

No. 613,962.

Patented Nov. 8, 1898.

G. J. BONES & L. H. HART.
CYCLE RACING OR EXERCISING MACHINE.

(Application filed Jan. 11, 1898.)

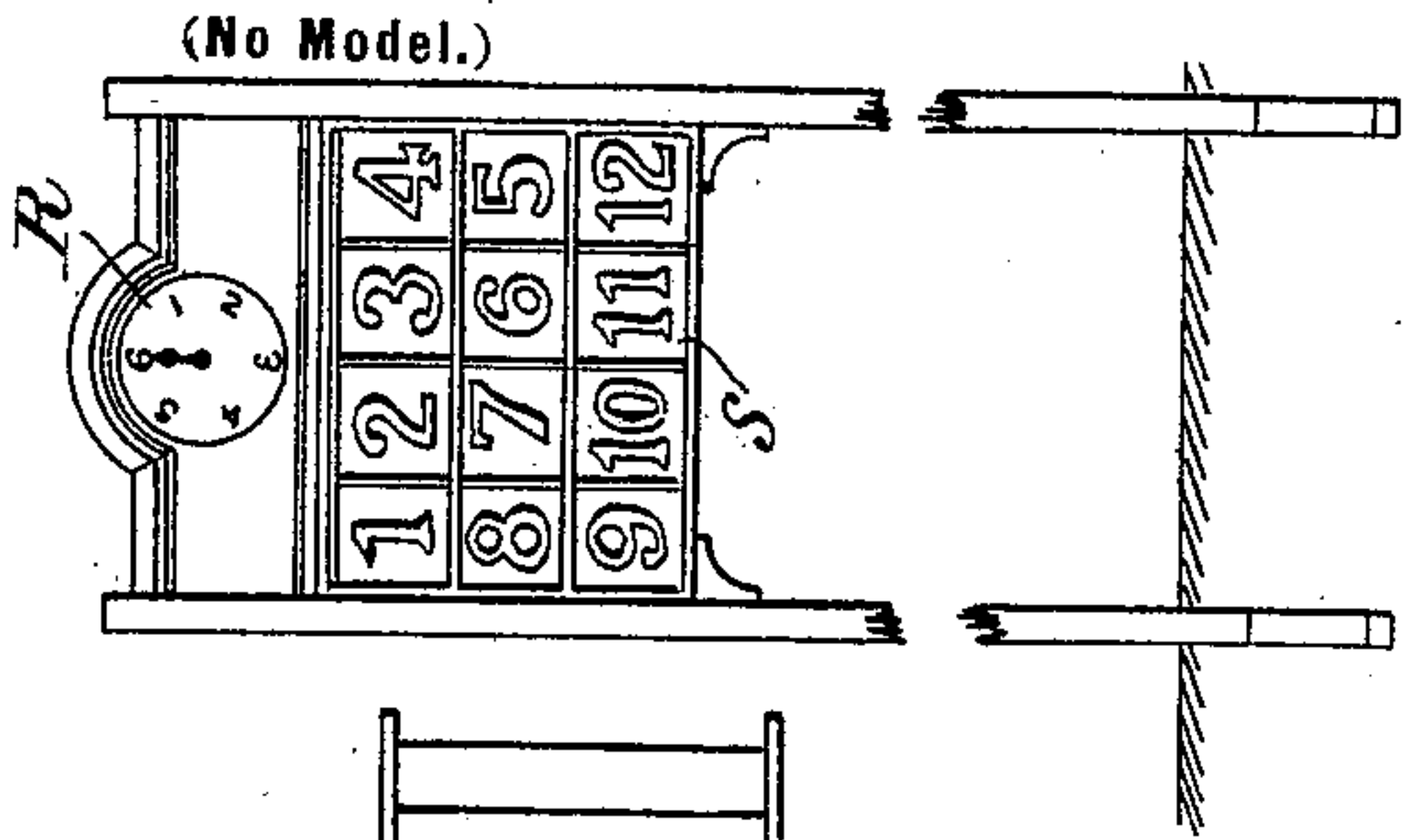


Fig. 4.

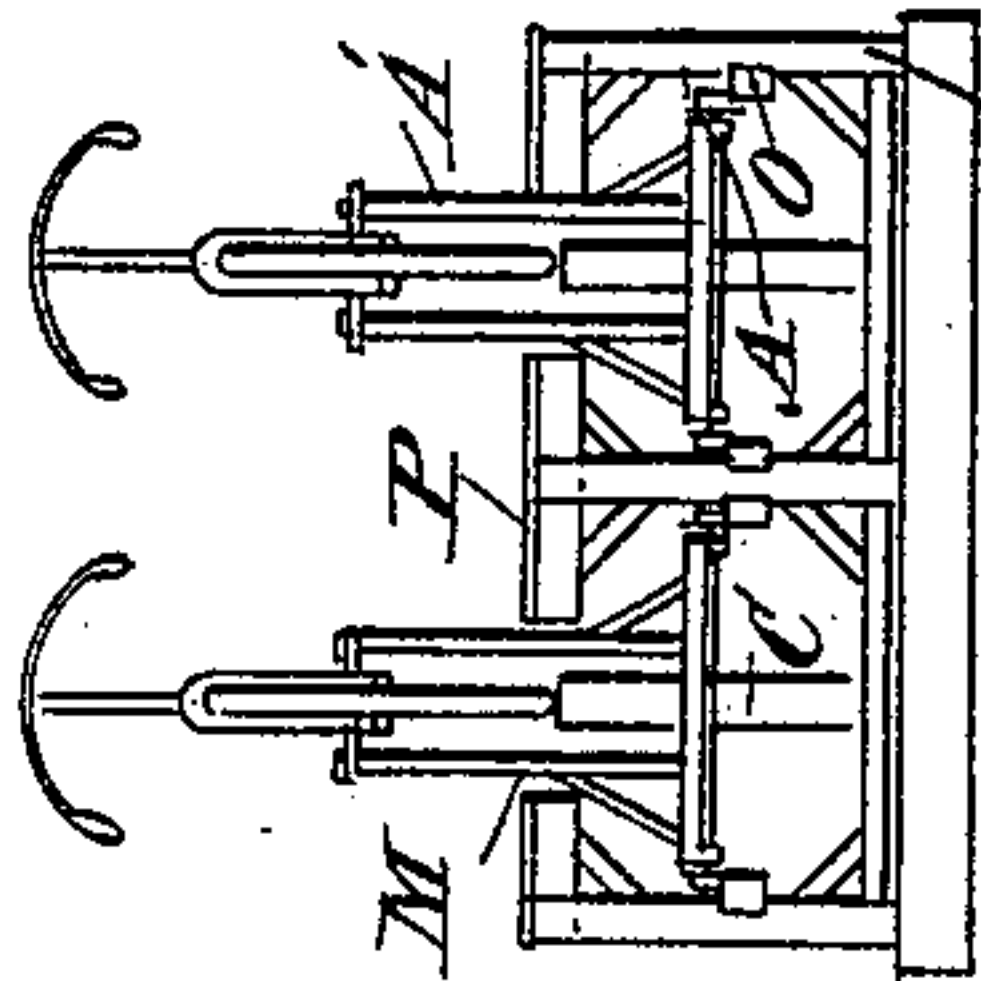


Fig. 3.

