

J. N. MAHER.
OIL WELL PUMPING RIGGING.

No. 575,122.

Patented Jan. 12, 1897.

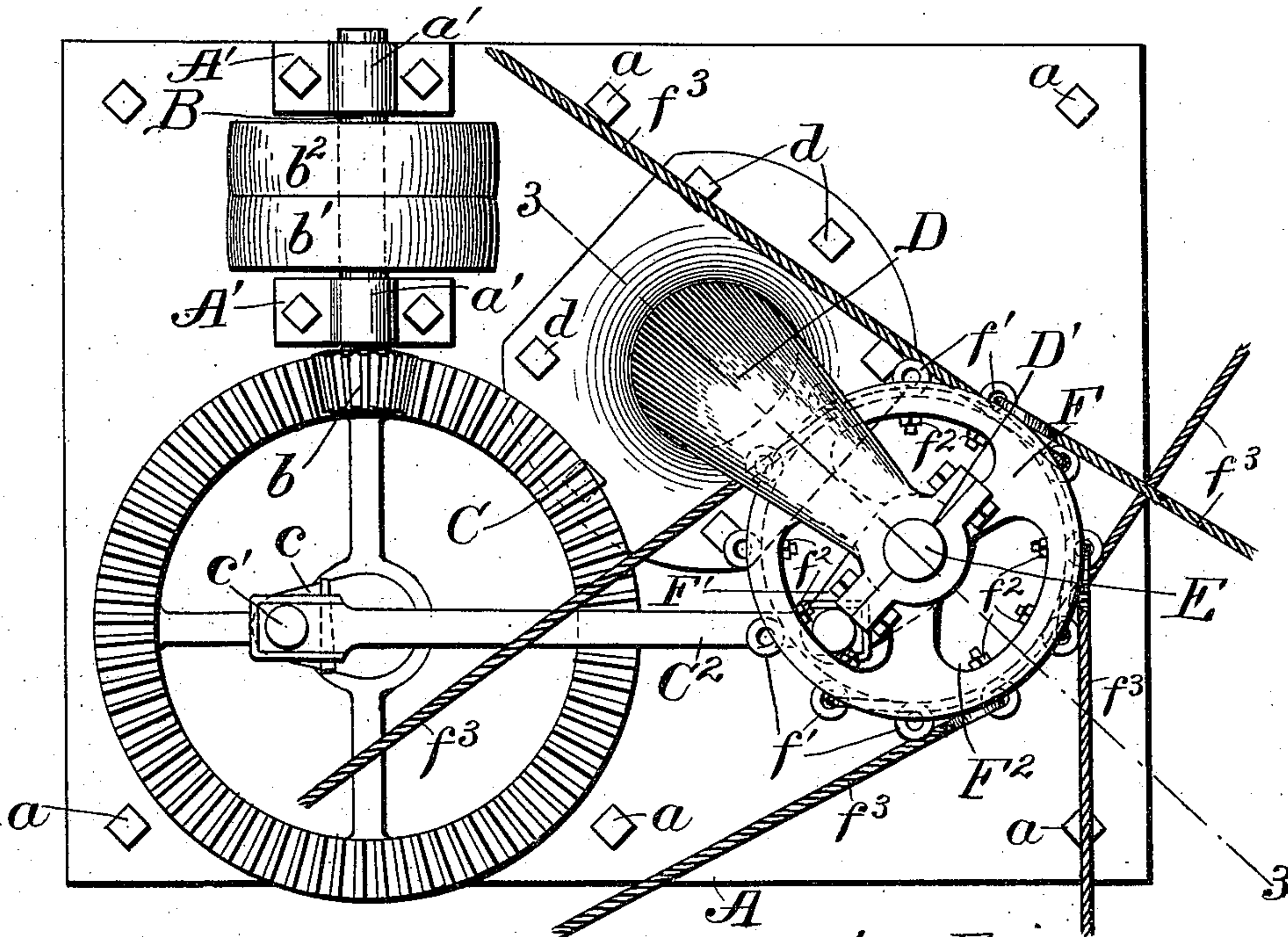


FIG. 1.

