

No. 763,622.

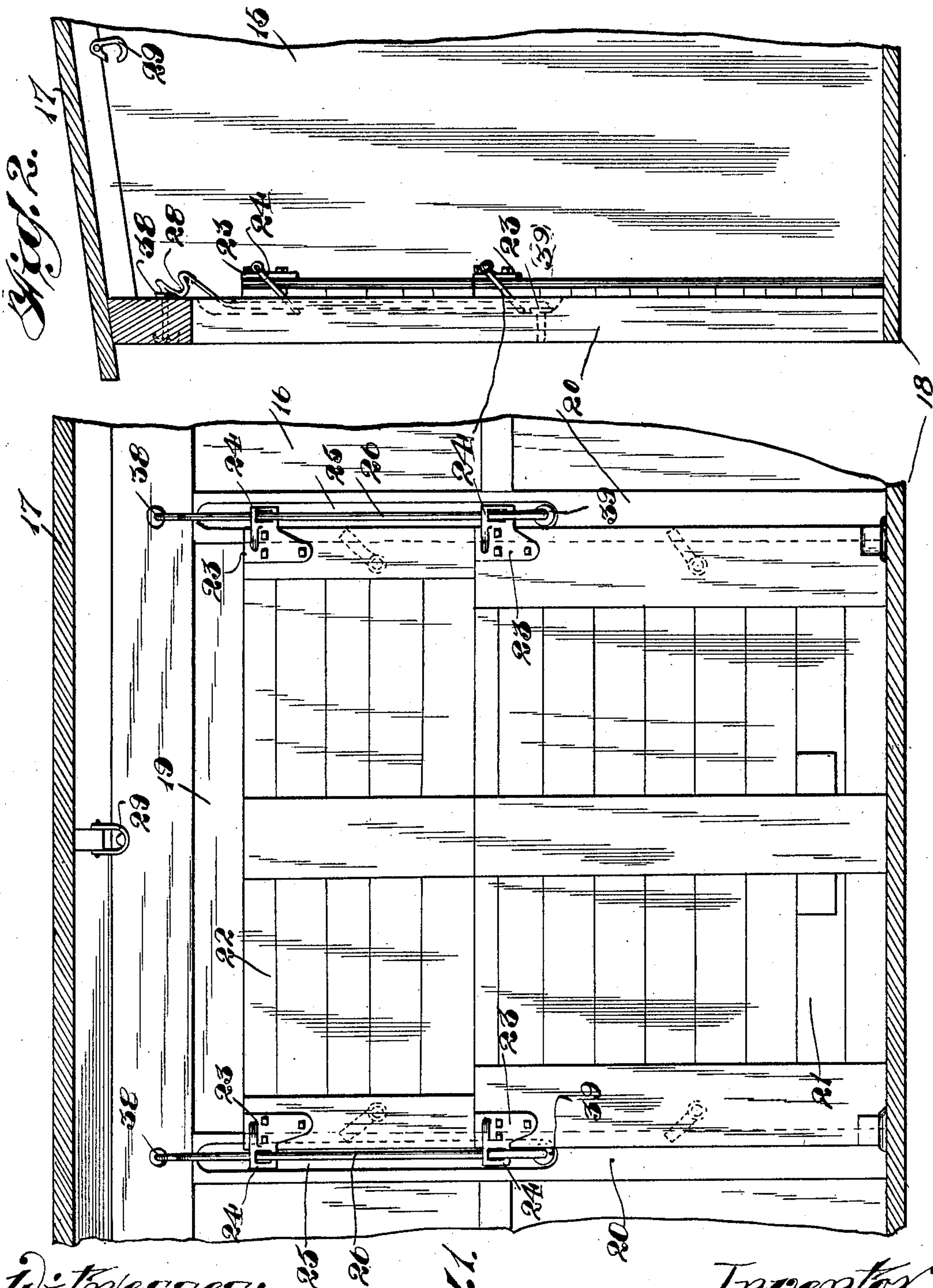
PATENTED JUNE 28, 1904.

W. A. McGUIRE, DEC'D.
A. A. H. B. C. & J. F. McGUIRE, EXECUTORS.
GRAIN CAR DOOR.

NO MODEL.

APPLICATION FILED JAN. 26, 1904.

3 SHEETS—SHEET 1.



Witnesses:
J. B. Weir
C. V. Domarus

W. A. McGUIRE
Inventor:
William A. McGUIRE
By Bond, Adams, Rickard & Jackson
Attys

No. 763,622.

PATENTED JUNE 28, 1904.

