

(No Model.)

2 Sheets—Sheet 1.

W. A. BARTLETT.

PNEUMATIC CANNON.

No. 344,936.

Patented July 6, 1886.

Fig. 1.

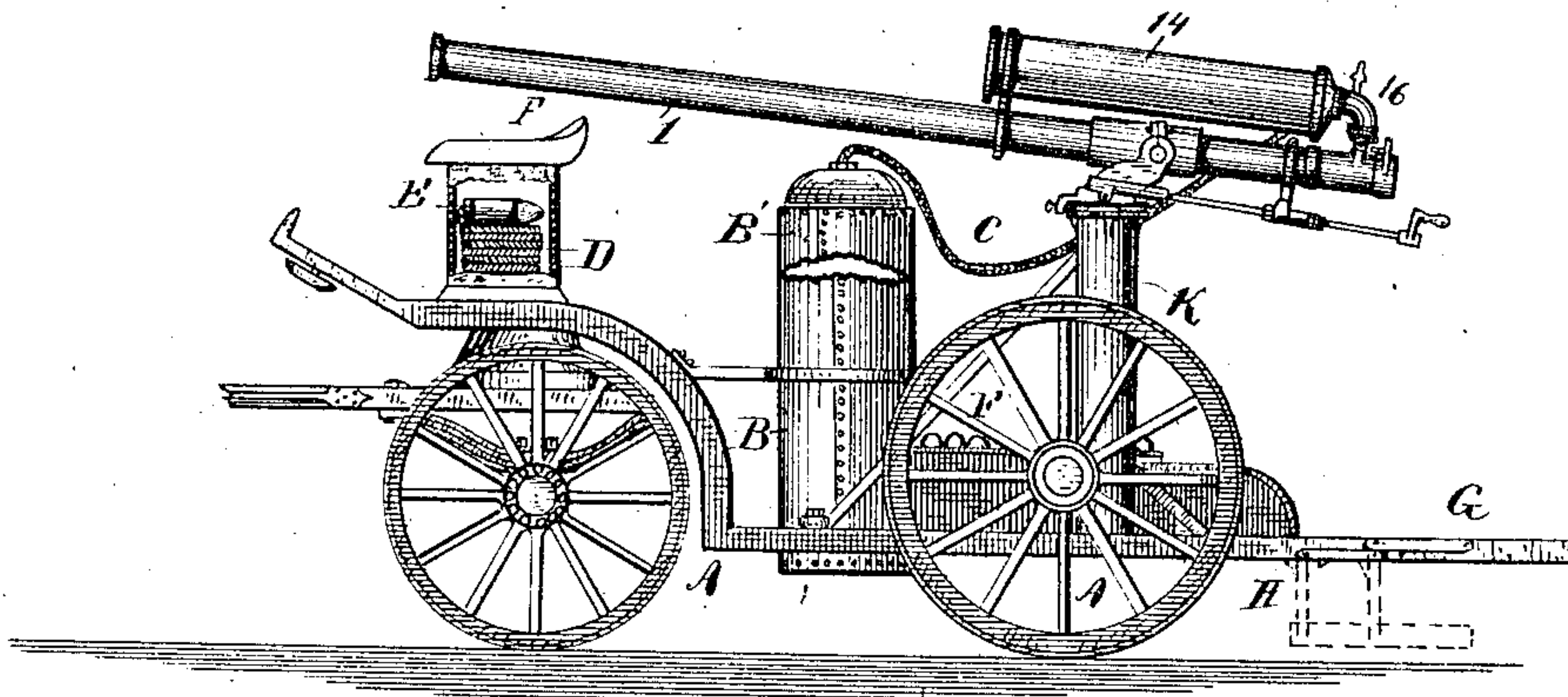


Fig. 2.

