

(No Model.)

4 Sheets—Sheet 1.

M. F. FIELD.
CAR FENDER.

No. 502,959.

Patented Aug. 8, 1893.

Fig. 1.

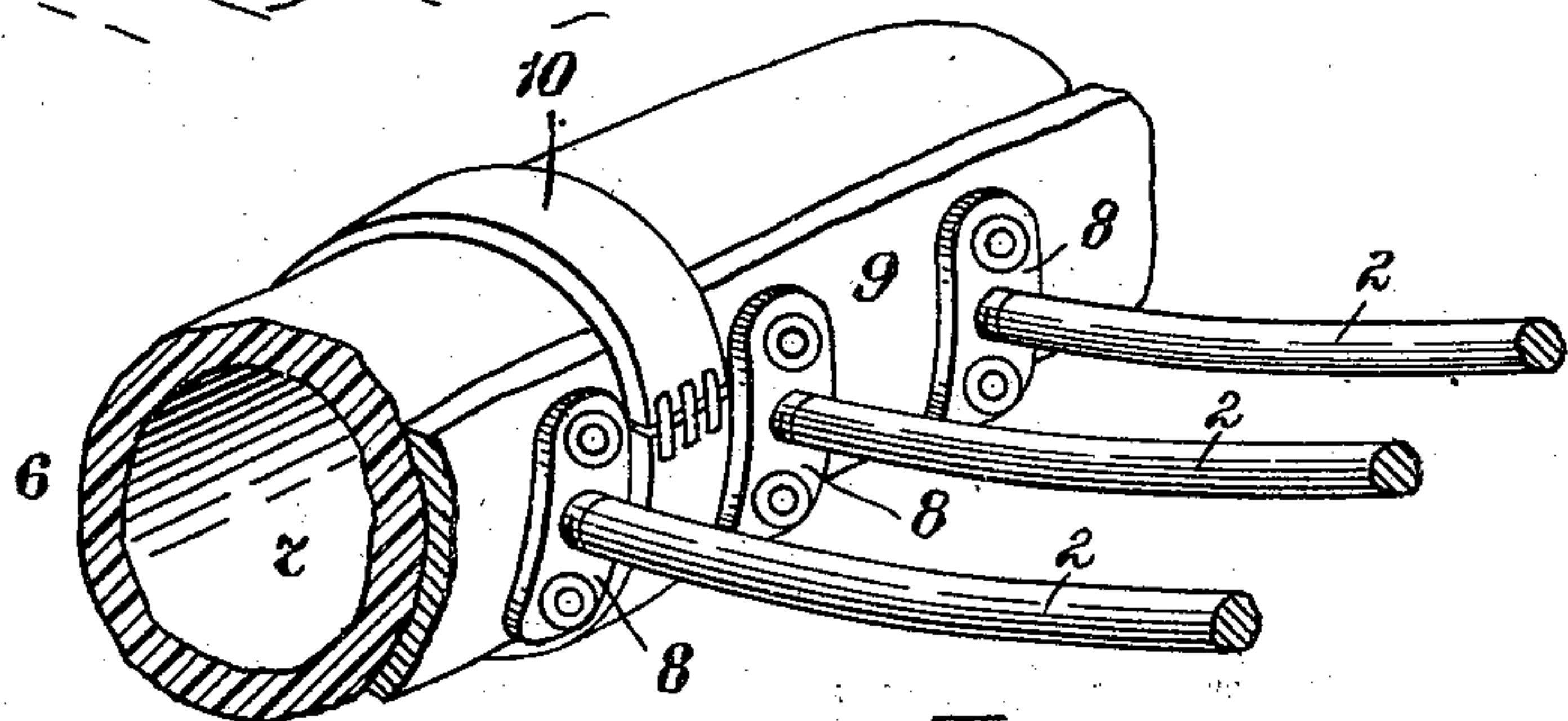
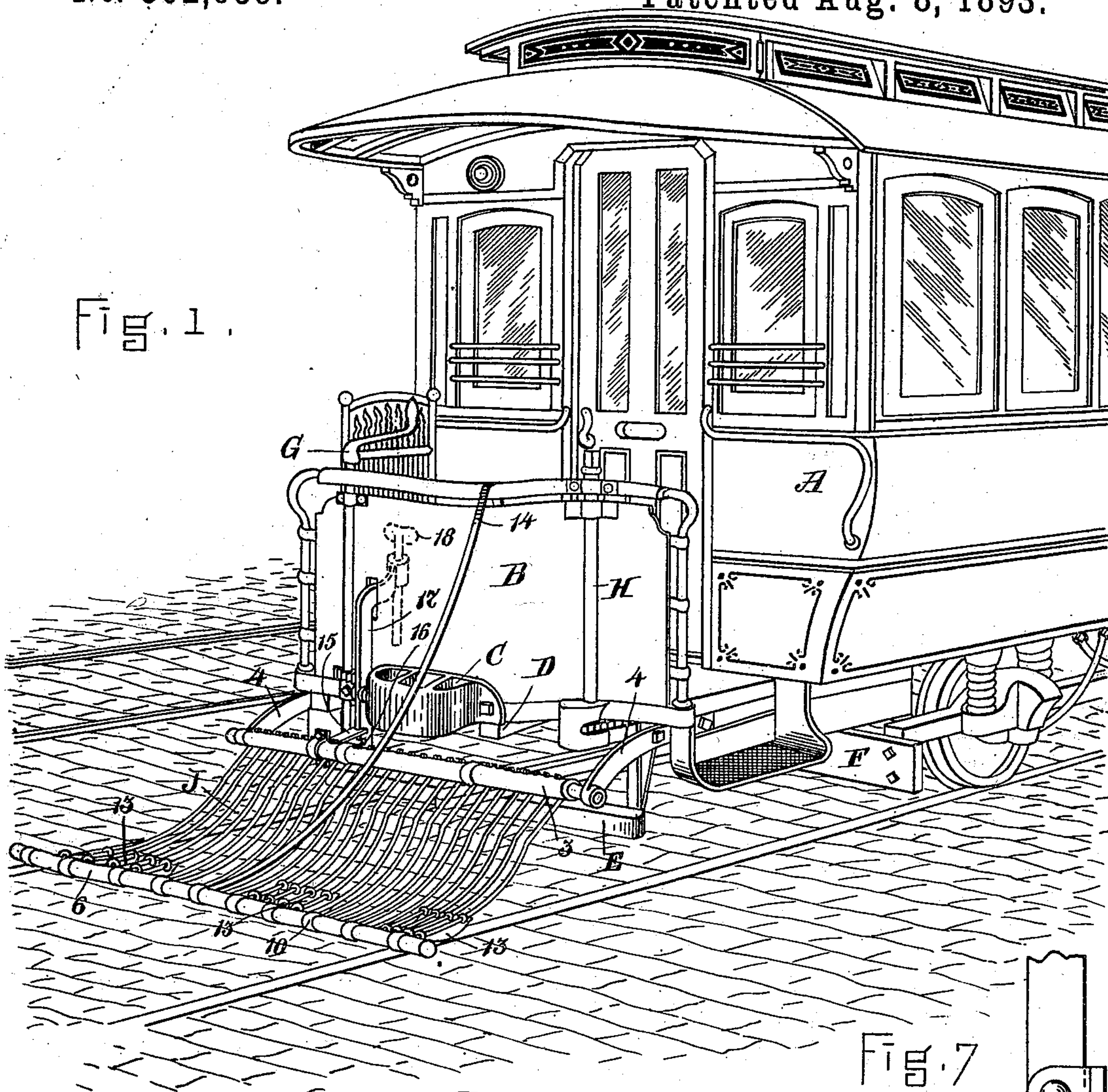