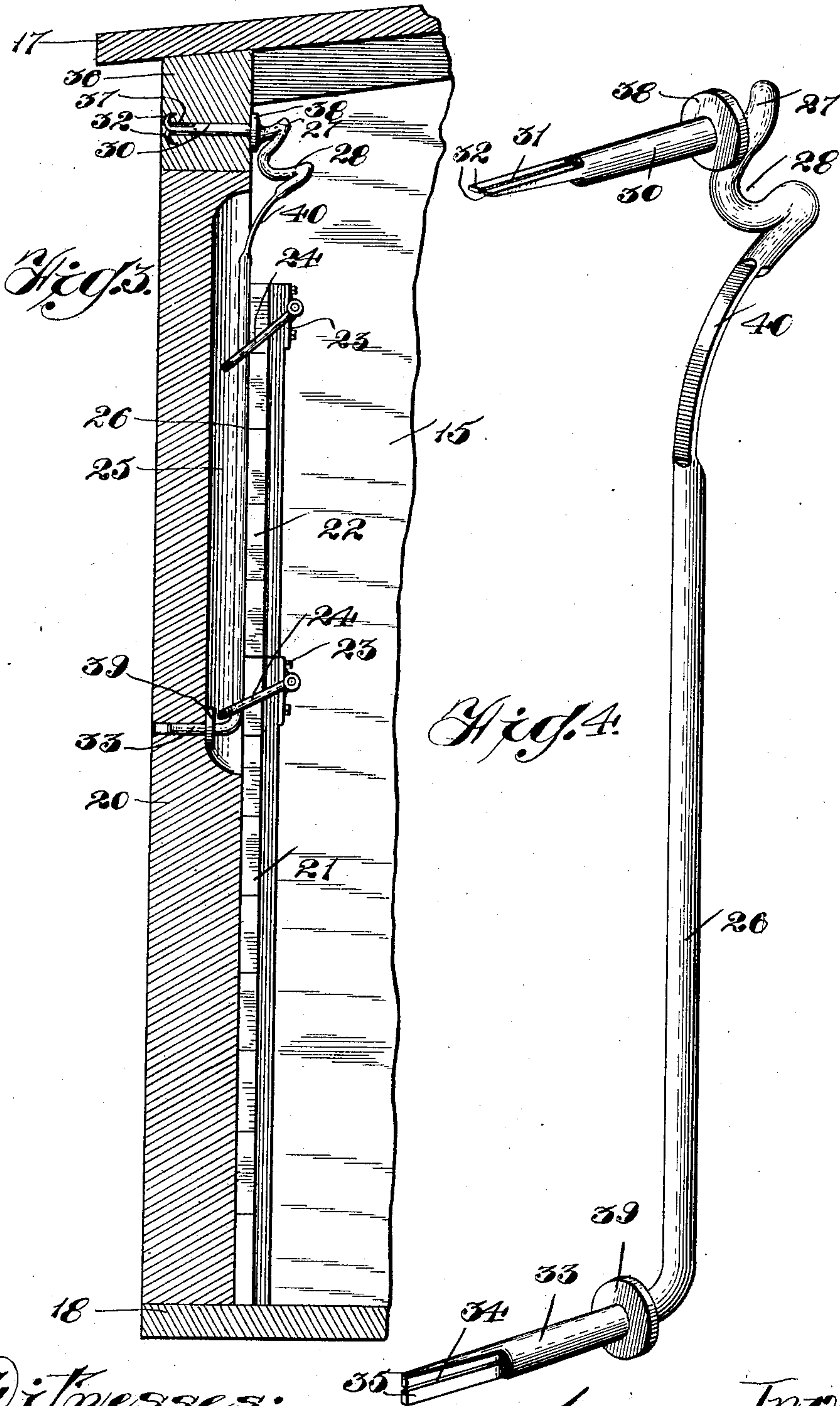
W. A. McGUIRE, DEC'D.
A. A. H. B. C. & J. F. McGUIRE, EXECUTORS.

GRAIN CAR DOOR.

APPLICATION FILED JAN. 26, 1904.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:
J. Blair
G. V. Donavies.

Inventor:
William A. McGuire
by Bond, Adams, Pickens & Jackson
Attys.

No. 763,622.

PATENTED JUNE 28, 1904.

W. A. McGUIRE, DEC'D.
A. A. H. B. C. & J. F. McGUIRE, EXECUTORS.

GRAIN CAR DOOR.

APPLICATION FILED JAN. 26, 1904.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 5.

