

A. SCHUBERT.
FIFTH WHEEL FOR SPRING VEHICLES.

No. 506,376.

Patented Oct. 10, 1893.

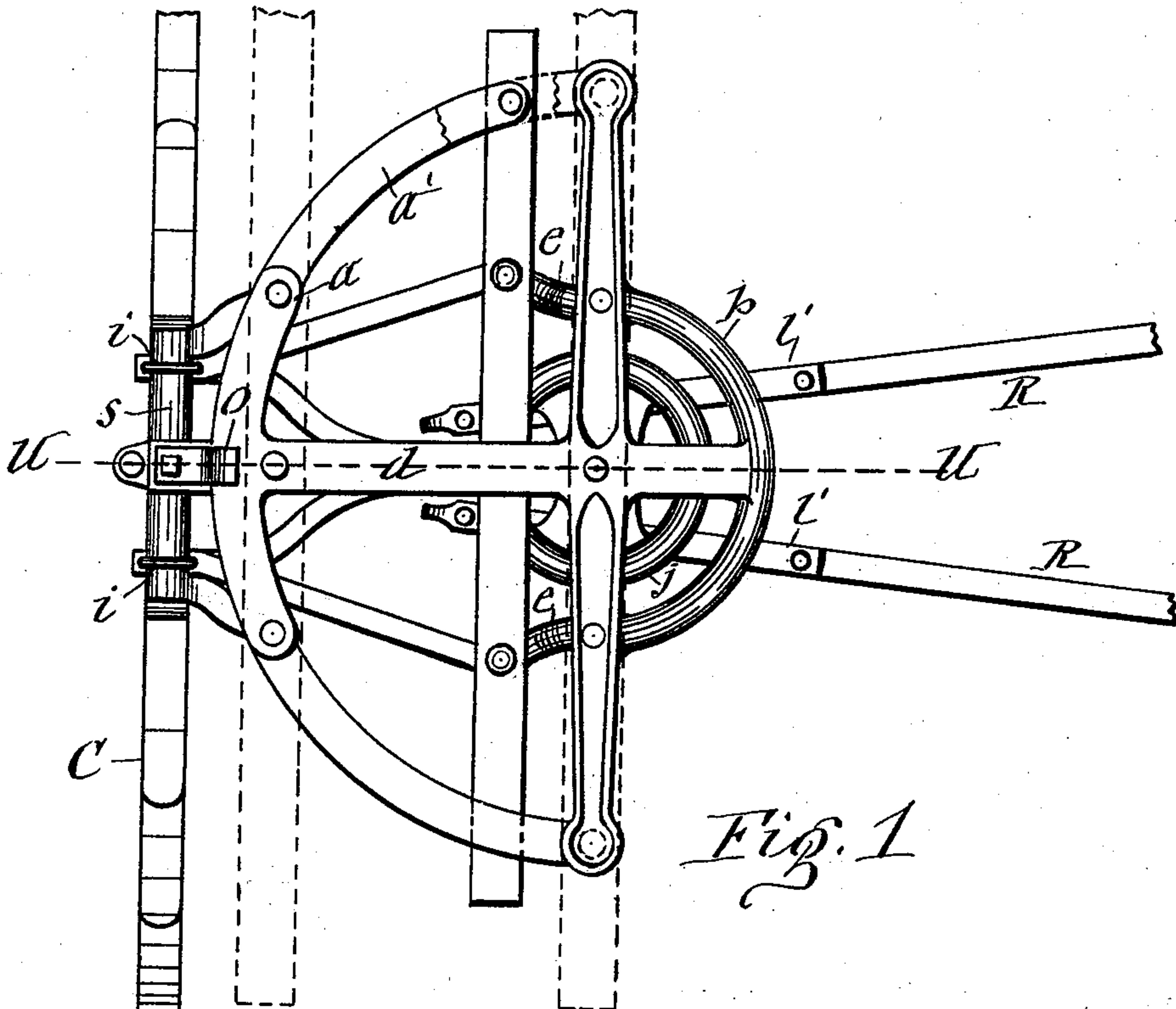


Fig. 1

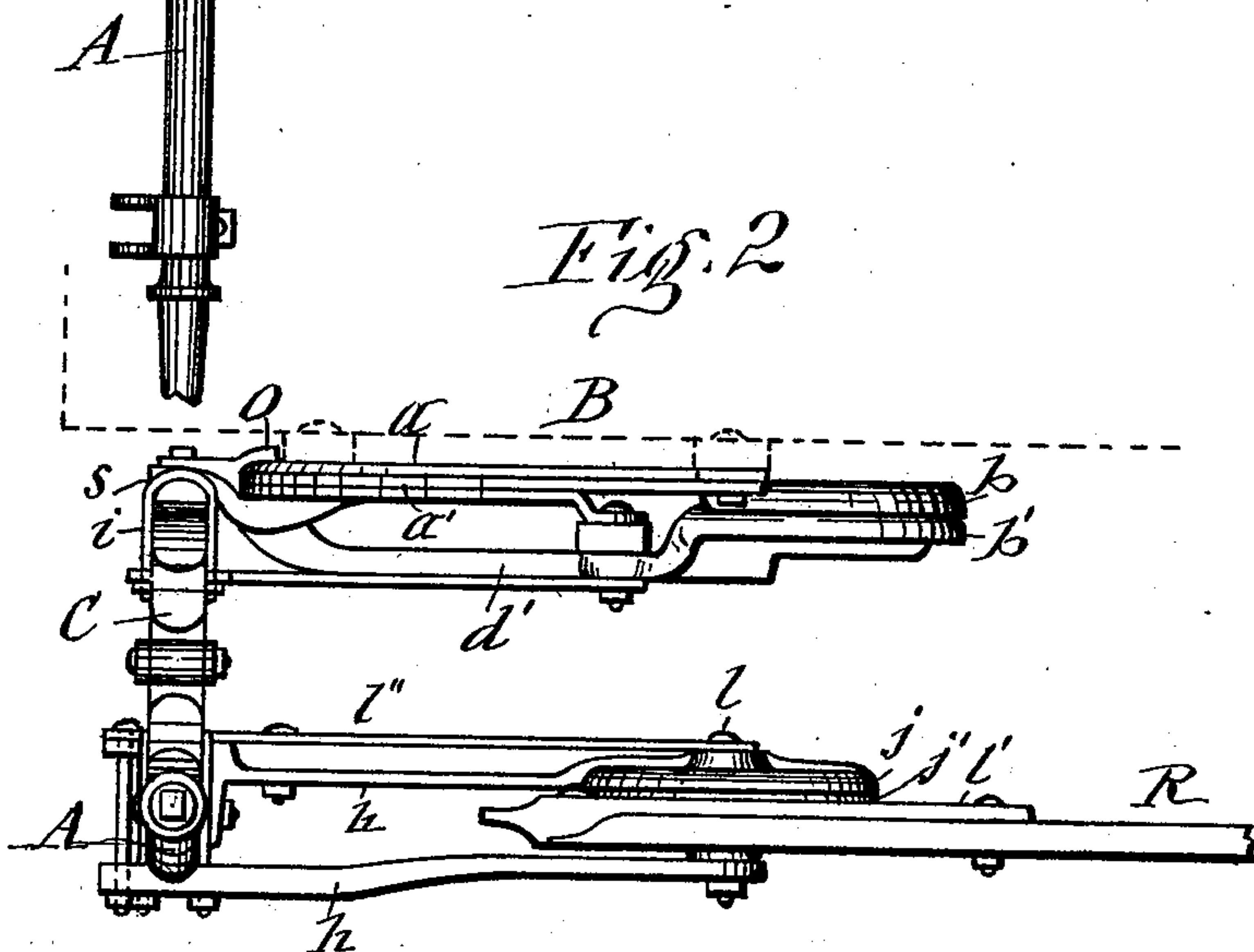


Fig. 2

WITNESSES:

