

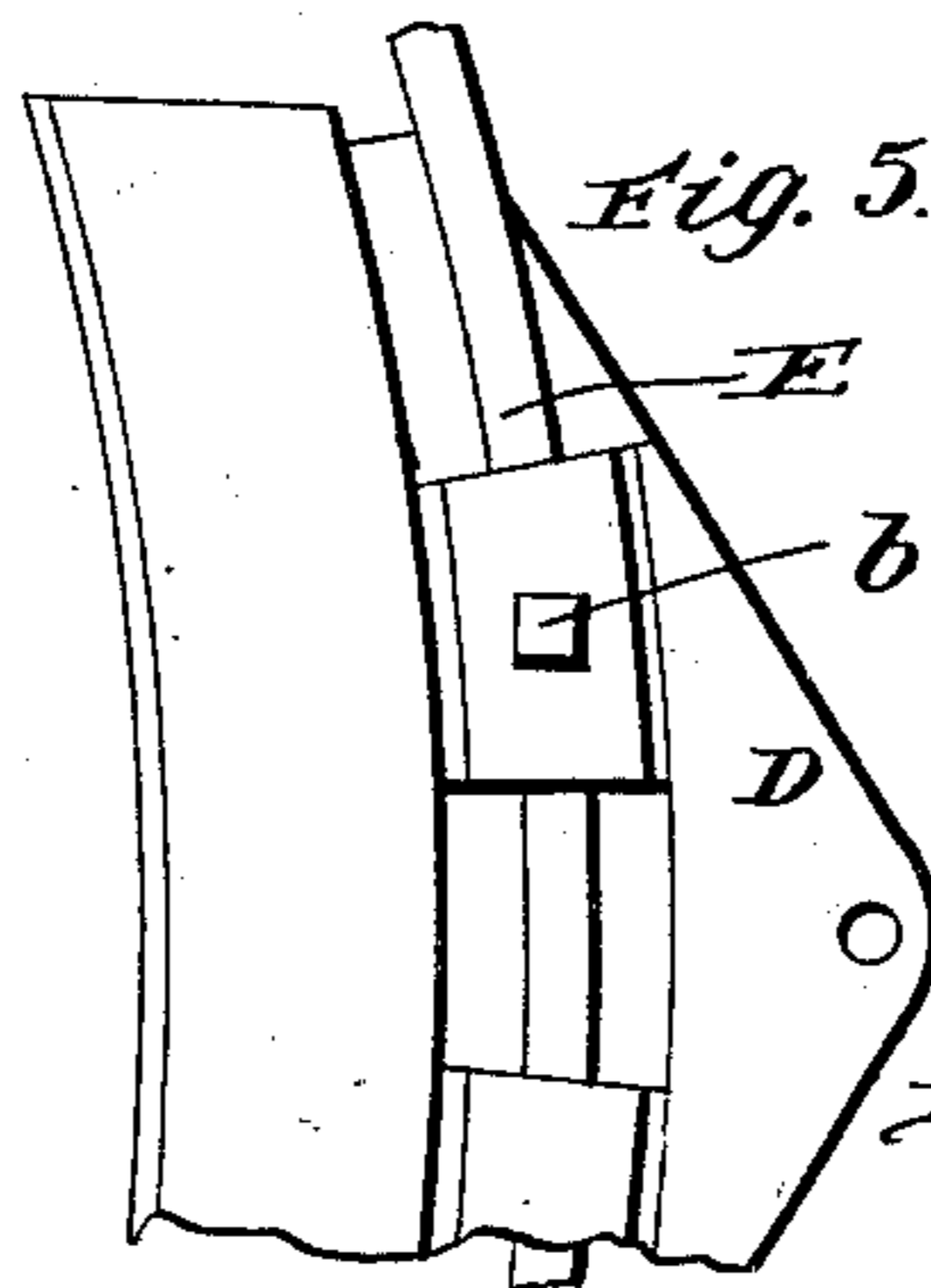