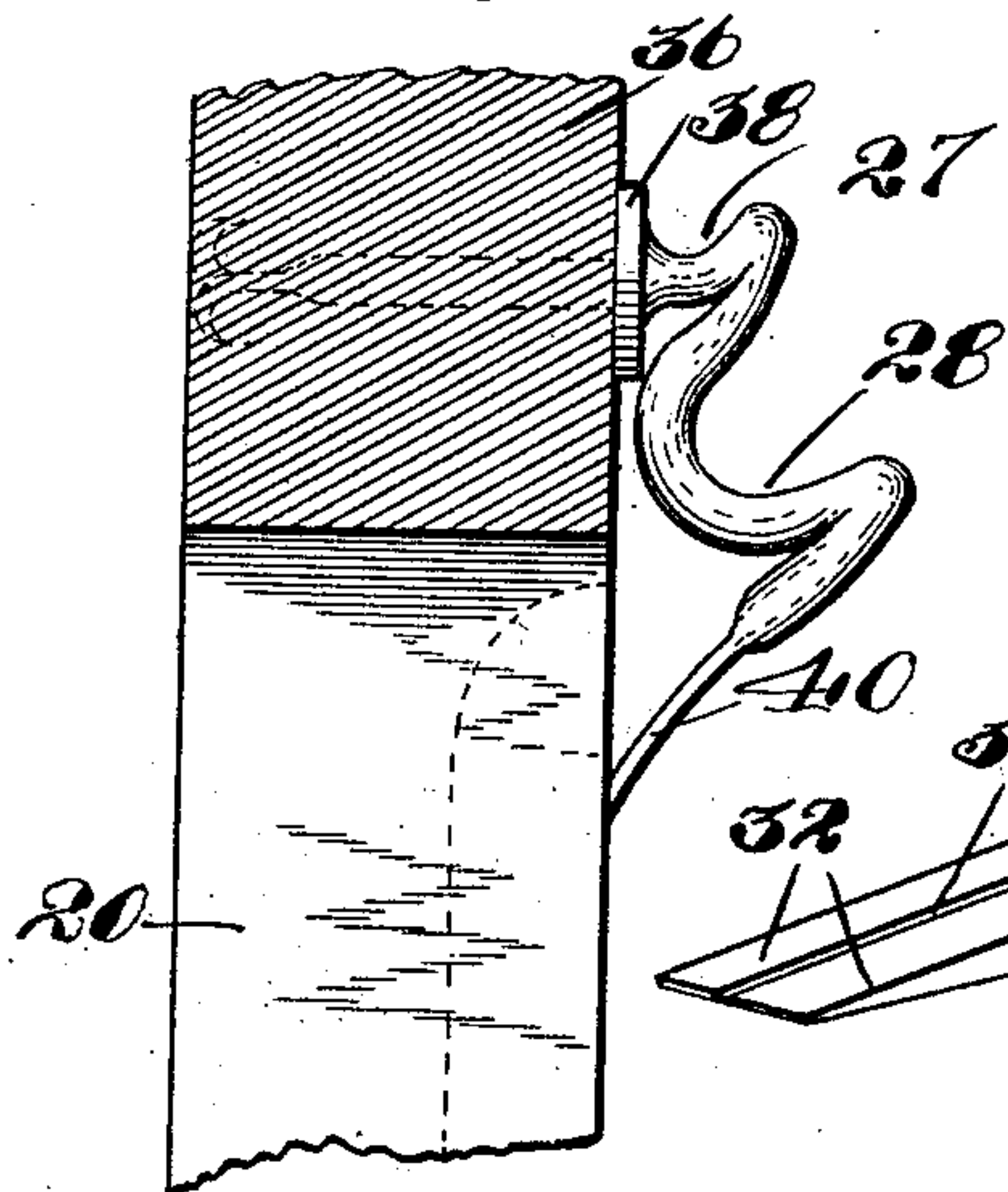


Fig. 6.

