

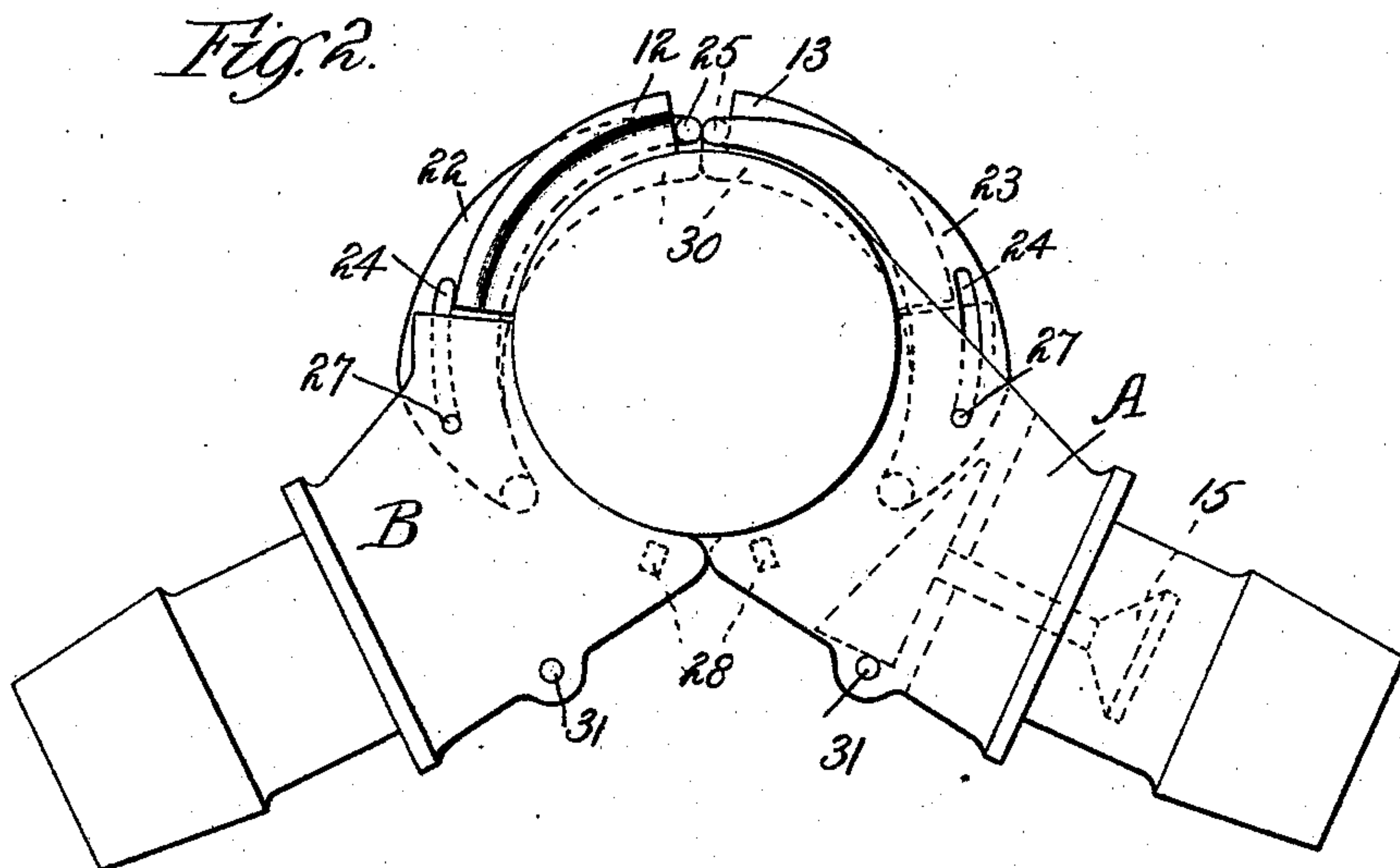