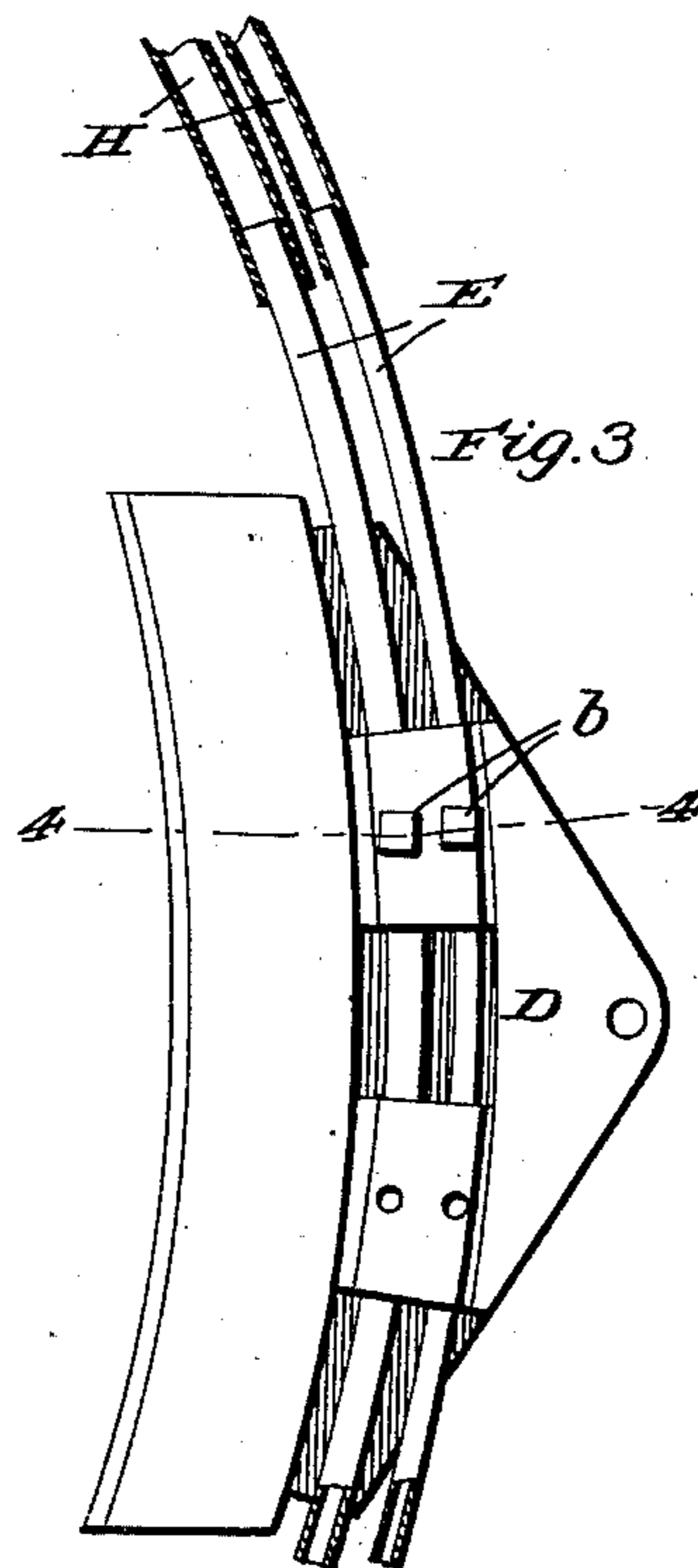
