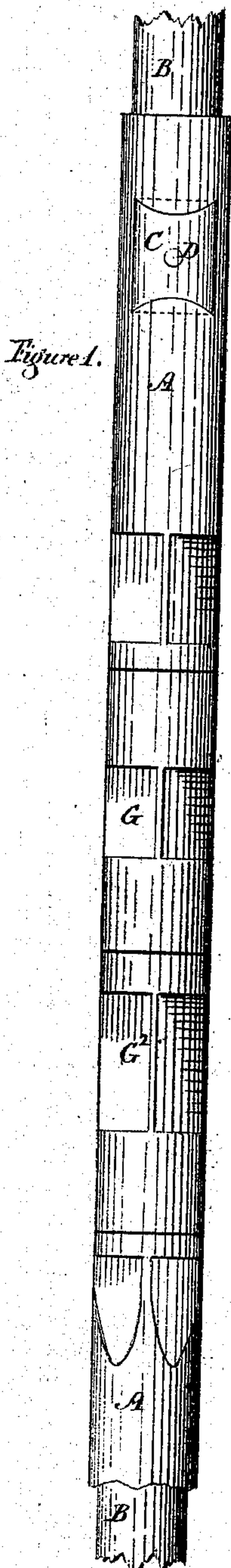


*A. Good, Jr.*

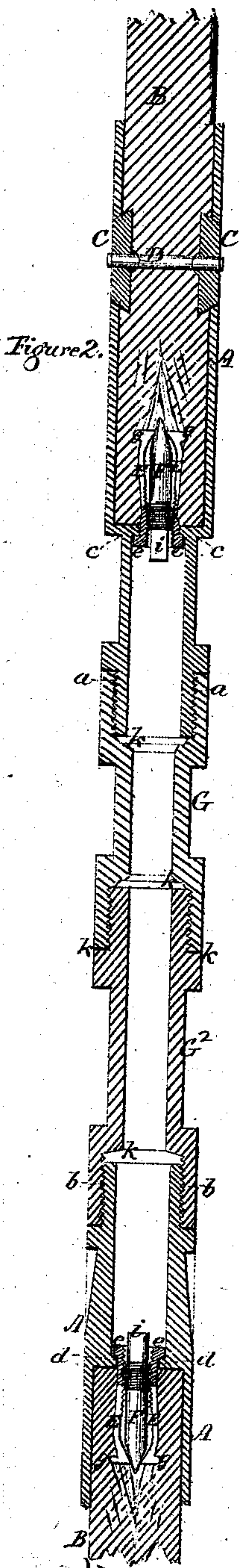
*Shaft Coupling.*

*No. 104,576.*

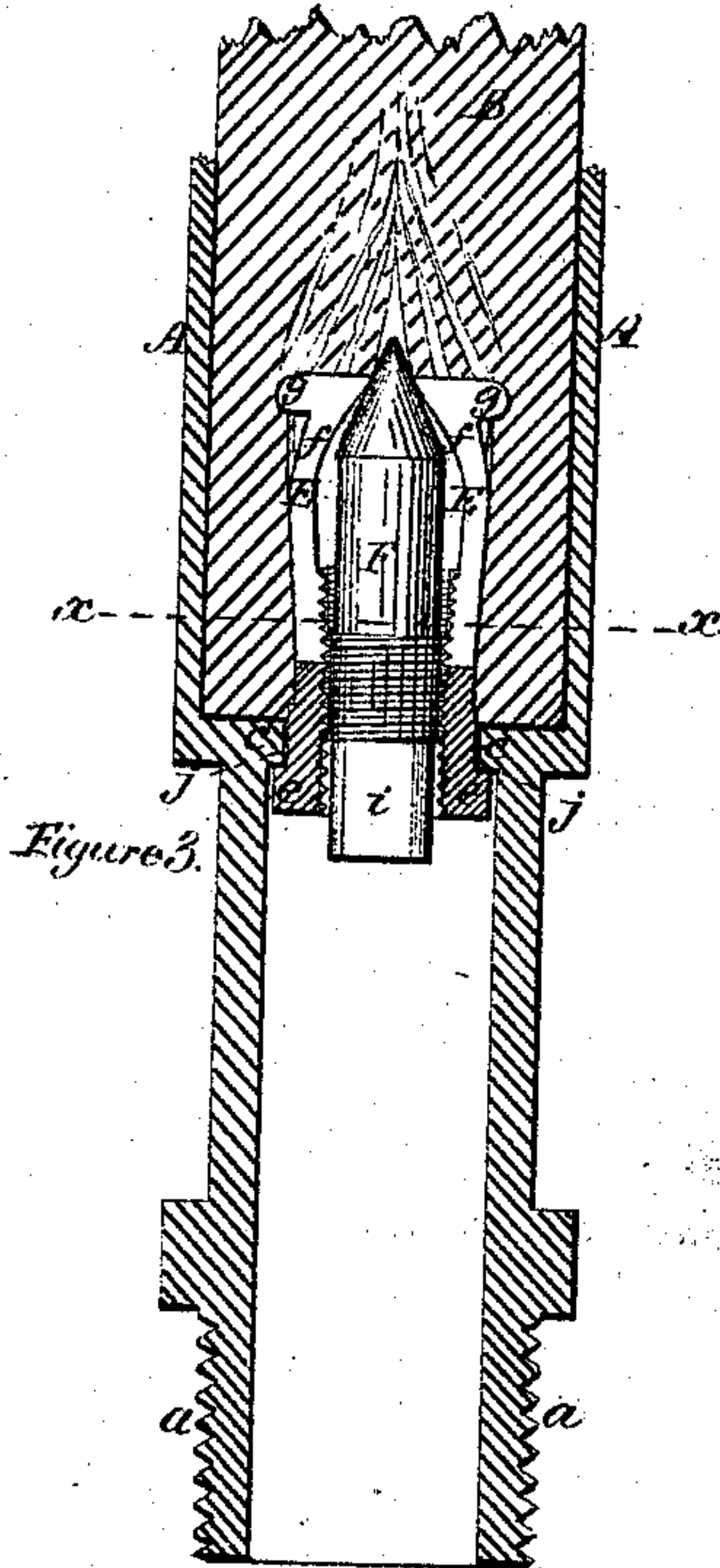
*Patented June 21, 1870.*



*Figure 1.*



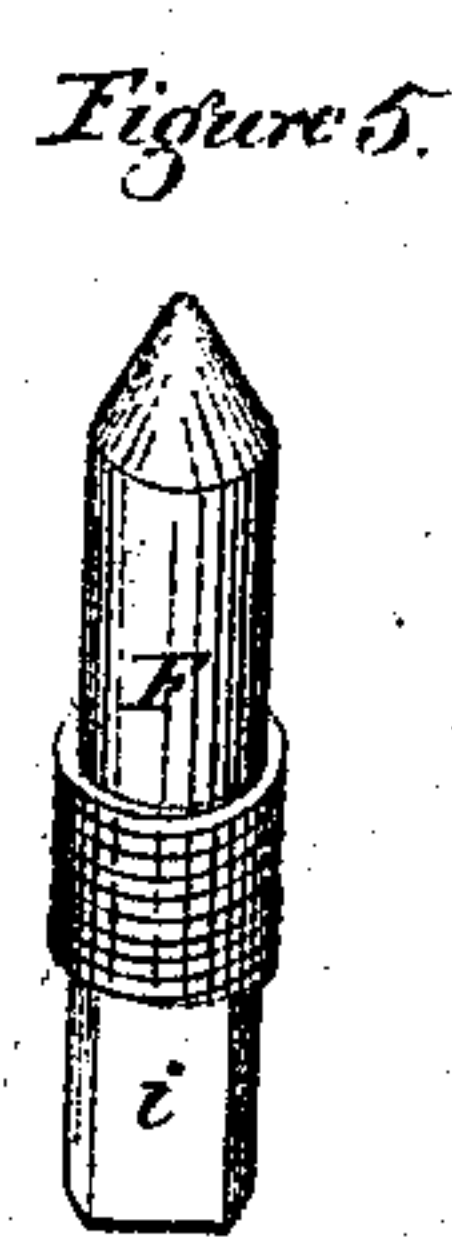
*Figure 2.*



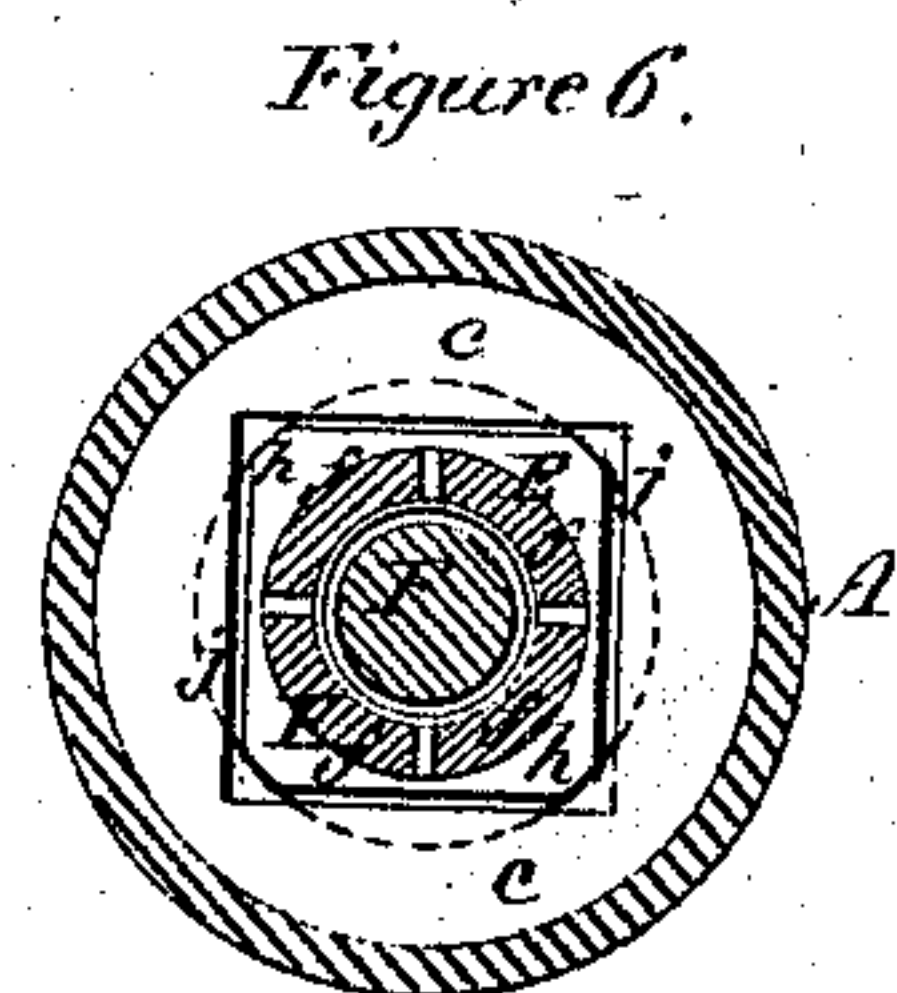
*Figure 3.*



*Figure 4.*



*Figure 5.*



*Figure 6.*

*Chas. E. Upferman  
P. A. Devine*

*Adam Good, Jr.  
By his Attorneys,  
Upferman Johnson.*



# United States Patent Office.

ADAM GOOD, JR., OF TITUSVILLE, PENNSYLVANIA.

Letters Patent No. 104,576, dated June 21, 1870.

## IMPROVEMENT IN SUCKER-ROD JOINTS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, ADAM GOOD, Jr., of Titusville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Sucker-rod Joints for Oil-well Tubes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing of the same, which makes part of this specification, and in which—

Figure 1 represents an elevation of two metallic hollow pins, screwed together, with substitute sections, and secured to the usual wooden connecting-rods, and constituting a portion of the sucker-rod;

Figure 2 represents a vertical section of the same;

Figure 3 represents an enlarged section of a portion of one of the pins, and its tubular expanding and gripping device;

Figure 4 represents a view in perspective of the hollow sectional expanding and gripping-core;

Figure 5 represents a view, in perspective, of the screw-expander, detached from the gripping-core; and

Figure 6 represents a horizontal section, taken at the line *x x* of fig. 3, showing the expanding device in its place within the hollow pin.

My invention relates to the construction of the joints of the sections of what is known as the sucker-rods of oil-well tubes, and consists in a device for expanding and gripping the inner end of the wooden connecting-rod within the hollow metallic pin, in connection with clamping-jaws, or other devices, for securing the connecting-rod to said hollow pin, for the purpose of not only increasing the strength of the sucker-rod, but rendering its connection with both ends of the hollow pin more firm, and bracing it against any lateral play therein, caused by the movement of the sucker-rod, to conform to the arc described by the motion of the walking-beam to which it is connected, and thus insure the perfect alignment of the rod throughout its length.