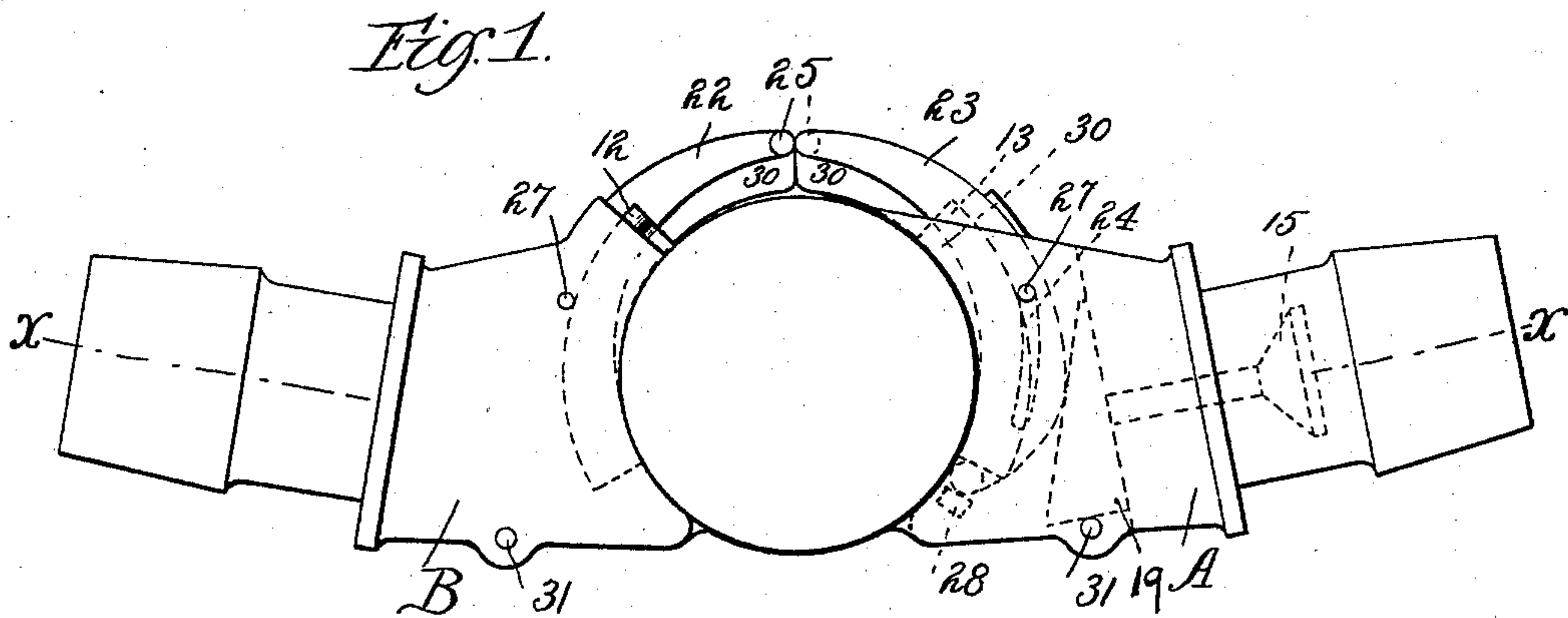
(No Model.)

