

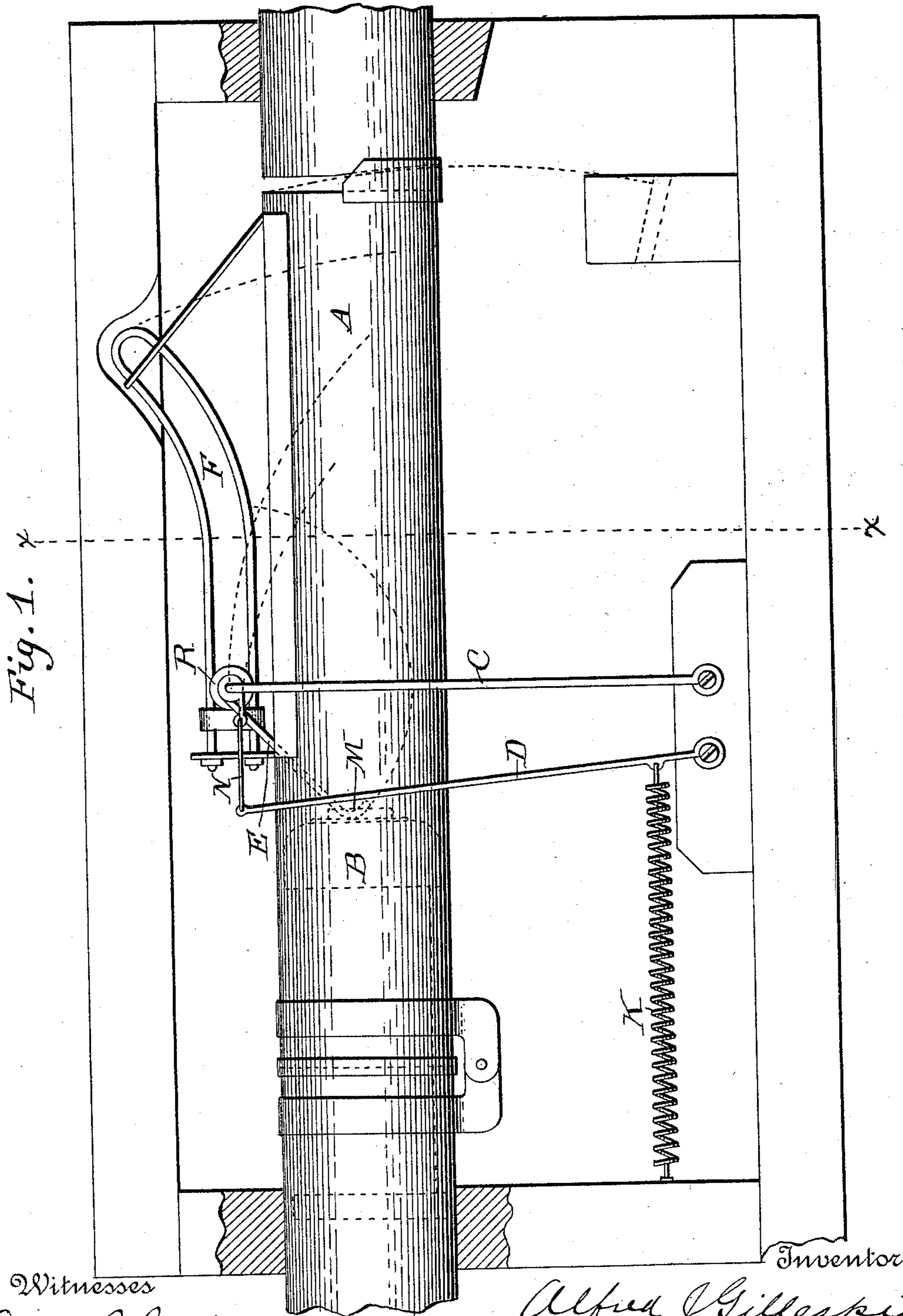
(No Model.)

4 Sheets—Sheet 1.

A. J. GILLESPIE.  
PNEUMATIC DISPATCH APPARATUS.

No. 533,191.

Patented Jan. 29, 1895.



