

No. 762,961.

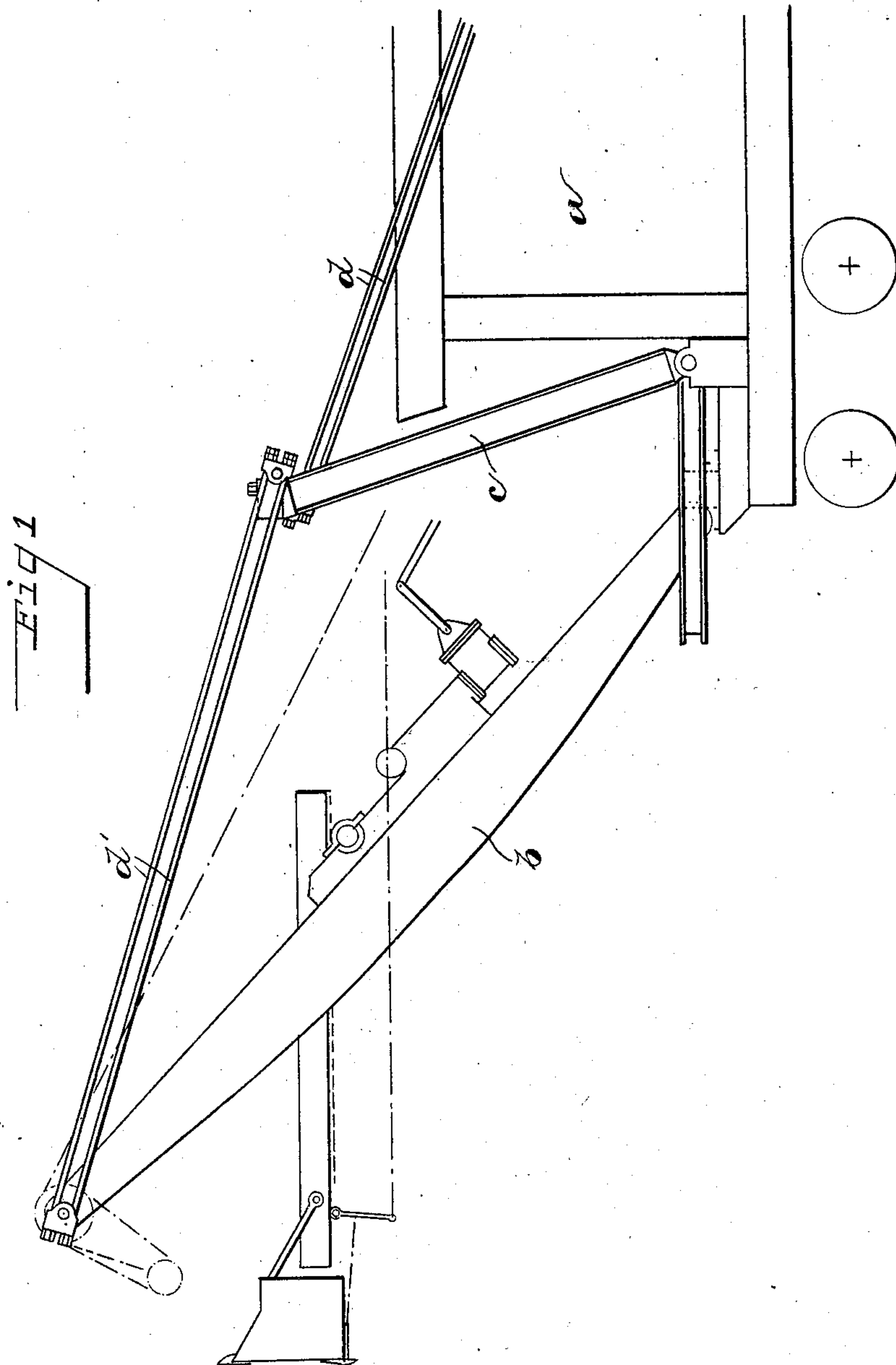
PATENTED JUNE 21, 1904.

