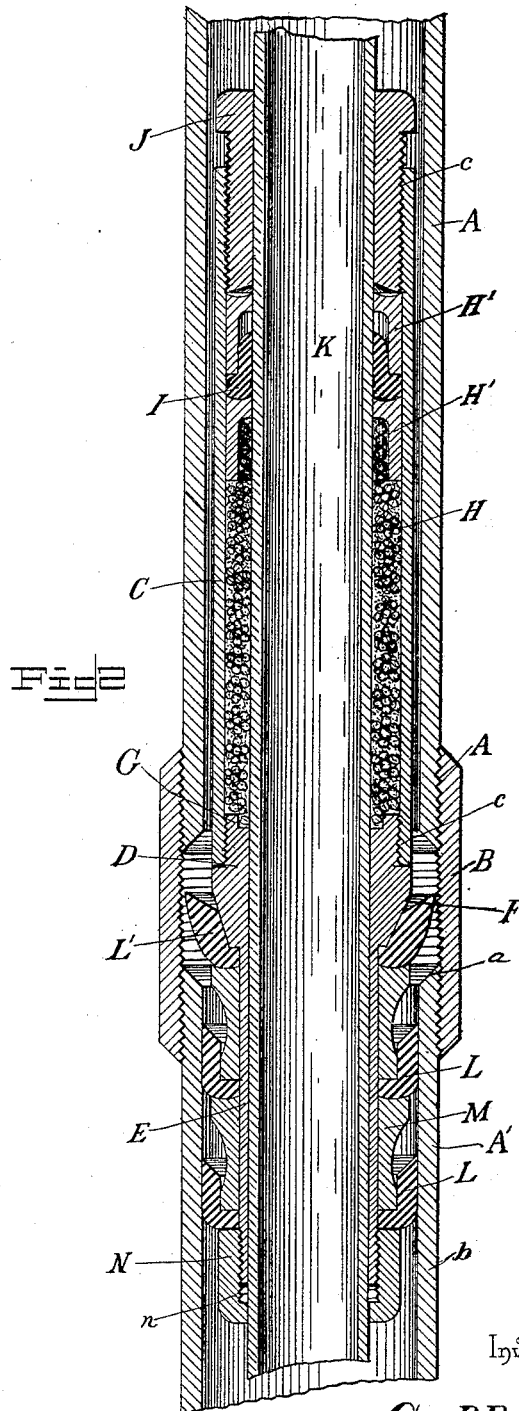
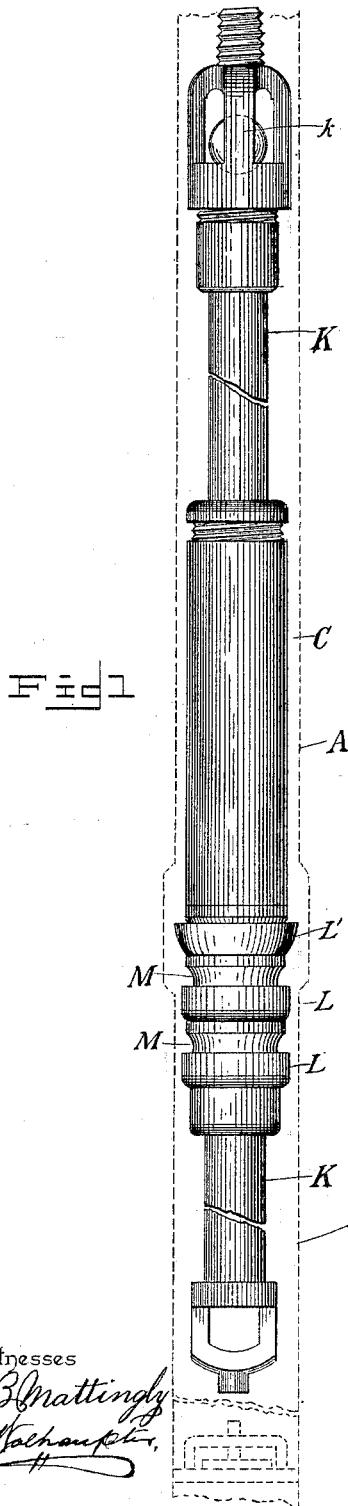


(No Model.)