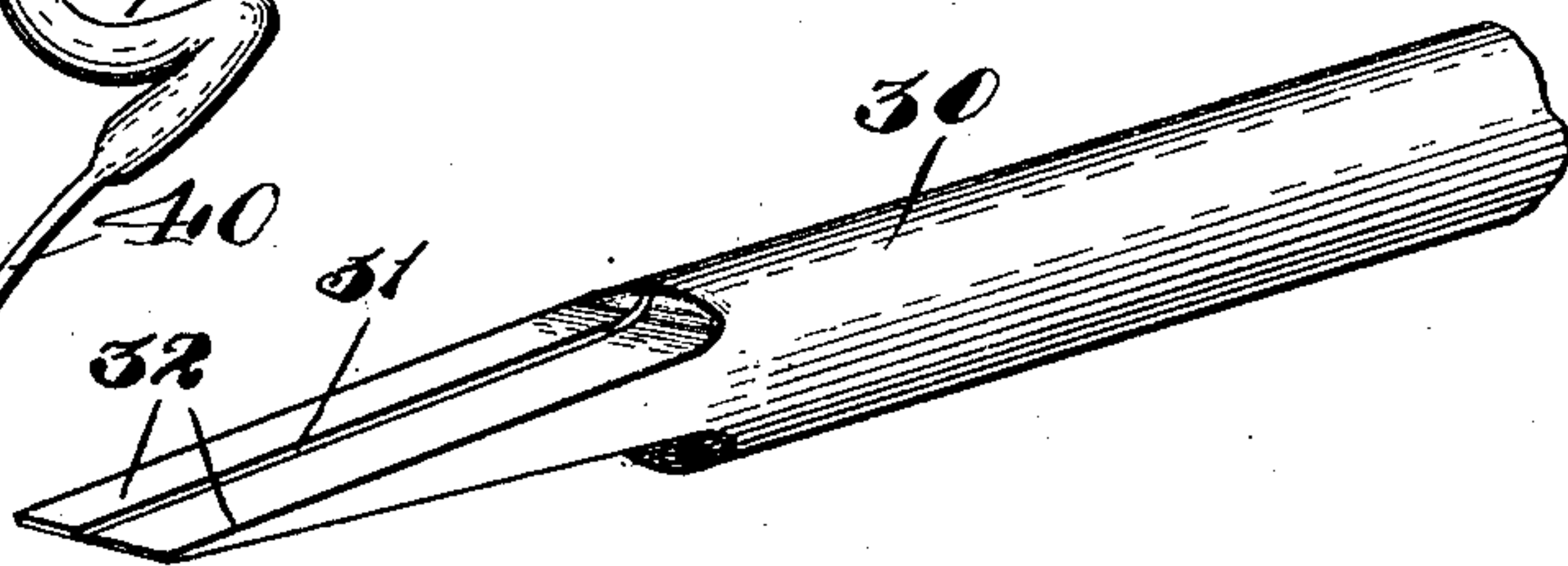


Fig. 7.

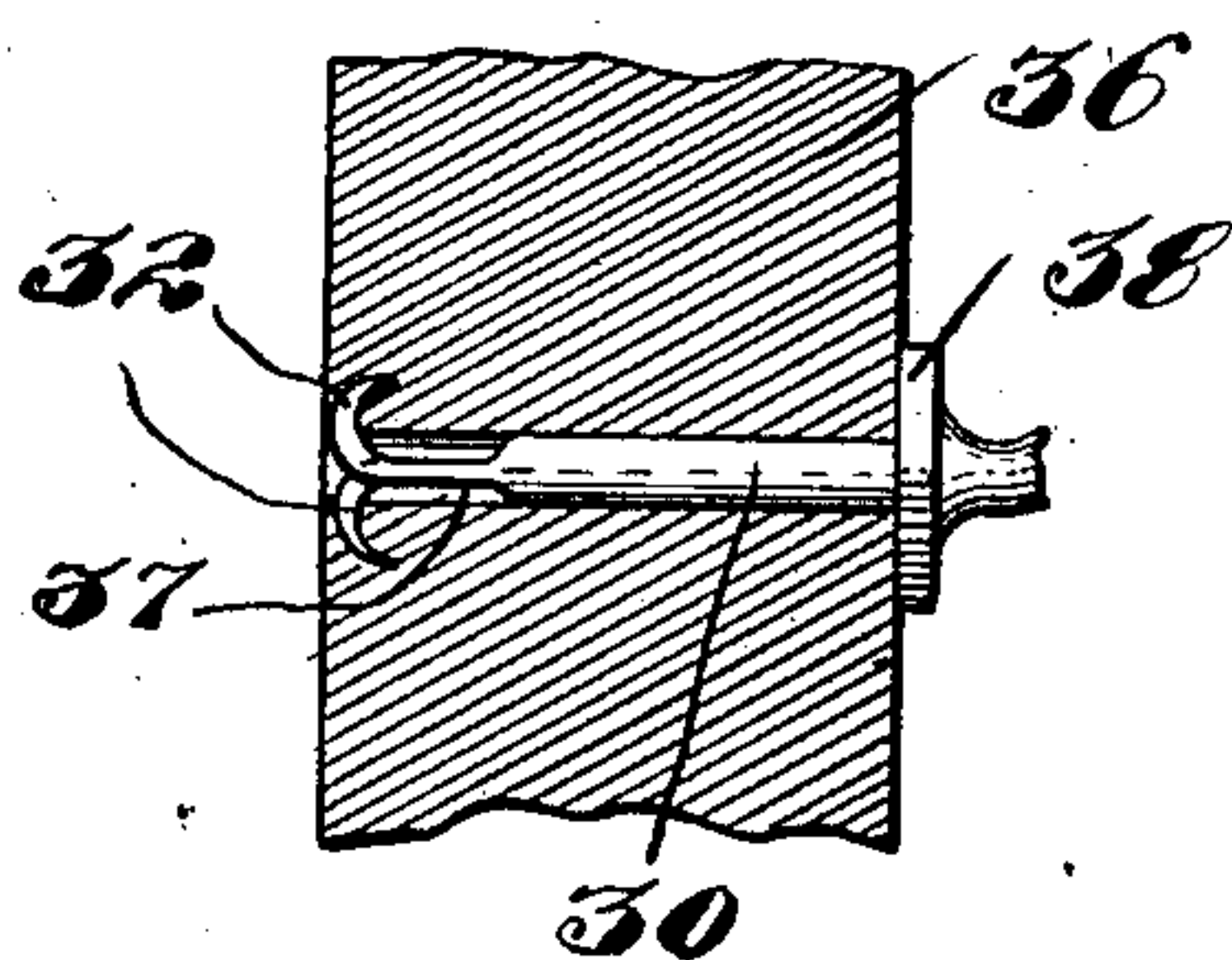


Fig. 8.