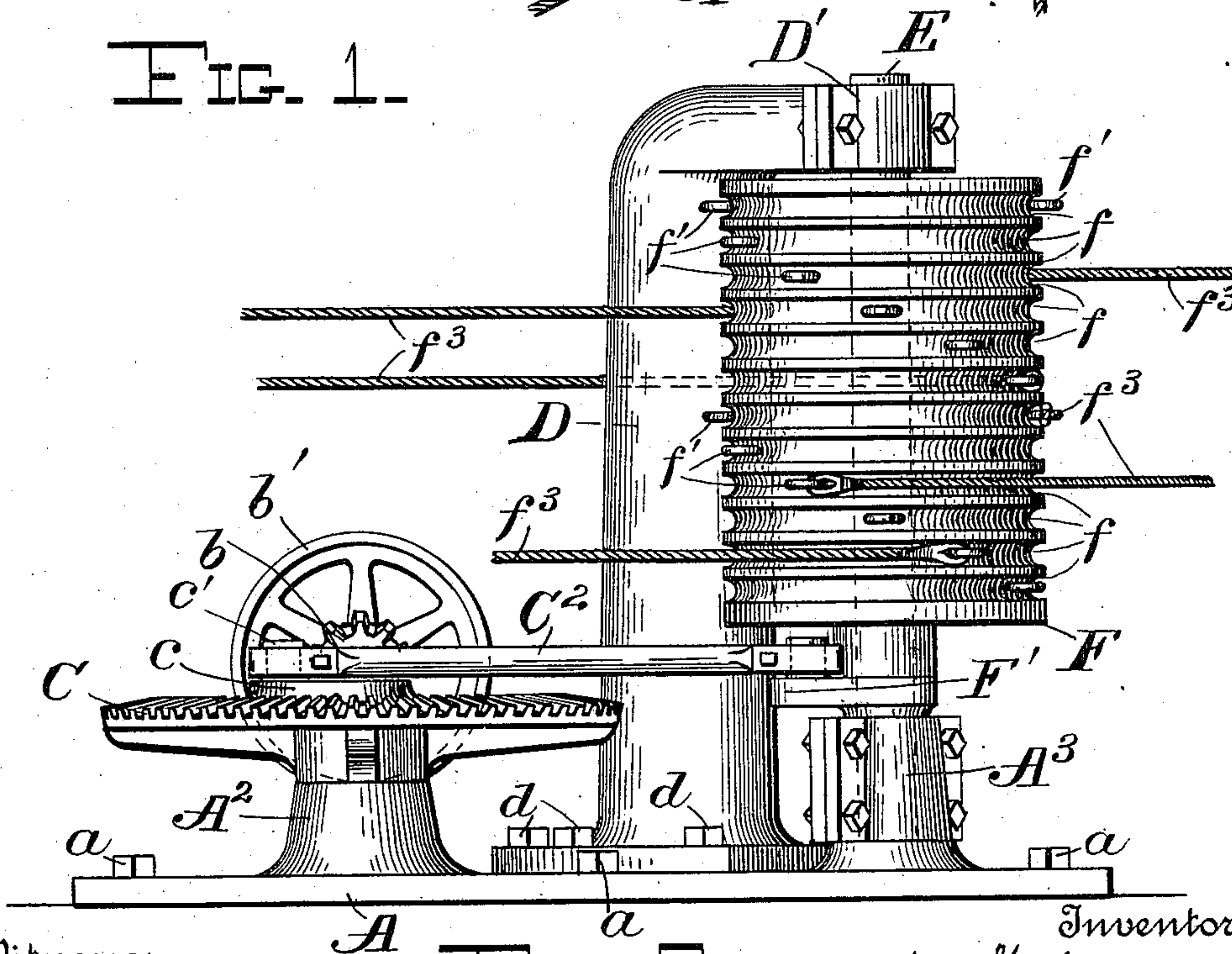


FIG. 2.

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(No Model.)

