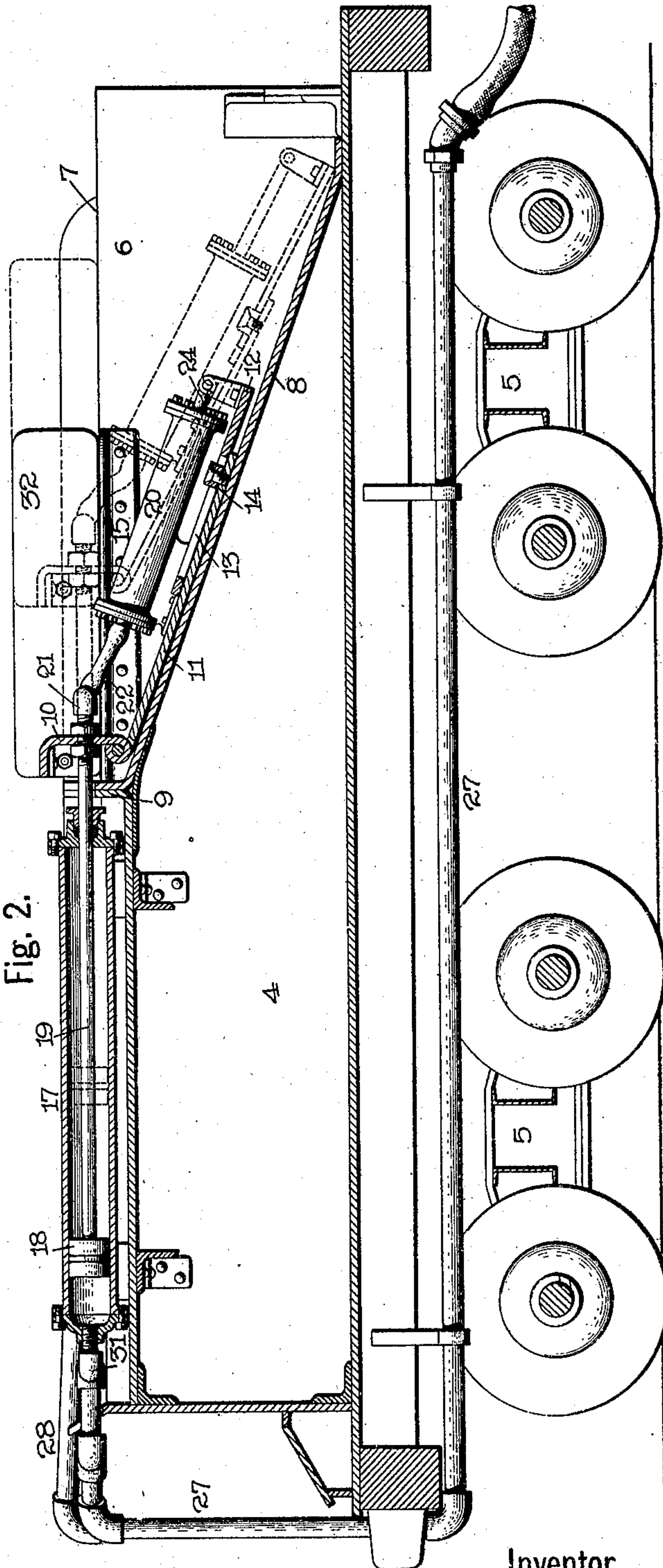
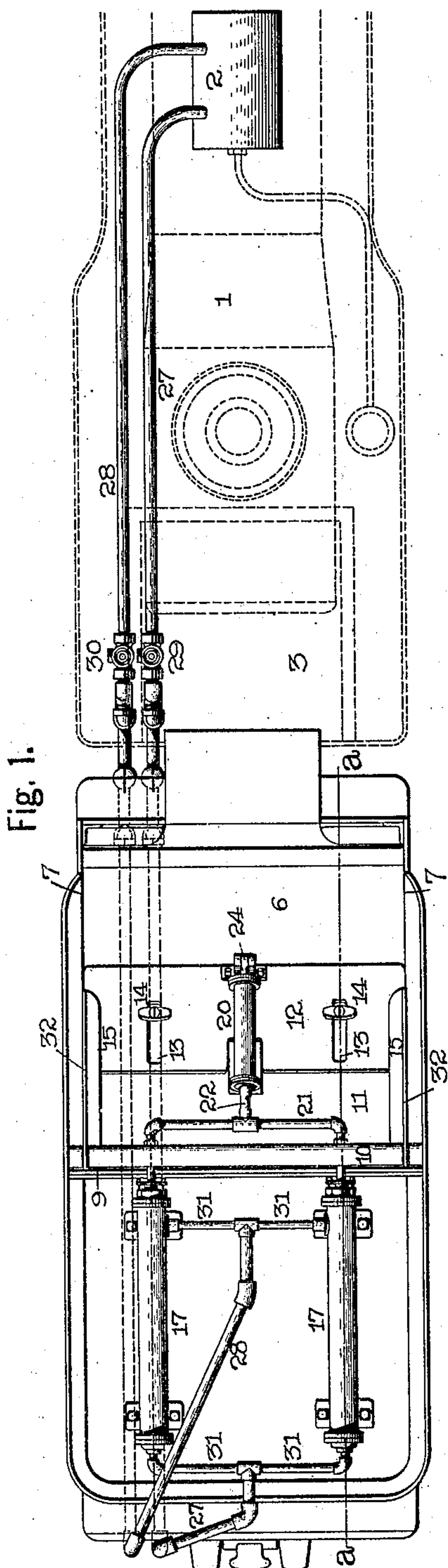