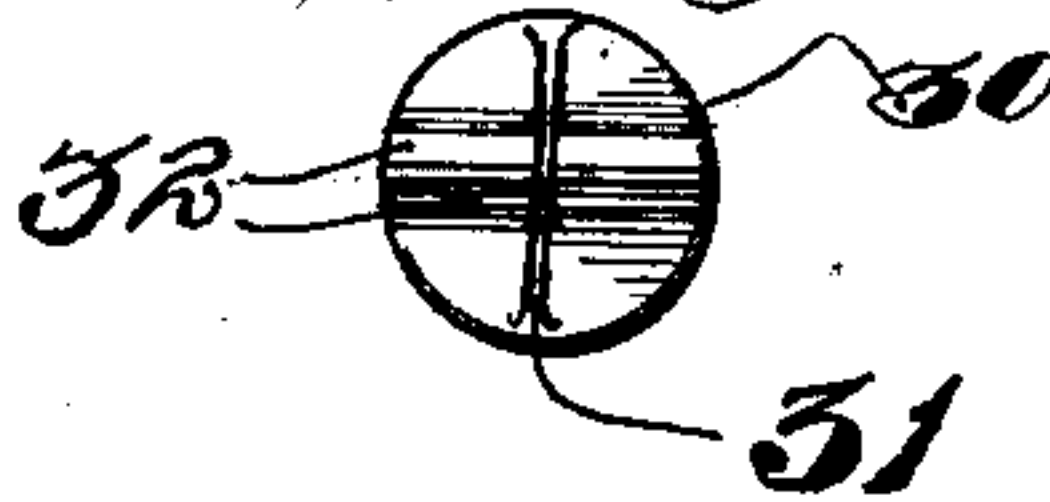


Fig. 11.

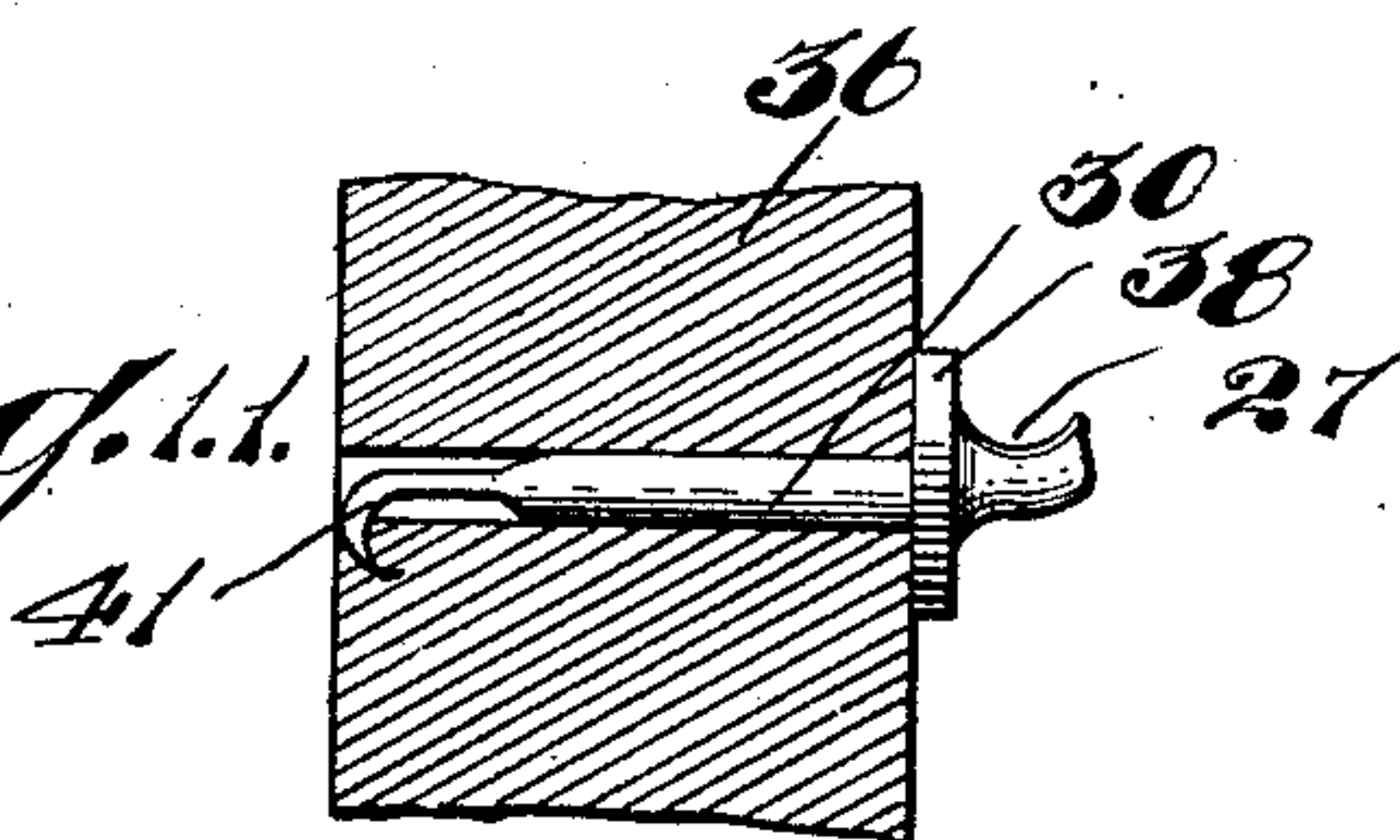


Fig. 10.