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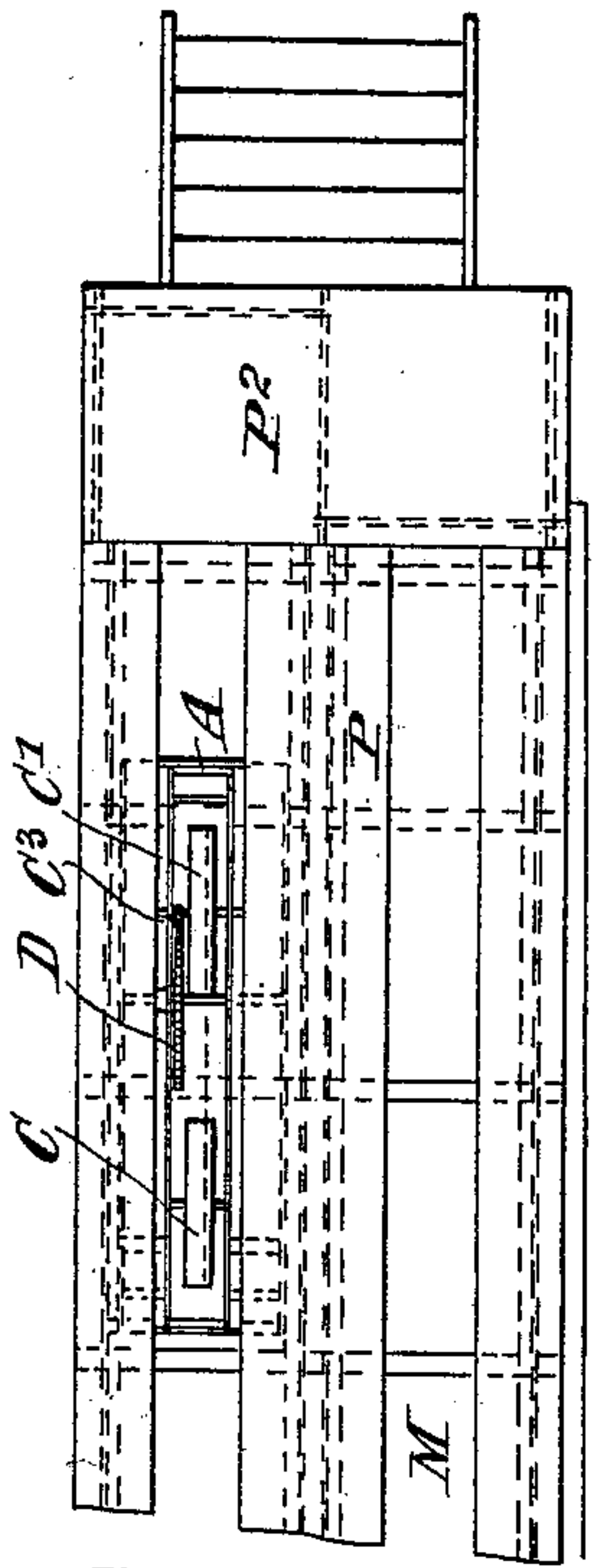


Fig. 1.