Fig. 6.

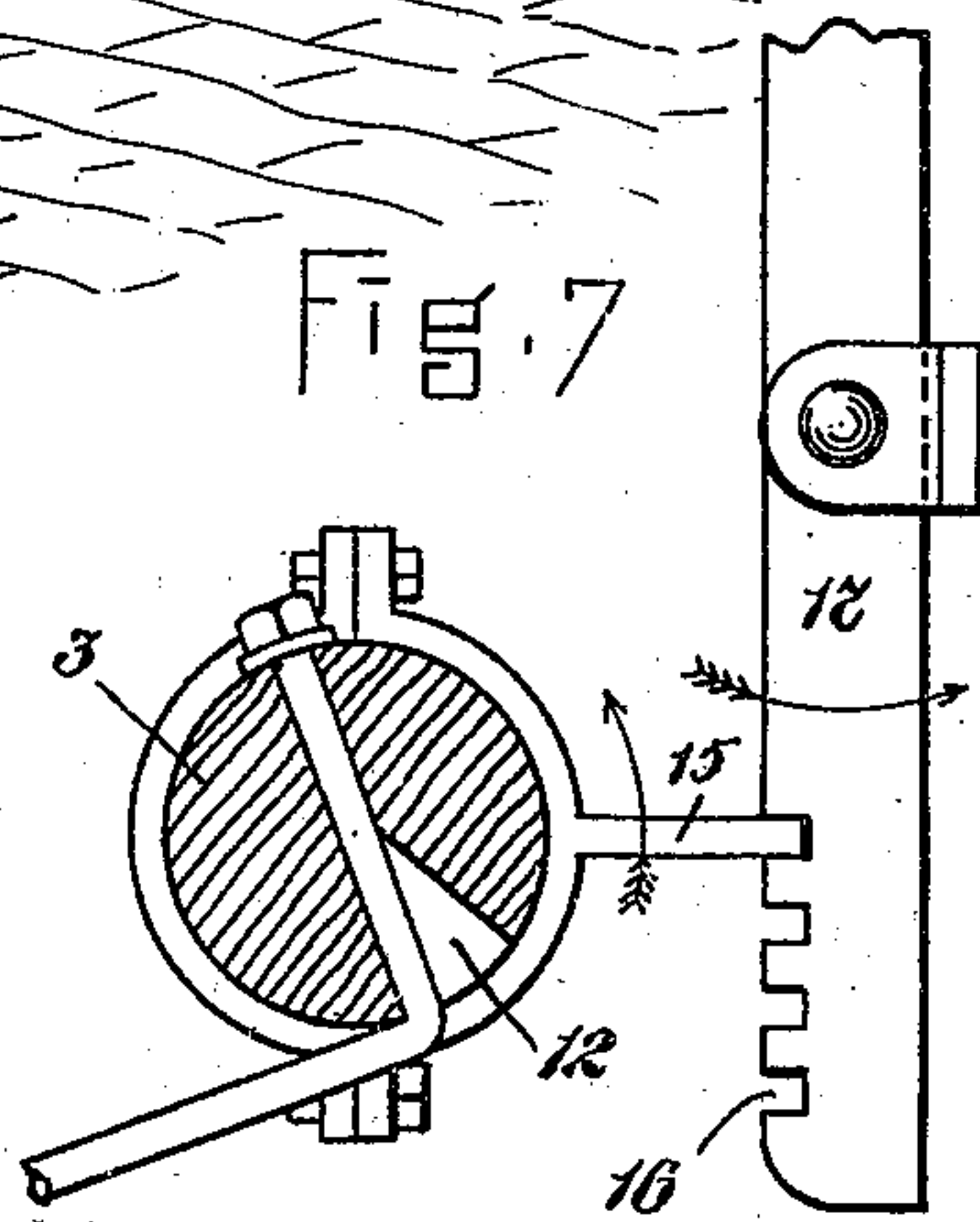


Fig. 7.