In the accompanying drawing—

A represents two metallic hollow pins, which compose the joint of two sections of the wooden connecting-rods B, into which the latter are driven, and secured by means of two flush clamping-jaws, C, arranged on opposite sides of the pins imbedded therein, and into the wooden connecting-rods, and locked together by means of a horizontal pin or clamp-screw, D, in such manner as to render the connection of the outer ends of the hollow pins, with their wooden connecting-rods, firm and secure; but as these flush clamping-jaws, in connection with the construction of the hollow pins, form the subject of a separate patent, they need not be here more fully described.

These hollow pins are open at both ends, and are provided with a male and female screw, *a b*, by which one is screwed within the other, or into substitutes.

These contiguous hollow ends are formed with interior strengthening shoulders, *c d*, and the wooden connecting-rods are driven into these pins against said shoulders, and, therefore, extend nearly through their entire length.

In order that the inner ends of these connecting-rods B may be braced tightly and firmly within their hollow pins A, an expansible tube, E, is inserted in a hole bored in the end of said connecting-rod.

This tube is about six inches in length, open at its outer end, and provided with a shoulder, *e*, which fits against the interior shoulder *c* of the pin, when the tube is driven into the rod.

Its inner end is split vertically about two-thirds its length, so as to divide it into four sections, *f*, and the end of each section is provided with a rib, *g*, which is made to bite into the wooden connecting-rod B, as the tube is expanded, as shown in figs. 2 and 3.

The inner end of the interior opening of the tube is conical, and partially closed by the solid sections, while its other end is open, and provided with a female screw.

Into this tube is screwed an expanding screw-core, F, made conical at its point, so as to conform to the interior opening of the tube, and penetrate between the sections *f* thereof, so as to open them, and force their ribs *g* into the wood of the connecting-rod, which expands it, causing it to fit very tightly within the hollow pin A, and, in connection with the clamping-jaws C, to form an additional lock to the rod lengthwise.

To prevent the sectional tube E from turning as the expansible core is being screwed therein, it is made with a square shoulder, *h*, which fits a correspondingly-shaped opening, *j*, within the interior shoulder *c* of the pin, so as to lock it therewith when driven within the rod.

The end *i* of the expanding core is also made square, to receive the wrench by which it is screwed into the tube, and the interior screw is of sufficient depth to allow the core to produce the proper expansion of the tube.

It frequently happens that one or more of the sections of a sucker-rod become, by long use, out of alignment, or are, by some accident, broken, when the refitting of a new section of rod is rendered necessary. To accomplish this, without the removal of the whole line of rods from the well, I employ hollow malleable-iron substitutes, G G<sup>2</sup>, provided at either end with female screw-threads, or with a male screw-thread at one end and a female at the other, whereby I am enabled to joint the rod, whether the contiguous ends to be jointed be a male or female screw-thread, or one of each, and one or both of the substitutes may be used, as required, to fit the pins. These substitutes are made hollow, and a great saving in the weight of the sucker-rod is attained.



They are provided with shoulders, *k*, against which the ends of the hollow pins or those of the substitutes abut, thus rendering the rod perfect in its alignment, strong, and durable, while its weight is much less than that of the ordinary sucker-rods, where solid substitutes are employed.

Having described my invention,  
I claim—

1. In combination with the clamping-jaws *C*, for securing the connecting-rod *B* to its hollow joint-pin *A*, an expansible locking-tube, *E*, inserted within the end of said connecting-rod, in the manner and for the purpose substantially as hereinbefore described.

2. An expansible locking-tube, *E*, in combination with the hollow metallic joint-pin *A* and its connecting-rod *B*, constructed substantially as hereinbefore described.

3. In combination with an expansible locking-tube, *E*, for the joint-pins of sucker-rods, an expanding screw-core, *F*, constructed and arranged substantially as hereinbefore described.

4. The locking-tube *E* of the connecting-rod of the joint-pin, split and made sectional, and provided with gripping-ribs *g*, in combination with a conical expanding-core, *F*, as herein shown and described.

5. The expansible locking-tube *E*, constructed with an annular and a square shoulder, *e h*, in combination with the interior shoulder *c* of the hollow pin, having a square opening, *j*, for the purpose of both locking the tube when driven into its rod, and forming a stop thereto when so driven, in the manner and for the purpose substantially as hereinbefore described.

6. The combination of the clamping-jaws *C*, the hollow metallic pin *A*, the connecting-rod *B*, the expansible locking-tube *E*, and the expanding screw-core *F*, the whole constructed, arranged, and operating in the manner and for the purpose substantially as hereinbefore described.

ADAM GOOD, Jr.

Witnesses:

R. CAMERON, Jr.,  
J. J. HOLDEN.