C. L. Bendixon
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(No Model.)

6 Sheets—Sheet 2.

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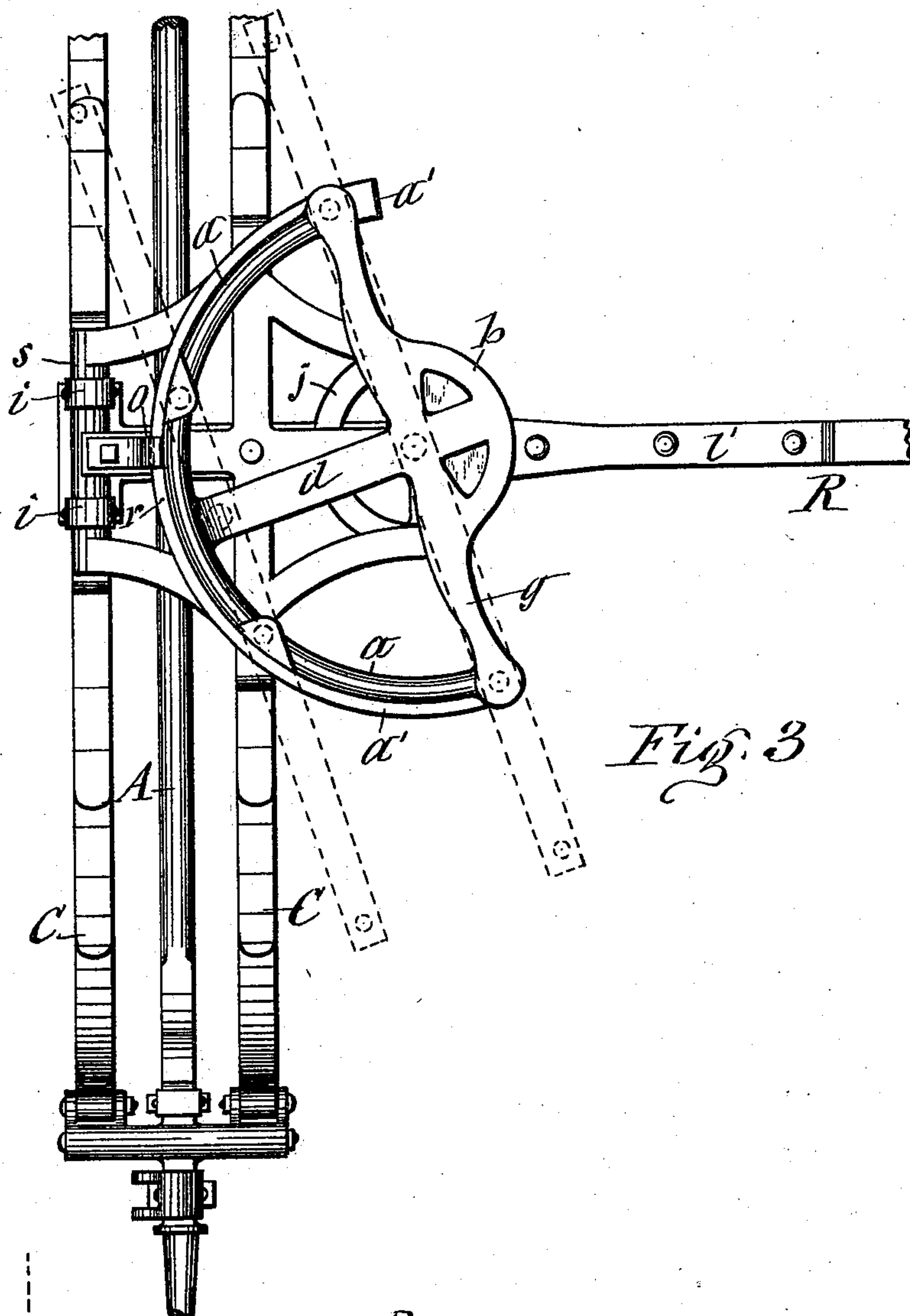