G. E. TURNER.
STEAM SHOVEL.

APPLICATION FILED OCT. 26, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Inventor

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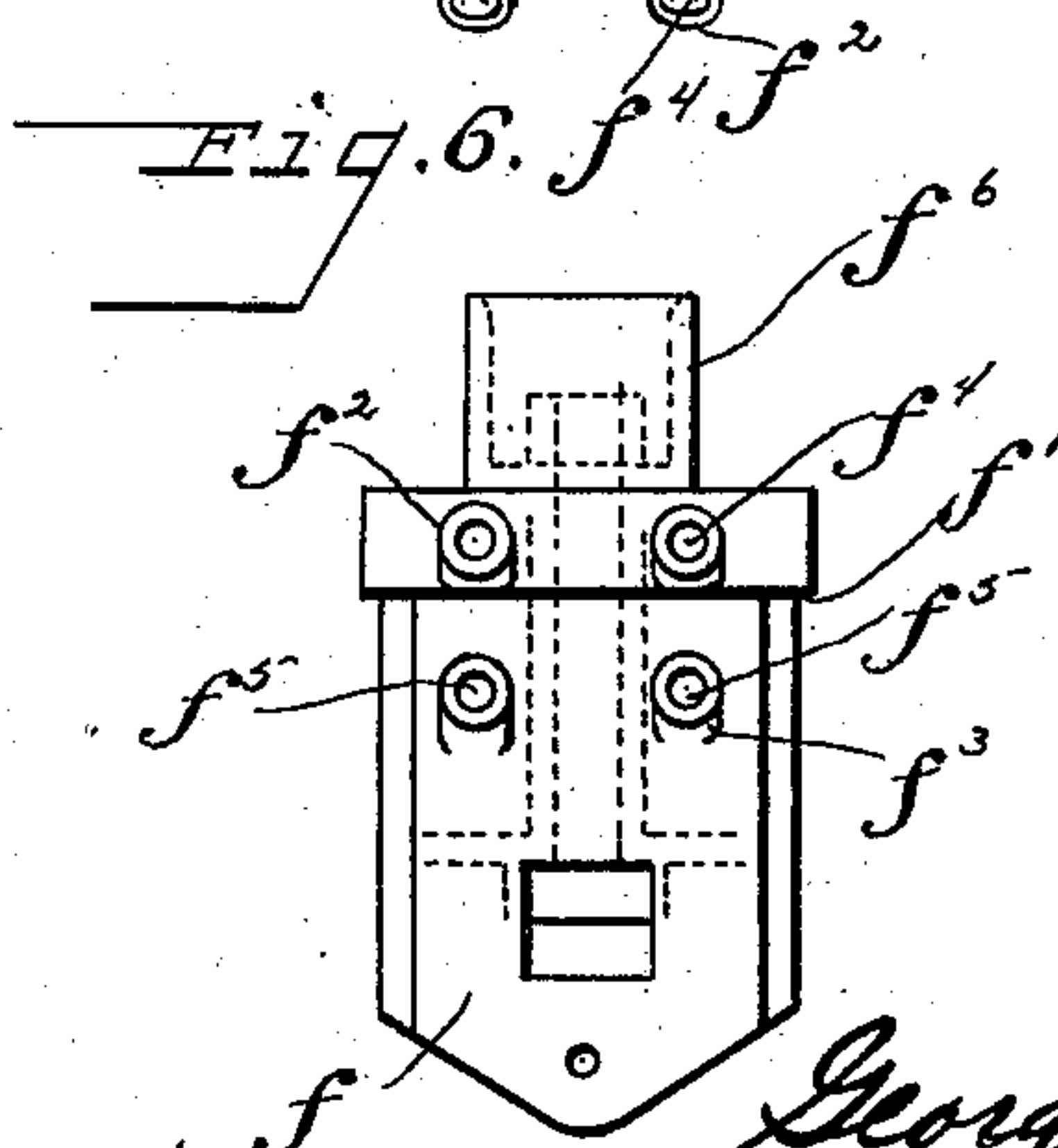
