B. F. ASPER.

Portable Derrick for Oil and other Wells.

No. 217,316. Patented July 8, 1879.

Fig. 1.

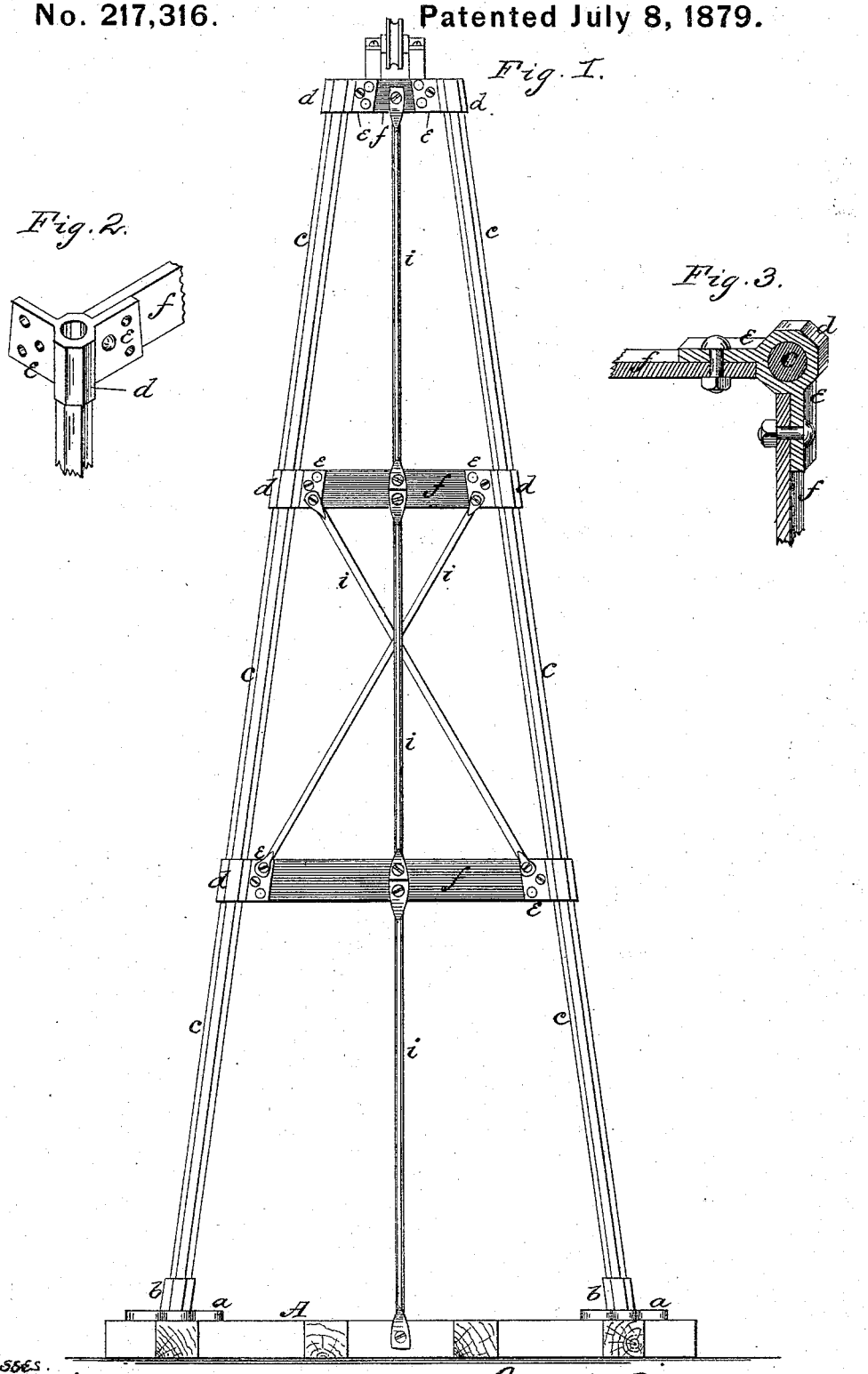

Fig. 2.

Fig. 3.

Witnesses.

F. A. Pollock.

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UNITED STATES PATENT OFFICE.

BENJAMIN F. ASPER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO EDWARD J. WARING, OF SAME PLACE.