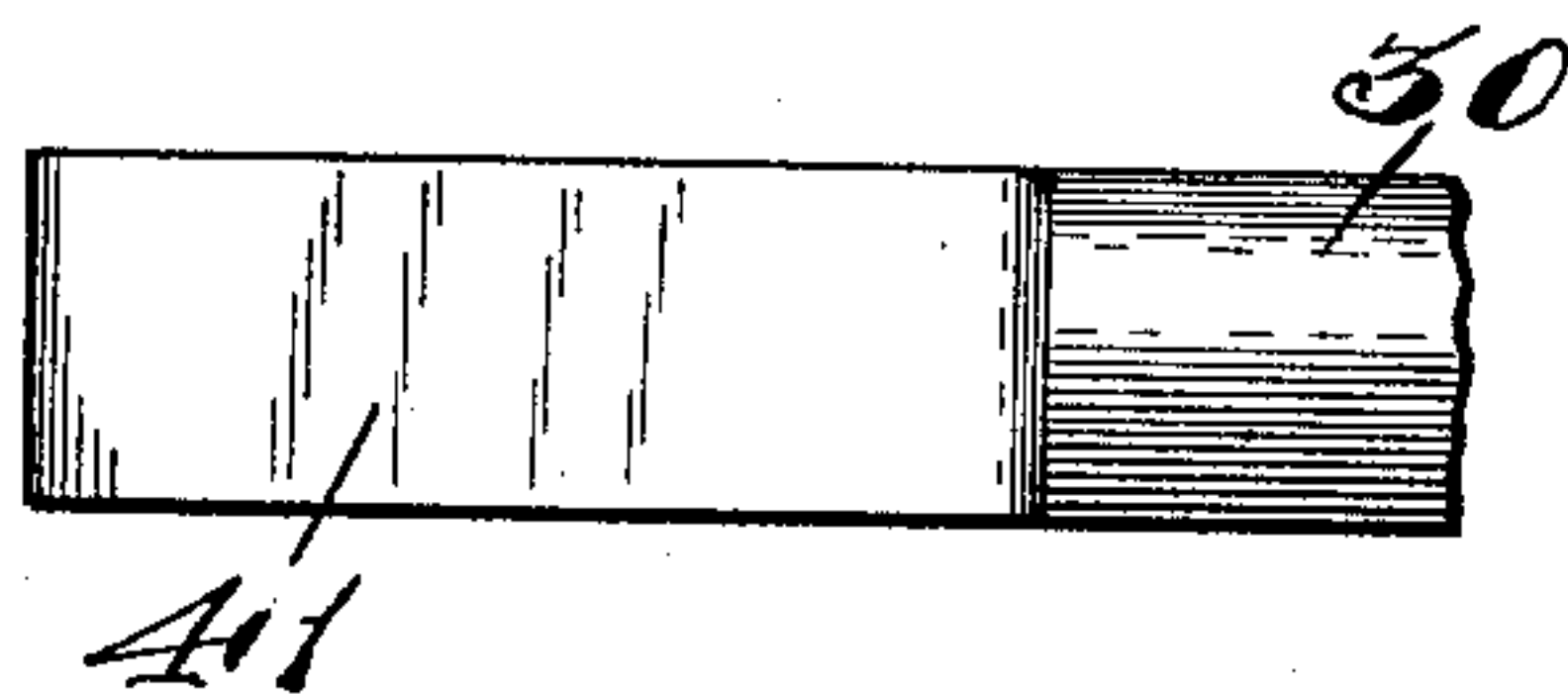


Fig. 9.



Witnesses:
J. W. Weir
G. V. Donnan.

Inventor:
William A. McGuire
by Bond, Tamm, Fickens & Jackson
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. McGUIRE, OF CHICAGO, ILLINOIS; ANTONIE AUGUSTA
HELENA BERTHA CLARA McGUIRE AND JOHN F. McGUIRE EXECU-
TORS OF SAID WILLIAM A. McGUIRE, DECEASED.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 763,622, dated June 28, 1904.