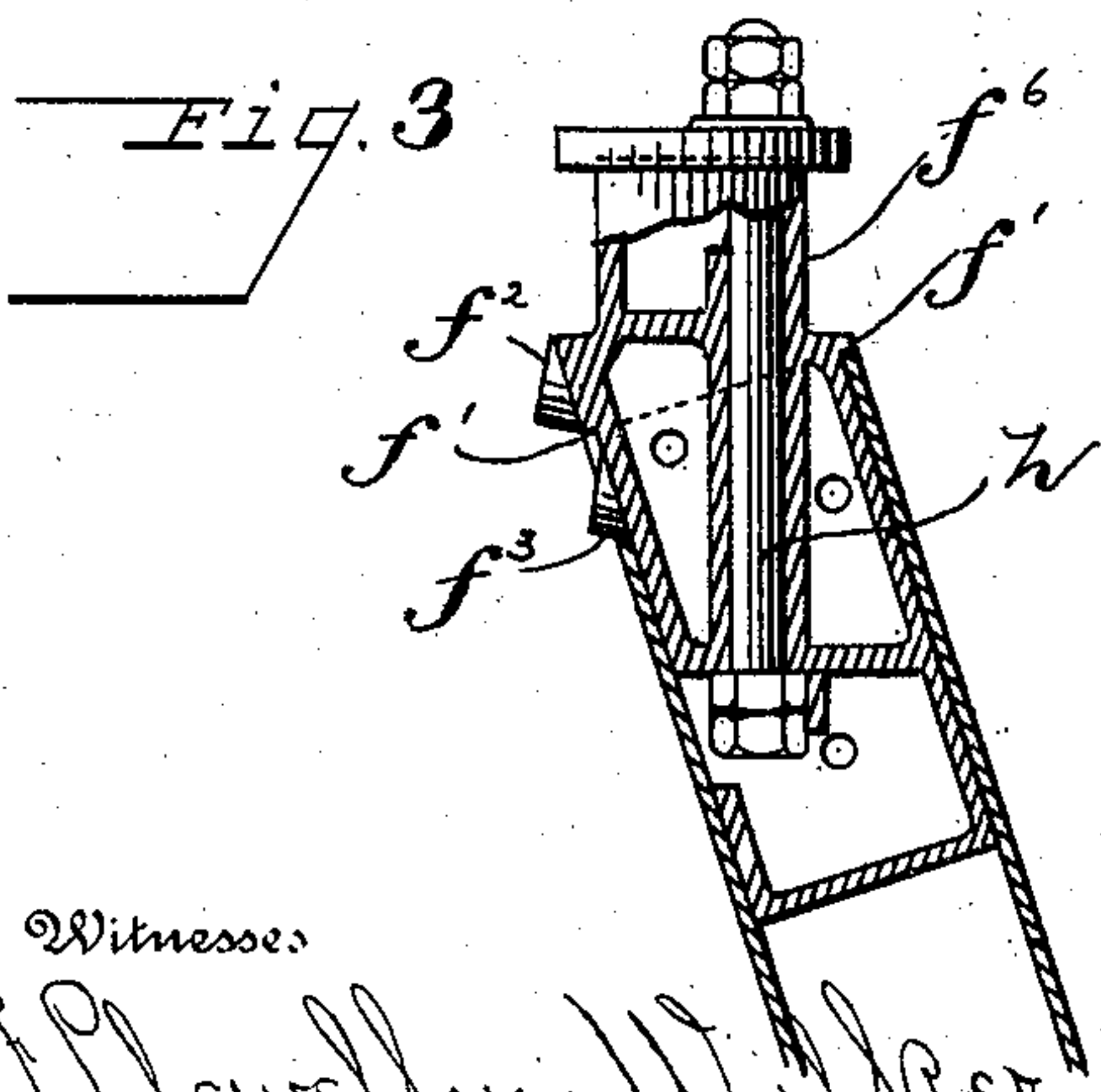
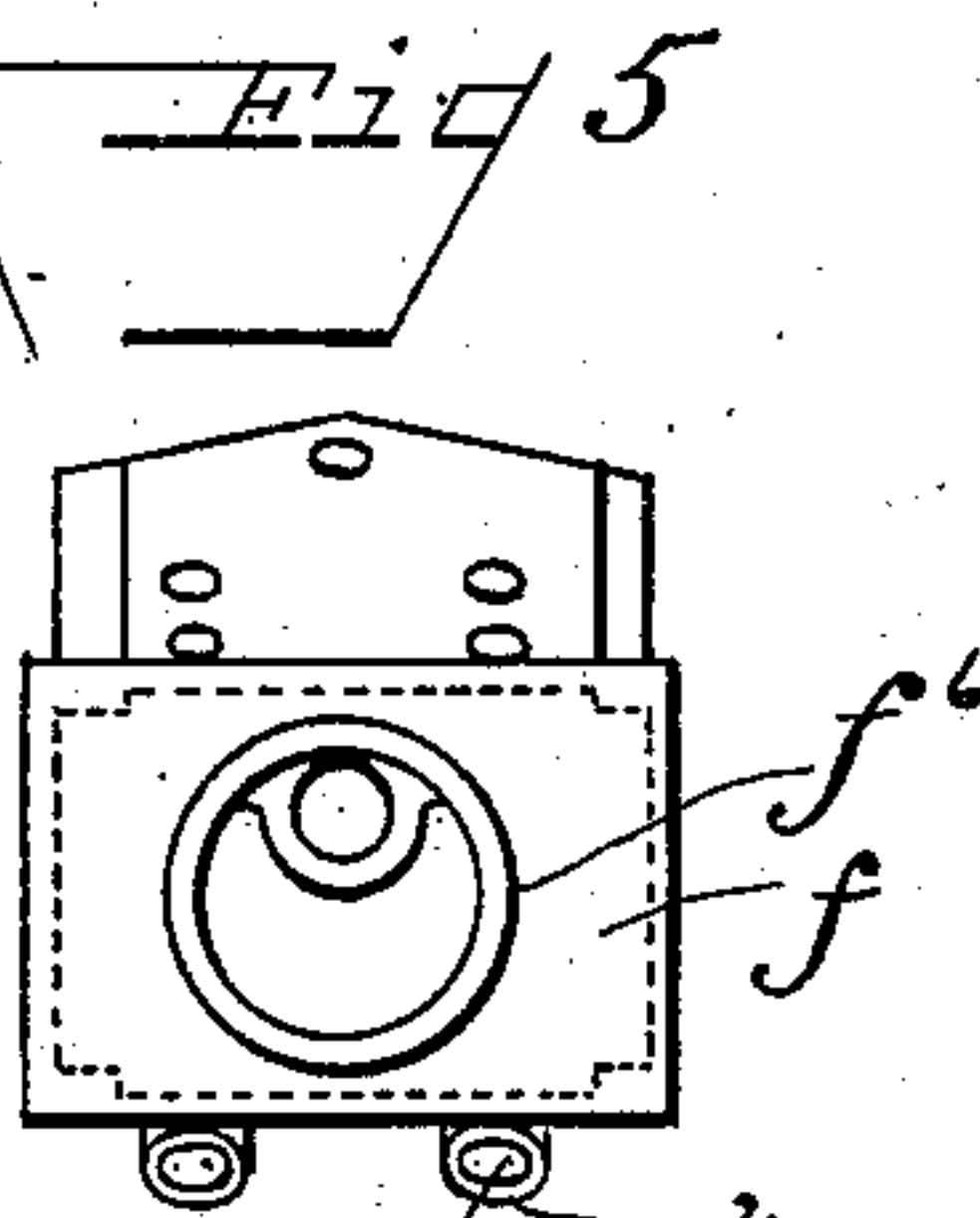