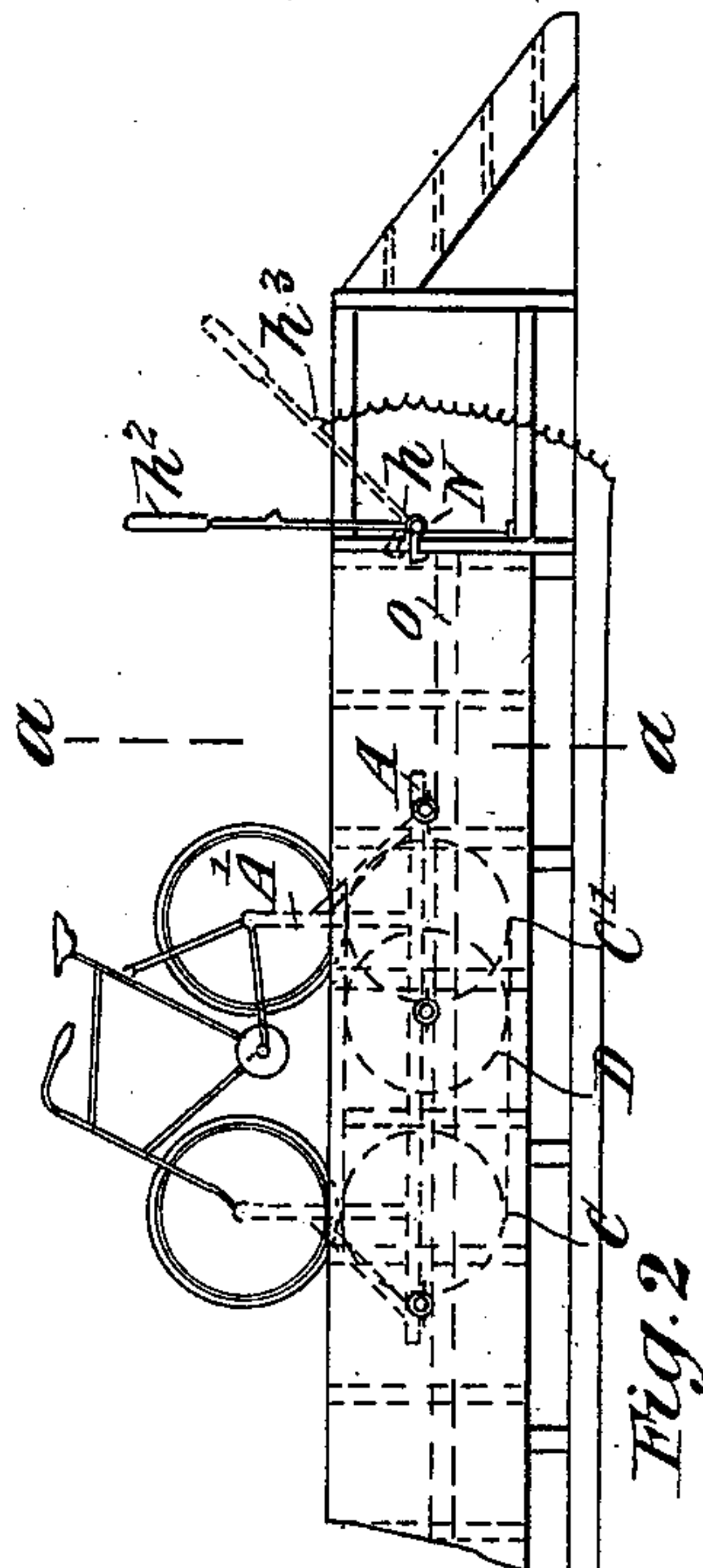
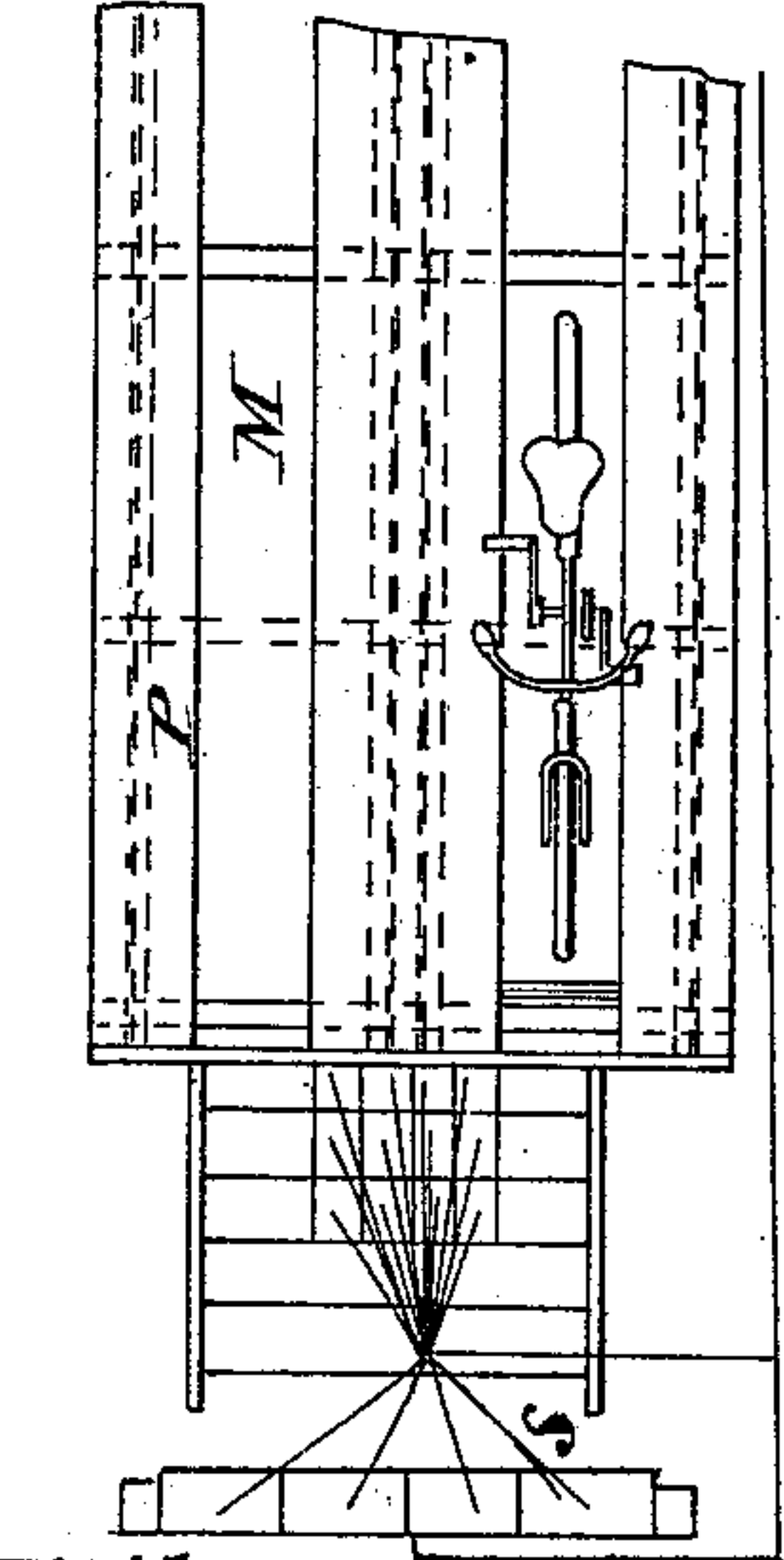
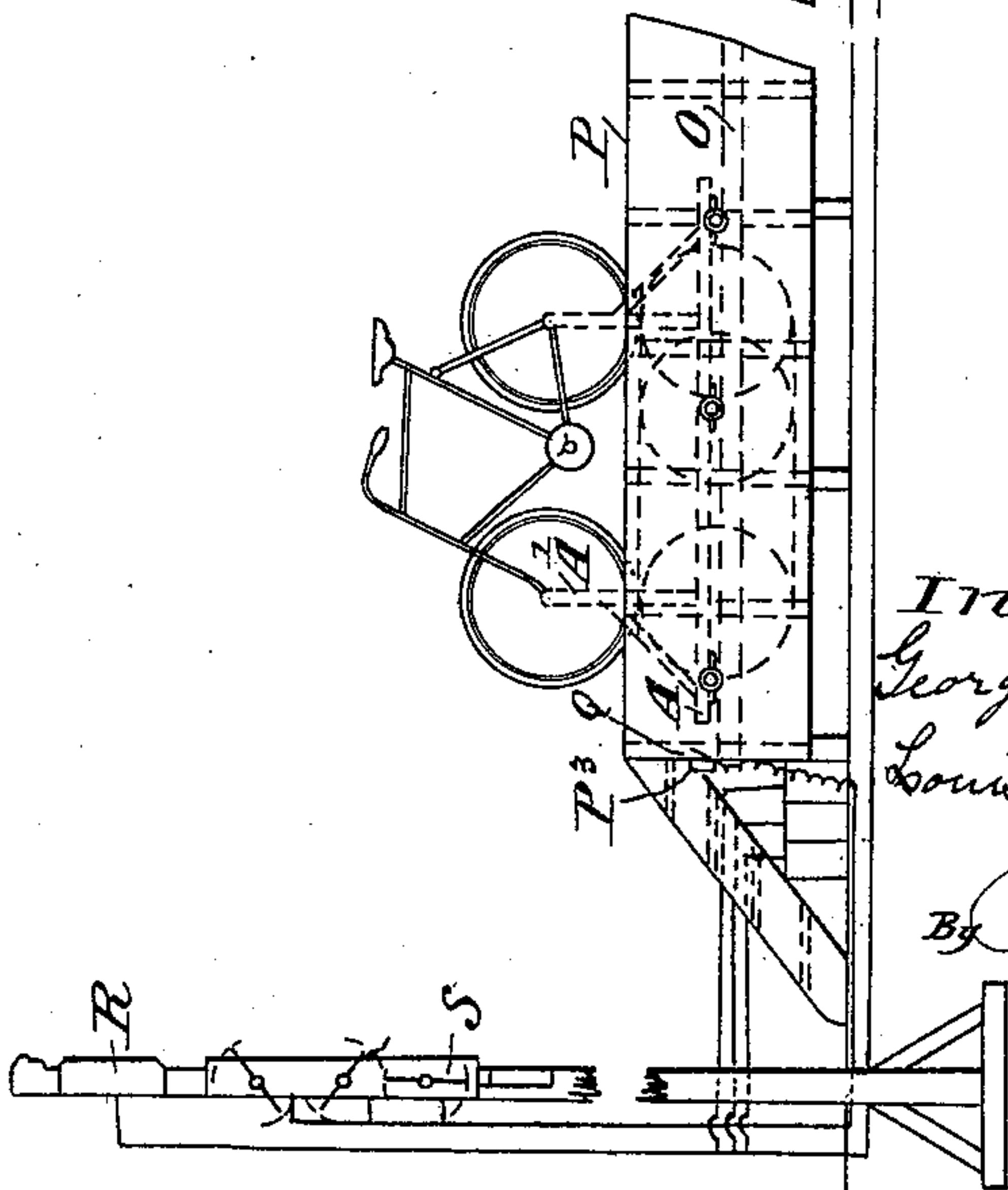


Fig. 2.