Application filed January 26, 1904. Serial No. 190,755. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. McGUIRE, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to grain-car doors of the type wherein each door is held in place opposite the door-opening by means of vertical rods secured one at each side of said door-opening, to which rods the door is suitably secured by oppositely-located loops or stirrups which permit the door to be raised and then swung inward against the roof of the car, in which position it is suitably secured to leave the door-opening unobstructed for loading or unloading purposes. Such vertical rods are known as "guide-rods," and it is with reference to improvements in the construction of such rods that my invention particularly relates. These rods have ordinarily been secured in place by ordinary fastening devices—such as screws, bolts and nuts, and the like—but it is the object of my improved construction to provide superior fastening means whereby all liability of the rod becoming loosened is avoided, which liability of becoming loosened is always present with the old methods of securing the rods in place, owing to the heavy strains put upon the rods due to the weight of the car-doors that are attached to them; the frequency with which such doors are operated, and the rough handling that such doors receive.

I accomplish the above-stated object as illustrated in the drawings and hereinafter specifically described.

That which I believe to be new will be pointed out in the claims.

In the accompanying drawings, Figure 1 is an inner face view of a grain-car door and a portion of a car, showing the arrangement of the improved guide-rods. Fig. 2 is a vertical cross-section through a portion of a car-body, showing in side elevation the parts represented in Fig. 1. Fig. 3 is an enlarged

view, somewhat similar to Fig. 2, but showing more clearly the construction of the guide-rods. Fig. 4 is a perspective view of one of the guide-rods. Fig. 5 is a detail showing the upper end of one of the guide-rods and in dotted lines showing the means for securing that end of the guide-rod in place. Fig. 6 is an enlarged detail, being a perspective view of the securing portion of the upper end of one of the guide-rods. Fig. 7 is a detail illustrating the position of the securing portion of one of the guide-rods when secured in place in the framework of the car. Fig. 8 is an end view of the portion of the rod shown in Fig. 6. Fig. 9 is a side elevation of the securing portion at the lower end of one of the guide-rods. Fig. 10 is a detail showing a modification in the construction of one of the securing portions of the guide-rod, and Fig. 11 is a detail showing a modification in the way of securing the end of a guide-rod in the framework of a car.

Referring to the several figures of the drawings, in which the same parts are indicated by corresponding reference characters, 15 indicates one of the end walls of a grain-car, 16 one of the side walls, 17 the roof, and 18 the floor of the car, all of which may be of any ordinary construction.

19 indicates the door-opening through the side wall 16 of the car, at each side of which is located the usual vertical post 20.

Grain-cars as now constructed are ordinarily of such large size that a door constructed of a single section and adapted to properly close the door-opening would be too heavy to be readily moved, and it has therefore become common to construct such doors in two sections or parts, and such construction I have illustrated and have indicated the larger and lower section by 21 and the smaller and upper section by 22. Each of these door-sections is provided near each upper corner with a suitable plate 23, from which extends laterally a suitable loop 24, preferably formed with its plate 23 and adapted to embrace a guide-rod, as usual, whereby the door-sections are movably secured to such guide-rods.

25 indicates wide grooves formed in the upright posts 20, each of which receives a guide-rod, so that such guide-rod will not project, except at its upper end, beyond the inner
5 face of the side wall of the car. As indicated in Fig. 3, the groove is also deep enough to receive the end of the loops 24.

26 indicates the main or body portion of my improved guide-rods, one of such guide-rods
10 being provided, as hereinbefore stated, at each side of the door-opening 19.

27 28 indicate two bends formed in the rod 26 near its upper end and adapted to support, respectively, the upper ends of the two door-
15 sections 22 and 21 when said door-sections are raised and turned up against the roof of the car, as will be readily understood, the lower or, in that position, inner ends of the door-sections being retained by suitable hooks pivotally at-
20 tached near the roof of the car, one of such hooks being shown and indicated by 29.

30 indicates a horizontally-turned portion of the guide-rod at the upper end thereof, the extreme end of which portion 30 is tapering
25 in form and provided with a slit or cut 31, as best shown in Fig. 6, which produces two prongs 32, each of such prongs in the construction shown having flat faces on each side that converge from the portion 30 toward the
30 end.

33 indicates a horizontally-turned portion of the rod 26 at the lower end of such rod, the outer end of such portion 33 being provided with a central slit 34, producing prongs
35 35 of similar character to the prongs 32 at the upper end; but, as will be seen from an inspection of Fig. 4, the slit or cut 34 is made at right angles to the slit or cut 31, so that the bending of the prongs 32 and 35 will be
40 in a direction at right angles to each other, the object of which will hereinafter be explained.