W. P. SCHERER.  
TENDER FOR LOCOMOTIVES.

APPLICATION FILED JUNE 8, 1905.

2 SHEETS—SHEET 1.



Witnesses.

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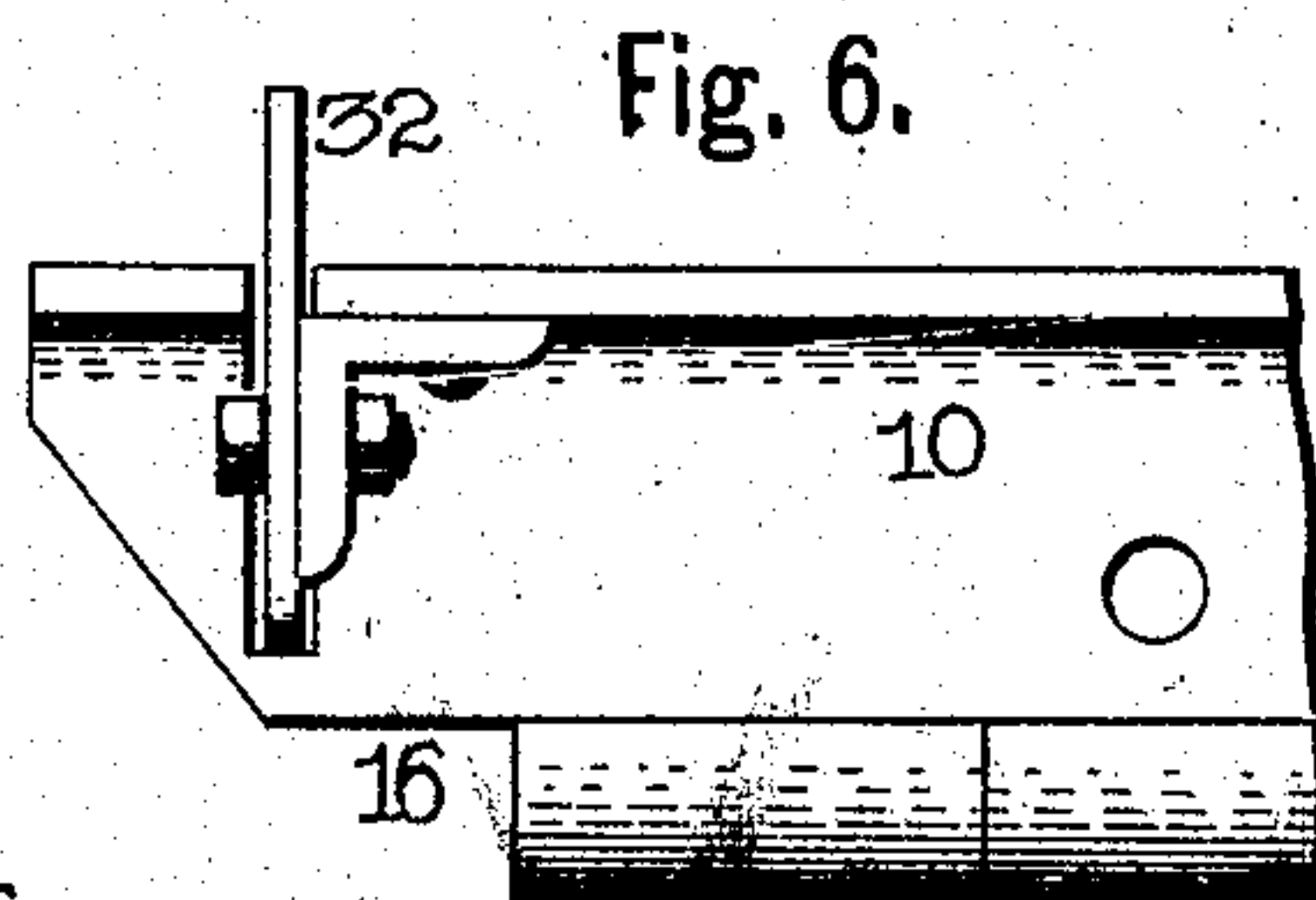
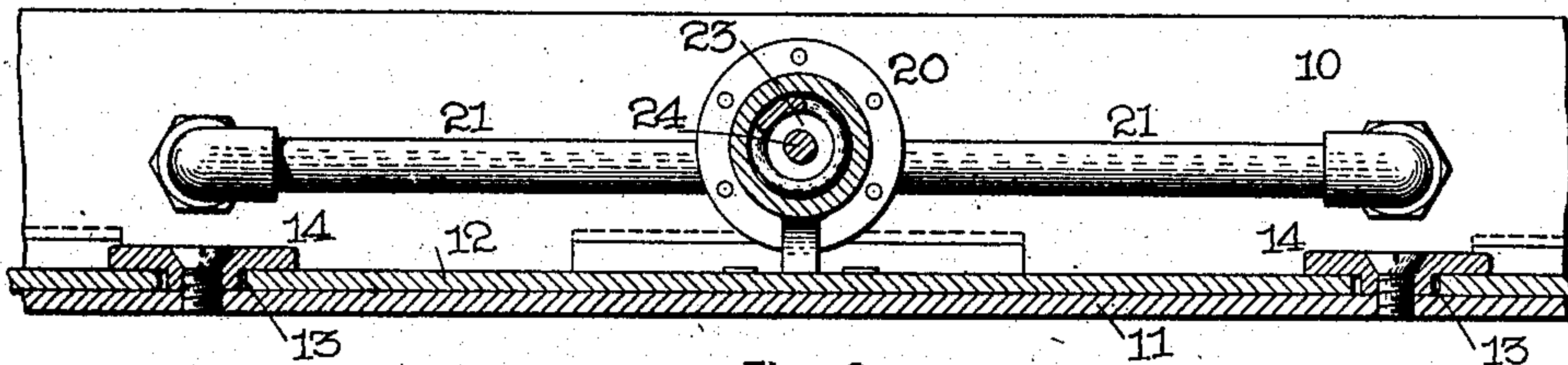