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No. 613,962.

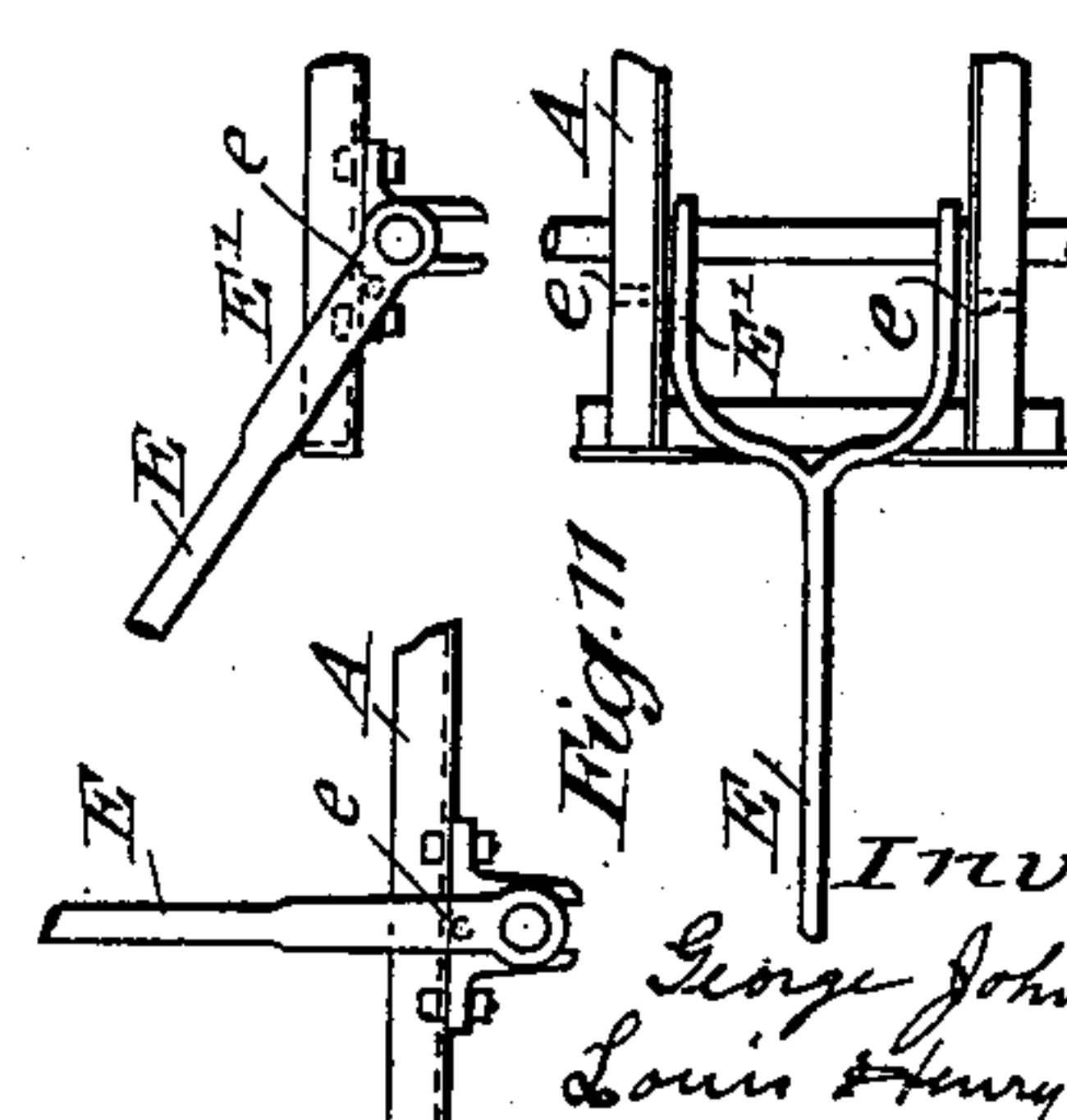
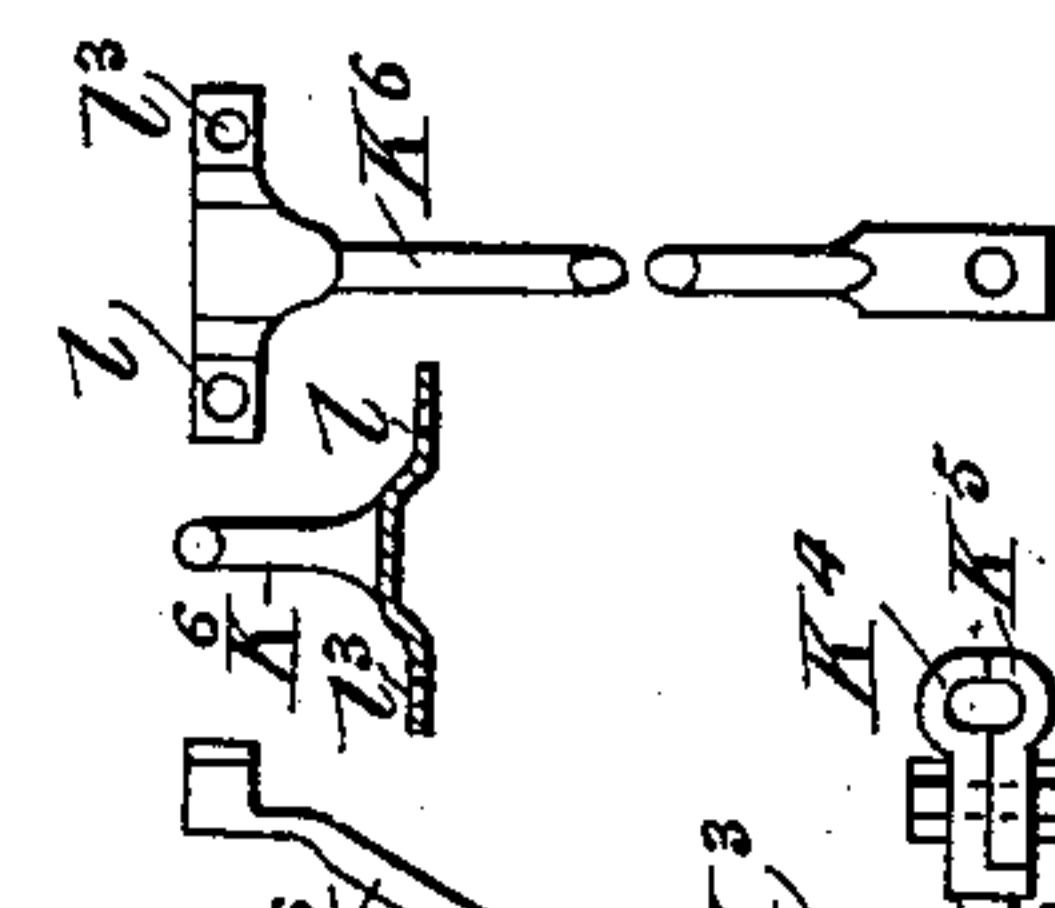