36 indicates a beam extending longitudinally of the car beneath the roof and forming
45 a portion of the framework of the car, and into openings 37, bored in this beam 36 at the proper points, are inserted the horizontal portions 30 of the pair of guide-rods, while the lower horizontal portions 33 are inserted in
50 similar openings formed in the vertical posts 20. The portion 30 of each rod is longer than the width of the beam 36, thus permitting the prongs 32 to project when by any suitable means such prongs can be turned in
55 opposite directions and turned back into the beam, thus effectually clenching the end 30 in such beam, as indicated in the drawings, and thereby securing the upper end of the rod against any tendency to withdraw notwithstanding the rough usage to which heavy double-sectioned doors may be put. In like man-
60 ner the prongs 35 on the lower horizontal portion 33 may be clenched in the upright posts 20; but it will be noted that these prongs 35

are turned back into the wood at right angles 65 to the turns of the prongs 32, and it is deemed essential that this should be so, inasmuch as the grain of the beam 36 runs at right angles to the grain of the posts 20, and by the construction shown and described splitting of the
70 wood will be avoided when clenching the prongs. In order that the horizontal portions 30 and 33 be inserted only so far as will leave the main or body portion 26 vertical, I have provided at the inner portion of each of these
75 parts 30 and 33 a suitable stop 38 and 39, respectively, such stops being in the form of heads which are formed integral with the guide-rods.

As it sometimes happens that the holes bored 80 for the reception of the horizontal ends 30 and 33 of a rod are not precisely the right distance apart, I have made provision for permitting these horizontal ends to be inserted in such holes notwithstanding the slight dis-
85 crepancy in their relative positions and at the same time without distorting the main or body portion of the guide-rod from its vertical position, such provision consisting in slightly diminishing in one direction the diameter of
90 the rod, such diminution in diameter being near the upper end of the rod where such rod projects in a curve from the groove 25 in the post 20 and such diminution in diameter at this place producing in the form of construc-
95 tion shown a slightly-flattened portion (indicated by 40) instead of the substantially round or cylindrical form which characterizes the rod throughout its principal length. The rod being of wrought metal can by reason of this
100 diminution in size at this place be bent slightly, so as to allow the horizontal ends to be forced into their respective openings in case such openings are not, as stated, precisely the right
105 distance apart.

In Fig. 10 I have illustrated one of the horizontal ends of the rod as being unprovided with a central slit or cut, so that there is but one prong, which is indicated by 41, the end
110 of which is adapted to be turned and clenched, as indicated in Fig. 11, and indeed, if desired, both prongs on either end of the rod may be turned in the same direction to engage the wood.

By my improved construction I provide a 115 form of guide-rod that has formed with its end fastening means—that is, constructed with practically no more effort or expense than grain-door rods that require separate fasten-
120 ings and that when in place will furnish a strong and reliable means for attaching in place the large and heavy doors required on the modern grain-car.

That which I claim as my invention, and desire to secure by Letters Patent, is— 125

1. A guide-rod for grain-car doors, having an end provided with a clenching-prong and a stop for limiting the extent of insertion of

such end in an opening, substantially as specified.

2. A guide-rod for grain-car doors, having a tapering clenching-prong and a bending portion of less diameter than the body of the rod, substantially as specified.

3. A guide-rod for grain-car doors, terminating at one end in a pair of tapering clenching-prongs, and provided with a stop for limiting the extent of insertion of such pronged end in an opening, substantially as specified.

4. A guide-rod for grain-car doors, having each of its ends provided with a clenching-prong, the prong at one end being adapted to be bent at an angle to the bend that the prong at the other end is adapted to be turned, substantially as specified.

5. A guide-rod for grain-car doors, having each of its ends slit to provide two prongs, the slit at one end being at an angle to the slit at the other end, substantially as specified.

6. A guide-rod for grain-car doors, having its end portions tapering and provided with longitudinal slits, the slit in one tapered end being at an angle to the slit in the other tapered end, substantially as specified.

7. A guide-rod for grain-car doors, having between its ends a portion reduced in sectional area compared to the main or body portion of the rod, said portion being adapted to be bent to bring the ends of the rod nearer to or farther from each other, substantially as specified.

8. A guide-rod for grain-car doors, having between its ends a curved portion reduced in sectional area compared to the main or body portion of the rod, said portion being adapted to be bent to bring the ends of the rod nearer

to or farther from each other, substantially as specified.

9. A guide-rod for grain-car doors, having between its ends a portion that in one direction is of less diameter than the main or body portion of the rod, said portion being adapted to be bent to bring the ends of the rod nearer to or farther from each other, substantially as specified.

10. A guide-rod for grain-car doors, having between its ends a flattened portion adapted to be bent to bring the ends of the rod nearer to or farther from each other, substantially as specified.

11. A guide-rod for grain-car doors, having between its ends a curved bending portion reduced in sectional area compared to the main or body portion of the rod and having an end provided with a clenching-prong, substantially as specified.

12. A guide-rod for grain-car doors, having between its ends a bending portion that in one direction is of less diameter than the main or body portion of the rod and having an end provided with a clenching-prong, substantially as specified.

13. A guide-rod for grain-car doors, having between its ends a bending portion reduced in sectional area compared to the main or body portion of the rod, a clenching-prong at the end, and a stop for limiting the extent of insertion of such pronged end in an opening, substantially as specified.

WILLIAM A. McGUIRE.

Witnesses:

ALBERT H. ADAMS,
MINNIE A. HUNTER.