2 Sheets—Sheet 1.

A. G. KINYON.
HOSE COUPLING.

No. 580,871.

Patented Apr. 20, 1897.



Witnesses.
Wm. M. Rheem.
M. J. Cavanagh.

Inventor
Alonso G. Kinyon
by Brown & Darby
Attys

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Fig. 3.

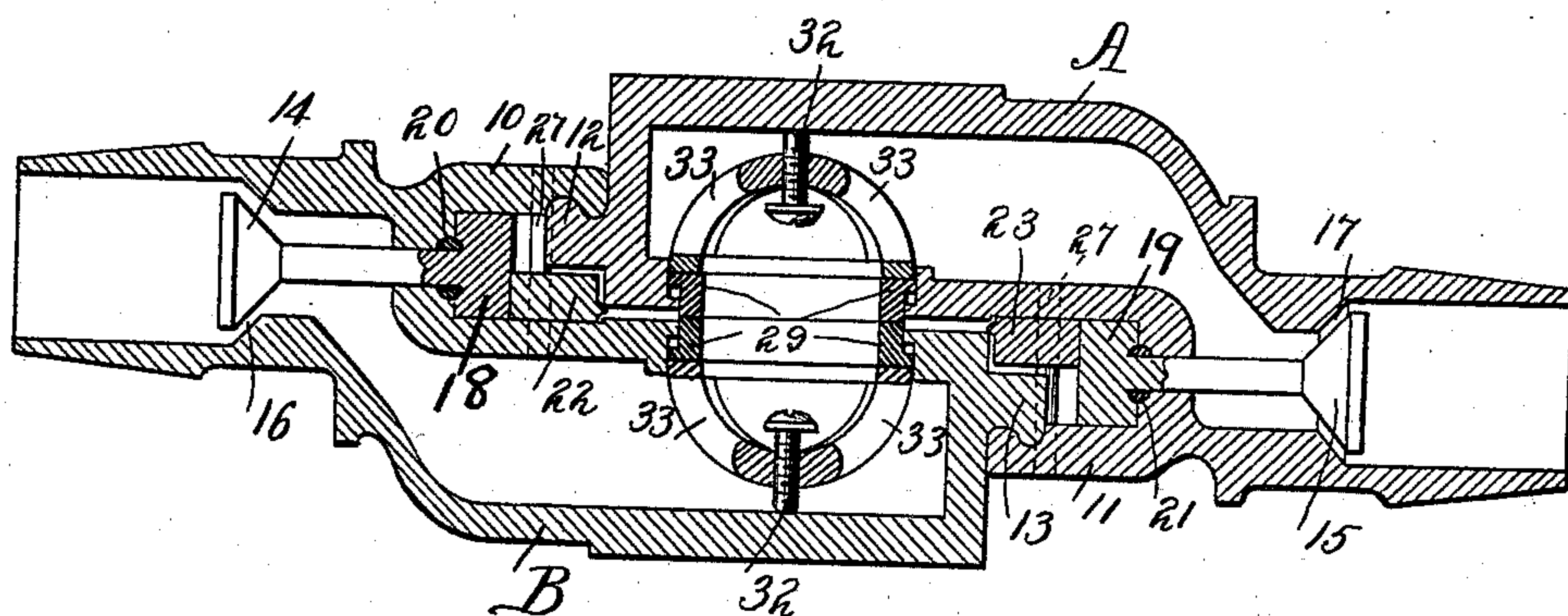


Fig. 4.