WITNESSES.

G. Henry Marsh.

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by H. E. Longe Atty.

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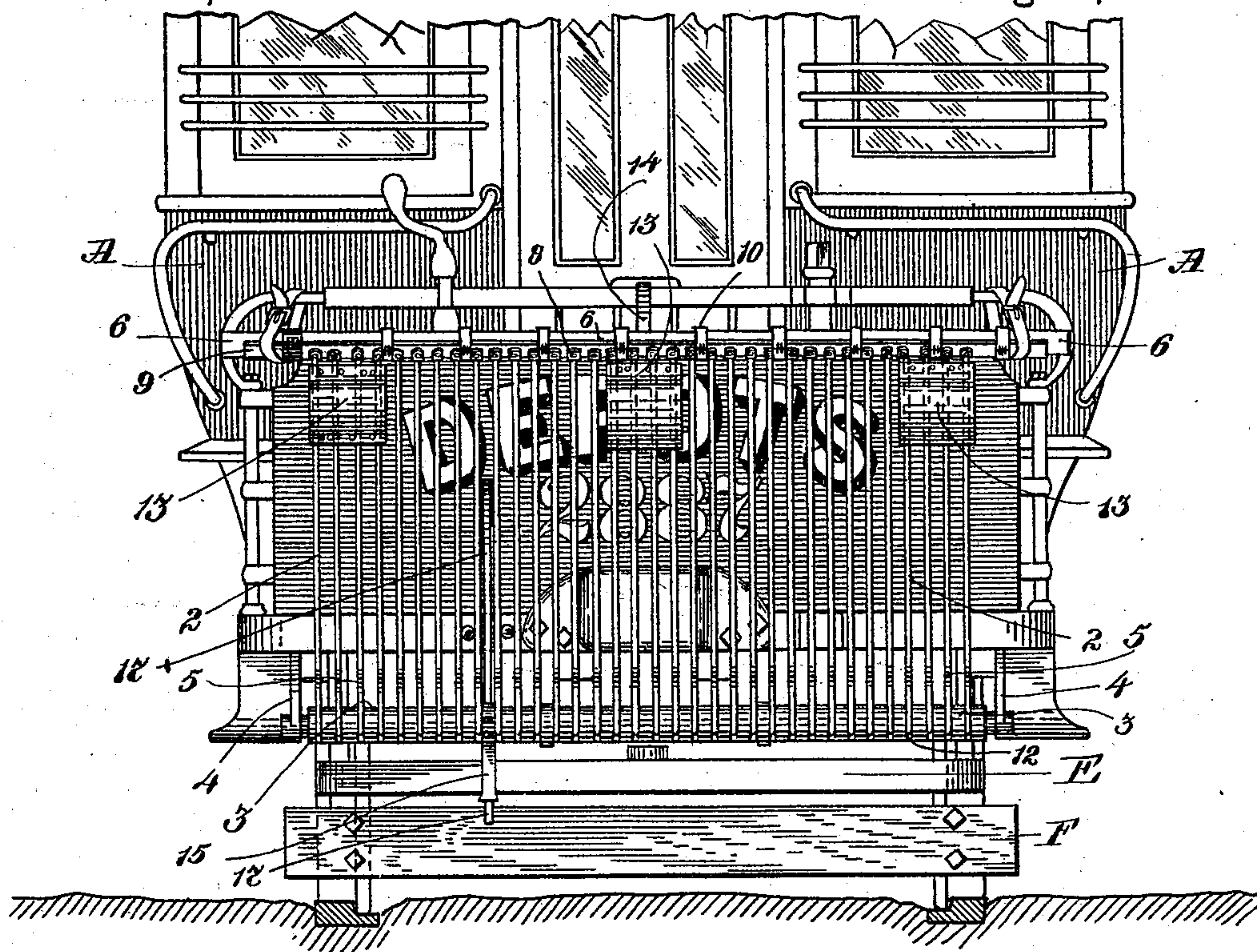


Fig. 2.