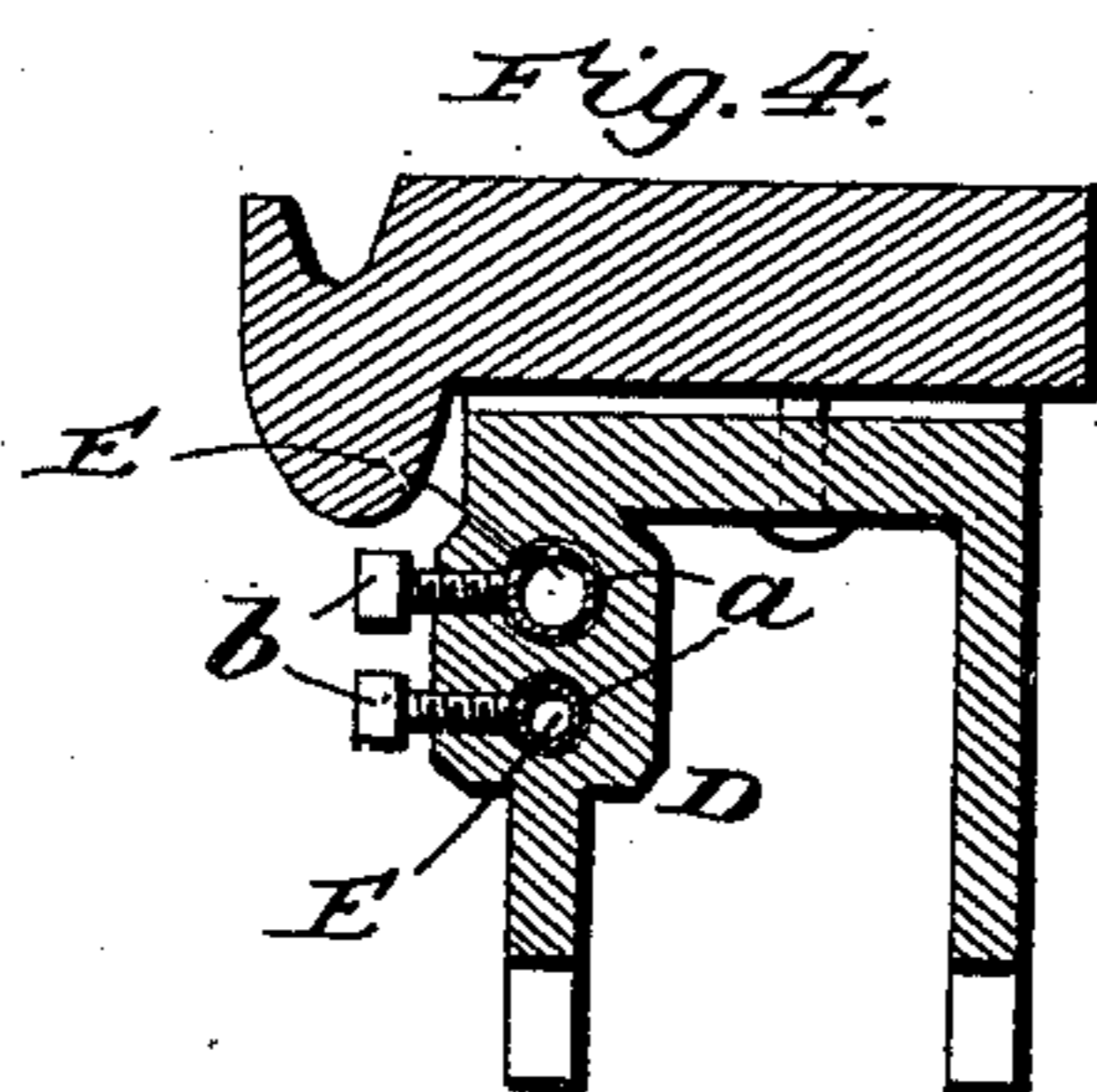