IMPROVEMENT IN PORTABLE DERRICKS FOR OIL AND OTHER WELLS.

Specification forming part of Letters Patent No. **217,316**, dated July 8, 1879; application filed March 26, 1879.

To all whom it may concern:

Be it known that I, BENJAMIN F. ASPER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Portable Derricks for Oil and other Wells; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a front elevation of my invention. Fig. 2 is a perspective at the junction of two sections, showing the corner pieces. Fig. 3 is a plan section of the same.

The object of this invention is to construct a derrick which shall be portable—that is, capable of being taken apart for removal from one place to another without destroying the parts or in any way rendering them unfit for further use.

My invention consists in the construction and combination of parts, substantially as hereinafter fully described.

The derrick may be triangular, rectangular, or other shape, as will be seen; but for illustration I show the common form of oil-well derrick, which is a rectangular pyramid.

At the proper points on a suitable base, A, I place and firmly bolt the base-sockets, which consist of the horizontal web *a* and inclined socket *b*, as shown. The sockets *b*, as well as those to be described, are given a slight inclination, to correspond with the general convergence to a common point. Into each socket *b*, I set an upright of wood, *c*, having its end tenoned to fit the socket, where I hold it by threading the two, or by a cross-pin through the upright and socket, or by the tie-rods shown hereinafter. The uprights *c* are of such length as will be portable and readily handled. They, as well as all the uprights, have both ends similarly tenoned, so that they will all fit interchangeably.

On the upper end of each upright *b*, I place the socketed corner pieces, consisting of the counterbored or hollow body *d* and two wings or flanges, *e*, at right angles to each other, as shown, and provided with one or more transverse bolt-holes.

When all are in place on uprights *c*, I set the struts *f* by bolting them to the wings *e* of the corner castings. This all forms one section of the derrick. I next set four more uprights into the upper end of the corner pieces *d e*, and to the upper end of these another set of similar corner pieces. Then tie-rods *i* are bolted on, either diagonally to the wings *e* or vertically to the struts *f*, whereby the parts of the sections are held securely together. The first strut may be likewise tied to the base, if desired. A third section is built up in the same manner, and so on till the desired height is reached.

I thus build up any size of derrick required. If a small one be wanted, the parts for one section may do. If a medium height be desired, two or three sections will answer. If a very tall derrick be necessary, I need only to set the base-sockets at the proper distance apart, and add enough sections to get the elevation demanded. In all cases the parts are all alike and interchangeable, all the corner pieces *d e* exactly similar, as also the uprights, the only changeable parts being the diagonal tie-rods and struts; but if the vertical tie-rods be used to join section to section, or to unite several sections with one long tie-rod, this variation in sizes of tie-rods cannot arise.

The corner pieces are preferably cast-iron, the uprights of wood, the tie-rods of bar or angle iron, and the struts common boards or planks.

The diagonal tie-rods or braces may have a series of bolt-holes in their ends, and thus become interchangeable.

In this manner I produce a structure which is capable of being very speedily erected by any ordinary person, and which is very strong and secure, and, having but slight superficial surface, is but little liable to damage from wind-storms.

It is particularly designed for use in the oil regions, where test-wells are being put down continually.

The present practice is to erect the derrick of lumber; and when the well has been proved a "dry hole" or valueless the derrick is left

standing, and a new one erected for the next well, or, if taken down, only a part of it can be reused.

With my invention, however, all this useless waste of material is done away with, as it is a matter of a few hours to take down and remove the parts, and on the new site no care need be had to see that the parts occupy exactly the same positions as before, since they are interchangeable.

I claim as my invention—

1. In a portable derrick, the metal corner pieces having the counterbored or hollow body *d* and two flat wings, *e*, extending out at right angles to each other, and having two or more transverse bolt-holes, substantially as described, whereby the body is adapted to receive the ends of the uprights, and the wings for attachment of wooden planks.

2. The combination of uprights *c*, corner pieces *d*, having flat wings *e* projecting therefrom at right angles, planks *f*, and tie-rods *i*, both attached to the wings *e* by transverse bolts, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of March, 1879.

BENJAMIN F. ASPER.

Witnesses:
T. J. McTIGHE,
THOS. CONNOLLY.