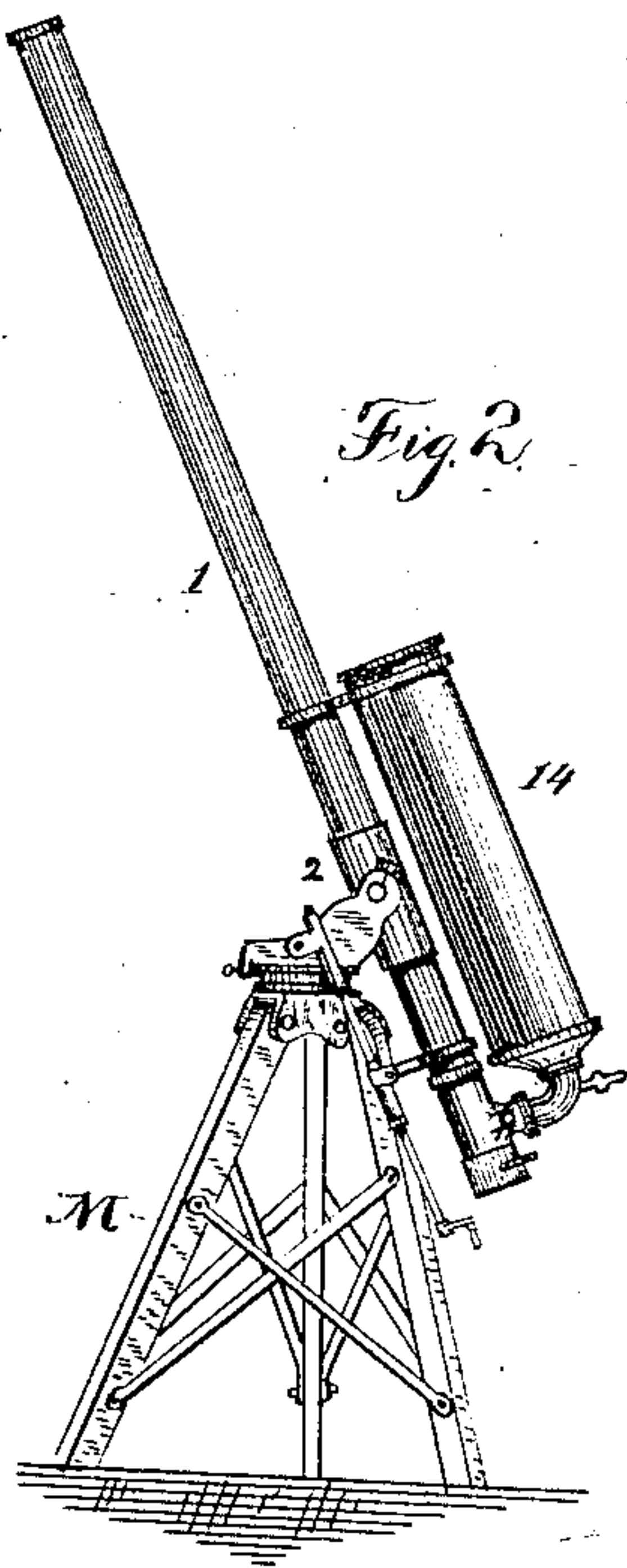
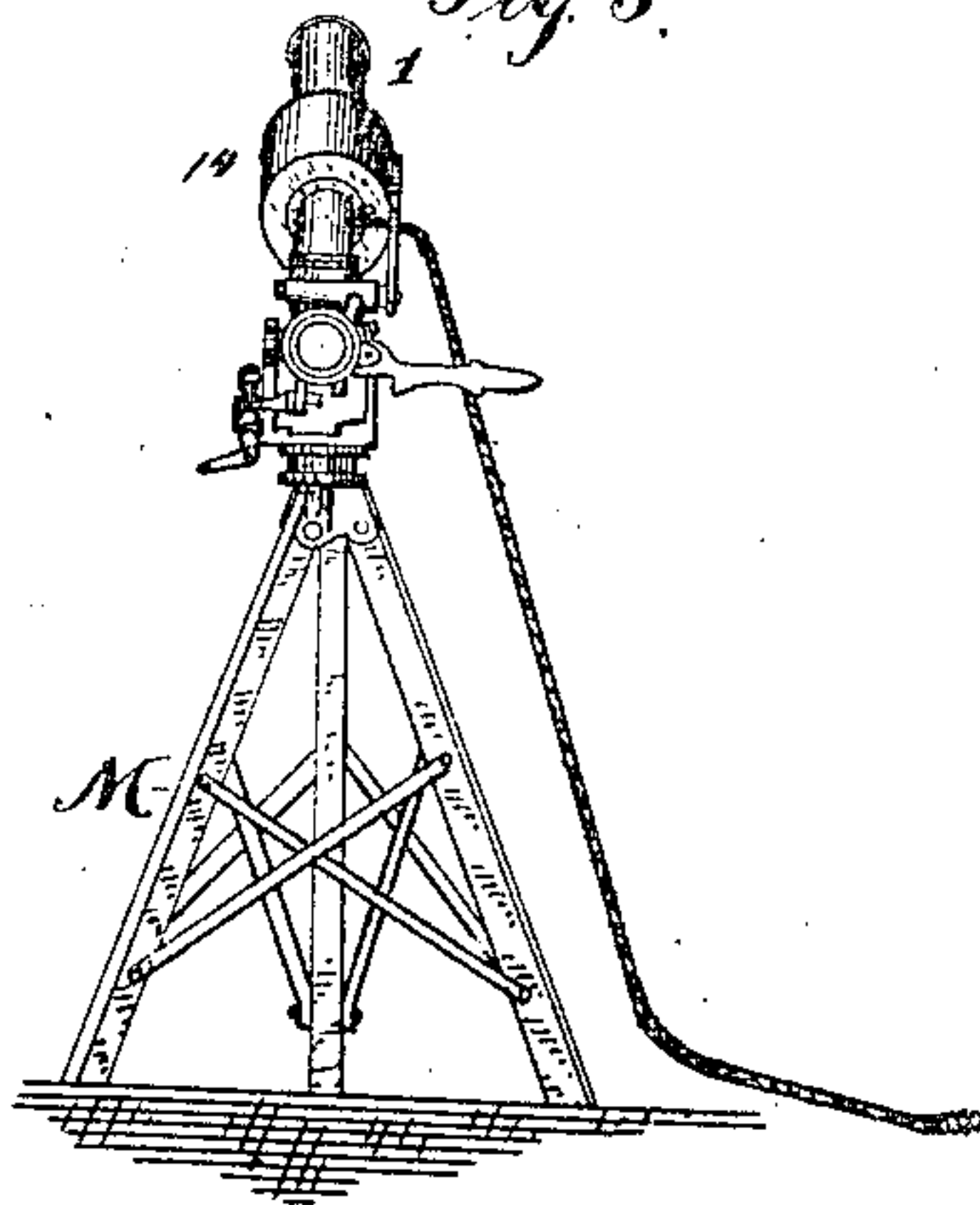


