(No Model.) 3 Sheets—Sheet 1.

E. D. YATES.

OIL WELL PUMPING RIG.

No. 562,999. Patented June 30, 1896.

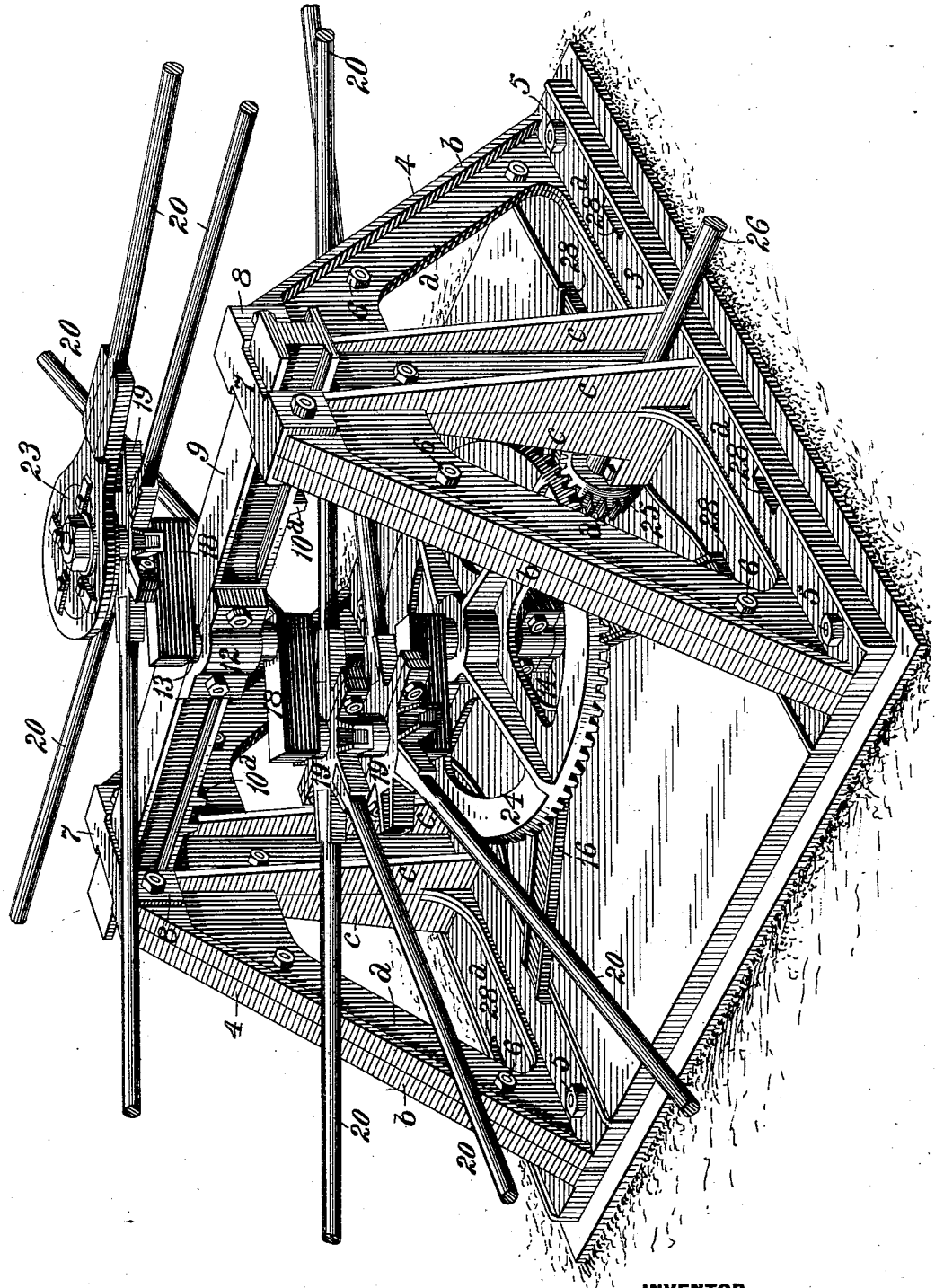

FIG. 1.

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(No Model.) 3 Sheets—Sheet 2.