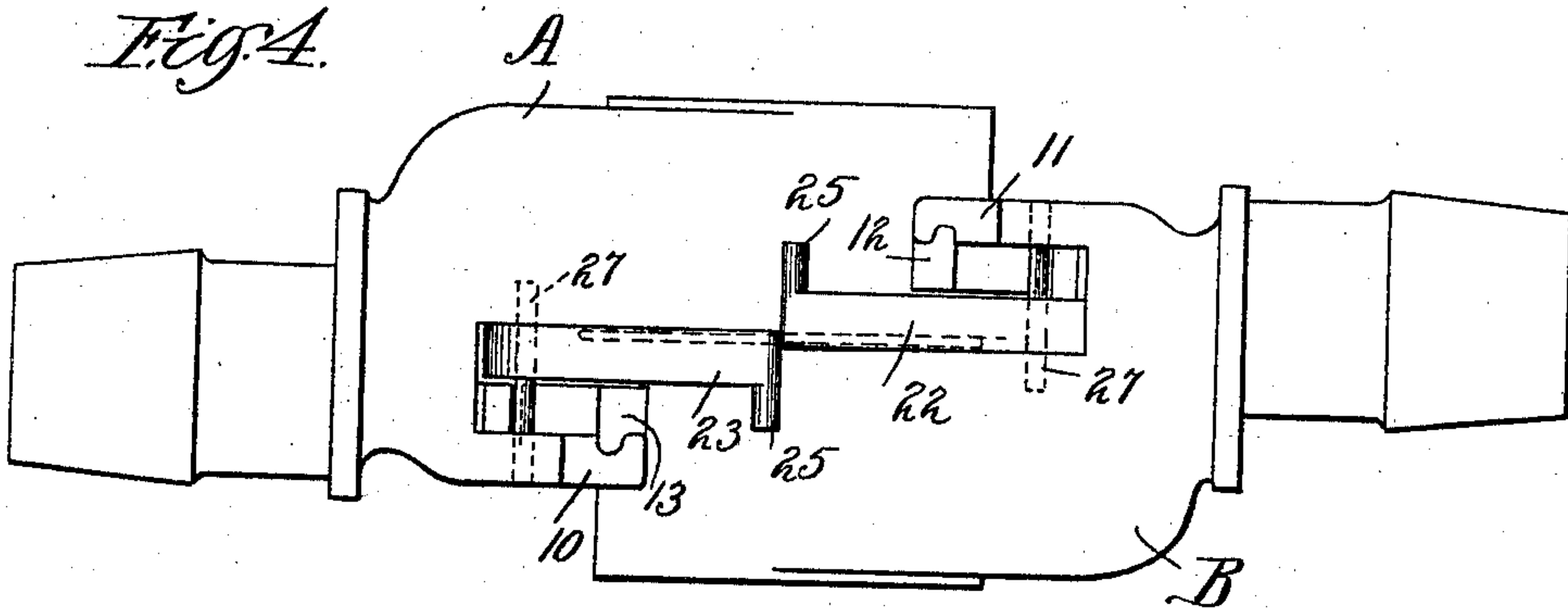


Fig. 7.

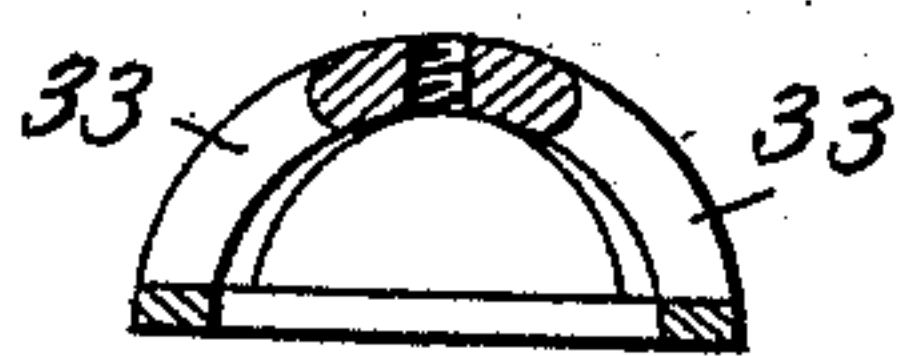


Fig. 5.