Fig. 3

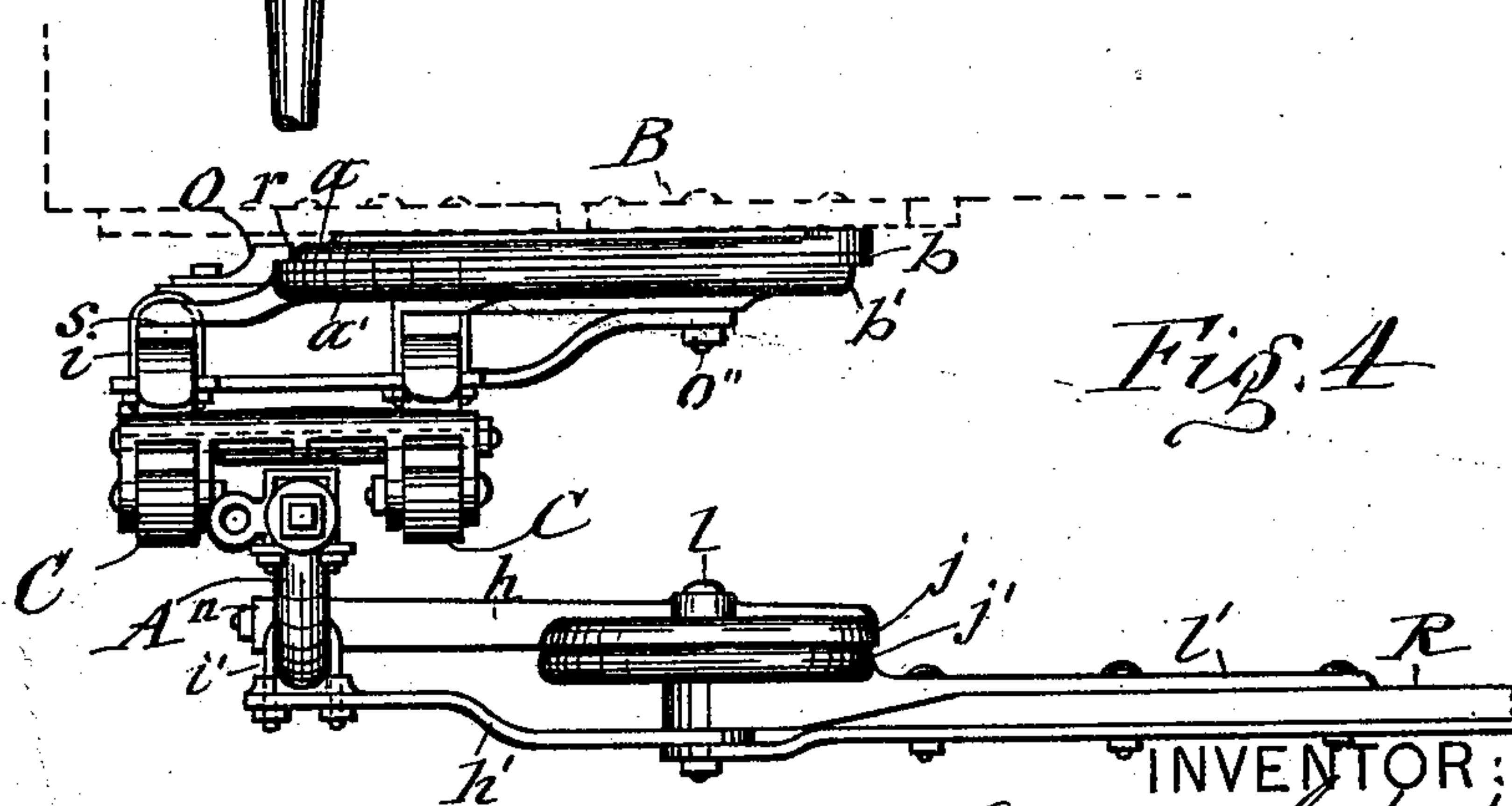


Fig. 4

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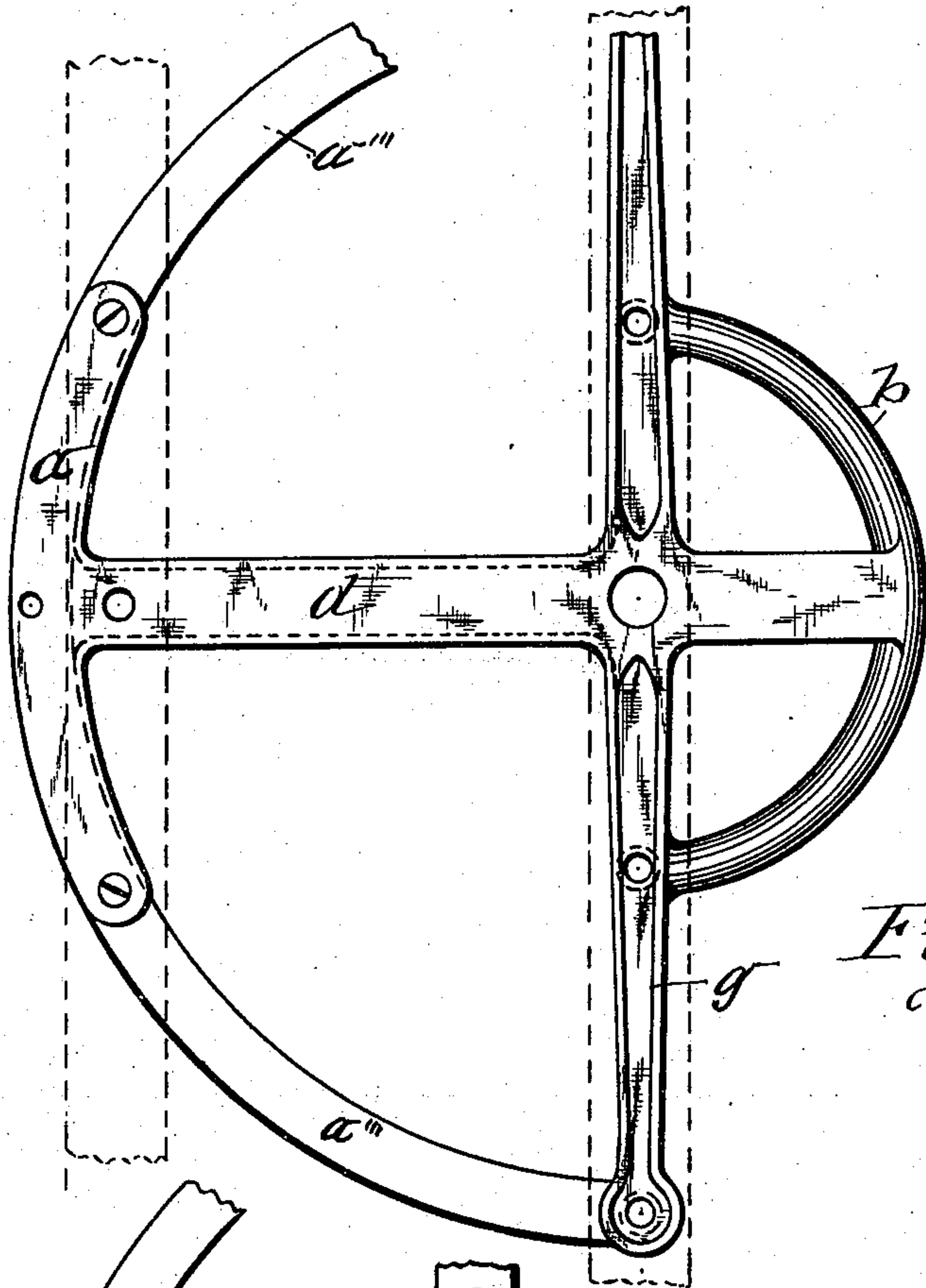