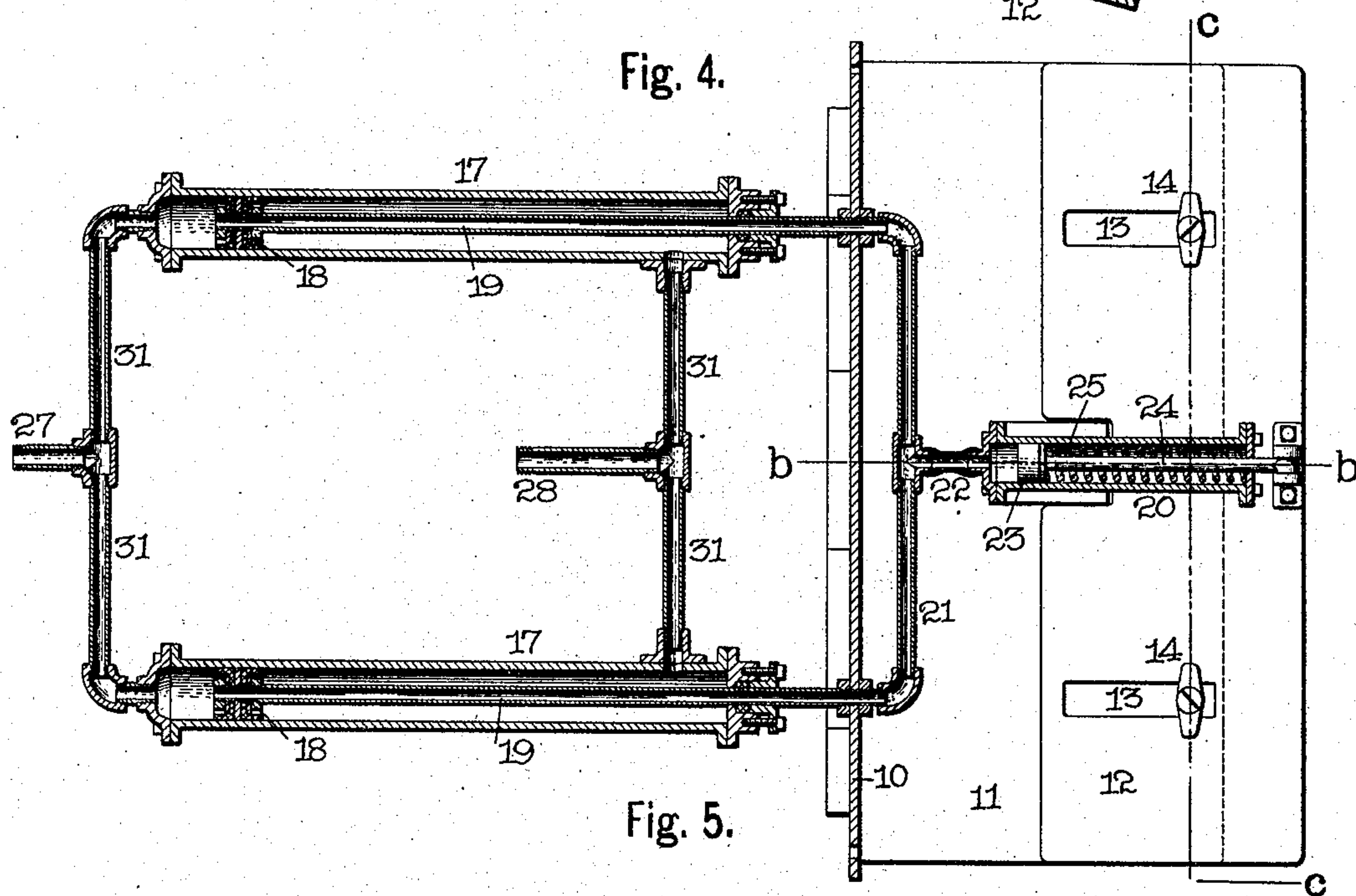
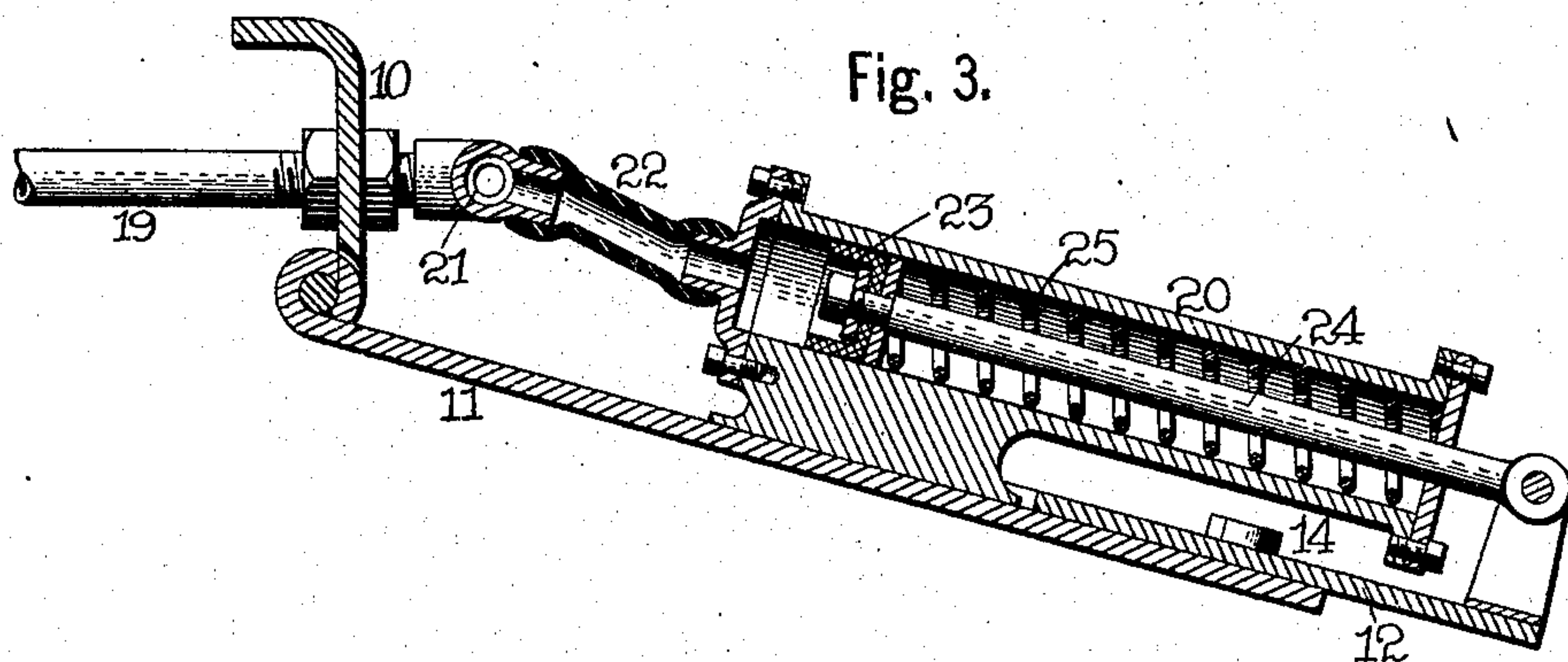
No. 806,436.