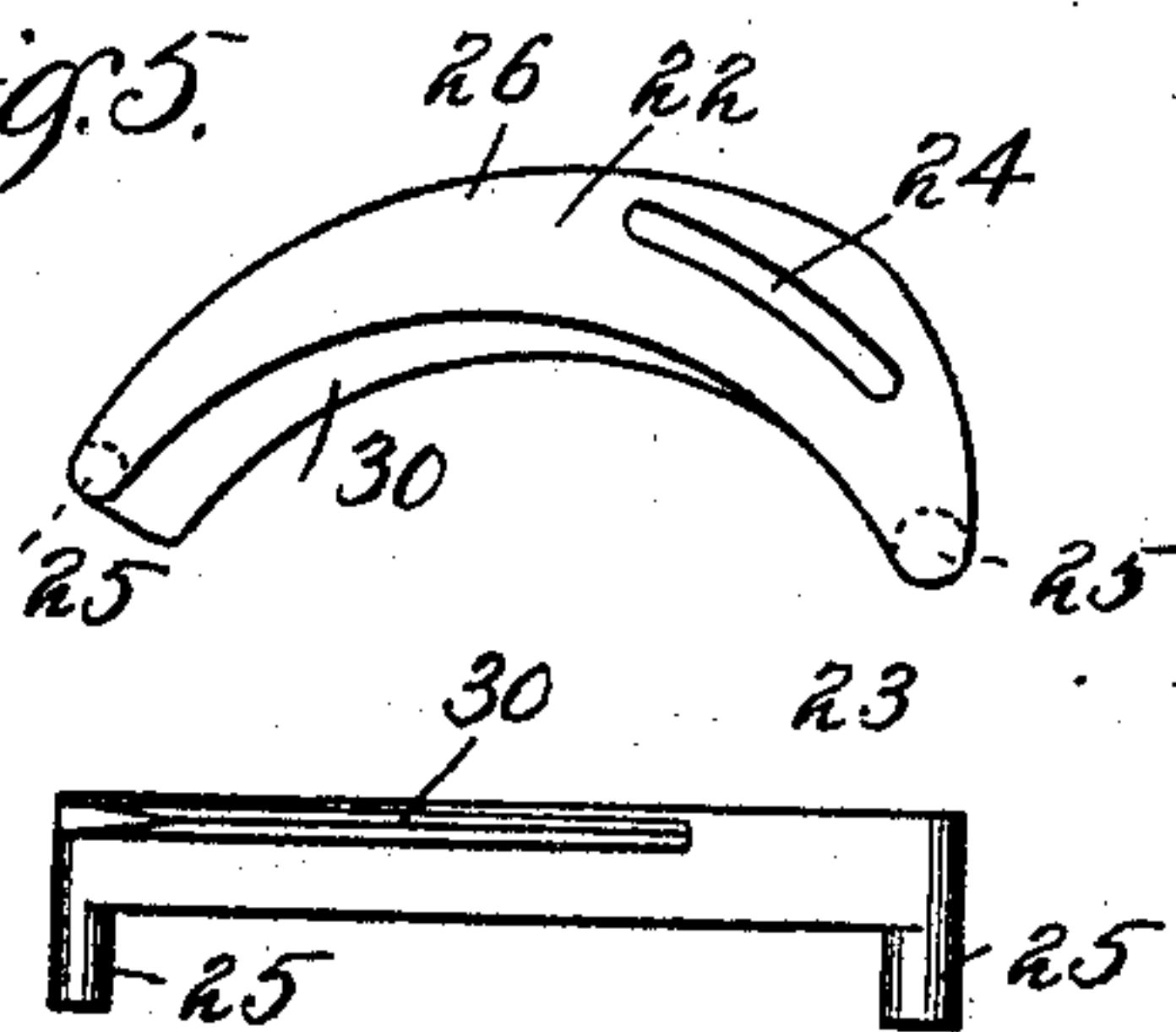


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

ALONZO G. KINYON, OF ELGIN, ILLINOIS, ASSIGNOR TO JAMES M. BARR, OF ST. PAUL, MINNESOTA.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 580,871, dated April 20, 1897.

Application filed September 15, 1894. Serial No. 523,131. (No model.)

To all whom it may concern:

Be it known that I, ALONZO G. KINYON, a citizen of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented a new and useful Hose-Coupling, of which the following is a specification.

This invention relates to hose-couplings, and particularly to couplings for hose employed in brake mechanism for railway trains.

The present invention is an improvement upon the construction set forth in my application, Serial No. 504,818, filed March 23, 1894.

The object of the present invention is to provide a coupling of simple and improved construction, easily operated, durable, and exceedingly effective in operation.

With these objects in view the invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Reference is had to the accompanying drawings, and to the various views and reference-signs appearing thereon, and wherein—

Figure 1 is a plan view showing two half-blocks coupled up and embodying my invention. Fig. 2 is a plan view of the same, showing the position of the parts at the beginning of the coupling operation. Fig. 3 is a view in central longitudinal section taken on the line $x x$, Fig. 1. Fig. 4 is a view in side elevation of the construction shown in Fig. 1. Figs. 5, 6, and 7 are detail views in plan and side elevation, respectively, of the cam-plate.