Fig. 5

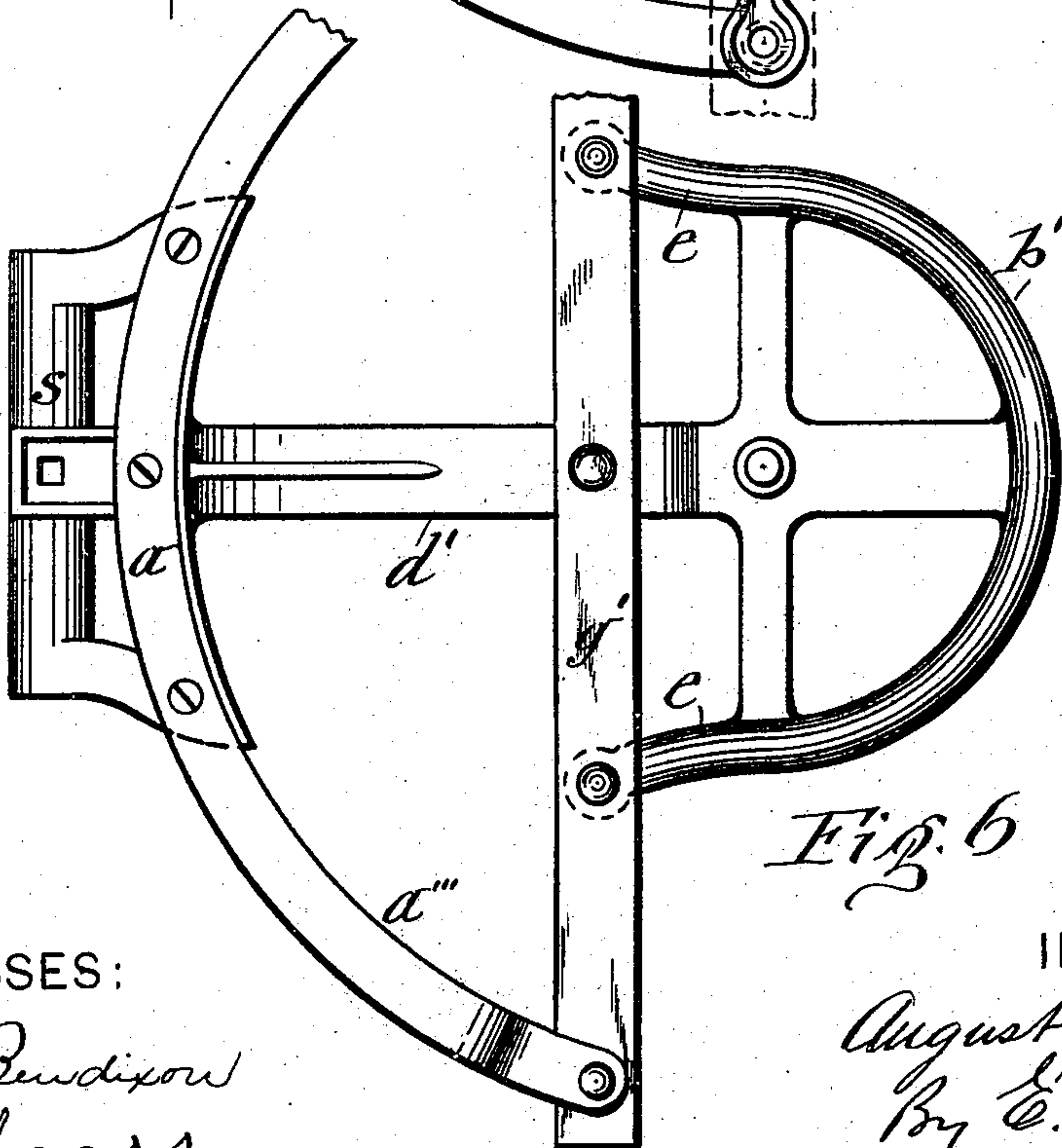


Fig. 6

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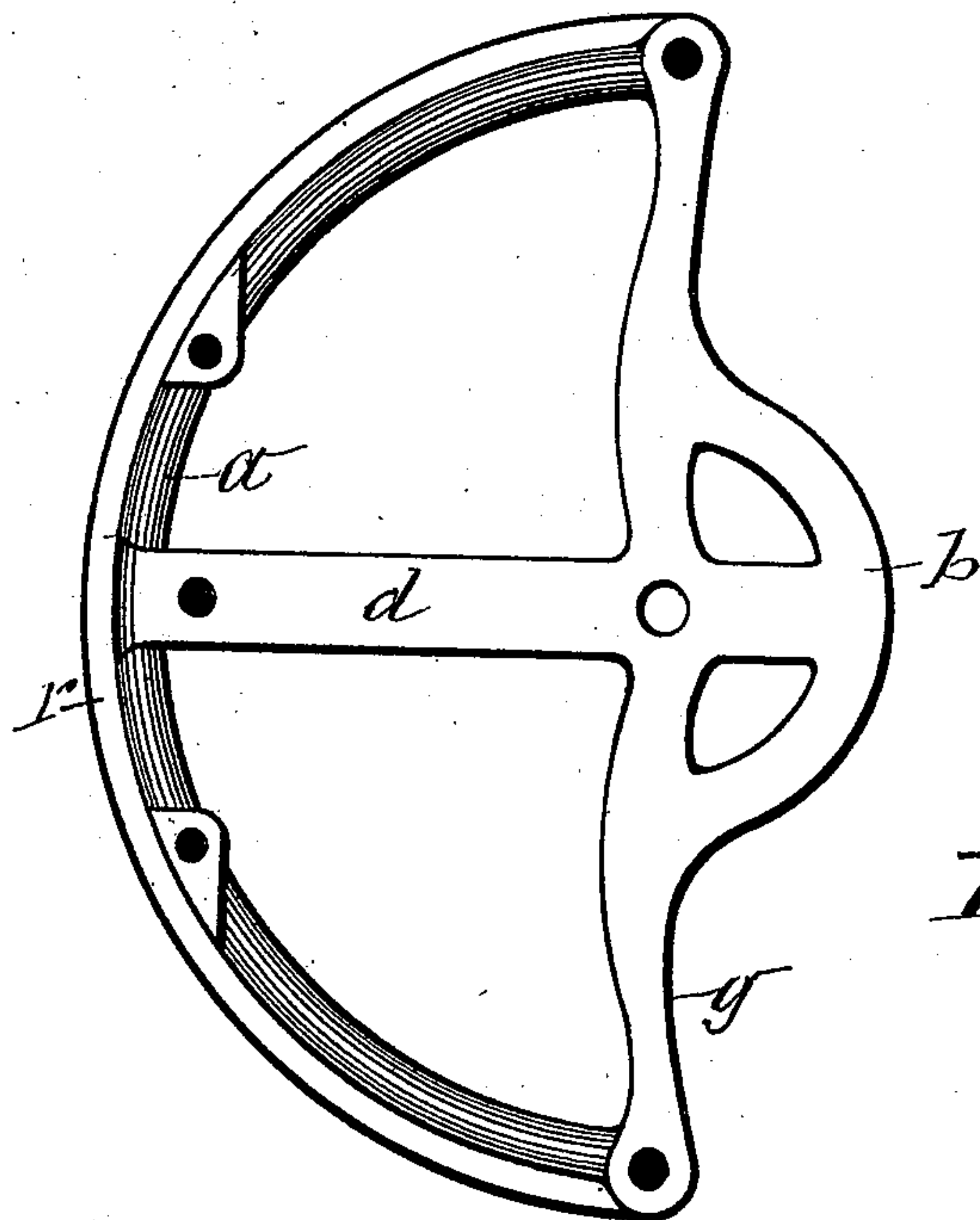