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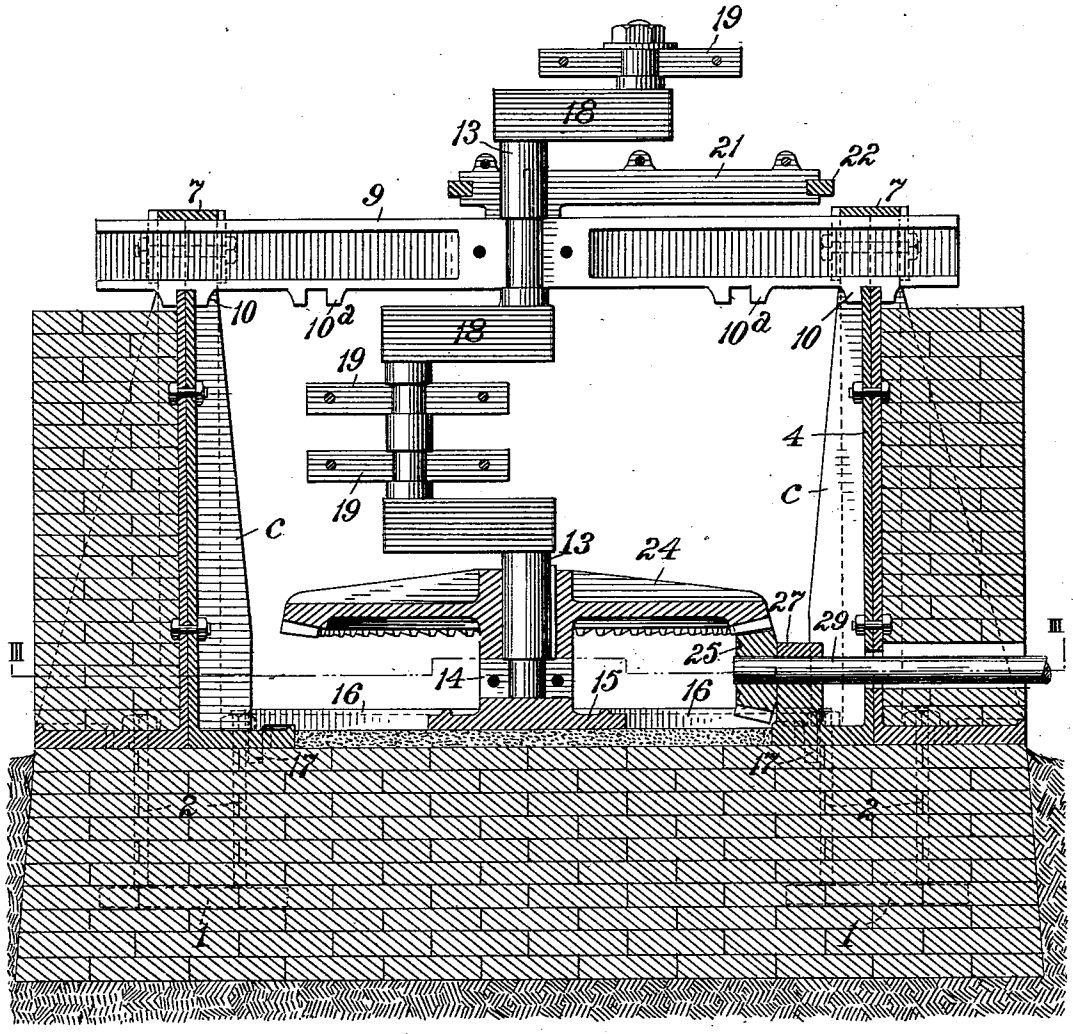
FIG. 2.



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(No Model.)

3 Sheets—Sheet 3.

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FIG. 3.