Fig. 3.



Witnesses

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Fig. 4.

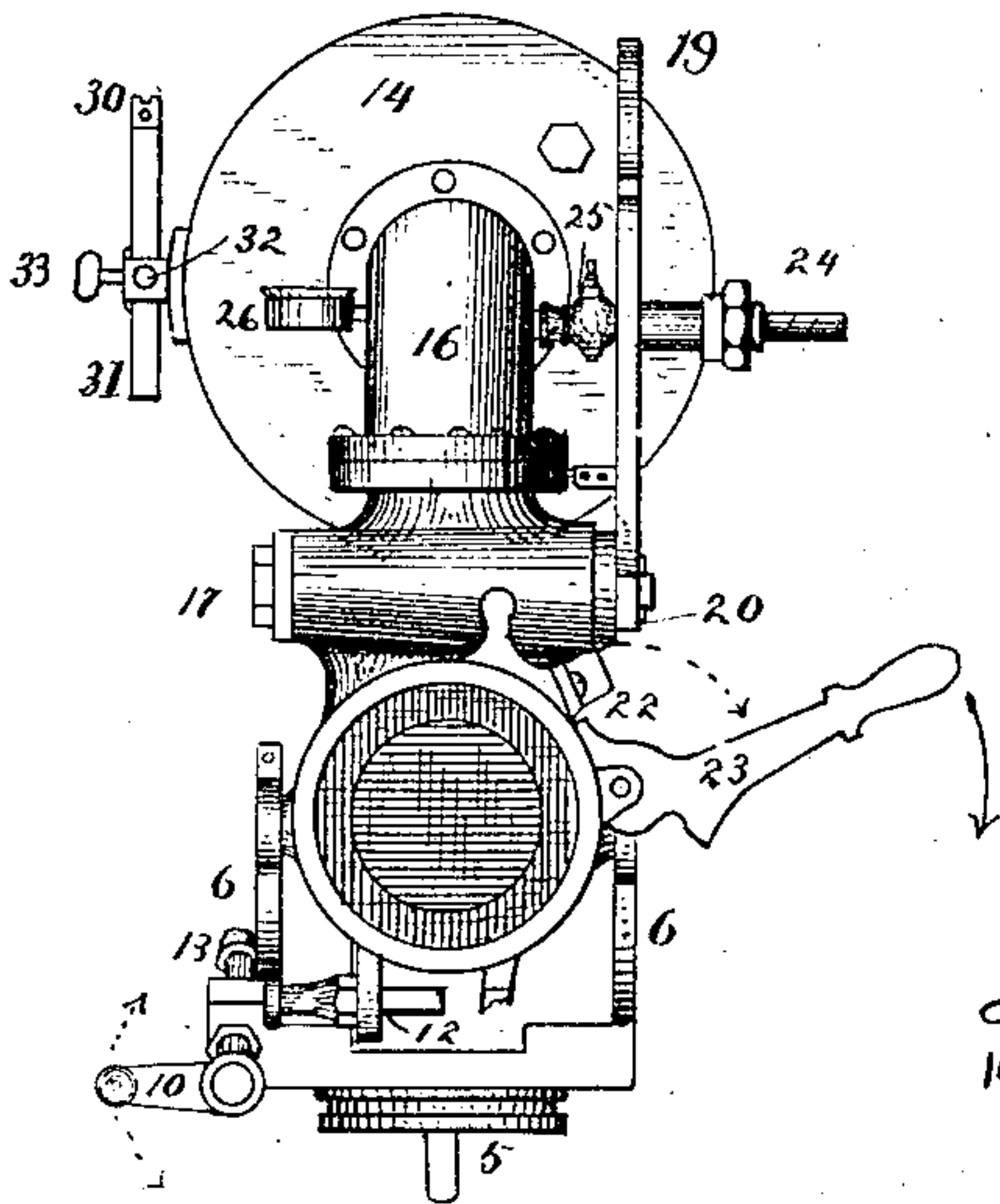


Fig. 5.