Fig. 7

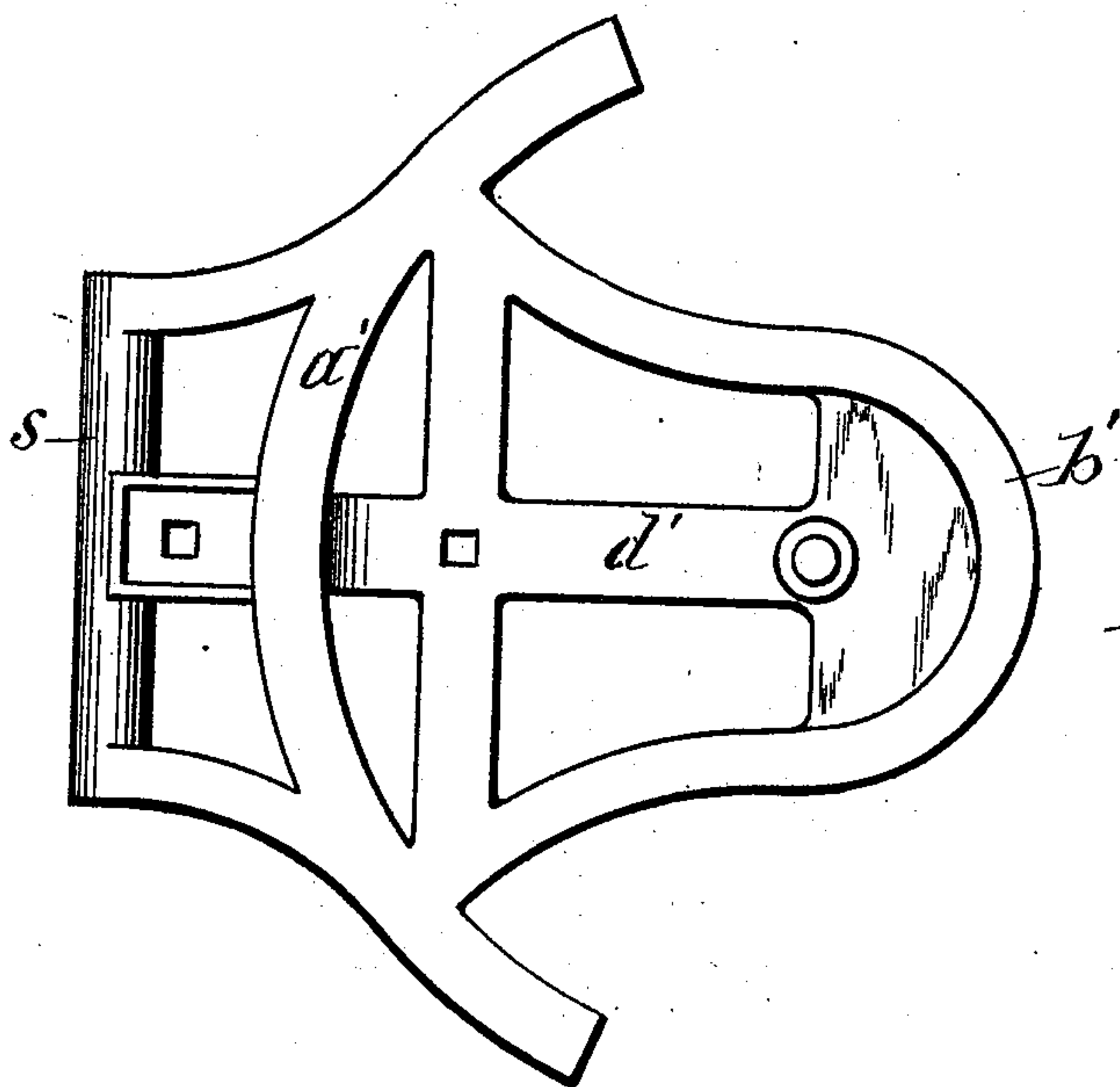


Fig. 8

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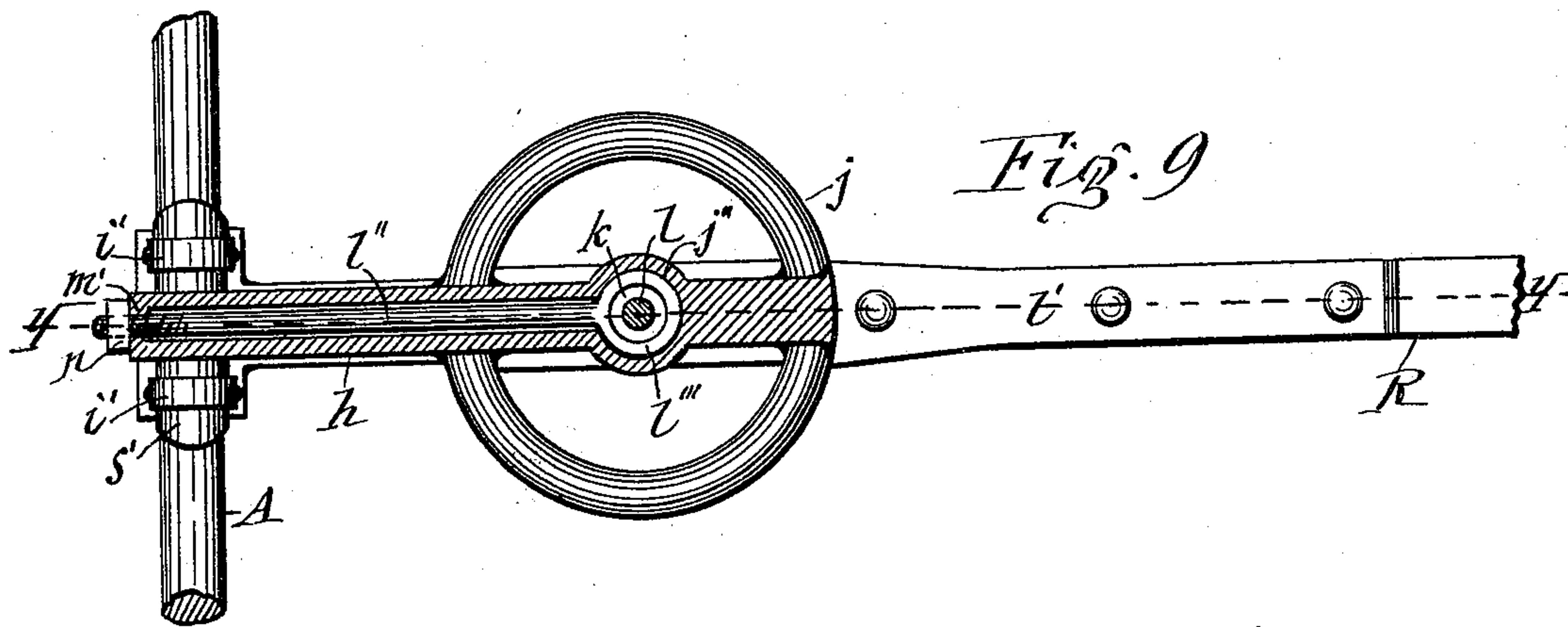