Witnesses  
Albert B. Blackwood  
Jas. H. Blackwood

Inventor  
Alfred J. Gillespie

(No Model.)

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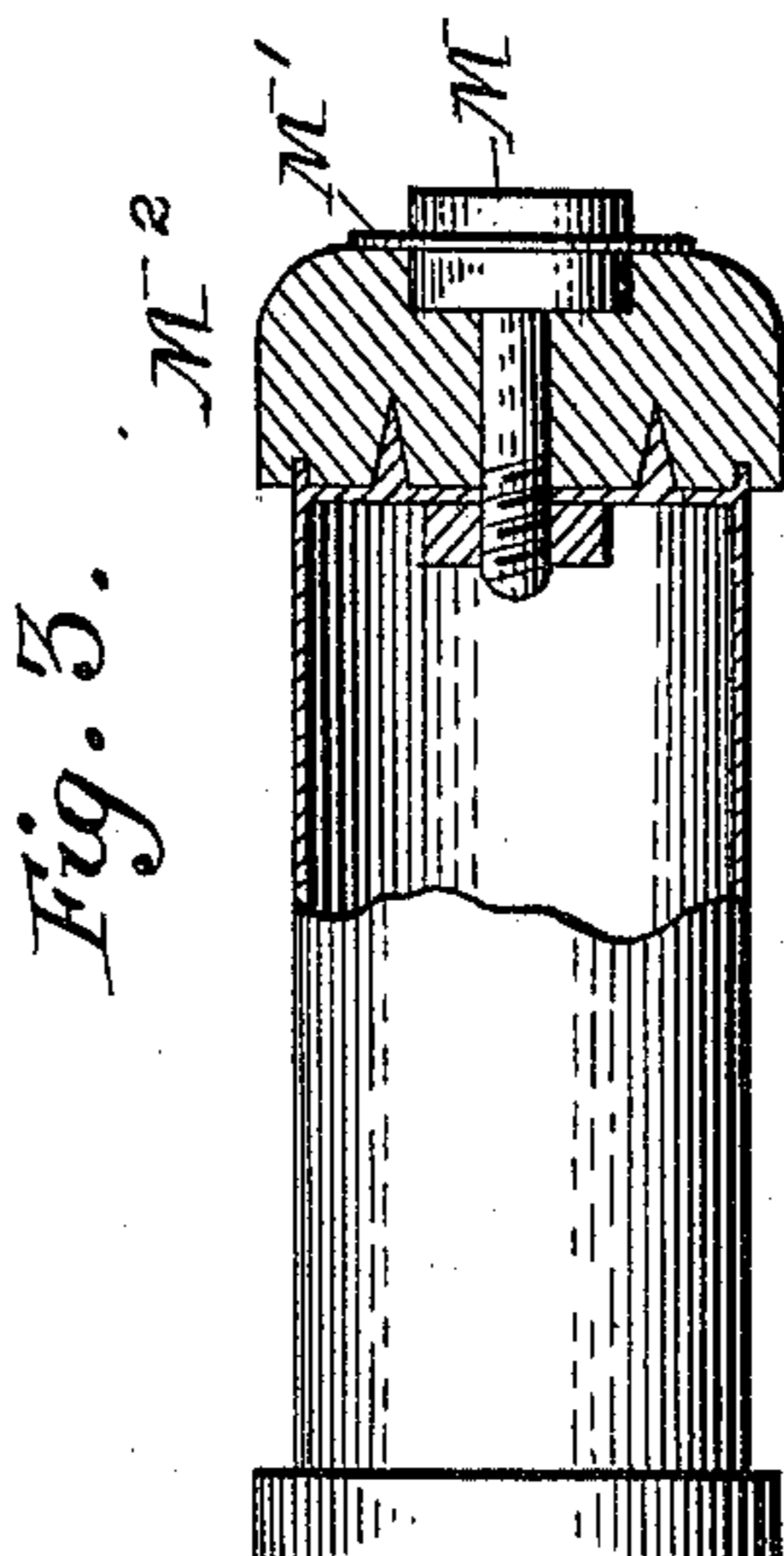
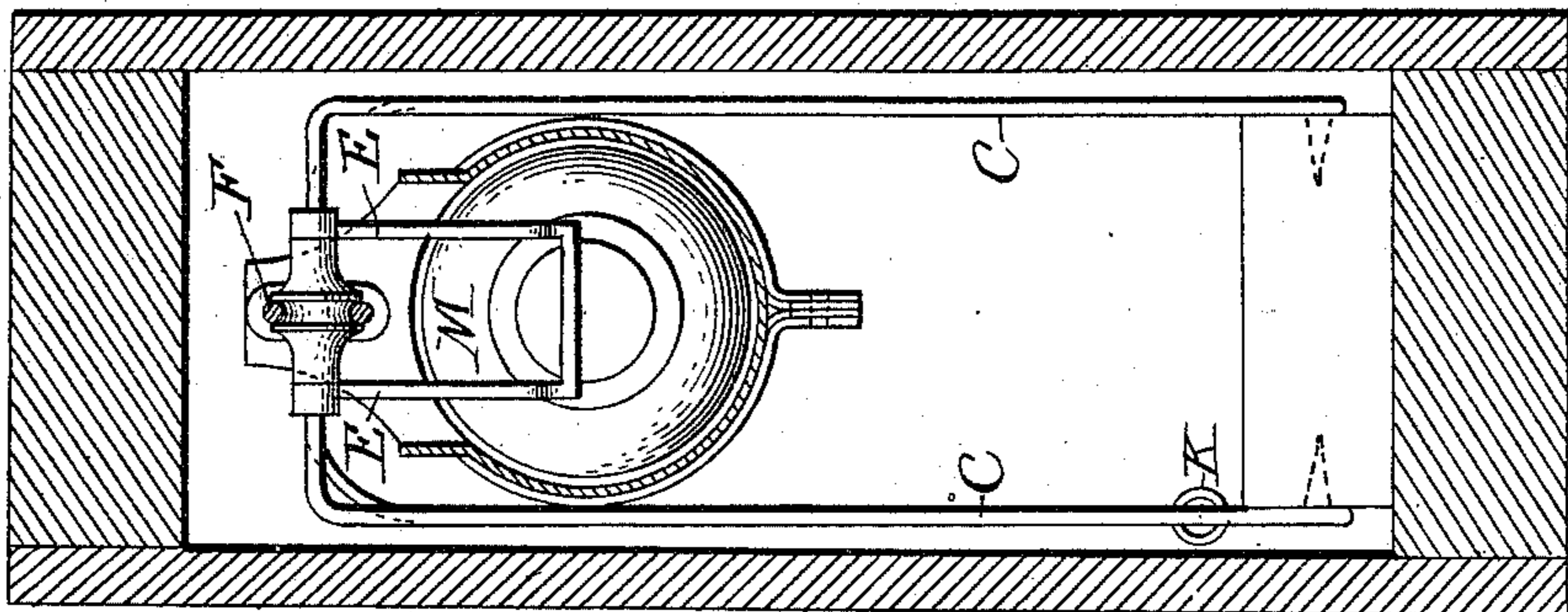