3 Sheets—Sheet 2.

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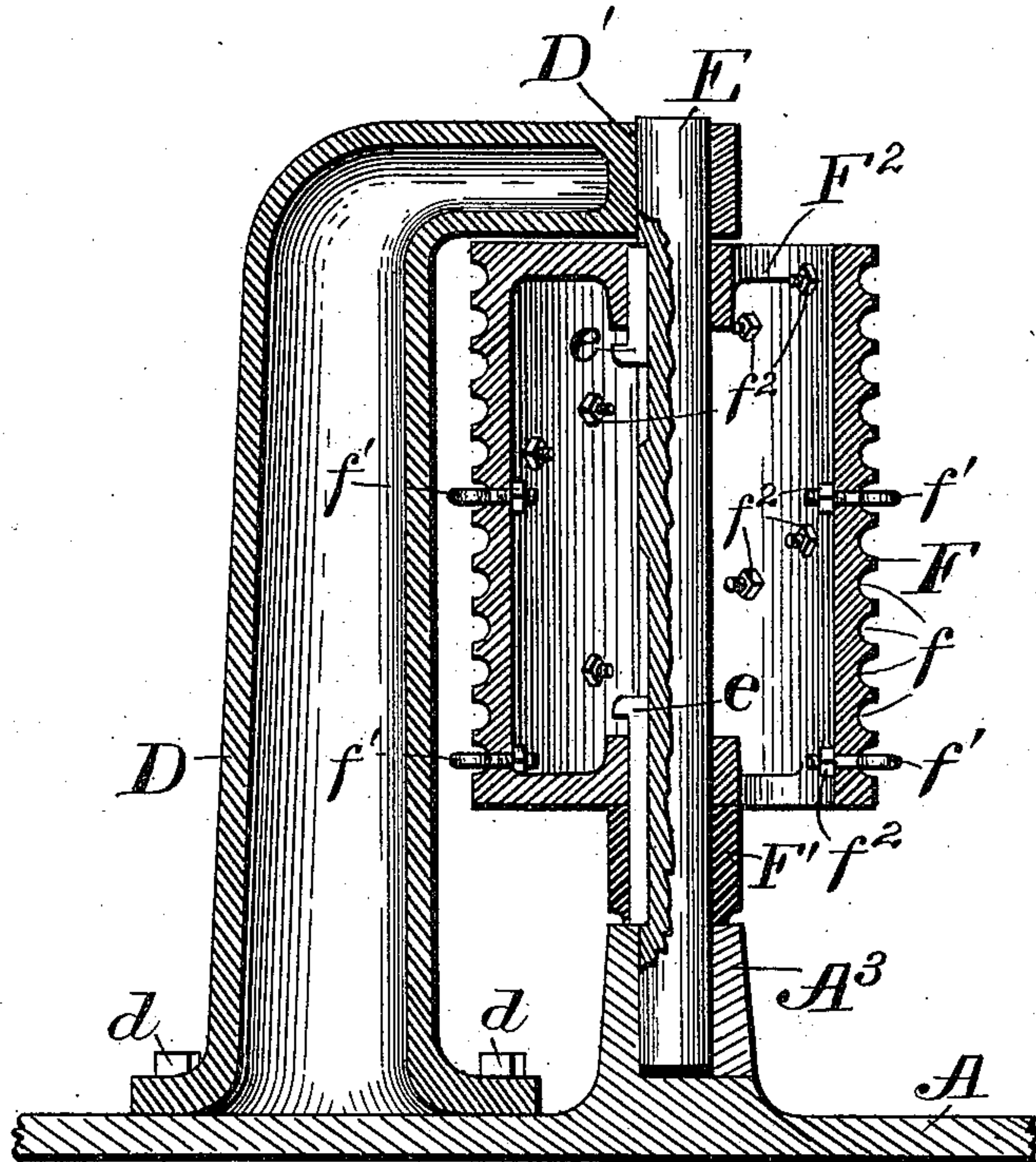


FIG. 3.