Fig. 9

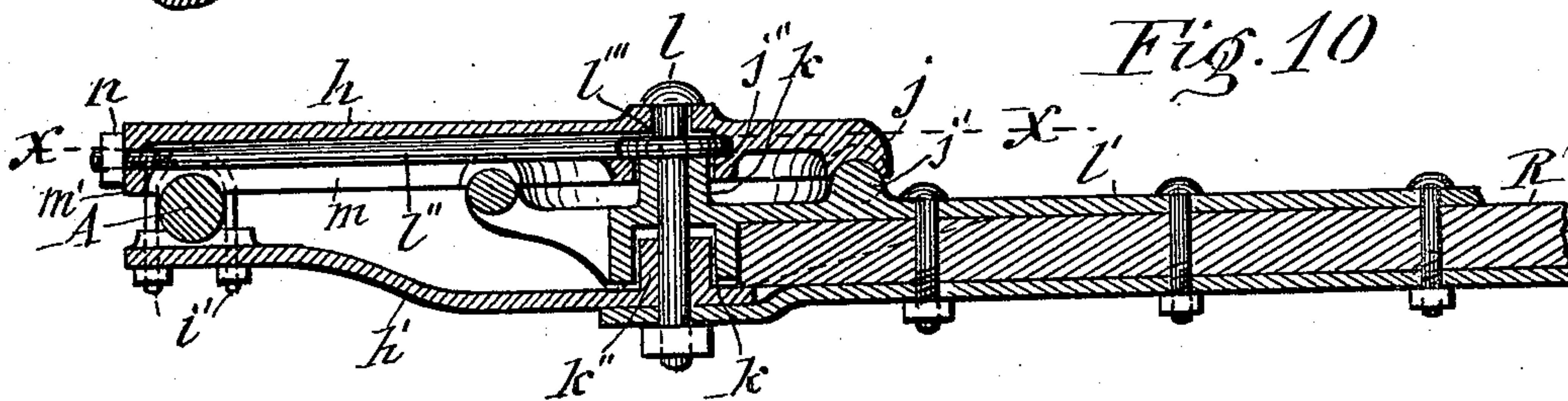


Fig. 10

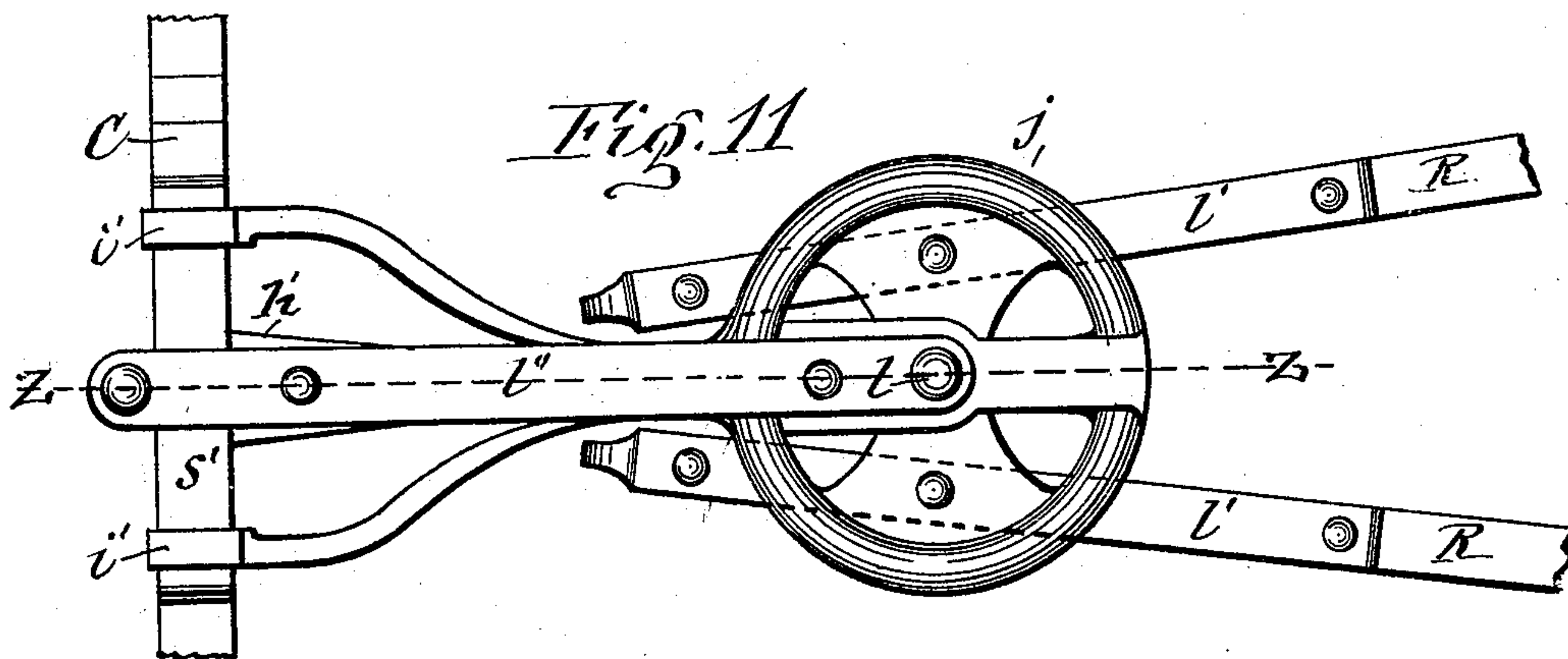


Fig. 11

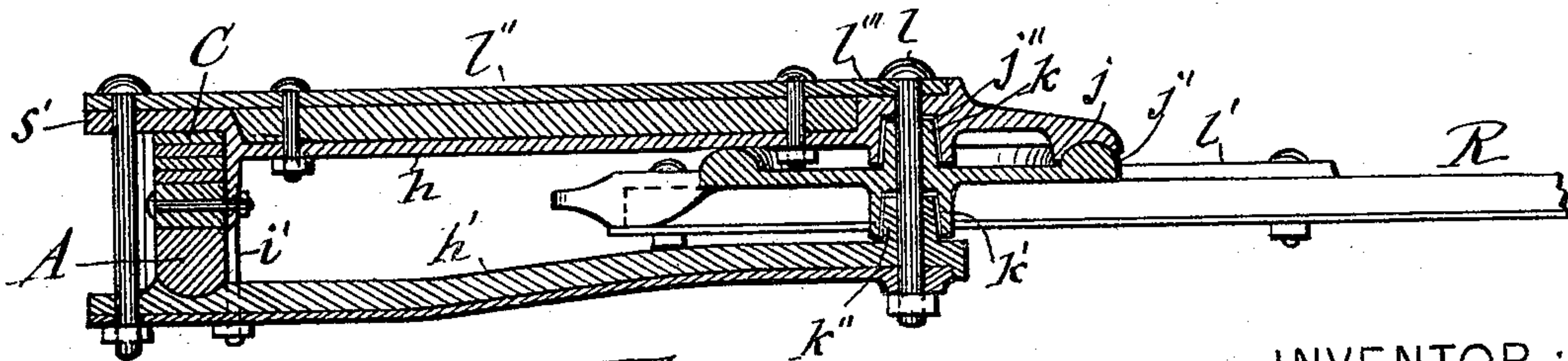


Fig. 12

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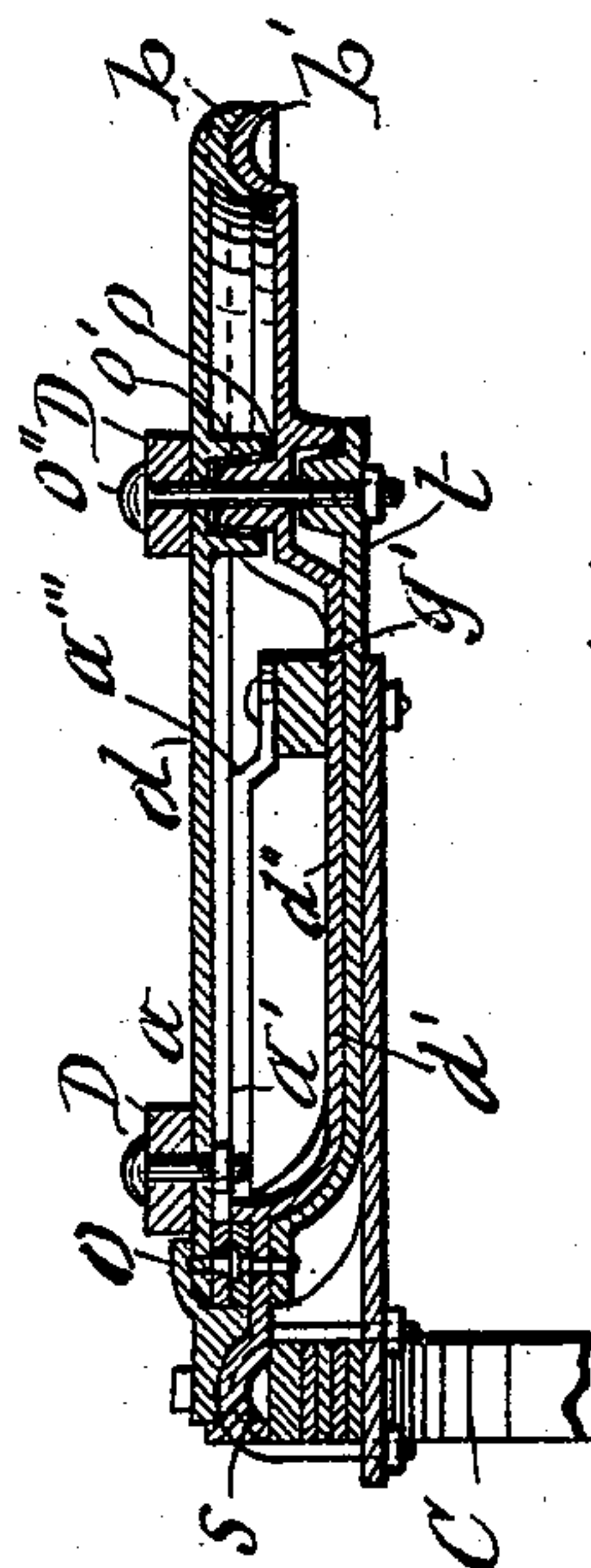
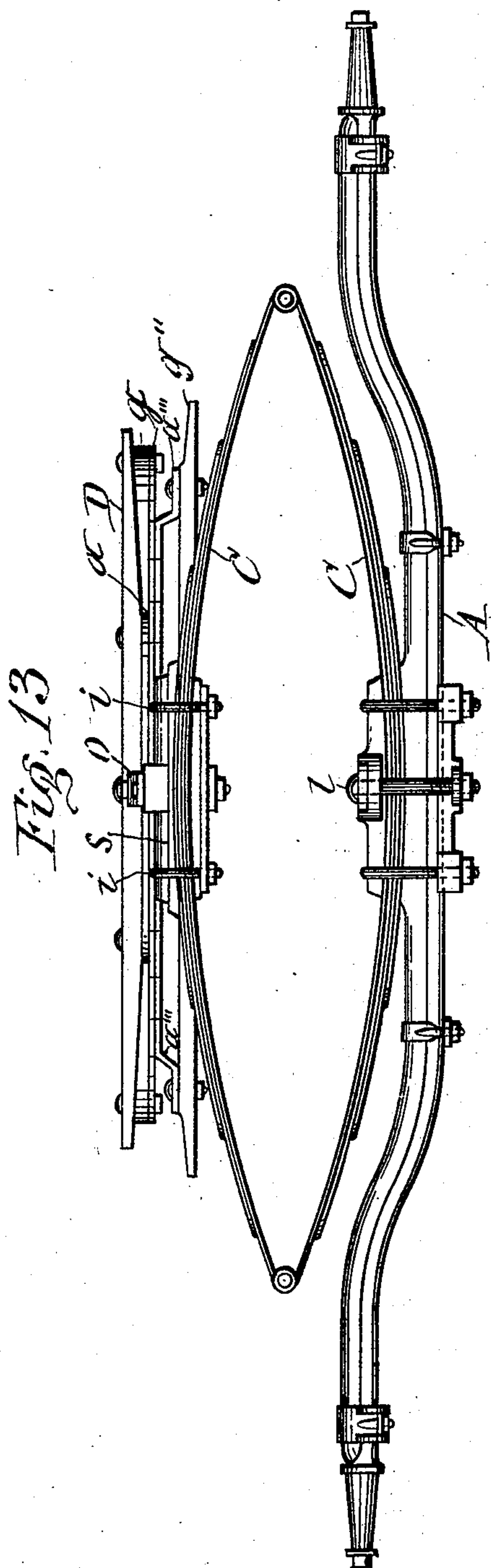
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WITNESSES:

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UNITED STATES PATENT OFFICE.

AUGUST SCHUBERT, OF ONEIDA, NEW YORK.

FIFTH-WHEEL FOR SPRING-VEHICLES.

SPECIFICATION forming part of Letters Patent No. 506,376, dated October 10, 1893.

Application filed April 5, 1893. Serial No. 469,098. (No model.)

To all whom it may concern:

Be it known that I, AUGUST SCHUBERT, of Oneida, in the county of Madison and State of New York, have invented new and useful
5 Improvements in Spring-Vehicles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of vehicles which have the front running gear pivoted back of the axle. And the invention consists in an improved construction and combination of parts hereinafter described and specifically set forth in the claims.

15 In the annexed drawings Figure 1 is a plan view of the front running gear embodying my invention in connection with a single cross-spring and two reaches. Fig. 2 is a side view of the same. Fig. 3 is a plan view showing my invention in connection with two
20 cross-springs and a single reach. Fig. 4 is a side view of the latter. Figs. 5 and 6 are enlarged plan views of the two circle-plates of the upper fifth wheel designed for a single cross-spring. Figs. 7 and 8 are plan views of the circle-plates of the upper fifth wheel designed for duplex cross-springs. Fig. 9 is a
25 horizontal section of the lower fifth wheel taken on line *x, x*, in Fig. 10 and showing its connection with a single reach. Fig. 10 is a vertical longitudinal section on line *y, y*, in Fig. 9. Fig. 11 is a plan view of the lower fifth wheel connected to a double reach. Fig. 12 is a vertical longitudinal section on line *z, z*,
30 in Fig. 11. Fig. 13 is a front view of the front axle with my improved fifth wheel mounted thereon, and Fig. 14 is a vertical longitudinal section on line *U, U*, in Fig. 1.

Similar letters of reference indicate corresponding parts.

40 A—denotes the front axle of a vehicle, which axle may be of any suitable shape and may have either a single elliptic cross-spring—C—mounted on it as represented in Figs. 1, 2, 11 and 12 of the drawings, or have two
45 semi-elliptic springs—C—C—hung on it as shown in Figs. 3 and 4 of the drawings.