PATENTED DEC. 5, 1905.

W. P. SCHERER.  
TENDER FOR LOCOMOTIVES.

APPLICATION FILED JUNE 8, 1905.

2 SHEETS—SHEET 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM PETER SCHERER, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-FOURTH TO EDWARD JOHN KELLEY AND ONE-FOURTH TO JAMES BERNARD KELLEY, OF BUFFALO, NEW YORK.

## TENDER FOR LOCOMOTIVES.

No. 806,436.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed June 8, 1905. Serial No. 264,253.

*To all whom it may concern:*

Be it known that I, WILLIAM PETER SCHERER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Tenders for Locomotives, of which the following is a specification.

This invention relates to a locomotive-tender in which means are provided for shifting the coal in the coal-space forward toward the cab of the locomotive as it is used, so that it may be conveniently reached by the fireman, said means being bodily slidable.

The main object of the invention is to facilitate the operation of firing by maintaining the coal-supply within convenient reach of the fireman in the cab.

In the specific adaptation of the invention illustrated in the accompanying drawings the coal-space is provided with a false or movable wall which is moved forward by fluid-pressure to force the coal toward the forward end of the tender. The supply of compressed fluid is controlled by a valve device located within convenient reach of the fireman or engineer.

The adaptation of the invention shown also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of the improved tender coupled to a locomotive. Fig. 2 is an enlarged longitudinal section through the improved tender on line *a a*, Fig. 1, showing the movable wall moved forward in dotted lines. Fig. 3 is an enlarged section through the movable wall on line *b b*, Fig. 1. Fig. 4 is an enlarged central horizontal section through the air-cylinders. Fig. 5 is an enlarged fragmentary section on line *c c*, Fig. 4, showing the method of securing the two members of the movable wall together. Fig. 6 is an enlarged fragmentary view showing the method of securing the wings to the movable wall.

In referring to the adaptation of the invention shown in the drawings in detail like numerals designate like parts.