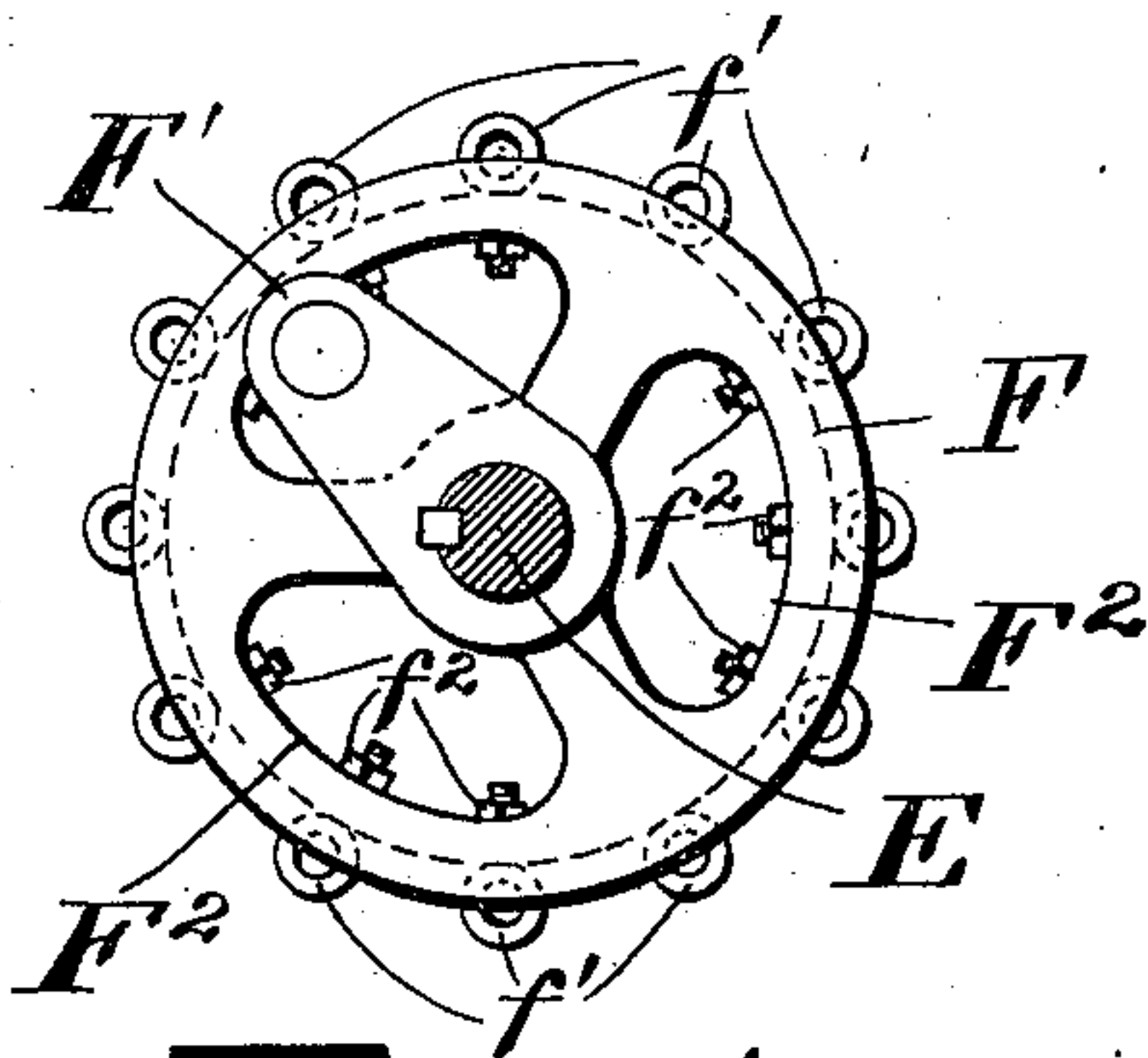


FIG. 4.

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3 Sheets—Sheet 3.