The same reference-sign is used throughout the several views to designate the same part.

Reference-signs A and B indicate half-blocks of a hose-coupling. Each half-block is provided with the usual grooved flange 10 11 and engaging lip or projection 12 13 for maintaining two half-blocks in engagement when a coupling has been effected. The half-blocks are provided with valves 14 15, normally adapted to be received in valve-seats 16 17 and to be seated by the pressure contained in the train-pipe connected to said half-blocks. Valves 14 15 are arranged longitudinally with reference to the length of the half-blocks, and the heads 18 19 thereof, secured or

attached thereto in any suitable way, is arranged to project into the recess formed by flanges 10 11 and the main body of the half-block. A gasket 20 21, of suitable packing material, is mounted upon the stem of valve 14 15 adjacent to the point of junction of the stem and head 18 19, and is adapted to be received in a suitable seat formed in the body of the half-block in order to make an effective tight joint.

In the construction set forth in my prior application the valve 14 15 is arranged to be unseated by the engagement with the head thereof of the engaging lip or projection on the adjacent half-block. I have found that the resistance to any movement of the valve in a direction to unseat it, due to the pressure in the pipe, is so great as to have a tendency to force the half-blocks away from each other without effecting a coupling when the valve-head was engaged directly by the engaging lip of the adjacent half-block. I will now describe the present construction, wherein this tendency is entirely corrected and removed. I provide a cam-plate 22 23, slotted as at 24, and having pins 25 at each end thereof, and arrange the same adjacent to the head of valve 14 15, with the curved back 26 thereof presented toward and adapted to engage said valve-head, as indicated more clearly in dotted lines in Fig. 1, the valve-head being shown of wedge shape. A pin 27, rigidly mounted in the half-block, is adapted to pass through the slot 24 in the cam-plate in order to form a guide therefor. In the form shown guide-pin 27 is arranged slightly beyond the path of movement of the engaging lip 12 13, so as not to offer obstruction thereto. The cam-plate 22 23 is arranged so that the pins 25 thereon project away from the face of the half-block and in position to be engaged by the side or edge of engaging lip or projection 12 13 of an adjacent half-block when two half-blocks are brought into position to be coupled up, as shown more clearly in Fig. 2. When the half-blocks are then turned upon each other to effect an engagement or coupling—that is, when the half-blocks are turned from the position shown in Fig. 2 to that shown in Fig. 1—the side or edge of the engaging lip or projection 12 13 engages pin 25 on the one end of cam-block 22 23 and forces the same around

endwise, its movement being guided by slot 24 and pin 27. This movement causes the back surface 26 thereof to engage the front face of the head of valve 14 15, and hence effects an unseating of the valve without the direct engagement with the valve-head of the engaging lip or projection 12 13, while at the same time the tendency of the engagement between the side or edge of the engaging lip and the pin 25 is to pull or maintain the two half-blocks together and into engagement with each other. This tendency is due to the fact that the side or edge of the engaging lip which engages pin 25 is inclined upwardly from the outer or peripheral edge or end of the said lip, and hence the resistance of the pin 25 is exerted in a direction to force the two half-blocks endwise toward each other. The greater the resistance to the unseating of valve 14 15 the greater this tendency. Suitable stops 28 may be provided, against which plates or blocks 22 23 may abut in order to limit the movement thereof without depending upon the engagement of pin 27 with the end of its slot 24. In order to relieve the usual packing-gaskets 29 of undue wear during the coupling and uncoupling operations, I provide cam-block 22 23 with a flange 30 at one end thereof, the outer edge of which is struck upon a circle having a different center from that of the circular face of the half-block. Flange 30 is so arranged that when two half-blocks are brought together in order to effect a coupling—that is, when the parts are brought into position shown in Fig. 2—the flange 30 is interposed between the meeting faces of the half-blocks. The effect of this is that the faces of the half-blocks and hence the gaskets or packing-rings 39 do not come in close contact with each other during the turning of the half-blocks to effect a coupling, as into the position shown in Fig. 1, while at the same time the endwise movement imparted to cam-block 22 23 by the engagement with the pin 25 thereon of the side or edge of engaging lip or projection causes the flange 30 to be retracted from between the meeting faces of the half-blocks. This construction and arrangement also insure an effective engagement of the engaging lip with the grooved flange on the adjacent half-block. In order to relieve the valve-stem of undue friction during its endwise movements and thus reducing the wear thereon, I provide a guide-pin 31, (see Figs. 1 and 2,) against which the side of the head on the valve-stem is adapted to bear and which not only forms a guide therefor, but it also takes up the pressure and resistance which would otherwise be imparted to the valve-stem.