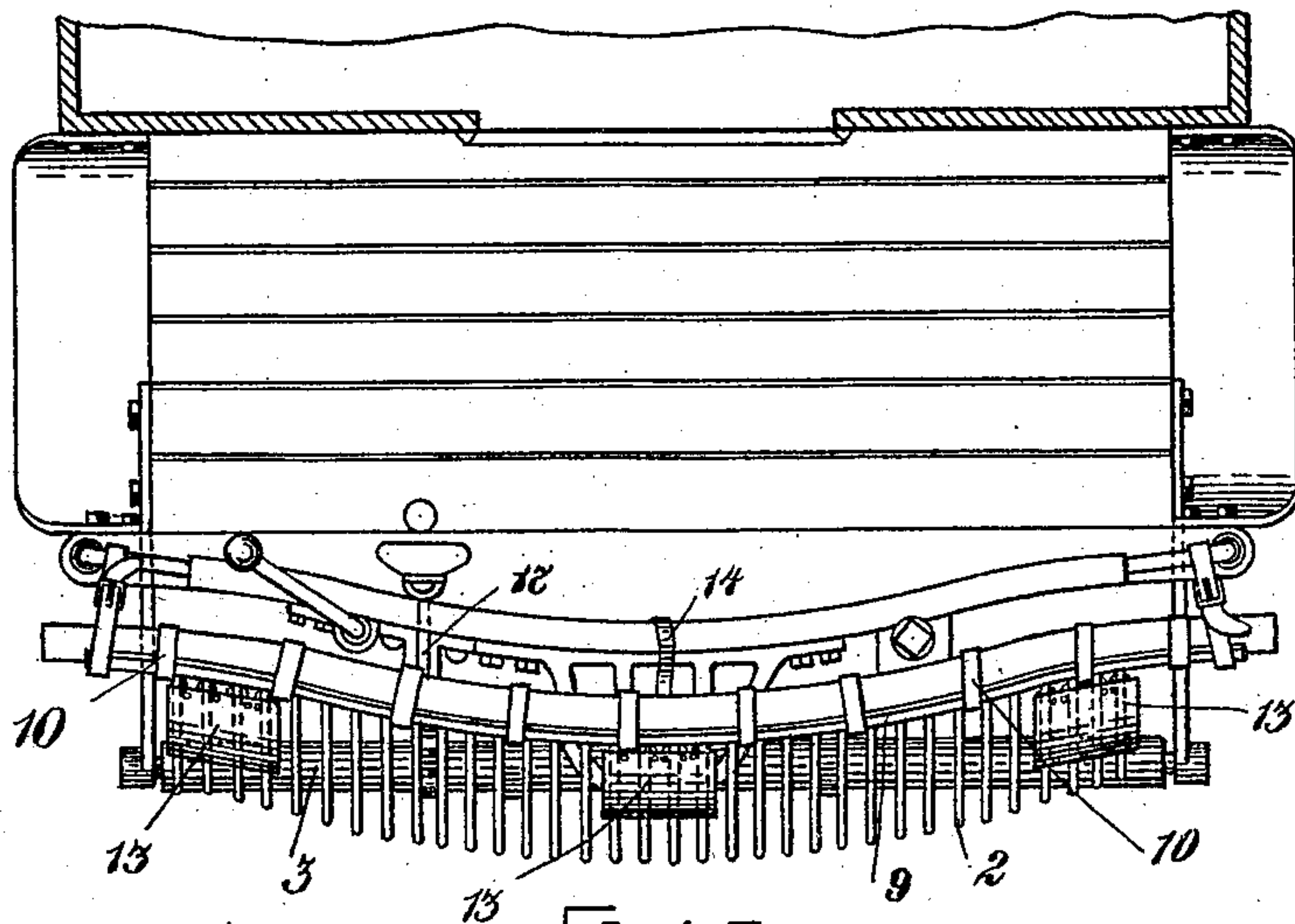


Fig. 3.

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Fig. 4.