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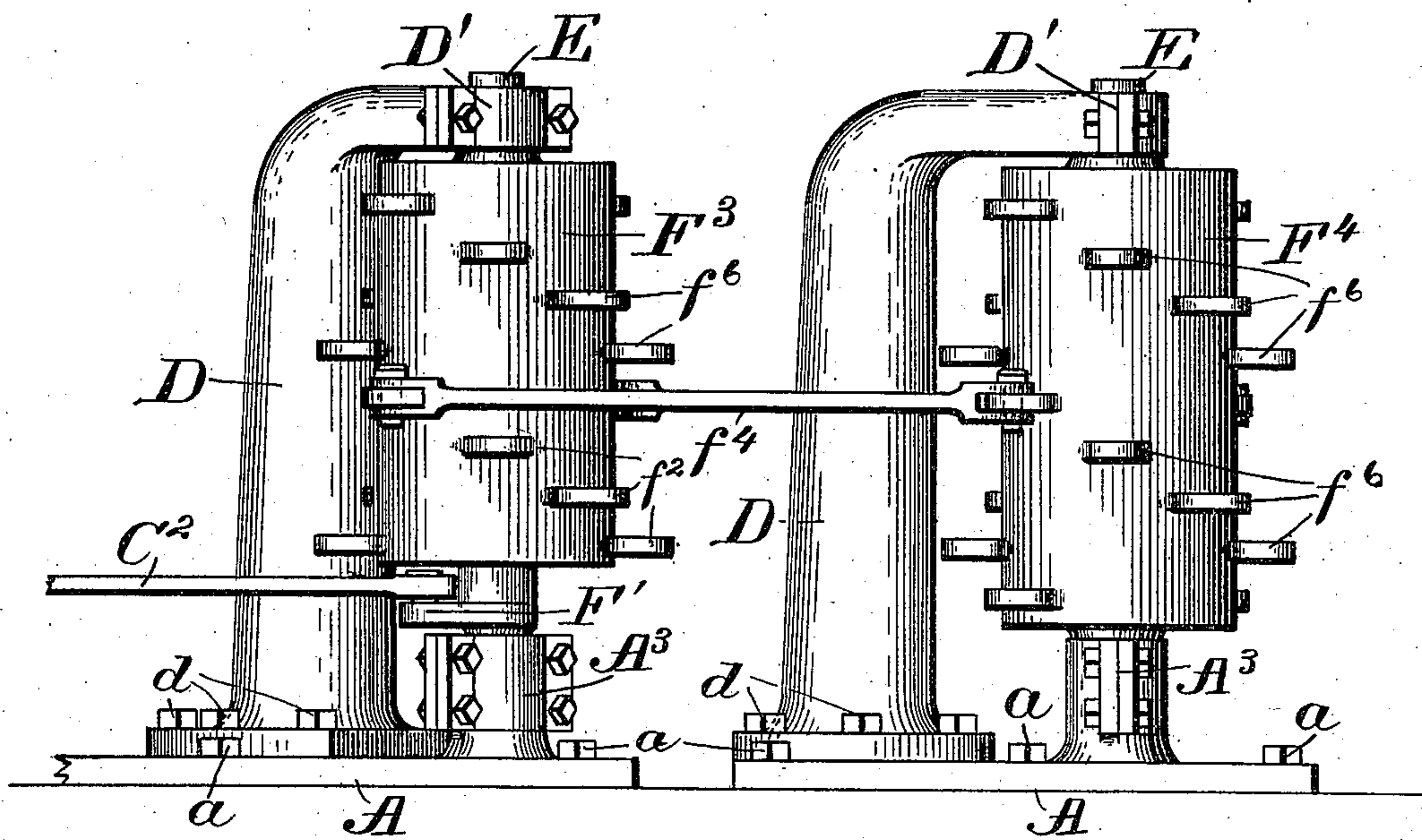


FIG. 5.