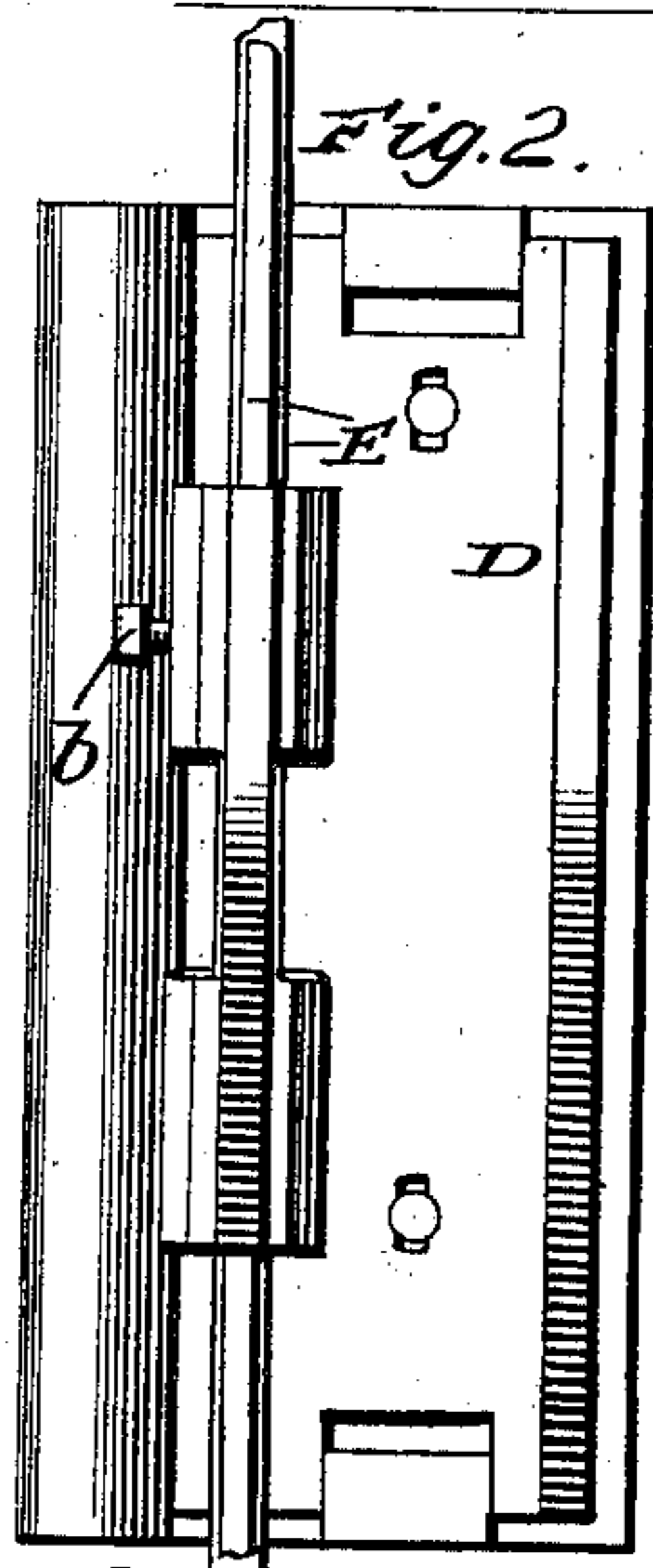