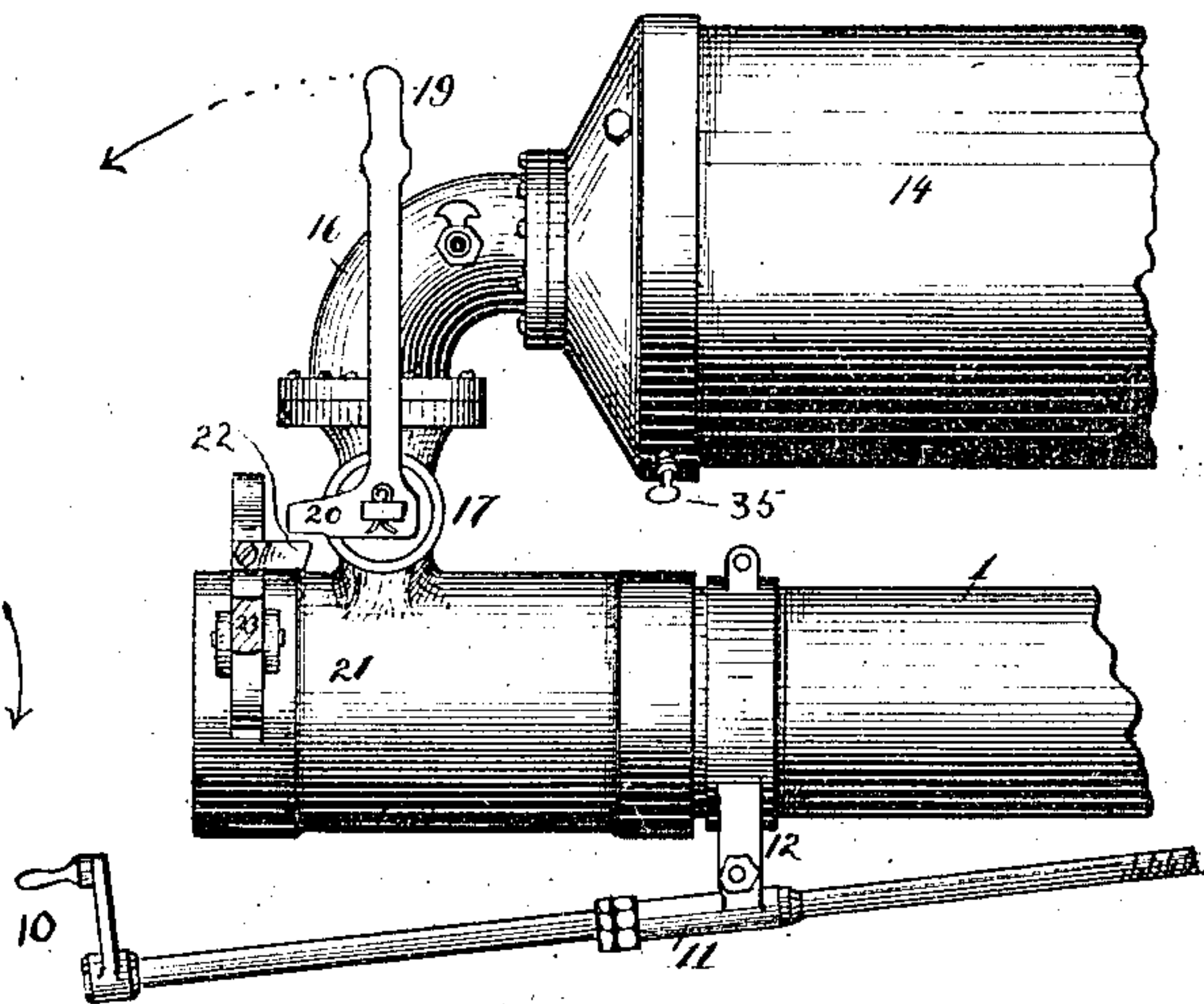