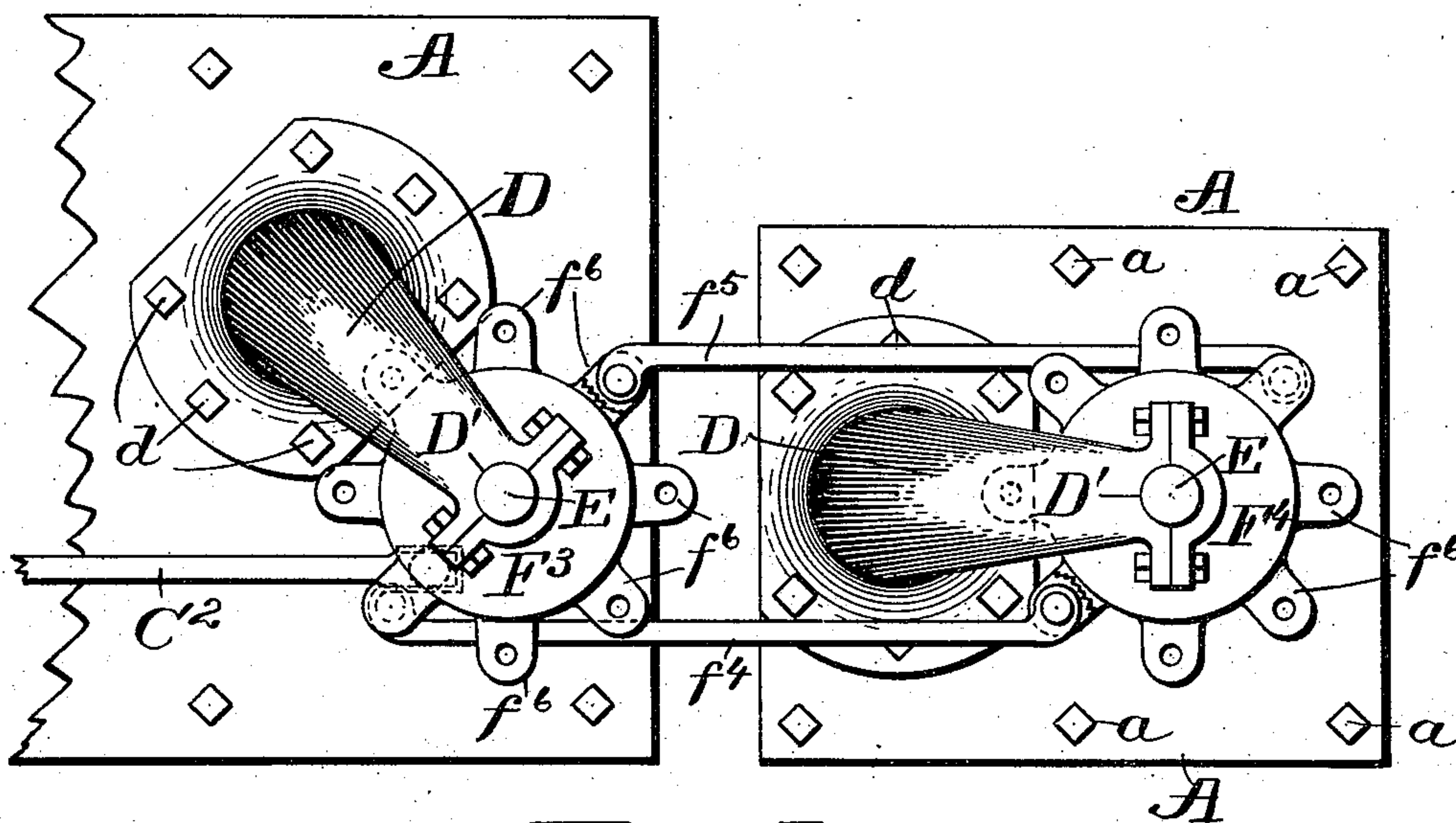


FIG. 6.

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UNITED STATES PATENT OFFICE.

JOHN N. MAHER, OF FRANKLIN, PENNSYLVANIA.

OIL-WELL-PUMPING RIGGING.

SPECIFICATION forming part of Letters Patent No. 575,122, dated January 12, 1897.

Application filed September 2, 1896. Serial No. 604,639. (No model.)

To all whom it may concern.

Be it known that I, JOHN N. MAHER, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Well-Pumping Rigging; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in rigging for oil-well pumps, the object being to provide a device by which a plurality of pumps may be operated from a single shaft, and also to provide a rigging which will be simple in construction and reduce to a minimum the liability to accidents usually encountered in oil-well pumping, and in the event of accident to provide a mechanism so constructed that its parts will be readily interchangeable.

With the above objects in view my invention consists of the novel construction and combination of parts hereinafter fully described and claimed.

Referring to the accompanying drawings, in which like letters of reference designate the same parts throughout the several views, Figure 1 represents a plan of my improved rigging for oil-well pumps. Fig. 2 represents a side elevation of the same. Fig. 3 is a vertical sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is an inverted view of the drum. Fig. 5 represents a side elevation of a modified form of the device, and Fig. 6 represents a plan of the same.

A designates the base of the machine, which may be bolted to any suitable ballast by the bolts *a*.

A pair of pillow-blocks *A'* project upwardly from the base *A* and have bearings *a'* for a shaft *B*. This shaft *B* is provided with fast and loose pulleys *b'* and *b''*, by which it may be driven from any suitable source of power, and is also provided with a bevel-pinion arranged to mesh with a bevel gear-wheel *C*.

The bevel gear-wheel *C* is supported on a vertical shaft mounted in a suitable bearing *A''* upon the base *A*, and the said wheel is provided with a crank *c* and wrist-pin *c'*, for a purpose to be hereinafter described.

A second bearing *A'''* is provided on the base *A*, and a standard *D* is bolted to the base, as at *d*, and projects upwardly, having its upper end bent over the said bearing *A'''* to form a bearing *D'* in line with the bearing *A'''* for a vertical shaft *E*.