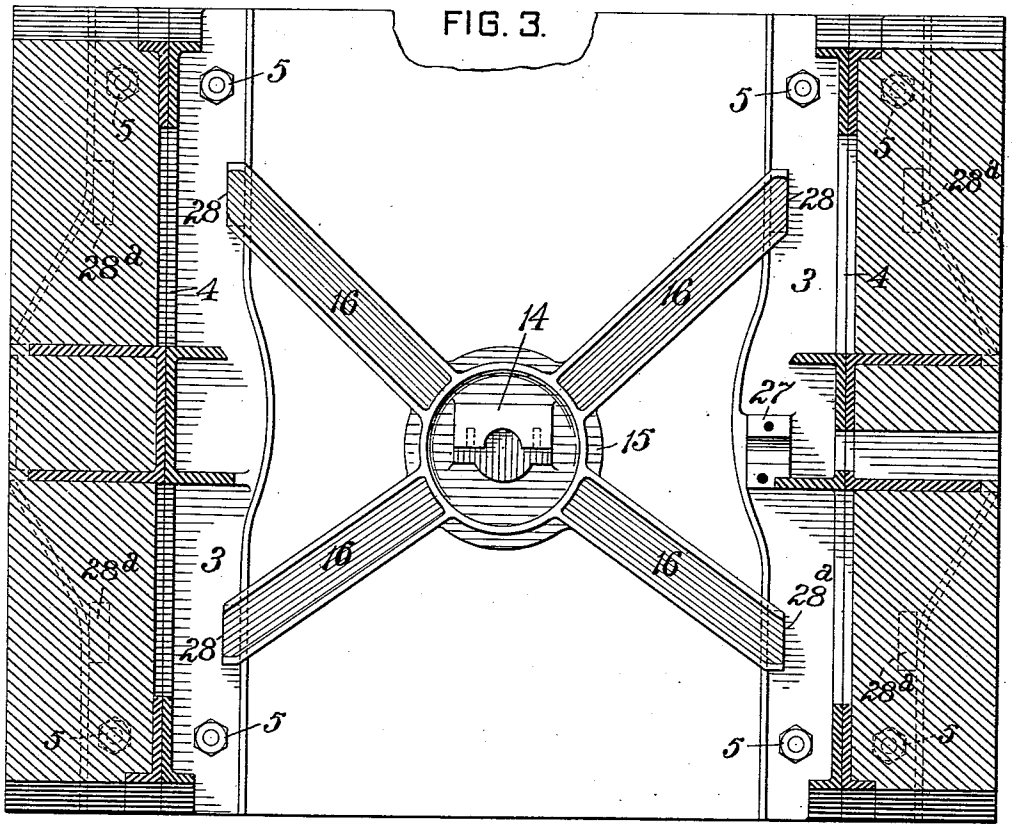


FIG. 4.

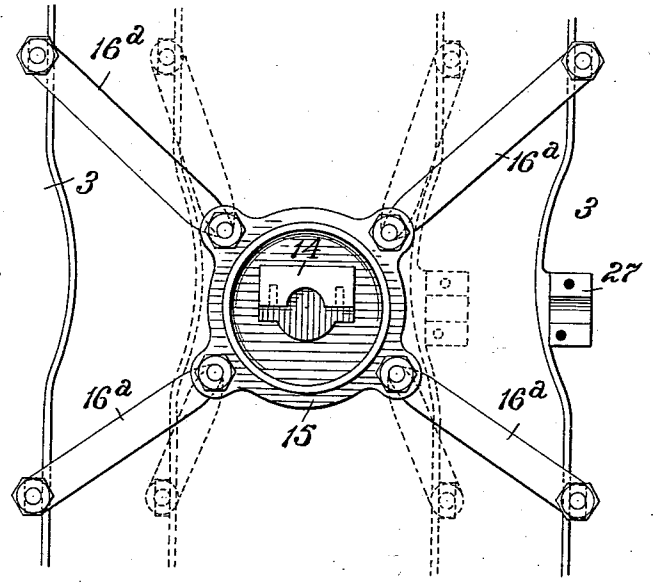
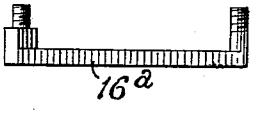


FIG. 5.



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UNITED STATES PATENT OFFICE.

EDWARD D. YATES, OF FRANKLIN, PENNSYLVANIA.

OIL-WELL-PUMPING RIG.

SPECIFICATION forming part of Letters Patent No. 562,999, dated June 30, 1896.

Application filed December 26, 1895. Serial No. 573,340. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. YATES, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Oil-Well-Pumping Rigs, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the construction of rigs or frames for supporting the central mechanism employed for distributing power to pumps of a series of widely-distributed oil-wells, and has for its object a construction of rig or frame which can be easily transported to oil-fields, which are generally at a considerable distance from railroads and manufacturing centers, and can be quickly erected by unskilled labor.

It is a further object of the invention to provide for the adjustment of parts of the rig or frame in accordance with the power required.

In general terms, the invention consists in the construction and combination, substantially as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of my improved rig or frame having the distributing-shaft mounted therein and showing the manner of distributing power to the wells. Fig. 2 is a sectional elevation of the same. Fig. 3 is a sectional plan view, the plane of section being indicated by the line III III, Fig. 2. Fig. 4 is a sectional plan view illustrating a modification in the construction of the step or lower bearing plate or gird, and Fig. 5 is a detail view of one form of connecting-arms.