A locomotive 1 of well-known type has a main air-reservoir 2 and a cab 3, as shown in Fig. 1. A tender is coupled in the usual

manner to the locomotive and has the usual water compartment or space 4, trucks 5, and coal-space 6. The coal-space has vertical side walls 7 and a slanting or diagonal rear wall 8, which terminates near the top of the tender in a short transverse wall 9. A movable wall is placed upon the diagonal rear wall and is composed of two members, which are connected so that they may be moved relatively to each other to widen or narrow the wall. The upper member has a vertical top plate 10 and a lower plate 11, hinged in said top plate, and the lower member 12 is preferably a single plate and partially laps and slides upon the lower plate 11, being provided with slots 13, through which projections 14 from the lower plate 11 are slidably fitted to adjustably secure the two members together. The lower member is moved upon the upper member to widen the movable wall by fluid-pressure mechanism, as will be more clearly hereinafter set forth. The movable wall is supported from the side walls 7 of the coal-space so that it will be moved forward and back in an approximately horizontal direction by horizontal ledges 15, secured to the side walls near the top thereof, which project into recesses 16 in the top portion 10 of the upper member.

The fluid-pressure mechanism for shifting the movable wall comprises one or more air-cylinders 17, preferably two, which are mounted horizontally and longitudinally upon the tender-top in the rear of the coal-space. A double-action piston 18 is fitted in each of the air-cylinders, when more than one is employed, so as to reciprocate therein, and is mounted upon the inner end of a hollow piston-rod 19. The piston-rods 19 in the double-cylinder construction illustrated in the accompanying drawings are each connected at their forward ends to the movable wall, so that reciprocation of the piston and its rod will likewise move the movable wall.

The lower member is moved downward upon the upper member of the movable wall by fluid-pressure, an air-cylinder 20 being mounted upon the upper member and connected at its upper end to the ends of the hollow piston-rods 19 by pipes 21 and 22, the pipe 21 connecting the ends of the piston-rods and the pipe 22 extending from approxi-



mately the middle of the pipe 21 and connecting to the cylinder. A piston 23 in the cylinder 20 has a rod 24 connected to the lower member and is but single-acting, the lower member being automatically returned to its upper position by a spring 25, located within the cylinder, the tension of which retracts the piston.

The cylinders 17 are connected at each end to a source of fluid-pressure supply, preferably to the main air-reservoir 2 on the locomotive, by separate pipes 27 and 28, each of which has shut-off valves 29 and 30, and extend within convenient proximity of the engineer or fireman in the locomotive-cab. The pipe 27 for forcing the movable wall forward will hereinafter be termed the "forward-force supply-pipe" and the pipe 28 for returning the wall to its position in proximity to the permanent rear wall of the coal-space will be hereinafter termed the "return-force supply-pipe." Each of the pipes 27 and 28 are connected by branch pipes 31 to both cylinders for simultaneous operation.

The coal-space may be provided with wings 32, which extend above the side walls thereof and serve to provide additional space, so that the coal-space may be filled heaping full without danger of the coal running over the sides. These wings 32 are pivoted to the vertical plate 10 of the movable wall, so that they may be turned back out of the way when not in use.

The operation of the device is as follows: The coal pile having been used sufficiently in front to render it inconvenient for the fireman to shovel, the valve 29 is opened, which permits the compressed air from the main air-reservoir to press against the pistons 18, forcing them forward and by means of the connecting piston-rods sliding the movable wall forward and pushing the coal to within convenient reach of the fireman. At the same time the compressed air passes through the hollow piston and the connecting-pipes 21 and 22 into the cylinder 20, forcing the piston out and sliding the lower member upon the upper member to widen the wall. The length of movement of the movable wall is easily regulated by the air-valve 29, and the wall can be moved forward from time to time until the coal in the coal-space is entirely used.

The construction of the mechanism may be varied or changed without departing from my invention, which comprehends the moving of the coal in the coal-space toward the cab as it is used, so that the fireman will always have a supply of coal within convenient reach.

While I have shown a multipart construction of movable wall, it may be in one piece and may be shifted in various ways to move the coal toward the cab as it is used.

