

No. 760,266.

PATENTED MAY 17, 1904.

R. R. SMITH.
PUMP ROD COUNTERBALANCE.

APPLICATION FILED FEB. 29, 1904.

NO MODEL.

Fig. 1.

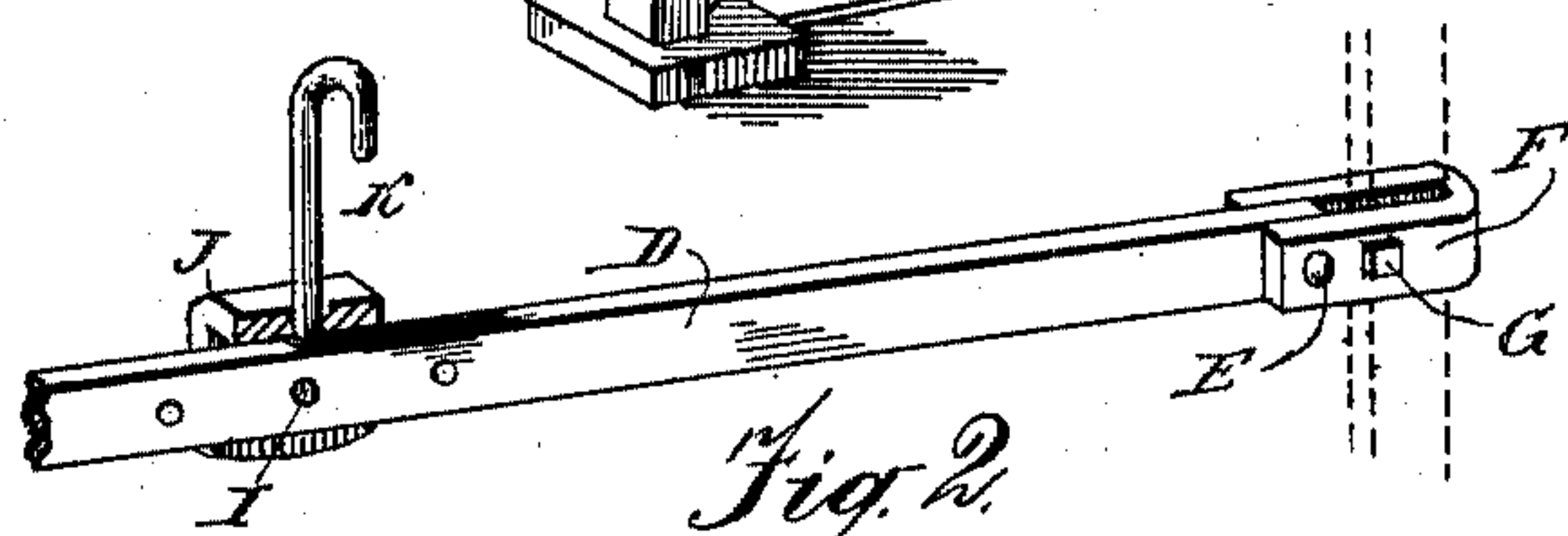
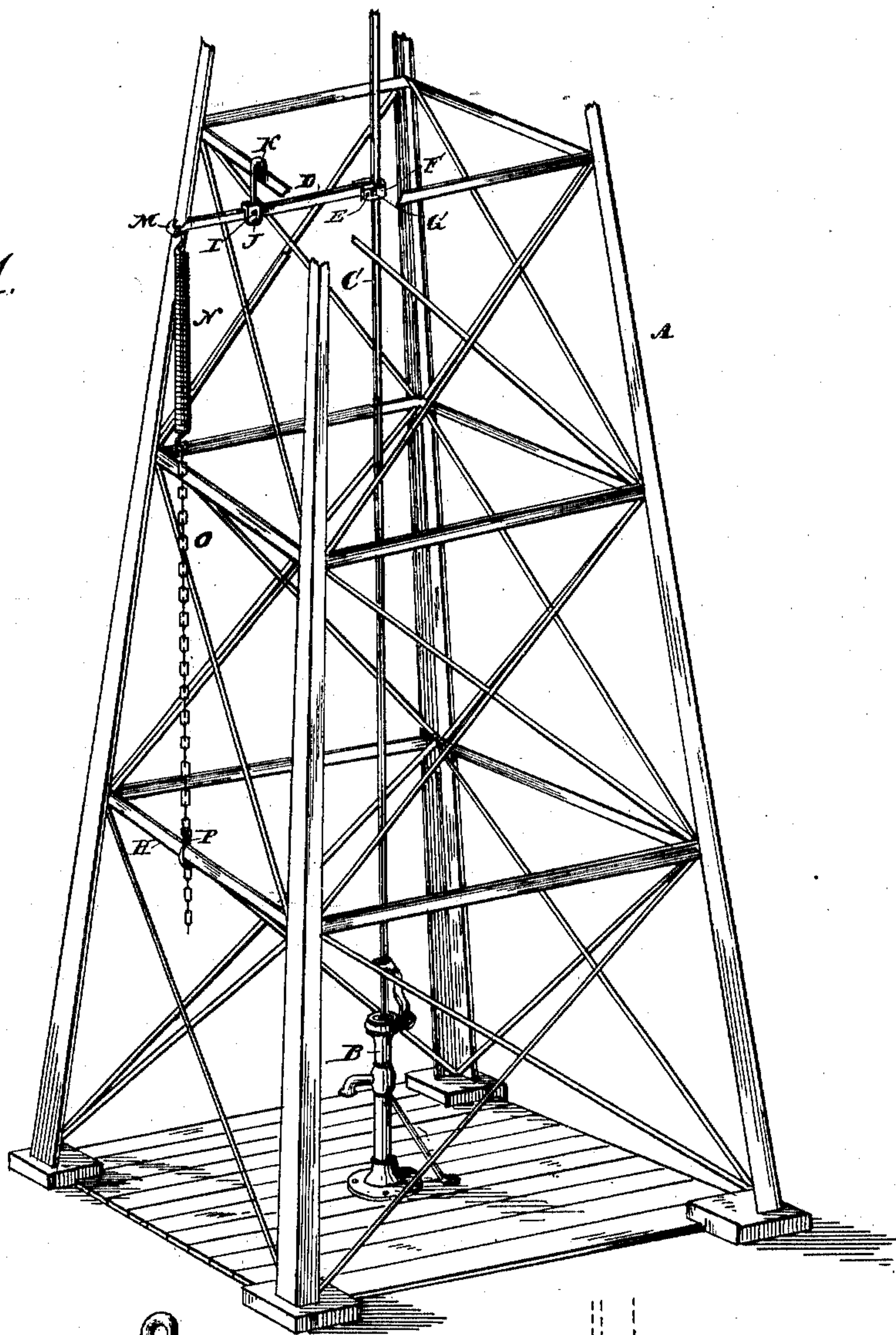