I will now describe the construction whereby the packing-rings or gaskets 29 are held in place and which facilitates the easy renewal thereof in case of wear.

In the manufacture of half-blocks it is usual to cast the same in a sand mold. In carrying out my present invention I bury in that part

of the sand mold which forms the core a previously-constructed spider, comprising a ring or circularly-flanged base, having converging arched arms or legs 33. When the casting of the half-block is completed and the sand removed, the spider will of course be retained in the hollow chamber of the block, it being understood that the spider is too large to pass through the opening in the face of the block. At the meeting point of the arched arms 33 I drill and screw-thread an aperture and insert a threaded stud or bolt 32, the end of which is adapted to bear against the rear wall of the half-block. By suitably manipulating this stud through the opening in the face of the block the spider can be set down upon the packing-ring or gasket or released therefrom. When it is desired to renew the packing-ring, it is only necessary to release the spider, insert a new ring, and again clamp the spider into place. By this construction the packing-rings may be renewed with the greatest facility wherever and whenever desired, the only tool required being an ordinary screw-driver, without the necessity of skilled labor or the returning of the coupling to the shops for repairs, as is the case with the couplings at present in use.

It will be observed that the pins 25 on each cam-block 22 23 are spaced as far apart as possible in order that the engaging lip 12 13 may pass therebetween in case a coupling should by accident pull apart while in use. In practice I may, if desired, inclose the cam-blocks in a suitably-arranged protecting-hood.

It will be obvious from the above description that a half-block constructed in accordance with my invention is equally effective when used in connection with a half-block of the ordinary Westinghouse type of construction, wherein the valve is operated by an ordinary angle-cock.

When two half-blocks constructed in accordance with my invention are used in conjunction with each other to effect a coupling, it will be seen that the outer ends of the cam-blocks carried by the respective half-blocks abut against each other when the parts are arranged to make a coupling, (see Fig. 2,) and when the half-blocks are turned to effect the coupling the cam-blocks push against each other. This engagement is not depended upon, however, to unseat the valves through the engagement of the cam-surface 26 of the cam-blocks with the valve-head. This work is accomplished by the engagement of the side or edge of the engaging lip 12 13 with pin or projection 25.

In order to effect an uncoupling, the half-blocks are rotated upon each other—that is, moved from the position shown in Fig. 1 to that shown in Fig. 2. By this movement the outer edge or side of the engaging lips 12 13, respectively, engage the outer pins or projections 25 of the cam-blocks, thereby moving said cam-blocks and releasing the cam-sur-

face thereof from engagement with the heads 18 19 of the valves, and hence permitting the valves to be seated by the pressure contained in the pipes.

5 While I have shown and described in detail a specific construction embodying the principles of my invention, I desire it to be distinctly understood that I do not confine or limit myself to the exact details shown and 10 described, as many variations therefrom would readily suggest themselves to persons skilled in the art and still fall within the spirit or scope of my invention; but,

15 Having now described an embodiment of my invention and explained the principle and mode of operation thereof, what I claim as new and of my own invention, and desire to cover by Letters Patent of the United States, is—

20 1. In a hose-coupling for railway-brake mechanism a half-block provided with the usual engaging lip and flange for maintaining two half-blocks in engagement with each other when a coupling has been effected, a 25 valve adapted to hold its seat by the pressure therein, a movable piece arranged to engage said valve to unseat it and adapted to be engaged and moved by a moving part on an adjacent half-block when a coupling is effected; 30 as and for the purpose set forth.