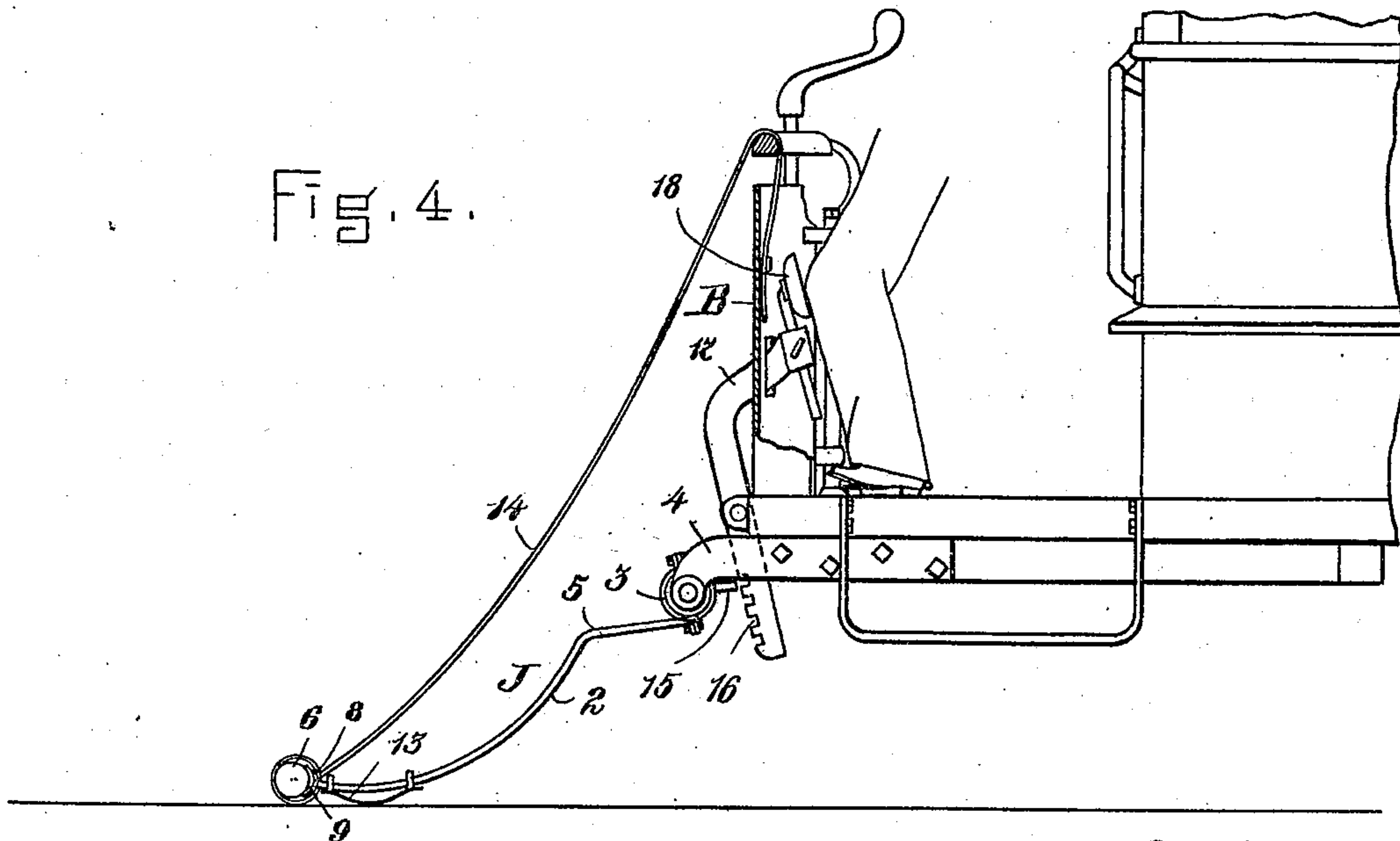
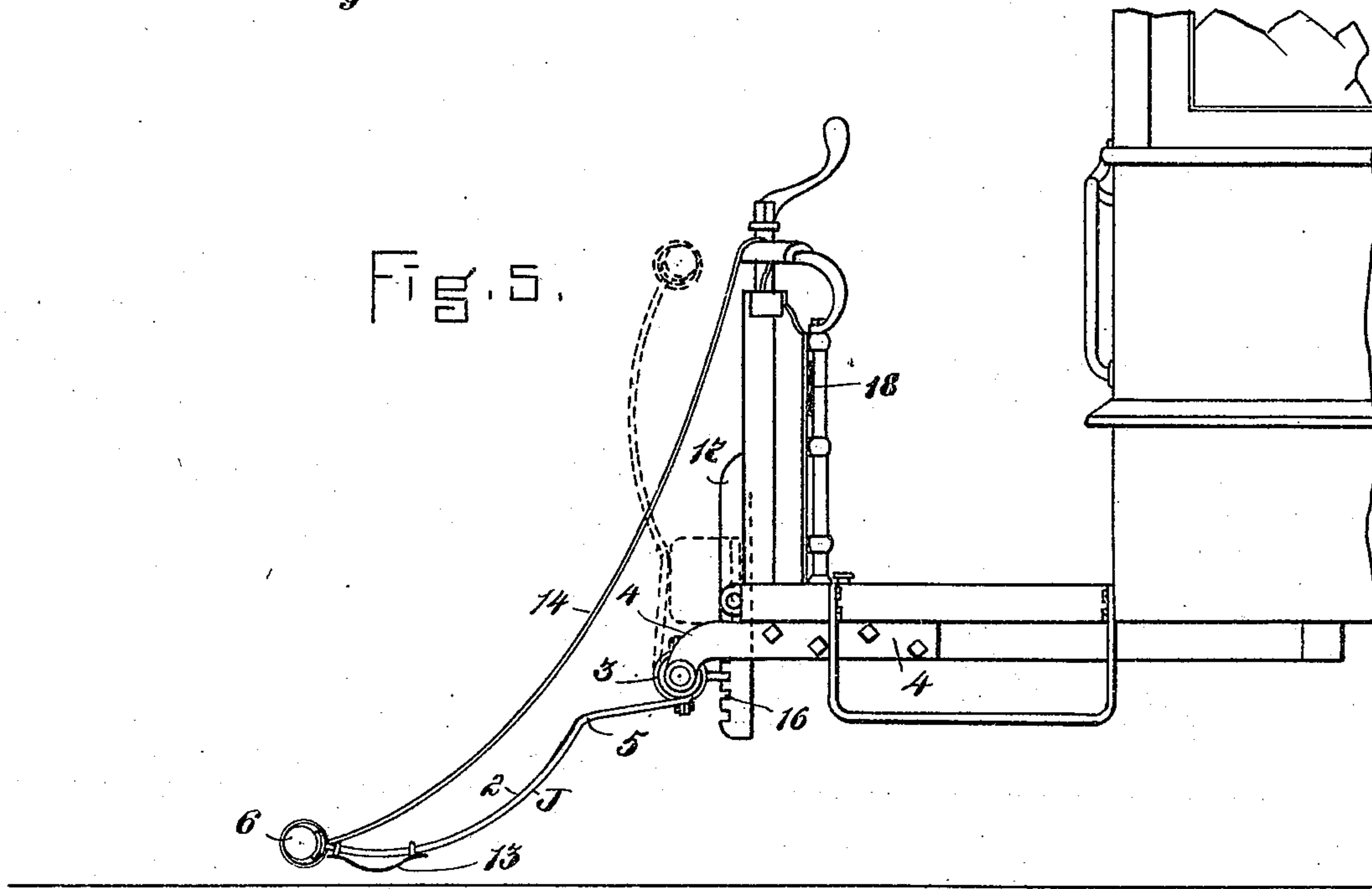


Fig. 5.