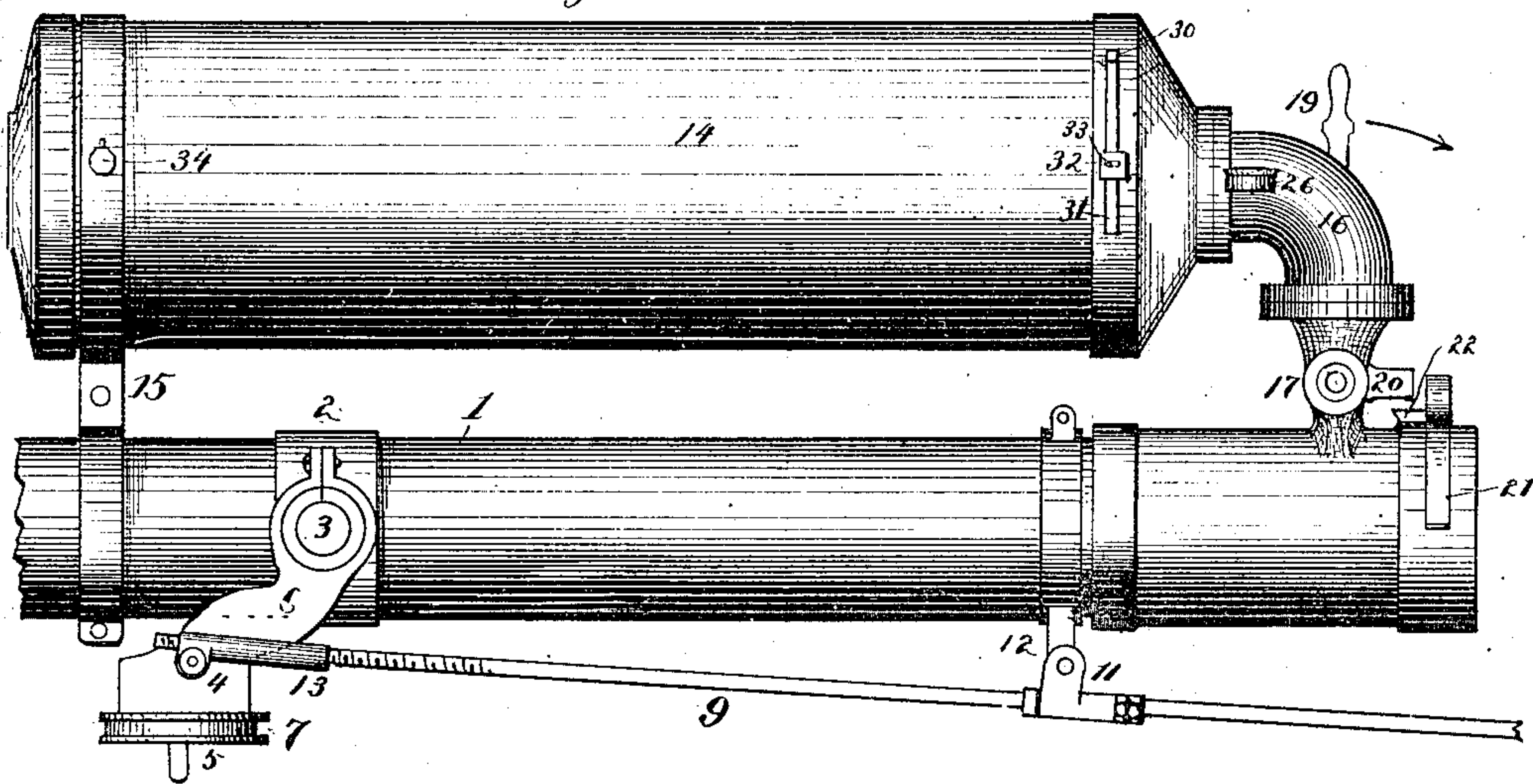