2. In a hose-coupling, a half-block provided with the usual engaging lip and projection, a valve arranged longitudinally with respect thereto, and adapted to be held to its seat by 35 the pressure therein, a block arranged to engage the head of said valve and adapted to be engaged by the engaging lip on an adjacent half-block when a coupling is effected, whereby said block is moved and said valve 40 is unseated; as and for the purpose set forth.

3. In a hose-coupling a half-block provided with the usual engaging lip, a valve arranged to be seated by the pressure contained therein, a cam-block arranged to engage the head of 45 said valve and having a pin or projection, adapted to be engaged by the engaging lip on an adjacent half-block when a coupling is effected, whereby said cam-block is moved and said valve is unseated; as and for the purpose 50 set forth.

4. In a hose-coupling, a half-block provided with the usual engaging lip, a valve arranged to be seated by the pressure contained therein, a slotted cam-block, the cam-surface of which 55 is arranged to engage the head of said valve, a guide-pin adapted to be received in said slot, said cam-block adapted to be engaged by the engaging lip on an adjacent half-block when a coupling is effected, whereby said cam-block 60 is moved upon its guide-pin, and said valve is unseated; as and for the purpose set forth.

5. In a hose-coupling, a half-block, a valve arranged therein longitudinally with respect thereto, and adapted to be seated by the pres-

sure contained in the train-pipe, a slotted 65 movable cam-block arranged to engage the head of said valve, and having pins or projections arranged in the path of movement of the engaging lip on an adjacent half-block when a coupling is effected, a guide-pin adapt- 70 ed to be received in said slot, and a stop for said cam-block; as and for the purpose set forth.

6. In a hose-coupling, a half-block, a valve arranged therein having a headed stem, a 75 packing-ring mounted upon said stem, a movable cam-block having projections arranged in the path of movement of the engaging lip on an adjacent half-block when a coupling is effected and adapted to engage the valve- 80 head, and a guide for said head; as and for the purpose set forth.

7. In a hose-coupling a half-block, a valve arranged therein adapted to be seated by the pressure in the train-pipe, a movable cam- 85 block carried by said half-block, the cam-surface of which is arranged to engage the head of said valve, and means for moving said cam-block when a coupling is effected; as and for the purpose set forth. 90

8. In a hose-coupling, coupling-blocks, provided with the usual packing-rings, a flange arranged between the meeting faces of said blocks when the parts are assembled to effect 95 a coupling, and means whereby said plate is disengaged from between said meeting faces during the movement of the parts to complete the coupling; as and for the purpose set forth.

9. In a hose-coupling, half-blocks, a block, having a flange arranged between the meet- 100 ing faces of said half-blocks when the parts are assembled to effect a coupling, said block adapted to be engaged and moved by the engaging lip on one of said half-blocks during the coupling operation, whereby said flange 105 is disengaged from between the faces of the half-blocks; as and for the purpose set forth.

10. In a hose-coupling half-blocks, a movable block carried by one of said half-blocks having a cam-flange thereon arranged be- 110 tween the meeting faces of said half-blocks when the parts are assembled to effect a coupling, said movable block provided with pins or projections arranged in the path of movement of the engaging lip on the adjacent 115 half-block when a coupling is effected, whereby said flanged block is moved and the cam-flange thereon is disengaged from between the meeting faces of said blocks; as and for the purpose set forth. 120

In witness whereof I have hereunto set my hand, this 12th day of September, 1894, in the presence of the subscribing witnesses.

ALONZO G. KINYON.

Witnesses:

M. I. CAVANAGH,
S. E. DARBY.