R—represents the reach which may also be either single as shown in Fig. 3 of the
50 drawings, or double as shown in Fig. 1. Said reach or reaches I couple to the front running gear by the following devices: To the

top and bottom of the axle are rigidly secured the metallic arms—*h*—and—*h'*—, the upper arm—*h*—being formed with a saddle—*s'*—
55 by which it rests upon the axle, in case the duplex spring—C—C—is hung on the axle at opposite sides thereof, but when the single cross-spring is mounted upon the axle the said saddle rests upon the top of the lower half of the
60 spring as shown in Fig. 12 of the drawings. The saddle is firmly secured to the axle by means of clips—*i'*—*i'*—. To the rear end of the arm—*h*—is pivotally connected the reach or reaches—R—for which purpose I prefer to
65 form the rear end of the said arm with a socket—*j''*—in its under side and with the top-circle plate—*j*—concentric with said socket, and to the top of the wooden reach I fasten the metallic strap—*l'*—which has the hub—*k*—and
70 lower circle-plate—*j'*—formed integral therewith or rigidly attached to it. Said hub entering the socket—*j''*—. Directly under the hub—*k*—and axially in line therewith is a socket—*k'*—also integral with the strap
75 —*l'*—and into this socket is inserted a hub—*k''*—formed on the rear end of the arm—*h'*—. The aforesaid hubs are provided with a central vertical orifice through which the king-bolt—*l*—passes. To the upper arm
80 —*h*—I attach a supplemental safety coupling—*l''*—consisting of a metallic strap or rod extending lengthwise of the said arm and provided at its rear end with an eye—*l'''*—
85 through which the king-bolt passes. This safety coupling I prefer to make adjustable to take up the wear of the eye—*l'''*—, and for this purpose I form the arm—*h*—with a longitudinal cavity—*m*—for the reception
90 of the rod—*l''*—, said cavity terminating with a perforated ear—*m'*—on the front end of the arm—*h*—and through this ear protrudes the end of the rod—*l''*—which is
95 screw-threaded and provided with a nut—*n*—which bears on the front of the arm as illustrated in Figs. 9 and 10 of the drawings. By tightening said nut the opposite end of the rod or safety coupling—*l''*—obtains a firm hold on the king-bolt. Above the aforesaid king-bolt and in line therewith is the
100 center of another fifth wheel by which the running gear is pivotally connected to the body—B. This latter fifth-wheel thus has its pivot likewise back of the axle. It is support-