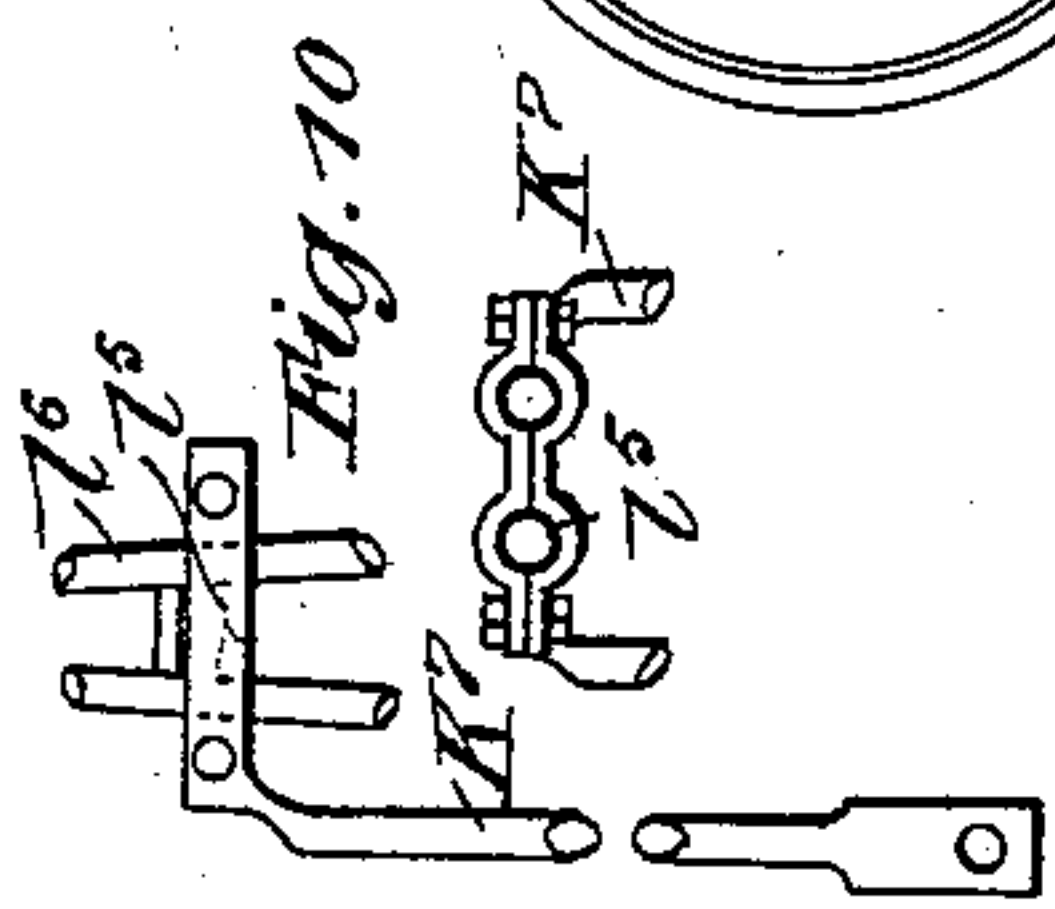
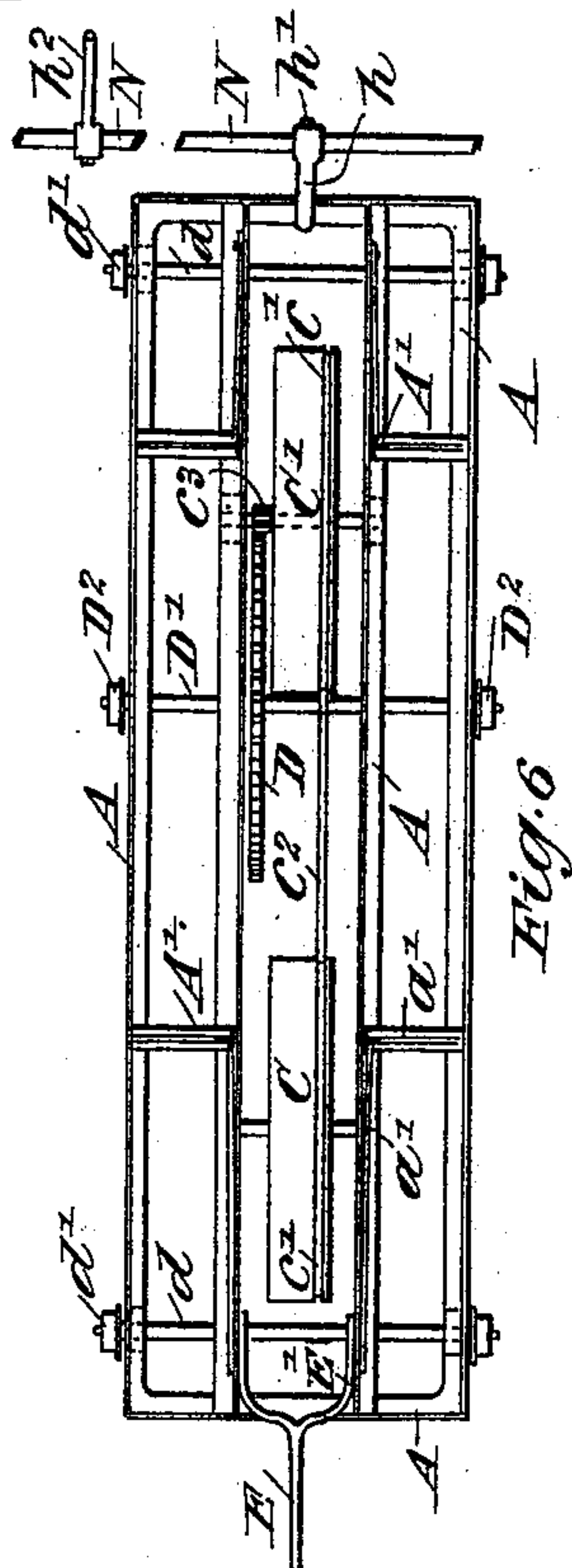
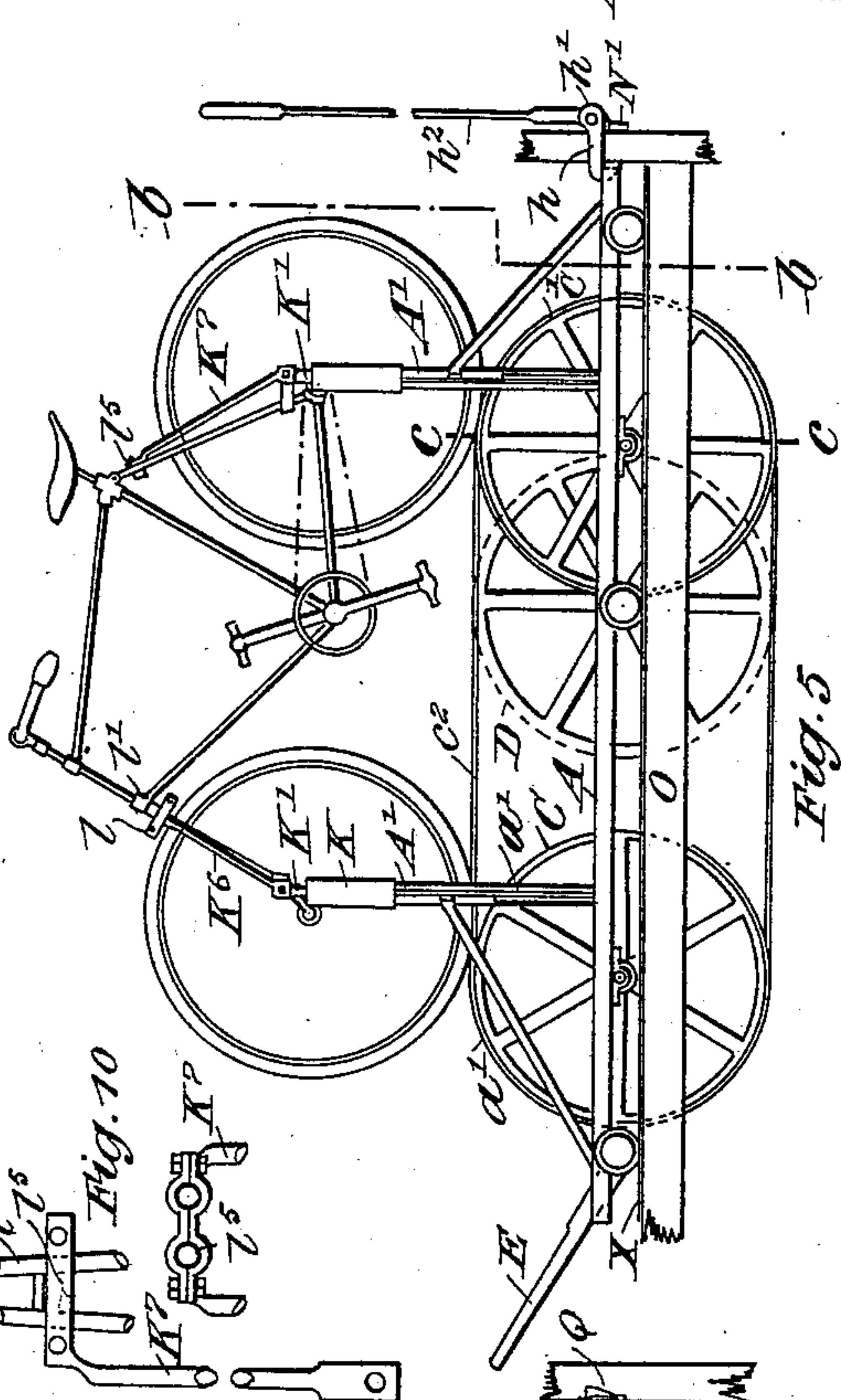
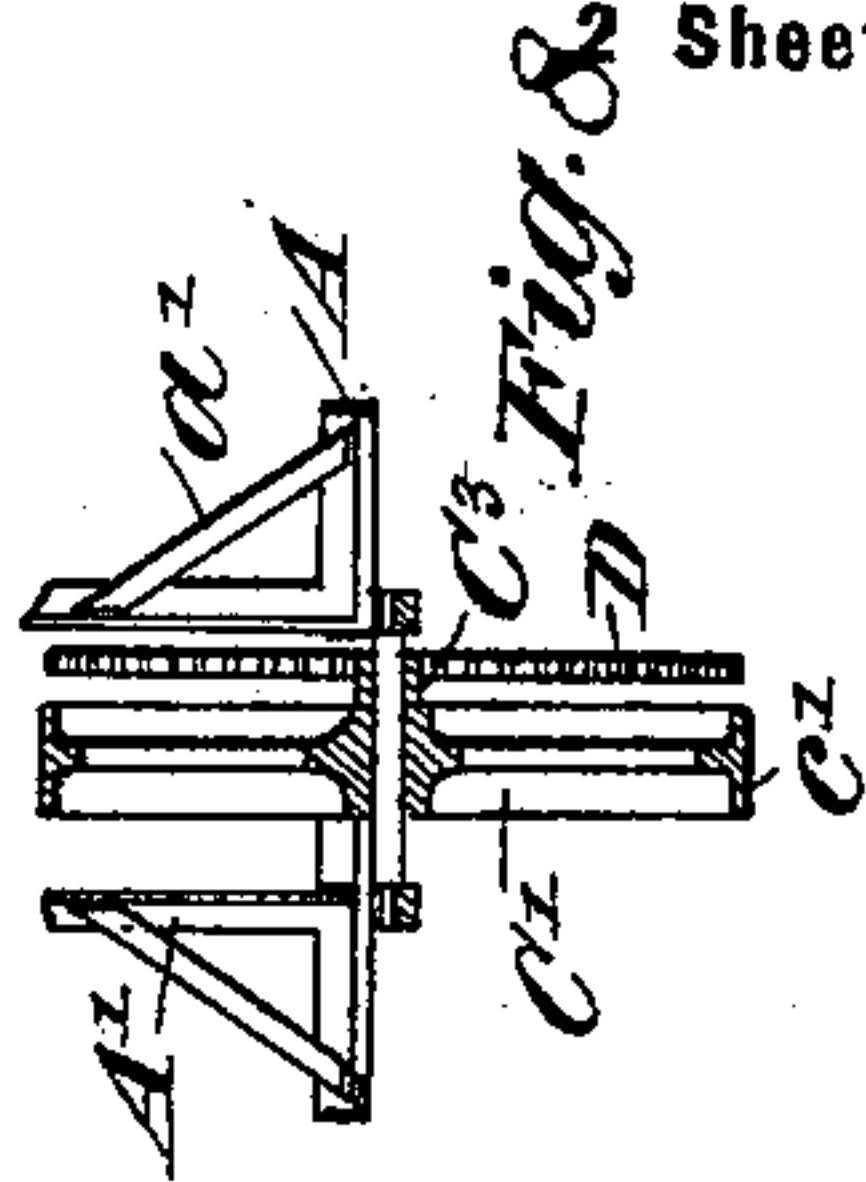