Fig. 2.



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(No Model.)

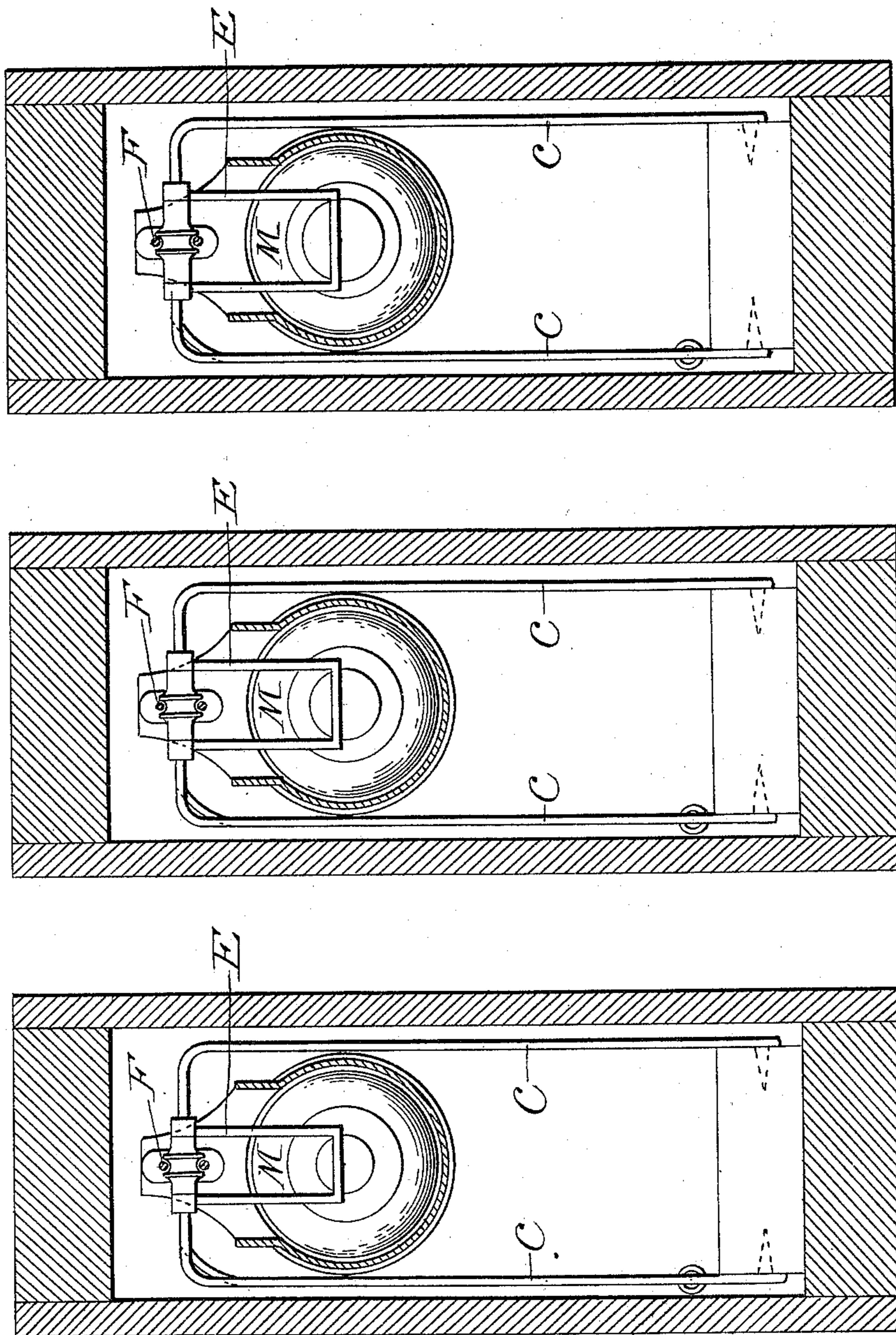
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Fig. 2 a.



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Alfred James Gillespie  
by Blackwood Bros.  
Attorneys.

(No Model.)