A drum *F* is keyed on the shaft *E*, as by the keys *e*, or may be cast integral with the said shaft, if preferred, and is provided round its periphery with annular grooves *f*. In each of the grooves *f* is secured one or more eyes *f'*, the stems of which are passed through the drum and threaded to receive a nut *f''* to secure the said eye in place. Openings *F''* are formed in the ends of the drum, (see Figs. 1 and 4,) through which the nuts *f''* may be screwed down. In the drawings I have shown two of these eyes *f'* at diametrically opposite points in each groove, but it will be understood that, if desirable, only one eye could be used to each groove, or three, or even four, might be used in case of necessity, but they should not be placed close enough to interfere with the operation of the cables or chains, as will be hereinafter described. A crank *F'* is also keyed to the shaft *F* and connected by a connecting-rod *C''* with the crank *c* on the bevel-wheel *C*, and the relative length of these two cranks are such that each revolution of the crank *c* on the wheel *C* will move the crank *F'* and shaft *F* through a quarter of a circle and return. Thus the drum does not revolve, but simply oscillates through a quarter of a circle or any other distance that the cranks may be proportioned to produce.

The eyes *f'* are connected by flexible connections, such as chains, ropes, or cables *f'''*, with the rods from the oil-well pumps. These cables are so connected to the eyes on the drum that while half or any desired number of the well-rods are being lifted the others are going down, thus balancing the drum and causing it to be operated very easily after it is once started.

In the modification shown in Figs. 5 and 6 I have shown two drums *F'''* and *F''''* connected together by the connecting-rods *f''''* and *f'''''* on opposite sides, so that the second drum *F''''* will receive the same motion as the first drum *F'''*. This second drum may be used in place of the ordinary pull-wheel. In this instance I have shown projections *f''''*, perforated to re-

ceive pins, to attach the connecting-rods $f^4 f^5$, and also the rods from the wells; but I do not desire to confine myself to either the eyes or projections, as any convenient means of
 5 attaching the rods or cables to the drums might be used. By this arrangement a large number of well-pumps may be attached to one drum, and it does not matter whether they are in the same or different directions
 10 from the rigging, as in either case they may be so attached that when part of the rods are coming up the others will be going down, thus balancing the drum. The numerous other advantages of this construction will be
 15 clearly apparent to those skilled in the art to which it appertains.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

20 1. In a rigging for oil-well pumps, the combination with a bevel gear-wheel, a crank on the said bevel gear-wheel a pinion meshing with the said bevel gear-wheel, and means for rotating the said pinion, of a drum, a
 25 crank connected with the said drum, grooves in the surface of the said drum, eyes secured in the said grooves, and connected with the pumps and a connecting-rod connected with the two cranks to oscillate the drum, substan-
 30 tially as described.

2. In a rigging for oil-well pumps, the combination with a base, a bevel gear-wheel mounted thereon, a bevel-pinion also mounted thereon, a crank on the said bevel gear-
 35 wheel, and means for rotating the said pinion; of a shaft mounted in bearings on the said base, a crank keyed on the said shaft and connected with the crank on the gear-wheel,

a drum also keyed on the said shaft, eyes on the said drum and means for connecting the
 40 said eyes with the oil-pumps, substantially as described.

3. In a rigging for oil-well pumps, the combination with a base, a bevel gear-wheel mounted thereon, a bevel-pinion also mounted
 45 thereon, a crank on the said bevel gear-wheel, and means for rotating the said pinion; of a bearing mounted on the said base, a standard secured to the said base and bent over the said bearing, a bearing in the end of the
 50 said standard, a shaft mounted in the said bearings, a crank keyed on the said shaft and connected with the crank on the gear-wheel, a drum also keyed on the said shaft, eyes on the said drum and means for con-
 55 necting the said eyes with the oil-pumps, substantially as described.

4. In a rigging for oil-well pumps, the combination with a bevel gear-wheel, a crank on the said bevel gear-wheel a pinion meshing
 60 with the said bevel gear-wheel, and means for rotating the said pinion, of a drum, a crank connected with the said drum, grooves in the surface of the said drum, eyebolts secured in the said grooves by nuts on the in-
 65 side of said drum, and connected with the pumps and a connecting-rod connected with the two cranks to oscillate the drum, substantially as described.

In testimony whereof I affix my signature
 70 in presence of two witnesses.

JOHN N. MAHER.

Witnesses:

N. F. OSMER,
 JOHN L. MATTOX.