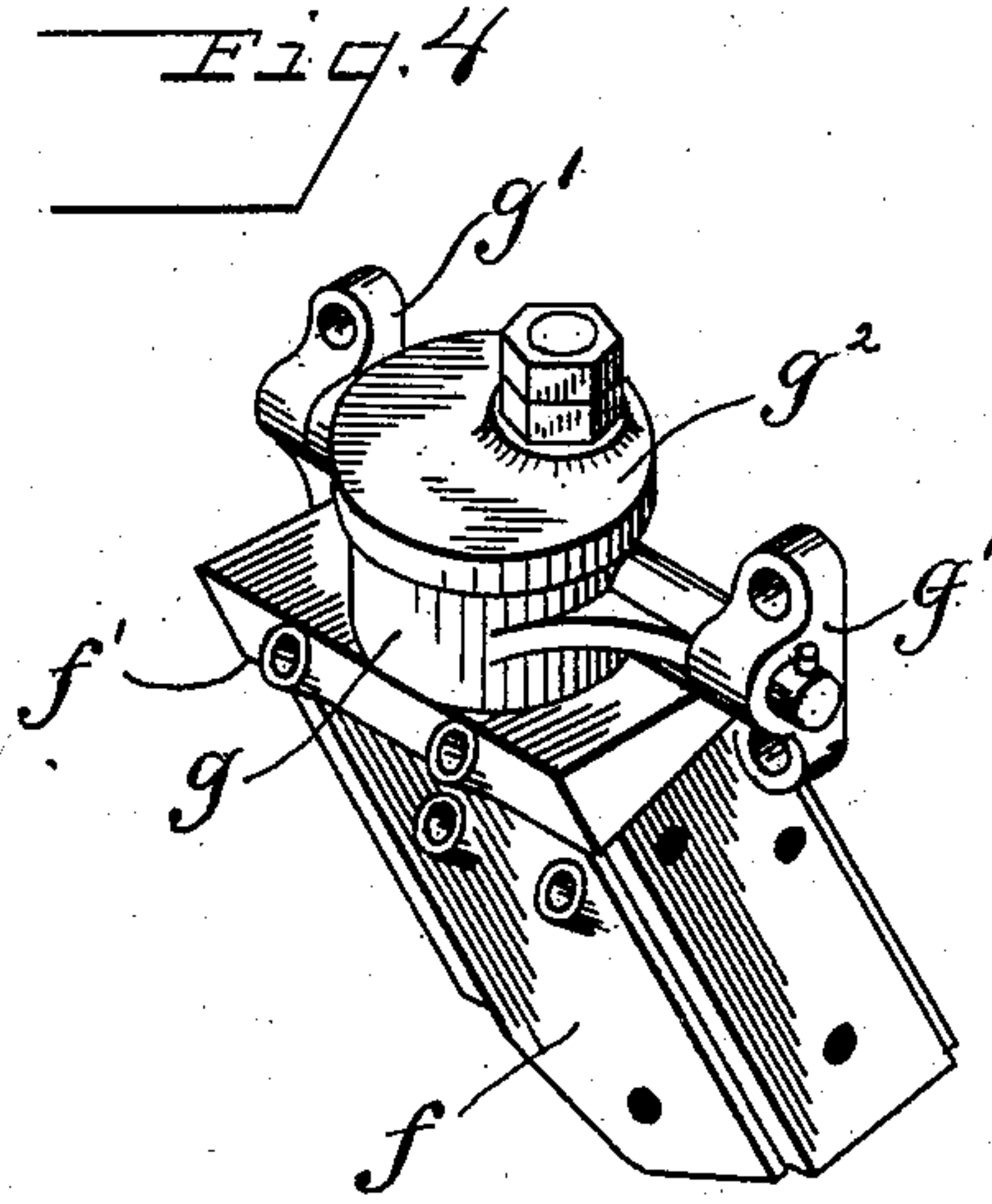
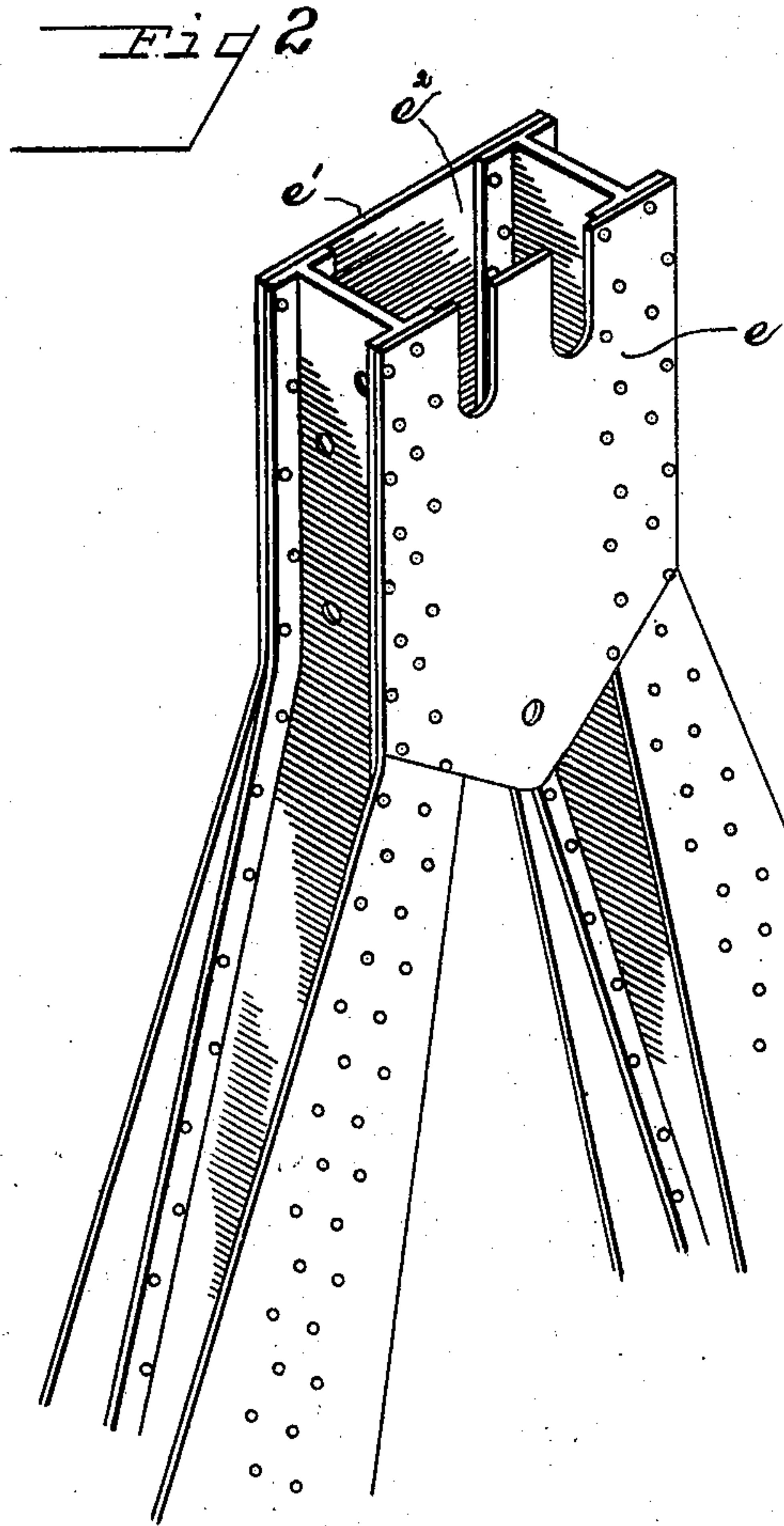
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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE E. TURNER, OF BELLEFONTAINE, OHIO.