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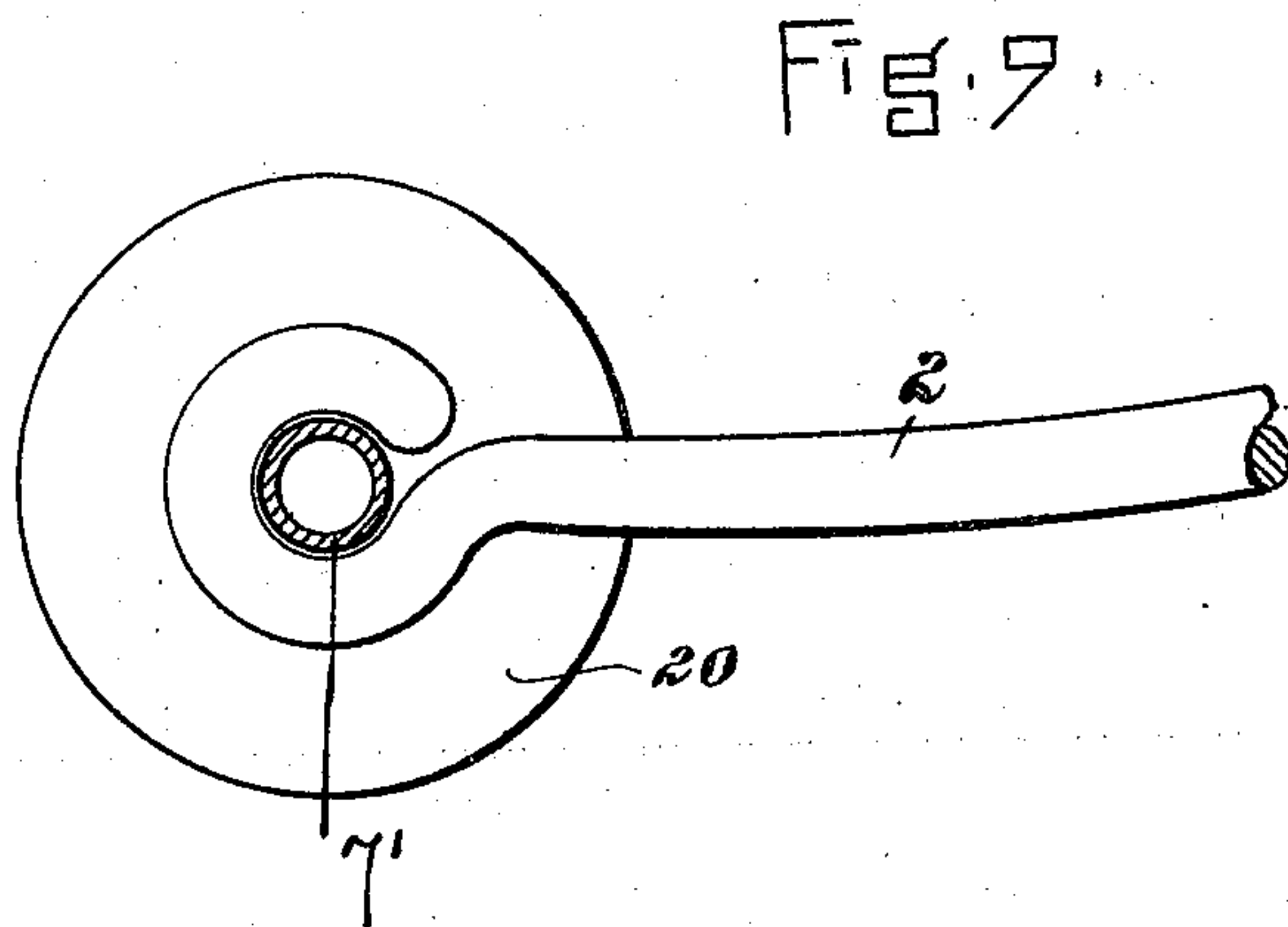
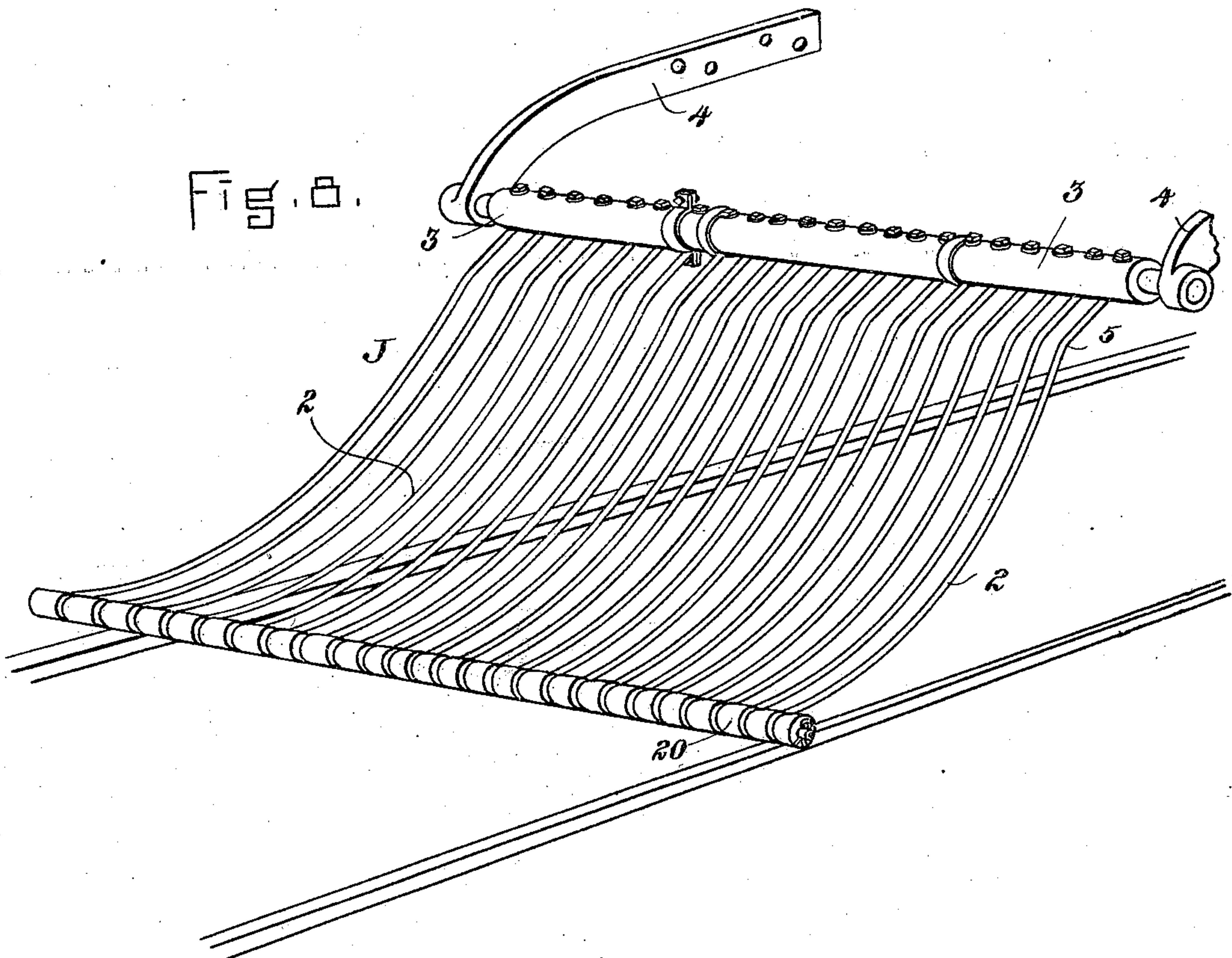
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WITNESSES.