In the practice of my invention I prepare a suitable brick, stone, or cement foundation in which the anchor-plates 1 are embedded. The anchor-plates are provided with bolts 2, arranged to project up through holes in the flanges 3 of the side frames or standards 4, which are held upon the foundation by nuts 5, screwing into the threaded ends of the bolts. The side frames or standards are preferably made of cast iron or steel in two parts or halves for convenience in manufacture and transportation. In order to reduce the weight, each section or part of the standards consists of a comparatively thin web *a* and comparatively broad peripheral rims *b*. The sections are further strengthened by side ribs *c*, gradually increasing in width from the top of the standards to the base. The sections are fastened together by bolts 6, and at their upper ends by caps 7, which will be hereinafter more fully described. The standards are provided at their upper ends with notches for the reception of the cross-beam 9, which is provided on its under side with lugs 10, adapted to pass on opposite sides of the standards and thereby prevent any longitudinal movement of the beam and brace the standards laterally. The cross-beam is held in position in the notches by any suitable device, but preferably by the caps 7, which consist of a bar or strip provided at its ends with U-shaped clips 8, adapted to fit over the upper ends of the standards. These caps are held in place by suitable bolts passing through the arms of the clips.

The beam is provided midway of its length with a bearing for the shaft 13, which is held in place by a cap 12. The lower end of the shaft 13 has a bearing in the step or socket 14, preferably formed integral with the plate 15, which is provided with lateral arms 16. These arms are provided at their ends with toes 17, adapted to engage slots 28 in the flanges of the standards and thereby hold the bearing-plate as against horizontal movement.

The shaft 13 is preferably formed with one, two, or more cranks 18, having disks 19, provided with radiating arms mounted loosely on the pins of said cranks, and to the arms of the disks are attached the pull-rods 20, which extend to the several wells to be pumped. If desired, the shaft 13 may be made straight and a series of eccentrics secured thereon, as shown at 21 in Fig. 2. The straps 22 of such eccentrics are connected, in the manner well known in the art, to one or more pull-rods. It is sometimes desirable to impart a greater or less movement to one or more of the pull-rods than that obtained from the cranks, and to this end an eccentric 23 is secured to one of the crank-pins, as shown in Fig. 1. By adjusting this eccentric around the pin, the pull rod or rods operated thereby can be given a greater or less movement than the throw of the crank.

On the shaft 13 is secured the bevel gear-wheel 24, adapted to intermesh with a bevel-pinion 25 on the power shaft 29, which is mounted near its inner end in bearing 27, formed on the inner flange of one of the standards.

In order to adapt my improved frame for use with shafts having different lengths of crank-arms and different diameters of gear-wheels, the cross-beam is provided with additional lugs 10^a, thereby permitting the side frames or standards to be arranged at different distances apart with the same cross-beam, and in order to adapt the bearing-plate 15 to the different adjustments of the standards, additional slots 28^a are formed in the flanges or bases of the standards. The bearing-plate can be adapted to different positions of the standards by employing detachable arms 16^a of different lengths for connecting the bearing-plate to the bases or flanges of the standards, as shown in Figs. 4 and 5.

If desired, the standards or side-frames may be braced laterally by increasing the width of the side ribs *c* and the portion of the flanges or bases of the standards adjacent to the ribs, as shown in Figs. 2 and 3, or, if preferred, the masonry can can be extended up outside of the standards, or both means may be employed.

I claim herein as my invention—

1. In an oil-well-pumping rig, the combination of side frames or standards, each consisting of two similar vertical sections adapted to be secured together, a cross-beam supported by the standards and provided with a shaft-bearing, caps for holding the cross-beam in position on the standards, and a bearing-plate provided with arms whereby it is adjustably connected to the standards at their lower ends, substantially as set forth.

2. In an oil-well-pumping rig, the combination of side frames or standards, a cross-beam provided with a shaft-bearing and constructed to laterally brace the upper ends of the standards, means for holding the cross-beam in position on the standards, and a bearing-plate provided with arms, whereby it is adjustably connected to the standards at their lower ends, the cross-beam and bearing-plate being constructed to permit of the adjustment of the standards toward and from each other, substantially as set forth.

3. In an oil-well-pumping rig, the combination of side frames or standards having notches in their upper ends, a cross-beam provided with a shaft-bearing and having two, four or more sets of lugs adapted to fit on opposite sides of the side frames or standards, caps for holding the cross-beam in position in the notches of the standards and a bearing-plate and means for connecting the bearing-plate to the lower ends of the standards in different relative positions of the latter, substantially as set forth.

In testimony whereof I have hereunto set my hand.

EDWARD D. YATES.

Witnesses:
W. S. WHITAKER,
THOS. G. ELLIS.