Fig. 6.



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UNITED STATES PATENT OFFICE.

WALLACE A. BARTLETT, OF WASHINGTON, DISTRICT OF COLUMBIA.

PNEUMATIC CANNON.

SPECIFICATION forming part of Letters Patent No. 344,936, dated July 6, 1886.

Application filed February 9, 1886. Serial No. 191,324. (No model.)

To all whom it may concern:

Be it known that I, WALLACE A. BARTLETT, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Pneumatic Cannon, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to pneumatic or similar cannon, specially intended for throwing life-lines, fire-extinguishing grenades, and similar projectiles at short range.

The invention consists in certain constructions and combinations, by which the firing-valve and breech block are made interdependent in operation; also, in improvements in the mounting and training mechanism, by which facility of handling and a wide range of fire may be had.

Figure 1 is a side elevation of a gun mounted on a carriage, showing a convenient arrangement of air-flasks, lines, and projectiles, and the gun swiveled on its pedestal in operative position. Fig. 2 is a side elevation of the gun mounted on a tripod, showing high elevation. Fig. 3 is a rear perspective of gun on tripod. Fig. 4 is a rear elevation of gun, showing general position of the working parts, the gun and its yoke being detached from tripod or pedestal. Fig. 5 is a side elevation of rear end of gun and flask, showing relation of valve and breech-block. Fig. 6 is a reverse side elevation of gun and flask.

A indicates the carriage, which has preferably two storage-flasks, B B', one of which is connected with the gun by a hose, C, or in other suitable manner. Each of these flasks will supply compressed air for forty to fifty shots for four-inch guns.

The life-lines D and their projectiles E are stored under the driver's seat F, in convenient position for loading into the muzzle of the gun.

The projectiles for extinguishing fires are conveniently stored in a box at F, and the gunner's platform G, at the rear of the carriage, can be swung up on links H when the carriage is running to a fire, but swings down near the level of the street when in use.

The gun can readily be lifted from standard K, in which the yoke swivels, and mounted on

a tripod, M, when it is desirable to use the gun from a window, or from other locality not easily accessible to the carriage.

One of the flasks, B or B', may be taken from the carriage with the gun, or the hose C, which is generally of one-half-inch diameter, may be of such length as to connect the gun-flask with the storage-flask, or with an air-compressor from a considerable distance.

The gun-tube 1 is supported by means of collar 2, which has trunnions 3 on a yoke, 4, which swivels on pintle 5. The side pieces, 6 6, of the yoke are offset or oblique from the perpendicular line of the pintle, so that the gun may be elevated nearly or quite to the perpendicular without having the gun-tube come into contact with the base 7 of the yoke. The elevating screw-rod 9 is at one side of the gun, and is operated by crank-handle 10. The rear bearing, 11, of rod 9 is a sleeve swiveled to a side projection, 12, from the gun-tube, and the nut 13 is swiveled to the yoke. By this construction the breech of the gun may be lowered alongside of the elevating apparatus, and any desired elevation of the muzzle up to ninety degrees may be had. This extreme elevation cannot be had with any apparatus with which I am acquainted where the gun is on trunnions and the elevating apparatus is beneath the breech.

The air-flask 14 is mounted on the gun-tube, being sustained by band 15, which surrounds the tube and supports the flask. The supply-pipe connection to the breech of the gun forms a sufficient support for the rear of the flask.