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UNITED STATES PATENT OFFICE.

MILLARD F. FIELD, OF TAUNTON, MASSACHUSETTS.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 502,959, dated August 8, 1893.

Application filed December 9, 1892. Serial No. 454,564. (No model.)

To all whom it may concern:

Be it known that I, MILLARD F. FIELD, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Car-Fenders; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to guards or fenders for car service, particularly street cars, either cable or electric.

The prominent characteristics of this invention consist in an open guard or fender composed of a series of curved, parallel, spring fingers arranged to operate as an entirety. This guard, mounted upon either or both ends of the car, is adapted to be swung up from an active position contiguous with or in close proximity to the surface of the road, into an inactive position, when it rests against the car dasher.

A further feature is embodied in a flexible device by which the several fingers are all interconnected and united in order to form a yielding front edge to the fender; likewise in mechanism by which changes in the position of the fender with respect to the road-bed can be effected at the will of the driver. Other novel and special details in construction which relate to this guard and its mode of operation will be hereinafter fully described.

The drawings represent in Figure 1. a perspective view of a street car equipped with a fender embodying my invention, and in a position for danger. Fig. 2. is an end view of a car showing the fender swung up against the dash-board and in an inactive position. Fig. 3 is a plan of Fig. 2. Fig. 4 is a side elevation of the fender in the danger position. Fig. 5 is also a side elevation in which the fender or guard is shown slightly raised to clear the road-bed and in the position usually maintained for ordinary active service. Fig. 6. is a sectional perspective elevation of a fragmentary portion of the front end of the

fender enlarged to show the flexible construction at this point. Fig. 7 is a sectional side elevation likewise enlarged to illustrate the method of varying the elevation of the front end of the fender. Fig. 8. is a perspective view of the fender, showing one form of flexible construction for the front bar thereof. Fig. 9. is a cross-section of the same enlarged.

In said drawings A represents a car for street service after the manner now most generally approved with a dash-board at B, buffer at C, draw-bar at D, draw-bar support at E, and wheel-guard at F. The brake-rod is shown at G and the power-rod at H. With these premises I will now proceed to describe my invention which is embodied in a guard or fender adapted to protect life, as well as to prevent inanimate objects on the road-bed from passing beneath the car and perhaps derail the latter with attendant injury to life and property. This guard is shown at J as composed of a series of metallic spring rods or fingers 2, the rear ends of which are affixed upon a transverse shaft 3 pivotally mounted in plates 4. 4. bolted to the car-frame. As seen in Fig. 5 this shaft extends beneath the buffer, while the fingers are curved and formed with a flexure at 5 in order to permit those opposite the buffer to bear closely thereagainst and so enable the guard to swing against the dash-board. This I consider an important feature, since two cars can be coupled, or they can be stored closely together in the car-house. A further feature consists in the manner of mounting this fender, that is in having the pivotal point considerably above the front or projecting edge of said fender with the result that the fingers are at once crowded down against the road-bed, whenever any object is encountered. As a result the object is lifted or raised in lieu of being crowded down with the attendant danger perhaps of passing beneath the fender.

A peculiar characteristic is embodied in the construction of the front bar 6 or connecting device for the free ends of the fingers 2. This is flexible or yielding and one form of construction is illustrated in Fig. 6. of the drawings, and consists in providing a rubber strip 6 preferably circular in cross-section and either solid or tubular. To connect said fin-

gers together to prevent wear and cutting of the flexible bar, flat metallic clips 8 are attached to the fingers, while a strip 9 of leather or analogous material is riveted to the clips 5 which are preferably bent or concaved in order to better support the flexible bar 6, the latter being attached and held in place by bands 10 at suitable intervals. By this arrangement the front edge is rendered yielding and aids in lifting the obstacle upon the fender, while at the same time the blow is not so severe. In connection with this yielding effect the shaft 3 may be recessed at 12 Fig. 7 at a point just in rear where the upper 15 ends of said fingers 2 enter it; hence each finger is permitted to retreat at this point, when the front extremity encounters an obstacle and the two act conjointly to modify the blow. To allow the front portion of the 20 fender to pass easily along the road-bed, when in contact therewith, a series of shoes 13 composed of convex steel castings may be attached to the fingers.