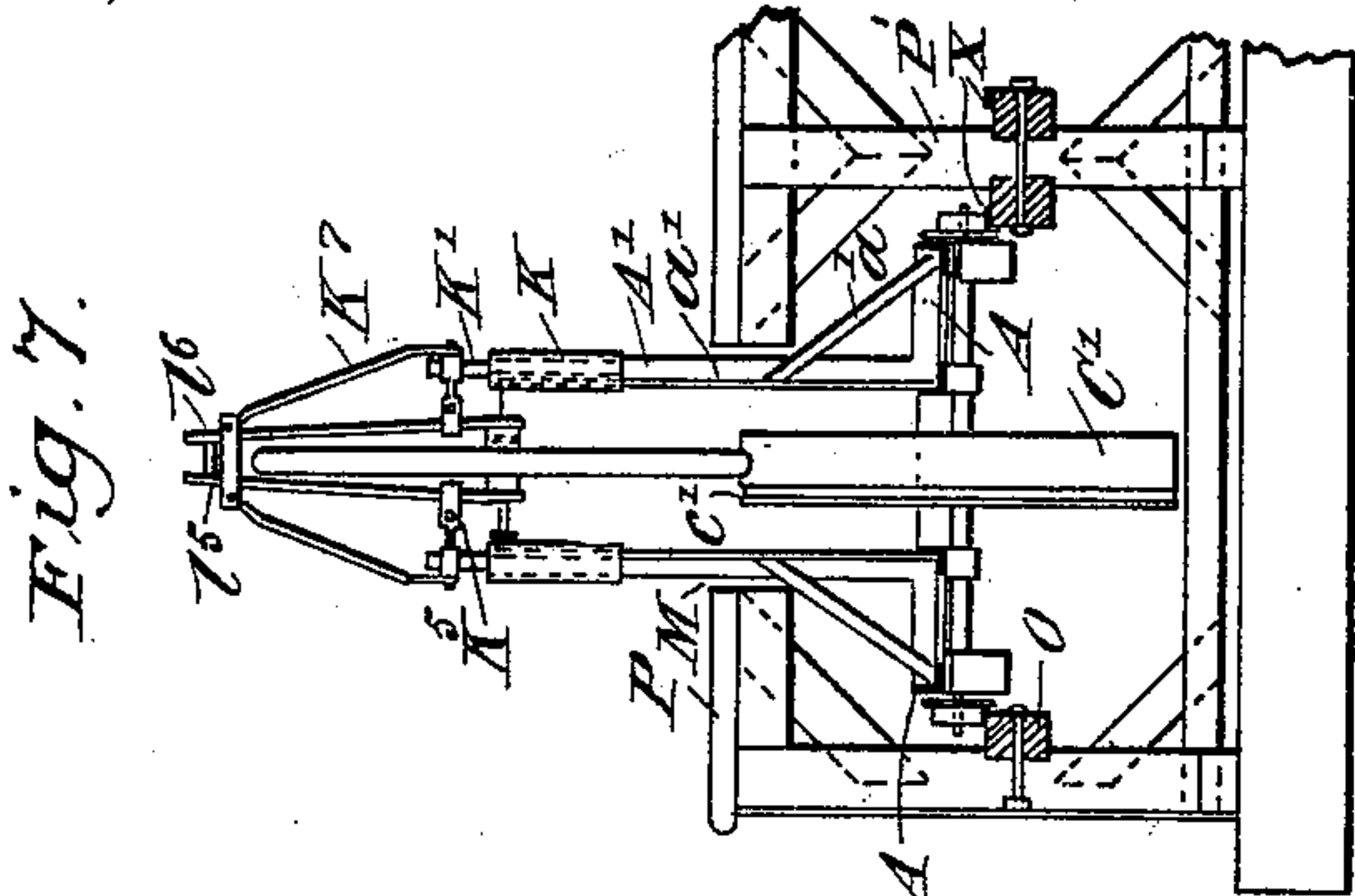
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CYCLE RACING OR EXERCISING MACHINE.