ed at the front portion of its periphery upon the spring or springs —C— and has its rear portion hung to the body —B— in the following manner. Said fifth-wheel is composed of a set of small circle-plates —a—a'— in front and large circle-plates at the rear of the pivot. The large bottom-plate —a'— is formed with a saddle —s— which is mounted on the spring or springs —C— and fastened thereto by clips —i—i—. This circle-plate is rigidly connected to the small bottom plate —b'— of the rear circle by means of a longitudinal tie —d'— preferably formed in one piece therewith, and the two top circle-plates —a— and —b— are likewise united by a longitudinal tie —d—. To maintain the two large circle-plates —a—a'— in proper contact with each other I bolt to the top of the saddle —s— a lip or tongue —O— which laps onto a rabbet, r, in the top of the top-circle-plate —a—. The rear end of the lower tie —d'—, is provided with a rigid upward projecting hub —o— which enters into a socket —o'— on the under side of the upper tie —d—, said hub and socket being axially in line with the lower king bolt —l— and constituting the pivot upon which the two circle-plates —a'— and —b'— turn. These circle-plates and ties I preferably form of malleable cast iron, and the adjacent sides of the large circle-plates I face with steel wear-plates. The rear upper circle plate —b— is also cast with a transverse bar —g— to which are tied the ends of the upper large circle-plate —a— either by the latter being formed integral with said bar, as shown in Fig. 7 of the drawings, or by extensions —a'''—a'''— of the steel linings riveted or bolted to the ends of the bar —g— as represented in Figs. 1 and 5 of the drawings. On a vehicle having a single spring —C— over the axle as shown in Figs. 1 and 2 of the drawings, the large circle-plates are entirely back of the spring and are supported thereon by the saddle —s— as before described. In this case I form the lower arm or tie —d'— with a depression —d''— and from the rear lower circle plate —b'— with forwardly and downwardly extending arms —e—e—, and upon the free ends of these arms and upon the depressed portion of the tie —d'— I fasten a cross-bar —g'— to the ends of which I firmly secure the ends of the extensions —a'''—a'''— of the large lower circle-plate —a'. Through the center of the before described hub —o— and socket —o'— passes the king-bolt —o''— the lower end of which passes through a steel or wrought iron strap —t— fastened to the under side of the longitudinal tie —d'— to reinforce the same. The king-bolt is provided with the usual head on its upper end and with a nut on its lower end and thus ties the aforesaid parts together. To the top of the cross-bar —g— and to the top of the front or large circle plates are bolted two wooden bolsters or cross-bars —D—D— which are fastened to

the under side of the body —B. The described fifth-wheel is thus hung to the body.

What I claim as my invention is—

1. In combination with the front axle, body and cross-spring or springs mounted on said axle, a fifth wheel having its pivot back of the axle and composed of large circle-plates in front of its pivot and small circle-plates at the rear of the pivot and supported by said large plates upon the spring or springs, and cross-bars fastened on the top of said fifth-wheel and to the body respectively over the pivot of the fifth-wheel and over the front portion thereof, as set forth.

2. In combination with the front axle, body and cross-spring or springs mounted on said axle, the fifth-wheel consisting of the large circle-plates —a—a'—, small circle plates —b—b'— cross-ties g, g' and the longitudinal ties —d—d'—, said fifth-wheel being mounted with its large circle-plates upon the spring or springs and the small circle-plates hung to the body back of the axle, as set forth.

3. In combination with the front axle, body and cross-spring, of the fifth wheel pivotally hung to the body back of the axle and consisting of large circle-plates in front of the pivot, small circle-plates back of the pivot, longitudinal ties connecting the front and rear circle-plates, a saddle extending from the front of the large bottom circle-plate and secured to the top of the spring, and a lip rigidly secured to the saddle and bearing on the large top circle-plate, as set forth.

4. In combination with the front axle, body and cross-spring, the large circle-plates —a—a'—, saddle —s— on the lower of said plates riding on the spring, clips —i—i— fastening said saddle to the springs, the small circle-plates —b—b'— back of the springs, the longitudinal tie —d— uniting the top circle-plates, the longitudinal ties —d'— uniting the bottom circle-plates and formed with the depression —d''—, the arms —e—e— extending from the small bottom circle-plate —b'— and deflected downward, the braces —f— connecting the free ends of said arms to the clips —i—i—, the cross-bar —g'— fastened to said ends of the arms and to the lower tie —d'—, bolsters —D—D'— secured to the top of the fifth-wheel, and the large circle plate extensions —a'''—a'''— attached respectively to the cross-bar —g'— and rear bolster —D'—, substantially as described and shown.

5. In combination with the cross-spring, the fifth-wheel having its upper plate provided with a rabbet in its outer edge, a saddle projecting from the bottom circle-plate and mounted rigidly on the spring, and a lip fixed to the saddle and lapping onto the rabbet of the top circle-plate, as set forth.

6. In combination with the axle, rigid rearwardly extending coupling arms fastened to the axle and in different planes, a circle plate rigidly attached to or integral with the upper arm, the lower circle-plate formed with a rear-

wardly extending shank, the reach attached to said shank, and the king-bolt tying the lower coupling arm to the lower circle-plate as set forth.

5 7. In combination with the axle, an arm extending rigidly rearward from the axle, the reach pivotally connected to the rear end of said arm, and a safety coupling extending lengthwise of said arm and secured thereto and receiving the king-bolt through it, as set forth.

8. In combination with the axle, a coupling arm extending rigidly rearward from the axle, a top circle-plate fixed to the rear end of said arm, a bottom circle-plate formed with a rearwardly extending shank, the reach attached to said shank, a supplemental safety coupling extending lengthwise of said coupling-arm and provided with an eye at its rear end and screw-threaded at its front end, a nut on said end bearing on the adjacent end of the coupling-arm, and the king-bolt passing

through the eye of the aforesaid safety-coupling, as set forth.

9. In combination with the axle, the arm 25 —h— rigidly attached to and extending rearward from the axle, the circle-plate —j— integral with the said arm and formed with the socket —j''— in its underside, the circle-plate —j'— formed with the hub —k— entering 30 said socket, and having the socket —k'— in its underside, the arm —h'— extending rigidly from the axle and terminating with the hub —k''— entering the socket —k'—, the king-bolt —l— passing through the said sock- 35 ets and hubs, and the reach attached to the lower circle-plate, as set forth.

In testimony whereof I have hereunto signed my name this 25th day of March, 1893.

AUGUST SCHUBERT.

Witnesses:

T. H. JURDEN,
LORING MUNROE, 2d.