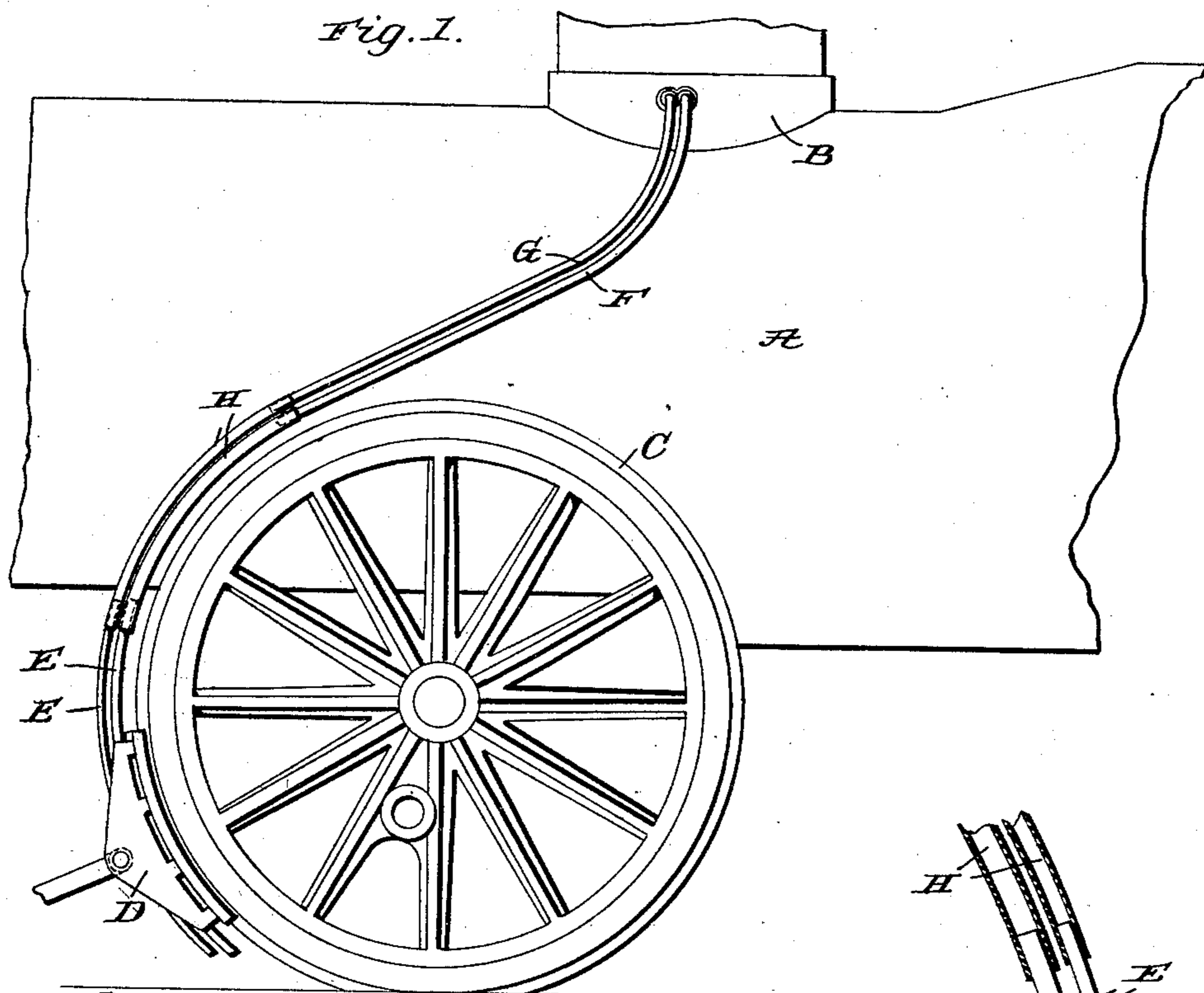
No. 673,316.