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(No Model.)

Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

GEORGE JOHN BONES AND LOUIS HENRY HART, OF MELBOURNE,
VICTORIA.

CYCLE-RACING OR EXERCISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 613,962, dated November 8, 1898.

Application filed January 11, 1898. Serial No. 666,321. (No model.)

To all whom it may concern:

Be it known that we, GEORGE JOHN BONES, importer, a subject of the Queen of Great Britain and Ireland, and LOUIS HENRY HART, manufacturer, a citizen of the United States, residing at No. 28 Market street, Melbourne, in the British Colony of Victoria, have invented a certain new and useful Cycle-Racing or Exercising Machine, of which the following is a specification.

This invention consists of a cycle-racing or exercising machine in which a cycle, preferably of the bicycle type, is supported on a carriage in such a manner that it can be pedaled as ordinarily, and by the rider giving the requisite number of revolutions to the pedals which would cause the cycle to travel on a road a given distance—say, for instance, one mile—the carriage supporting the cycle is propelled and carries the cycle an actual distance of only about twelve yards. Said carriage is arranged to run, preferably, on a straight track formed of rails and is impelled by a system of reducing-gears operated from the driving-wheel of the cycle.

For racing purposes two or more tracks with carriages each having a cycle mounted thereon, as described, are arranged side by side and the whole of the gearing below the bottom line of cycle-wheels is boxed or housed in, save and except a slot through the top or platform of each track and through which slot the cycle-wheels and carriage-standards pass, and hence each cycle has an appearance as if being pedaled as ordinarily on a road. Also an electric bell or gong is provided to indicate the start and the finish of the race and an electric annunciator indicates the number of the winner or of the first, second, and third, and a stop minute-dial registers the time in which the race was won.

In order that the invention may be well understood, we will now describe it, aided by a reference to the accompanying sheets of drawings, throughout which similar letters of reference will be used to indicate corresponding parts, and, further, it will be noted that Figures 1 to 4 are drawn to a smaller scale than the other figures.

Fig. 1 is a plan, and Fig. 2 a side view, of a two-track cycle-racing machine built in ac-

cordance with our invention; and Fig. 3, a sectional end view of same, looking from line *a a* in Fig. 2, while Fig. 4 is a face view of the annunciator and time-board. Fig. 5 is a side view of the carriage having a bicycle mounted on it and also showing the starting-lever and winning-post, and Fig. 6 a plan of the carriage with the bicycle removed. Fig. 7 is a sectional end view looking from line *b b* in Fig. 5 and also showing the rails and platform-framing; and Fig. 8, a sectional view of the carriage, taken at line *c c*, Fig. 5; Fig. 9, details of the connections between the carriage-standards and bicycle-forks and also showing the forward stay; and Fig. 10, details of the back bicycle-stay, while Fig. 11 shows details of the lever for tilting the carriage and stopping its progression.

A is the frame of carriage, made of light angle-iron bolted or riveted together and welded at the angle-joints. Upon this frame four brackets or standards *A'* of light T-iron are secured by bolts or otherwise and by the iron-braces *a'*, and between the said standards *A'* the bicycle is secured, as hereinafter described. The central longitudinal angle-irons of the frame A have bearings secured to them which support the axles of two pulley-wheels, (marked C and C', respectively,) and these pulleys have turned rims and also near one edge a narrow groove, as *c'*, to receive a belt *c*², which imparts motion from wheel C' to wheel C. The back pulley C' has a small spur-pinion C³ on its axle, and said pinion gears with a large spur-wheel D, secured on the central carriage-axle D', and upon each end of the latter are small flange or truck wheels D². Near the front and rear ends of the carriage are similar truck-wheels *d'*, mounted on axles *d*, supported in bearings secured to the under side of carriage-frame. The central pair of truck-wheels are made slightly larger in diameter than those near each end in order that a proper grip of the rails may be obtained.