STEAM-SHOVEL.

SPECIFICATION forming part of Letters Patent No. 762,961, dated June 21, 1904.

Application filed October 26, 1903. Serial No. 178,455. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. TURNER, a citizen of the United States, residing at Bellefontaine, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Steam-Shovels, of which the following is a specification.

My invention relates to improvements in steam-shovels, and it especially relates to improvements in the constructions of the supporting-frame of the shovel-arm.

My invention consists in the constructions and combinations of parts hereinafter described.

In the drawings, Figure 1 is a side elevation of a portion of a steam-shovel, some of the parts being more or less diagrammatic, illustrating my invention. Fig. 2 is a view in perspective of a portion of the A-frame which forms a part of the shovel-arm support. Fig. 3 is a sectional view of a portion of the same, showing the supporting neck or head forming a part of said frame. Fig. 4 is a perspective view of this head removed. Fig. 5 is a top view, and Fig. 6 a side elevation, of the same.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, *a* represents a main frame of a steam-shovel, *b* the swinging arm or support, and *c* the A-frame which forms a part of the support therefor. This A-frame is connected in the usual way to the main frame *a* by truss-rods *d* and to the outer end of the arm *b* by truss-rods *d'*. The A-frame *c*, to which my invention particularly relates, is built up of structural iron, preferably of I-beams, which are joined together at the top and spaced one from the other by plates *e* and *e'*, which are riveted firmly to the respective I-beams, so as to form a pocket *e''*. The head to which the upper attachments are made to this A-frame consists of a separate piece *f*, preferably formed of a steel casting and shaped to fit into the pocket *e''*. This head *f* is provided with shoulders or flanges *f'*, which are adapted when the head is in place in the pocket to rest on top of the I-beams and plates *e* and *e'*, respectively. The head is provided on one side with bosses *f''* and *f'''*, and

openings *f''* *f'''* through the same receive the ends of the truss-rods *d'*, the bosses being arranged at the proper angle to compensate for the inclination of these truss-rods. It will be understood that this head forms a support for the outer or upper end of the arm *b*, and as this arm swings from side to side this support must be a hinged or pivotal one and is made through the agency of a sleeve *g*, which is adapted to fit on a neck *f''* of the head. The truss-rods *d'*, which connect to the outer end, pass through the pivotal bearings *g'* on opposite sides of the sleeve *g*. A cap *g''* on the neck *g* holds the parts in position. In practice it frequently happens that the severe strain to which this head is subjected and the methods of casting the same, which may develop a defect therein, cause the head to break off, and as it is as heretofore constructed made a solid or integral part of the A-frame considerable difficulty is experienced in renewing or repairing the same. In the event of breakage it is evident that the entire outer end of the shovel is released and may cause considerable damage. Inasmuch as the defect, if any exists in the casting, generally opens at the rear of the neck, I have provided an additional means of securing it in the shape of a bolt *h*, which passes through a portion of the head *f* and the sleeve *f''* and the cap *g''*. This bolt serves the double purpose of holding the cap in place and also of strengthening the neck in such a manner that if there should, by reason of a defect or otherwise, a breakage occur the same will be held from separating and retained in position until it could be repaired. By the arrangement of the A-frame and the pocket which is formed therein, into which the head is adapted to slip, the parts are made removable, so that they can be readily repaired or renewed, as desired.

Having thus described my invention, I claim—

1. In a steam-shovel, the combination of the A-frame having a pocket therein, of a removable head to fit in said pocket, substantially as specified.

2. The combination of the A-frame and the pocket as described, of the removable head to fit in said pocket, said head having the ex-

tended flanges or shoulders to engage on the top of said frame, substantially as specified.

3. The combination with the **A**-frame, the swinging arm and the main frame, of the removable head having the supporting-lugs for the frame truss-rods, and a neck or journal forming the bearing for the ends of the arm truss-rods, and a cap having a bolt extending through said neck and a portion of said head, substantially as and for the purpose specified.

4. In a steam-shovel, an **A**-frame, a removable head forming part of the same, said head having an integral neck and a flanged cover, and a strengthening-bolt extending through said neck and adapted to secure said cover, substantially as specified.

5. The combination with the **A**-frame formed with the **I**-beams as described and joined together by front and rear plates, which, with said **I**-beams, form a pocket, a removable head having shoulders to engage the top of said **I**-beams and plates, a neck and a removable cover therefor, a strengthening-bolt extending through said neck and a part of said head to hold said cover and strengthen said neck, substantially as specified.

In testimony whereof I have hereunto set my hand this 22d day of October, A. D. 1903.

GEORGE E. TURNER.

Witnesses:

JOHN E. WEST,
L. E. PETTIT,