Patented Apr. 30, 1901.

F. C. CHARLES.  
SANDING DEVICE.

(Application filed Sept. 6, 1900.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

FRANK C. CHARLES, OF CEDAR RAPIDS, IOWA.

## SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 673,316, dated April 30, 1901.

Application filed September 6, 1900. Serial No. 29,233. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK C. CHARLES, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented new and useful Improvements in Sanding Devices, of which the following is a specification.

My invention relates to improvements in sanding devices for locomotives; and, broadly stated, it consists in the combination, with a brake block or head, of a sand-pipe carried by and movable with said block or head, this being advantageous, since the discharge end of the pipe is held so close to the driver or other wheel, against which the brake-head is adapted to be applied, that it will deliver sand on the rail when the engine is going around a sharp curve and not to one side and on the road-bed, as is the case when the sand-pipe is located at some distance from the wheel, and also because the pipe is securely held adjacent to its lower or discharge end by the brake-head, and hence is at all times directly over the rail and not liable to be bent out of place.

The invention also consists in the peculiar construction, the novelty, utility, and advantages of which will be fully understood from the following description and claims when taken in conjunction with the annexed drawings, in which—

Figure 1 is a side elevation illustrating a portion of a locomotive equipped with my improvements. Fig. 2 is an enlarged rear elevation illustrating the brake head or block and the two pipes carried thereby. Fig. 3 is a side elevation of the same with the lower ends of the pipes in section. Fig. 4 is a transverse section taken in the plane indicated by the broken line 4 4 of Fig. 3, and Fig. 5 is a detail side elevation illustrating a brake block or head equipped with but a single sand-pipe.

Referring by letter to the said drawings, and more particularly to Figs. 1 to 4 thereof, A is a locomotive provided with the usual sand-box B.

C is one of the drivers of the locomotive, and D is a brake head or block which in general may be of the ordinary or any approved construction and is designed to be applied to

the driver and released therefrom after the usual manner.

E E are sand-pipes carried by and movable with the brake head or block. These sand-pipes in the preferred embodiment of the invention are curved, as shown, in conformity to the periphery of the wheel C, and are adjustably fixed in bores or passages *a* in the head or block D, through the medium of set-screws *b*, in such manner that their lower ends project but a slight distance below the lower end of said brake head or block, as best shown in Fig. 1. The adjustable fastening of the sand-pipes in the brake head or block obviously permits of said sand-pipes being readily adjusted as the conditions require.

F is what is generally known as the "lever sand-pipe" of a locomotive, and G is what is called the "air sand-pipe." These pipes F G are connected to the large and small pipes E E, respectively, through the medium of rubber or other flexible tubes H, whereby it will be seen that while the pipes E are free to move with the head or block D incident to the application and release of the brakes they are continuously connected with the source of sand-supply, so as to enable the engineer to deposit sand on the track whenever necessity demands that the same be done.

It will be appreciated from the foregoing that the brake head or block is made to serve the additional function of a carrier or support for the sand-pipes and that by reason of the sand-pipes being carried by said brake head or block their discharge ends are held so close to a driver or other wheel, with which the brake-head operates in conjunction, that sand will be delivered on the rail when the engine is passing around a sharp curve as well as when it is traveling on a straight stretch of track and not to one side and on the road-bed, as when the sand-pipe is located a considerable distance from the wheel; also, by virtue of the lower ends of the sand-pipes projecting but a slight distance below the brake head or block said pipes are held at all times directly over the head of a rail and are not liable to be bent laterally out of place.

When a locomotive is equipped with but a single sand-pipe, but one sand-pipe E will be

carried by the brake head or block, as illustrated in Fig. 5 of the drawings.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a sanding device, the combination of a wheel, a brake block or head movable toward and from the same, and a sand-pipe carried by and movable with said block or head, and arranged to discharge beneath the wheel when the brake block or head is moved adjacent to the same.

2. In a sanding device, the combination of a wheel, a brake block or head movable toward and from the same, a source of sand-supply, a sand-pipe carried by and movable with said block or head and arranged to discharge beneath the wheel when the brake block or head is moved adjacent thereto, and a flexible conduit intermediate of the sand-pipe and the source of sand-supply.

3. In a locomotive the combination of a driver, a brake head or block adapted to operate in conjunction therewith, a sand-pipe

carried by and movable with the brake head or block and projecting below the lower end thereof, a sand-box, and a flexible tube intermediate of the sand pipe and box for maintaining communication between the two incident to the movements of the brake block or head, substantially as specified.

4. In a locomotive, the combination of a driver, a brake block or head adapted to operate in conjunction therewith, one or more sand-pipes adjustably secured in the brake block or head and projecting below the lower end thereof, a sand-box, one or more pipes connected with said sand-box, and a flexible tube or tubes connecting the pipes, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK C. CHARLES.

Witnesses:

GEO. T. HEDGES,  
D. J. MANION.