The supply-pipe 16 has a valve, 17, which opens or closes the passage leading to the breech of the gun. This valve 17 has an operating-handle, 19, and a projection, 20, which projection is in such proximity to the breech-block 21, or to the projection 22 thereon, that projection 20 will engage projection 22 if the breech-block be not nearly closed, and will thus prevent the opening of the valve. Breech-block 21 is of the swinging or "molasses-gate" pattern in this gun, and the part 22 has preferably an inclined side, as shown in Fig. 4, so that if the breech-block be nearly closed the engagement of part 20 with this incline will force the breech-block to its position.

The dotted line, Fig. 4, shows the path of

movement of projection 22 in opening, and it will be seen that it can swing open but a little way before it becomes an obstruction to the movement of the part 20, and thus locks the valve. It will thus be seen that the valve and breech-block serve as a check, each on the other. The valve cannot be opened until the breech-block is so nearly closed that it is practically secure. The movement of the valve in opening gives the additional movement to complete the breech-closure, if such is necessary, when it begins to move, and before the air really enters the gun-tube. This interlocking of valve and breech is very important to prevent accidents.

The handle 23 serves to swing the breech-block open.

The supply-hose C is connected with the inflow-pipe 24 by a union or other suitable coupling, and a small cock, 25, serves to shut off the air supply when needed for the purpose. A convenient point of connection is that shown in Figs. 4 and 5, the inflow-pipe being connected with the gun-supply pipe 16. The pressure-gage 26 is most conveniently attached to the opposite side of the supply-pipe.

The rear sight, 30, is at one side of the air-flask, and consists of an elevating post, 31, passing through a socket, 32, and being capable of adjustment by means of set-screw 33. The front sight, 34, is attached to the front of the air flask. This arrangement of sights on the side of the air-flask secures an uninterrupted range of sights at all elevations, which would not be the case were the sight attached to the gun-tube.

A small escape or blow-off cock, 35, at the lowest point of the flask permits the relief of overpressure, and the escape of water of condensation. As the gun is nearly always fired at an elevation, this location of the escape-cock and other operating mechanism is of importance, as it places the gun entirely under the control of the gunner without moving from his position.

The arrangement of the gun on a carriage by means of a pintle on the yoke-piece enables the gun to be shifted quickly to any form of carriage having a socket for the pintle, and the traverse is secured by swinging the gun on this pintle. The offset or overhang of the yoke allows any desired elevation. The arrangement of the elevating apparatus at one side and outside the yoke insures that the elevating-handle shall not be in the way of the loading, and also permits the holding of the gun at extreme elevations. The locking of the valve by the breech-block when the breech-

block is open prevents abortive shots, as would happen if the breech were partly open when the valve is operated to discharge the gun.

I claim—

1. The combination, with a gun of the character described, of a yoke which supports the trunnions of said gun, said yoke supported on a pintle, and having its arms extending obliquely from the pintle toward the rear of the gun, so that extreme elevation may be attained, substantially as described.

2. The combination, with a gun of the character described and a rearwardly-offset yoke supporting the same, of the elevating apparatus arranged at one side of the yoke and gun, so that extreme elevation may be had by depressing the breech alongside the elevating apparatus.

3. The combination, with a gas-flask, gun-tube, and a supply-pipe leading from the flask to the tube, of a valve controlling said supply-pipe and a movable breech-piece to the gun-tube constructed to lock the valve when the breech is open, substantially as described.

4. The combination, with a gun-tube, gas-flask, and supply-pipe connecting the flask and tube, of a valve in the supply-pipe and a swinging breech-block having a part which, when the block is open, locks the valve against movement, substantially as described.

5. The combination, with a gas-flask, supply-pipe, and gun-tube, of a movable breech to the gun-tube and a valve in the supply-pipe having a piece which interlocks with the breech-piece and holds the same closed when the valve is open, substantially as described.

6. The combination, with the flask, supply-pipe, and gun-tube, of a breech-block having an inclined-surface projection and a valve in the supply-pipe having a projection whose line of movement engages the incline on the breech-block, to complete the closing of said block, as stated.

7. The combination, with the oscillating valve arranged transversely of the supply-pipe, and having an operating-handle and rearward projection, of the swinging breech-block having a projection in line of movement of the valve projection, said breech-block projection having an inclined surface, as and for the purpose set forth.

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

WALLACE A. BARTLETT.

Witnesses:

M. L. WILLIAMS,
P. F. BRAWNER.