4 Sheets—Sheet 4.

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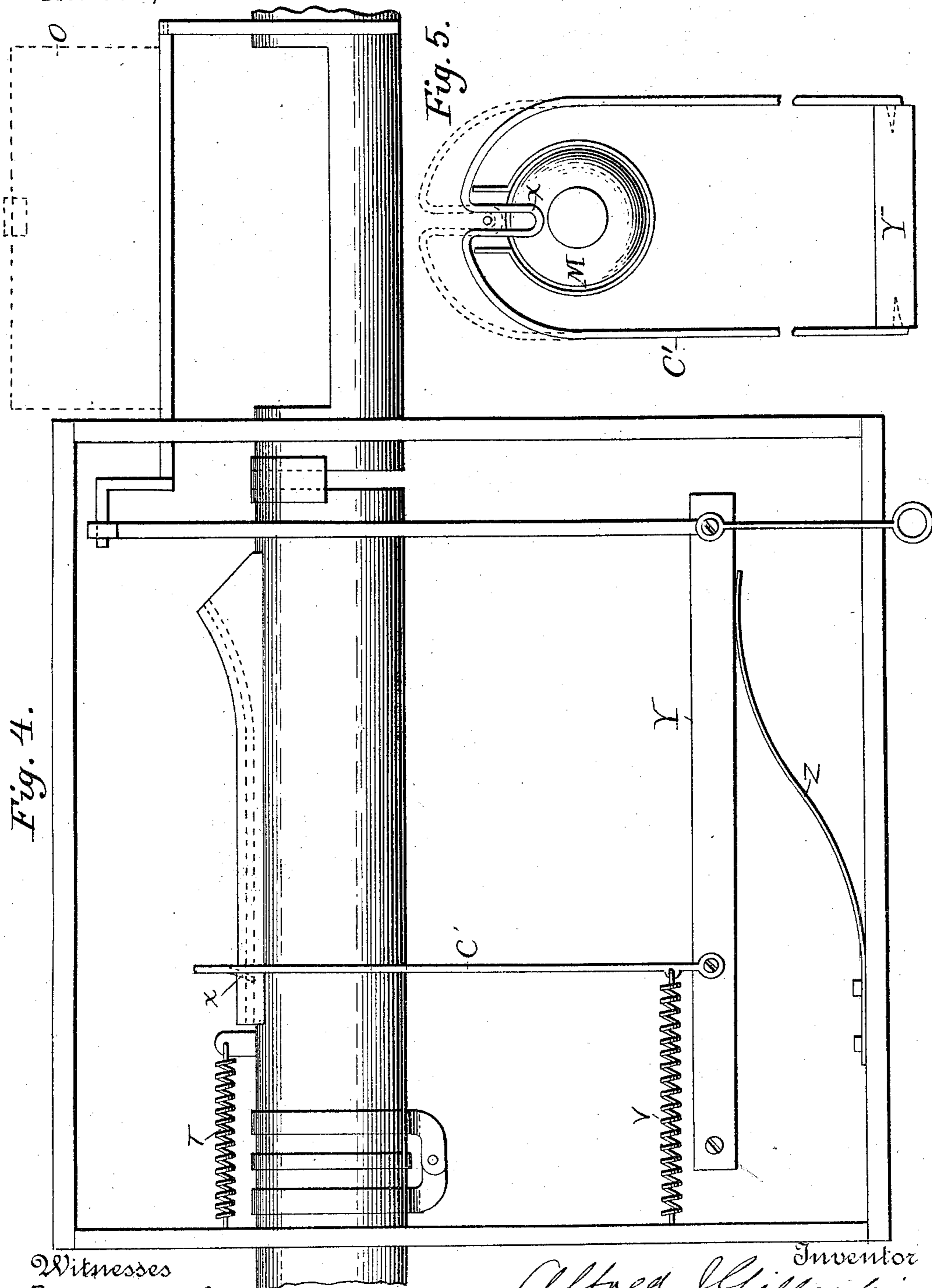


Fig. 4.

Fig. 5.

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# UNITED STATES PATENT OFFICE.

ALFRED JAMES GILLESPIE, OF ATLANTIC, IOWA.

## PNEUMATIC DISPATCH APPARATUS.

SPECIFICATION forming part of Letters Patent No. 533,191, dated January 29, 1895.

Application filed February 25, 1893. Serial No. 463,679. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED JAMES GILLESPIE, a citizen of the United States, residing at Atlantic, in the county of Cass and State of Iowa, have invented certain new and useful Improvements in Pneumatic Dispatch Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to pneumatic dispatch apparatus having a number of stations in the same tube or way for automatically discharging the carriers and consists in providing means for accomplishing this, and also for returning the carriers to the initial station. One of the difficulties heretofore met in attempting this has been the collision of the carriers passing, with others being introduced, and one feature of my improvement consists in providing means for preventing such collisions, all of which will be understood by the full and accurate description herein given with drawings annexed, in which like letters refer to like parts. This description has reference to its application to store service.

Figure 1, is a side view of the complete apparatus for switching out carriers coming from the initial point of the line. Fig. 2, is a sectional view on the line  $x x$  of Fig. 1 showing the trip in the act of engaging a disk on the front of the carrier. Fig. 2<sup>a</sup> is a detail sectional view showing a graduated series of disks and trips. Fig. 3, illustrates a carrier and the method of attaching a disk to its front end for actuating the switch mechanism. Fig. 4, is a side view of the switch for deflecting the carriers to prevent a collision in the return tube. Fig. 5, is an end view of the same showing the switch drawn down.