As I have before mentioned this fender is 25 pivotally attached to the front of the car; hence it is capable of three positions. The first or inactive one, as shown in Fig. 2 also in broken lines in Fig. 5, occurs when the fender is swung up against the dash-board, 30 where it may be held temporarily by straps, hooks or otherwise, and it may be pulled up into this position by means of a cord 14. The second or active position, see Figs. 1 and 4, is when an obstacle comes upon the road-bed. 35 The third position is intermediate between the other two and is that generally maintained, when the car is in use. This last position the motor-man or driver is enabled to vary somewhat as he desires by aid of the following mechanism. 40

Rearwardly upon the transverse rod 3 I have secured a lug or short pin 15, which is adapted to engage in notches 16 in a vertical releasing lever 17 on the front of the car; said 45 lever is to be operated by the driver in various ways, preferably in the manner I have illustrated. The present system of electrically impelled cars requires the use of both hands to operate the power and brake-rods, 50 while one foot, generally the right, is employed in ringing the alarm bell or gong. In this position with the weight of the body on the left leg, the right knee is free to be pressed forward, if the driver so wishes. Hence I 55 have bent the upper end of the releasing lever and passed it through an opening in the dash-board B and have moreover furnished the extremity with a presser-plate 18 adjustably mounted in order to suit different motor-men. The latter by grasping the rope 14 60 at the same time pressing the upper part of the lever 17 forwardly and outwardly is enabled to adjust the fender at any position above the road-bed, or may swing it up against the dash-board without getting off the platform of the car. Should an obstacle suddenly 65 come upon the track, the knee of the motor-

man is applied to the presser-plate 18, the lug 15 is released from the notched lower end of the releasing lever and the front end of the 70 fender drops upon the road-bed.

I do not desire to be limited to the precise mechanism for release of the fender, since other means may be adopted; but in view of the fact that in times of danger, the brake- 75 rod, power-rod, and alarm-bell are to be operated simultaneously, I deem the above device the most feasible, since the very act of ringing the gong permits freedom of the knee to operate the presser-plate and thereby puts 80 the fender in a position for danger.

In lieu of the construction of the front flexible connecting device, as shown in Fig. 6, I propose at times to employ the system illustrated in Figs. 8 and 9, that is I form an eye 85 at the free ends of the fingers 2, then pass a wire-cord or small steel tube or rod 7' through said eyes of the several fingers thus interconnecting them, while in order to maintain them in the same relative positions and properly 90 spaced at this particular point, short rolls 20 of rubber or other material are interposed between the fingers or rods; said rolls are likewise passed upon the flexible connecting device, as a wire-cord or otherwise. By means 95 of said rolls which are adapted to rotate the above mentioned shoes 13 may be omitted, as with the construction said rolls perform all the duties of the said shoes—that is they allow the fender to pass freely over the road- 100 bed when the front projecting edge is in contact therewith.

What I claim is—

1. A car-fender composed of a series of parallel spring rods or fingers mounted upon a 105 common pivot, and adapted to be swung up against the dash-board substantially as specified.

2. In combination with a car, a fender composed of a series of parallel spring rods 110 mounted upon a pivot attached to the car end and adapted for three adjustments in position; viz, to be swung up against the dash-board, to be held slightly raised above the road-bed, and to rest upon the track, together 115 with means for effecting such changes, substantially as set forth.

3. In combination with a car, an open fender composed of a series of spring rods or fingers, pivotally attached to the car end and a flexible 120 connecting device adapted to form the front edge of the fender and unite the several fingers as a unit, substantially as stated.

4. A fender for street-car service composed as follows, a transverse bar, or rear rod pivotally 125 attached to the car, a series of curved rods provided with a flexure at 5, and a flexible connection—as a rubber band or tube—which is attached to the individual fingers at their extremities, substantially as described. 130

5. The combination with a car, of an open fender composed of parallel spring rods or fingers and pivotally attached to the car-front and adapted to be normally held with its front

end above the track, together with means to cause said front end to drop, and bear upon the road-bed, substantially as explained.

5 6. In combination with a car, the lateral supporting plates 4, a pivotal fender there- upon composed of curved spring rods or fin- gers, and a flexible bar adapted to unite said fingers, a releasing lever pivoted upon the car front, and a lug 15 secured to the fender
10 pivot, and adapted to engage the releasing lever substantially as specified.

15 7. In combination with a car, and a project- ing fender, releasing mechanism to operate said fender and composed of a rocking lever furnished at one end with a presser-plate to be operated by the knee of the driver, and with the lower extremity adapted to engage with the fender, substantially as set forth.

8. In combination with a car, a pivotal fend- er having its point of support above its pro- 20 jecting end, when the latter rests upon the track, and composed of parallel spring rods adapted to be swung up against the dash- board, a yielding connection which unites the extremities of the several rods, elastic rollers 25 interposed between said fingers and mount- ed on said yielding connection, together with means for adjusting the fender in the several positions, substantially as herein specified and explained.

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

MILLARD F. FIELD.

Witnesses:

JAMES F. COOK,
H. E. LODGE.