I claim as my invention—

1. A tender having means which is slidable throughout for shifting the coal forward as it is used. 65
2. A tender having a coal-space and means slidable bodily throughout in a horizontal direction for shifting the coal forward in said space. 70
3. A tender having a coal-space and power means for shifting the coal forward in said space including a wall which is slidable throughout in a horizontal direction. 75
4. A tender having a coal-space and fluid-pressure power means for shifting the coal forward in said space including a wall which is slidable throughout in a horizontal direction and fluid-pressure mechanism operatively connected to said wall. 80
5. A tender having a coal-space and means for shifting the coal forward in said space including a wall which is slidable throughout in a horizontal direction and adjustable in length. 85
6. A tender having a coal-space and means for shifting the coal forward in said space including a horizontally-slidable rear wall. 90
7. A tender having a coal-space and a horizontally-slidable coal-shifting wall in said space.
8. A tender having a coal-space and a multipart horizontally-slidable coal-shifting wall in said space. 95
9. A tender having a coal-space and a horizontally-slidable and longitudinally-adjustable coal-shifting rear wall in said space.
10. A tender having a coal-space and a horizontally-slidable coal-shifting wall composed of a plurality of members. 100
11. A tender having a coal-space and a slidable coal-shifting wall composed of a plurality of members some of which lap upon and are in approximate longitudinal alignment with each other. 105
12. A tender having a coal-space and a movable coal-shifting wall composed of a plurality of members some of which extend approximately longitudinally which lap upon and are adjustably connected to each other. 110
13. A tender having a coal-space and manually-controlled power means for shifting coal forward in said space as it is used including a wall which is bodily slidable in a horizontal direction. 115
14. A tender having a coal-space and manually-controlled power means for shifting coal forward in said space as it is used, including a bodily-slidable wall in the coal-space and fluid-pressure mechanism for sliding said wall horizontally. 120
15. A tender having a coal-space and manually-controlled power means for shifting coal forward in said space as it is used, including a slidable wall in the coal-space fluid-pressure mechanism for bodily sliding 125



said wall horizontally and valves controlling said fluid-pressure mechanism.

16. A tender having a coal-space and manually-controlled power means for shifting coal forward in said space as it is used, including a slidable wall in the coal-space, fluid-pressure mechanism for sliding said wall bodily in a horizontal direction and valves controlling said fluid-pressure mechanism located within convenient proximity of the occupants of the locomotive-cab.

17. A tender having a coal-space, a coal-shifting wall slidably supported in said coal-space and composed of a plurality of plates some of which are hinged together, and means for bodily sliding said wall in a horizontal direction.

18. A tender having a coal-space, a coal-shifting wall slidably supported in said coal-space and composed of a plurality of plates some of which are hinged together and others of which lap upon each other, and means for bodily sliding said wall in a horizontal direction.

19. In combination, a locomotive, a main air-reservoir on said locomotive, a tender having a coal-space, a movable wall in said coal-space, at least one air-cylinder on the tender having a piston connected to the movable wall and pipes connecting the air-cylinder to the movable wall.

20. A tender having a coal-space and a slidable coal-shifting wall in said space composed of a plurality of adjustable parts.

21. A tender having a coal-space and a coal-shifting wall in said space composed of a plurality of adjustable parts whereby the wall may be widened or narrowed and means for moving at least one of said parts.

22. A tender having a coal-space and a coal-shifting wall in said space composed of a plurality of adjustable parts whereby the

wall may be widened or narrowed and power means for moving at least one of said parts.

23. A tender having a coal-space and a coal-shifting wall in said space composed of a plurality of adjustable parts whereby the wall may be widened or narrowed and fluid-pressure means for moving one of said parts.

24. A tender having a coal-space and a coal-shifting wall in said space composed of a plurality of adjustable parts whereby the wall may be widened or narrowed and fluid-pressure means for shifting the wall and also moving at least one of the wall parts to widen the wall.

25. A tender having a coal-space and a coal-shifting wall in said space composed of a plurality of adjustable parts whereby the wall may be widened or narrowed, an air-cylinder attached to one of said parts and fluid-pressure mechanism adapted to move another of said parts.

26. A tender having a coal-space provided with side walls and a rear wall and ledges on the inner surface of the side walls and a movable coal-shifting wall slidably supported from the ledges.

27. A tender having a coal-space, a movable coal-shifting wall slidably supported in the coal-space and double-acting fluid-pressure mechanism for moving said wall either forward or back.

28. A tender having a coal-space, a movable coal-shifting wall slidably supported in the coal-space, and an air-cylinder mounted horizontally on the tender in the rear of the coal-space and having its piston operatively connected to the said wall.

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Witnesses:

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