provided with the ordinary valve may be readily changed to embody my improved construction, which also affords the same facilities as the ordinary construction for grinding the disk to the seats.

On steamboats, which carry from one hundred to one hundred and fifty pounds of pressure of steam, it is hard work to operate the whistle, and in foggy weather, when the whistle has to be blown at short intervals, it requires generally the attention of two men at the whistle. This difficulty is overcome by my construction, which, besides, saves a great deal of wear and tear of the parts.

What I claim as my invention is—

In a steam-whistle, the combination, with the valve-seat E, of the hollow stem G, formed with spider-arms H, and valve-disk C, operating on said seat, and a smaller disk D, seated on the disk C and provided with a stem I, working through the stem G, said valve-stems projecting into different proximity to the operating-lever and operating substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 25th day of January, 1889.

CHARLES D. LYNCH.

Witnesses:
J. PAUL MAYER,
ALFRED B. EATON.