The bicycle is supported vertically between the brackets *A'*, the tires of the bicycle-wheels resting on the two pulleys C and C', the centers of which are set slightly in advance of those of the cycle-wheels in order to insure of a good tire-grip being obtained. The up-

per part of the web of the T-iron of brackets A' is cut away to allow of a cast-iron socket-piece K being secured to its flange by set-screws, as shown in Fig. 9, and said socket-piece has a hole in it to receive the spindle K', the head of which carries the clips and stays which secure the bicycle in position. Spindle K' fits freely within socket K to allow of its upward or downward movement, caused by the varying pressure on the pneumatic tires of the bicycle when ridden. The head of spindle K has a hole in it to receive the horizontal rod K², which is fixed in position by a set-screw K³. The inner end of rod K² has a two-part clip K⁴ K⁵ formed on it, such parts being secured together by a bolt, as shown, and said clip K⁴ K⁵ is designed to grip the lower part of the front and back bicycle-wheel forks on either side. The outer end of bars K² are reduced and provided with a nut l⁴, which secures the stay K⁶ in position, the upper end of said stay having a hollowed T-end l, and said ends of each opposite stay when placed together grip the front tube of the bicycle just above the fork and immediately below the boss l' of the bicycle-frame and are thereat secured by bolts passing through holes l³, as shown. The clips K⁴ K⁵ on bar K² at rear of bicycle are similarly secured to the spindle K', but one-half of the clip-straps l⁵ is formed on each side stay K⁷ in order that when both straps l⁵ are bolted together they grip the two tubes l⁶ of the rear-wheel fork, as shown in Fig. 10. The lower end of stays K⁷ are secured in a manner similar to the front stays K⁶.

To provide means for running the carriage backward or to allow the driving truck-wheel to rotate idly should the gear-wheels be worked, a lever E, having forked arms E', is attached to the carriage, said lever being centered on the front axle, and projecting outwardly from each arm of lever to under the frame A is a pin e, having sufficient throw that when the lever is lifted to a vertical position, as shown in Fig. 11, the carriage will be tilted just enough to raise the driving truck-wheels D² clear of the rails, and thus prevent the onward movement of the carriage.

Each carriage A runs on rails X, supported on longitudinal sleepers O, bolted, as shown, to the vertical props p' of the framed supports carrying the platform P, which is provided with the central track-groove M, as shown in the drawings. Any number of platforms with a track and slot M may be arranged side by side and the tracks may be of any desired length. Also the distance the carriage will travel at a greater or less speed depends on the gearing, which may be adjusted to represent a mile in a given length of track, or more or less. At the starting end of the framing is a platform P², provided with steps, and similar steps are shown at the finishing end. To provide a means for the simultaneous starting of the bicycles when racing, a transverse shaft N is supported in suitable bearings N'

on the platform-uprights, and on said shaft iron hooks h are secured with set-screws h', one opposite each track. These hooks are designed to engage the carriages A and prevent their forward movement when the starting-lever h² is vertical, but when the lever is pulled over the hooks release the carriages and at the same time press an electric button h³ on the platform, which causes a bell to ring and starts the clock R, timing the race. At the finishing or winning end of the track is a transverse bar P³, which acts as a buffer to prevent the forward movement of the carriage, and attached to said buffer is a spring bell-push Q, on which the front of the carriage presses at the finish of the race. Said bell-push is connected by an electric circuit with the clock and the annunciator-board S, so that when it is closed together by the pressure of the carriage it stops the clock, which registers the exact time the winning competitor completed the distance in, and at the same time a numbered plate or shutter on the annunciator falls and exhibits the number of the winning machine. If so desired, the annunciator can be arranged to record the number of the first, second, and third competitors in a race.

Although the machine has been described as traveling on a straight track, it may also be arranged on a curved or circular track, and especially so when used as an exercising or training machine; and, further, although the carriage shown is designed for supporting a bicycle, it is obvious that by making it wider and providing another wheel, as C', on the same axle the carriage and machine may be made suitable for a tricycle; also, the carriage may be made suitable, by adjustment or otherwise, for a cycle of any size or type.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a cycle-racing or exercising machine a wheeled carriage having two pulley-wheels as C, C' borne on it, upon which the wheels of a bicycle are supported and rotate, said carriage being furnished with a system of reducing-gears, driven by the pulley on which the bicycle-driving wheel is located, and communicating such a motion to the wheels of carriage that although the cycle can be pedaled as ordinarily the carriage will travel a proportionate less distance than the bicycle would were it similarly pedaled on a road substantially as and for the purpose described.

2. In a cycle-racing or exercising machine a carriage A mounted on truck-wheels D², d', and furnished with brackets or standards A', which support the bicycle, the axle of wheels D² having motion imparted to it by reducing spur-gear C³, D, from the axle of pulley C' which is driven by the bicycle and said pulley C' imparting motion by belt to pulley C as and for the purpose described.

3. In a cycle-racing or exercising machine, the combination with the wheeled carriage,

the standards mounted thereon, the socket-piece K carried by the standards, the clips carried by the socket-pieces for engaging the bicycle-frame, and the reducing driving-gear
5 between the bicycle and carriage-wheels, substantially as described.

4. In a cycle-racing or exercising machine the front stay and clips marked K⁶, l and l³ and the back stay and clips marked K⁷, l⁵ with
10 the horizontal bar K² of clip-pieces K⁴ K⁵ and with the socket-pieces K and their supporting-brackets on the carriage substantially as described.

5. In combination, the carriage having supporting and propelling wheels adapted to travel upon a suitable surface, a cycle mounted upon said carriage and having operating connections to said propelling-wheels, and means for raising said propelling-wheels out
15 of contact with the supporting-surface, substantially as described.

6. In combination, the plurality of carriages carrying cycles with operating connections to said carriages, the starting-lever having
25 retaining and releasing connections with said carriages, an electric signal and electric connections thereto adapted to be operated by the movement of the lever to release the carriages, substantially as described.

7. In combination, the slotted platform, the rails carried by the framing beneath the platform, the carriages having wheels traveling on said rails, standards for supporting the cycles carried by the carriages and extending up through the slots, and operating connections from the cycles to the carriage-wheels,
30 35 substantially as described.

8. In combination, the platform or way, carriages mounted thereon, cycles carried by the carriages and having operating connection therewith, an electric signal device at the starting end, a carriage-releasing device having electrical connection with said signal and designed to simultaneously release the carriages and operate the signal, buffers at the
40 45 opposite end of the platform, electric signal devices and electric connections from said buffers adapted on the impact of the carriages to operate said signals, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

GEORGE JOHN BONES.
LOUIS HENRY HART.

Witnesses:

W. STOKES,
BEDLINGTON BODYCOMB.