In Fig. 1 is shown a hinged tube section A, embraced by the prongs of a U shaped oscillating arm C, one branch on each side, having their lower ends pivoted, and the upper end passed through a cam way F, which is firmly secured to the tube section, a cam roller R being provided to reduce friction. When the end of the oscillating arm C is moved forward the end of the tube section will be thrown

down and when returned to an upright position the tube will be securely held in position, the arm acting as a support.

A trip E, is hinged to the cross section of the oscillating arm C, having one branch on each side of the cam roller and swings in the arc indicated by dotted lines, and is returned and held in its normal position by a short arm being flexibly connected (at N) to the upper end of a spring actuated oscillating arm D, pivoted at its lower end. The fixed end of the spring is secured to the case, or independently of the oscillating arm C, for reasons hereinafter stated.

The trips E have graduated recesses in their free ends for the purpose of engaging graduated disks M, attached to one end of the carriers B, for the purpose of actuating the oscillating arms C. The trips are arranged in the order of their recesses, that having the smallest recess being nearest the initial of the tube and each successive one larger. The end of the trip is held somewhat above the center of the disk, and in its contact it is forced downward being the direction of least resistance, and as the car advances the trip is swung round the arc represented by dotted lines until the car has passed, when it returns to its normal position.

The car passes each successive trip until it reaches one having a recess corresponding to the diameter of the disk, when its downward motion is resisted and it presses the oscillating arm C forward carrying the tube downward, until the curved cam way raises the hinged end of the trip allowing it to assume an upright position, and its lower end being carried forward the carrier is switched out as before indicated, and all the parts are returned to their positions shown in Fig. 1, by the action of the spring K, through the arm D.

I find it of great benefit to apply the spring connection to the ends of the trip and attach it to a stationary object for the reason that when a carrier strikes the lower end it tends to hold back the oscillating arm C. If the retaining spring were carried wholly by the arm C, there would be a tendency to carry it forward by every passing car, in proportion to the strength of the spring. A close wound

spiral or other spring may be substituted for the purpose herein described, but I prefer the former.

To prevent collisions in the tube in returning the cars to the desk, I provide a jointed section of tube and U shaped oscillating arm for switching the colliding carrier out, where it can be replaced at once.

The upper end of the oscillating arm C', has a loop X extended downward forming a lug to be lowered through a long slot in the tube, and the lower ends of the branches are pivoted to a lever adapted to raise and lower the arm, which lever is provided with a spring Z for pressing it upward. The tube section is held in position by the spring T, and the oscillating arm is also returned to position by the spring V. The lug X has its end curved backward and in its forward travel is drawn out of the path of the carrier allowing the latter to pass and discharge itself.

When a carrier is to be introduced the lever Y is moved downward either manually, or by being connected with the door O, as shown in Fig. 4, or some moving part of the opening mechanism, and the lug X is brought down and should a carrier approach during the time the lug is held down it would press the arm C' forward, and switch the carrier out, when the latter would be immediately replaced in the tube. This arrangement avoids the introduction of a positive stop, or shutting off the air current, both of which are not desirable.

Any form of switch may be used as I do not confine myself to the construction shown. The object of this feature of the invention is to provide means for switching out a carrier that otherwise would collide with one being placed in the tube.

In order to securely attach the disk M to the carrier, and cushion it, and hold it securely in the center of the carrier, and also prevent the cushion from becoming displaced, I employ the special construction shown in Fig. 3, which I regard as essential.

The disk M has a flange M' resting against the cushion, M<sup>2</sup>, and has a portion of its body embedded in the cushion, a part of the latter remaining between it and the end of the carrier body, and has a bolt projected to the interior of the shell and secured by a nut or otherwise.

As an additional means of safety I extend the shell slightly into the cushion, and also rigid points or pins from the front end of the shell into the substance of the cushion. It will be seen that any material displacement of the disk would interfere with the reliable action of the stop mechanism, hence the necessity of the special precautions herein described.

The boxes inclosing the parts herein described have a side removed to expose their workings.

I do not claim broadly a jointed tube section, nor an oscillating arm actuating it, nor

do I claim a series of switches in a pneumatic tube.