Fig. 2.

Witnesses.
G. J. Hubick
Robert Zollinger

Inventor
Robert R. Smith
By *J. M. St. John*
Atty

UNITED STATES PATENT OFFICE.

ROBERT R. SMITH, OF TRAER, IOWA.

PUMP-ROD COUNTERBALANCE.

SPECIFICATION forming part of Letters Patent No. 760,266, dated May 17, 1904.

Application filed February 29, 1904. Serial No. 195,719. (No model.)

To all whom it may concern:

Be it known that I, ROBERT R. SMITH, a citizen of the United States, residing at Traer, in the county of Tama and State of Iowa, have
5 invented certain new and useful Improvements in Pump-Rod Counterbalances, of which the following is a specification.

This invention relates to pumps operated by a windmill, and has for its object to provide a
10 simple device for counterbalancing the weight of the pump-rod and its connections, so as the better to equalize the work of the windmill crank-wheel on the upstroke and downstroke and prevent the most of the jerking and pound-
15 ing so common in the operation of pumping apparatus.

The invention embodies certain improvements in apparatus patented to Gilbert Mc-Turk and myself on the 12th day of January,
20 1904, under Letters Patent No. 749,236.

The more particular object sought to be attained in this invention is to provide for a connection of the counterbalance-lever near the upper end of the pump-rod, inasmuch as many
25 of them are quite slender and flexible, and as some pressure is brought to bear on them end-wise on the downstroke there would be a tendency on their part to bend if the lever were to be attached near the pump.

The nature of the invention will more fully and clearly appear by reference to the accompanying drawings and as set forth in the description and claims following.

In the drawings forming a part of this specification, Figure 1 is a view of a pumping-rig
35 without the windmill and illustrates the application of the device embodying this invention. Fig. 2 shows details of the counterbalance-lever and some of its connections.

A designates a windmill-tower of a familiar type, B the pump, and C the pump-rod, which is of course supposed to connect with the crank of a windmill. (Not shown.) To the pump-rod is pivotally connected one end of a
45 lever D. The connection might be direct, as by passing the pin E through the end of the

lever and a hole in the pump-rod; but as it would be inconvenient to drill such hole in pump-rods now in use it is preferred to use a clip F, straddling the pump-rod and secured
50 tightly thereto by a bolt G. This clip also straddles the end of the lever D and connects therewith by the pin E, as shown. The lever is pivoted by a fulcrum-pin I in a stirrup J, suitably connected to the supporting-frame, as
55 by a hook K, attached to the stirrup. The outer end of the lever forms a hook M, and to this is attached a strong spring N. To the outer end of the spring connects a chain O, by means of which an adjustable connection (to
60 secure the proper tension) is made with a hook P, here shown as a double hook, one end engaging a link in the chain and the other hooked to some part of the tower—a cross-brace H,
65 for example.

By this construction and arrangement that part of the pump-rod below the lever has no resistance, except the friction of the pump, to overcome on the downstroke, and there is no danger of bending the rod. At the same time
70 the mechanism which operates the pump is relieved of much of the weight or all the weight of the pump-rod and its connections, and the practical effect is to ease the operation greatly, make the apparatus run more
75 smoothly, and save wear and tear.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a pump-rod and
80 supporting-frame, substantially as described, of a lever having a pivotal connection with said rod, a fulcrum-stirrup therefor, suspending the lever from some suitable part of the supporting-frame, a spring attached to the
85 outer end of said lever, and an adjustable connection thereof with the tower below, substantially as described.

2. The combination with a pump-rod and tower, of a lever, a fulcrum suspended from
90 some portion of the tower, a clip secured to the pump-rod and pivotally connecting with

one end of said lever, a spring attached to the other end of the lever, and an adjustable connection thereof with the tower.

3. The combination with a pump-rod and
5 tower, substantially as specified, of a clip secured to the rod, a lever pivoted to said clip, a fulcrum-stirrup suitably suspended from the tower-frame by a hook engaging the stirrup, a suspending-hook, a spring attached to the

outer end of the lever, a chain depending therefrom, and a hook to connect the chain with a lower part of the tower.

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

ROBERT R. SMITH.

Witnesses:

HENRY OTT,

HENRY M. WOOLLEY.