I make no claim to the combination, in a pneumatic dispatch apparatus, of a tube, a carrier adapted to slide therein, said carrier having a pin or disk thereon, and a yieldingly supporting arm having a loop or trip projecting into the path of the carrier and adapted to engage the pin or disk on the carrier, in order to eject the latter.

What I do claim, and desire to secure by Letters Patent, is—

1. In a pneumatic dispatch apparatus, carriers having graduated disks on their ends for the purpose of operating switch mechanisms, substantially as described.

2. In a pneumatic dispatch apparatus, carriers having cushions and graduated disks on their front ends, the disks having flanges resting against the cushions and shouldered portions seated in the bodies of the cushions, substantially as described.

3. In a pneumatic dispatch apparatus, carriers having graduated disks and cushions on their front ends, the disks having shouldered portions seated in the cushions and fastenings through the cushions into the bodies or shells of the carriers, substantially as described.

4. In a pneumatic dispatch apparatus, carriers having cushions and graduated disks on their front ends, and having rigid projections from the fronts of the shells into the cushions for securely holding the disks in the center, substantially as described.

5. In a pneumatic dispatch apparatus, carriers having cushions and graduated disks on their ends, and having rims extending from the bodies of the carriers to inclose adjacent portions of the cushions, substantially as described.

6. In a pneumatic dispatch apparatus, graduated stops consisting of disks, and trips having graduated recesses in front made to engage the disks, substantially as described.

7. In a pneumatic dispatch apparatus, carriers having graduated disks on their front ends, in combination with trips having recessed ends held to engage the outer diameters of the disks, and switch mechanisms connected thereto adapted to deflect the carriers, substantially as described.

8. In a pneumatic dispatch apparatus, carriers having graduated disks on their front ends in combination with hinged trips having recessed ends held at an angle toward the carriers which they engage in such manner that the carriers cannot pass beyond until the hinged ends of the trips are carried away from the line of motion of the carriers, substantially as described.

9. In a pneumatic dispatch apparatus, carriers having on their front ends graduated disks in combination with trips having recessed ends held at an angle toward approaching carriers and their opposite ends hinged and adapted to allow their recessed ends to

pass downward and forward when the recesses fail to engage the disks, substantially as described.

10. In a pneumatic dispatch apparatus, a hinged section of the tube or way, in combination with a U shaped oscillating arm embracing said hinged section and having the prongs of the arm pivoted and adapted to deflect the section by a forward motion of the closed end; substantially as described.

11. In a pneumatic dispatch apparatus, a hinged section of the tube or way, in combination with a U shaped oscillating arm embracing the section, and bearing at its closed end a trip adapted to engage a passing carrier, substantially as described.

12. In a switching device for pneumatic dispatch apparatus, a trip held to engage a passing carrier, in combination with a sustaining spring connected therewith and controlling the movement thereof in one direction and permitting the trip to operate independently of the switch mechanism, substantially as described.

13. In a pneumatic dispatch apparatus, spring actuated oscillating arms having their free ends flexibly attached to graduated trips and adapted to return the trips to a normal position, substantially as described.

14. In a pneumatic dispatch apparatus, a trip provided with a spring, in combination with an oscillating arm actuating a switch,

said spring controlling both the trip and the arm, substantially as described.

15. In a pneumatic dispatch apparatus a tube or way having openings for the introduction of carriers, in combination with switch mechanism adjacent thereto, consisting of a hinged section of the tube or way and a U-shaped oscillating arm embracing said hinged section and provided with a lug arranged to eject passing carriers to prevent their colliding with carriers being introduced, substantially as described.

16. In a pneumatic dispatch apparatus, a tube or way having openings for the introduction of carriers, in combination with switch mechanism adjacent thereto, consisting of a hinged section of the tube or way and a U-shaped oscillating arm embracing said hinged section and provided with a lug, arranged to eject passing carriers to prevent collision with carriers being introduced, the switch mechanism being connected with the introducing mechanism for securing their automatic and simultaneous action, substantially as described.

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

ALFRED JAMES GILLESPIE.

Witnesses:

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ALBERT B. BLACKWOOD.