G. D. BUMPUS.  
OIL WELL PUMP.

No. 491,674.

Patented Feb. 14, 1893.



Witnesses  
*A. B. Mattingly*  
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By his Attorneys,

Inventor

*Geo. D. Bumpus*

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# UNITED STATES PATENT OFFICE.

GEORGE D. BUMPUS, OF ZELIENOPLE, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO C. J. D. STROHECKER, OF SAME PLACE.

## OIL-WELL PUMP.

SPECIFICATION forming part of Letters Patent No. 491,674, dated February 14, 1893.

Application filed October 31, 1892. Serial No. 450,527. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE D. BUMPUS, a citizen of the United States, residing at Zeli-enople, in the county of Butler and State of Pennsylvania, have invented a new and useful Oil-Well Packing, of which the following is a specification.

This invention relates to oil well packing; and it has for its object to provide an improvement in stuffing boxes therefor, which not only serve in the capacity of a guide for the long tube plunger, but also as a head to the upper end of the working barrel portion of the well tubing.

To this end the invention primarily contemplates a combined stuffing box and head for well tubes, which serve to hold the plunger steady in its vertical reciprocations, while at the same time preventing the escape of the liquid between the plunger and the packing, or the packing and the well tubing, so as to direct the entire flow of liquid from the portion of the tube below the stuffing box, through the plunger.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of a combined stuffing box and packing for well tubes in position within the tube, shown in dotted lines. Fig. 2 is an enlarged vertical sectional view of the device.

Referring to the accompanying drawings:—A represents a section of ordinary cylindrical well tubing, employed in sinking oil and other deep wells, and to the lower screw-threaded end of the section A, is coupled the upper threaded end of the section A', by means of the interiorly threaded coupling collar B. This is the usual construction of well tubing, but in order to illustrate the application of the present invention, the section A', is usually known in the art as the working barrel of the tube, having near the lower end thereof the usual stationary foot valve employed in pumps of this character, and the upper end of the section A', is designed to be beveled as at *a*, to form a stop for the stuffing box, which at an

intermediate point has a limited play between the adjacent coupled ends of the tubing.

The combined stuffing box and packing head is provided with an upper barrel or cylinder C, having upper and lower interiorly threaded ends *c*, the lower end of which receives the upper exteriorly threaded head D, of the lower packing extension tube E, said head D, being provided with an exteriorly beveled edge F, which is disposed between the adjacent ends of the tube sections for the purpose to be presently described. The head D, threaded into the lower end of the cylinder C, is further provided with an inner shoulder G, upon which is clamped the rope or other suitable packing H, the upper end of said packing being held in position by means of the inner flanged clamping rings H', between which is clamped the leather cup ring I, which also serves in the capacity of interior packing for the cylinder, and said clamping rings and the intermediate cup are held tightly together, and clamped firmly onto the packing H, by means of the upper exteriorly threaded gland or follower J, which is threaded into the upper interiorly threaded end of the cylinder C. An ordinary tube plunger K, works through the interior packing just described, and said packing fitting tightly around the same holds it and guides the same in its work within the well said tube plunger also snugly fitting the tube E, through which it slides. The said plunger is provided at its upper end with the ordinary ball valve *k*, while the lower end thereof is adapted to work within the well tube section A', between the valve therein, and the head formed by the herein-described stuffing box and packing, to carry the liquid therethrough, without the same escaping or leaking through the packings surrounding the plunger or the packing for the well tube.

As illustrated, the upper cylinder C, forming the stuffing box portion, is arranged in the lower end of the section A, while the extension tube E, projects into the upper end of the working barrel portion A'. The lower removable extension tube E, is of a smaller exterior diameter than the cylinder C, and is designed to accommodate thereon the leather cup-shaped packing disks L, the uppermost of said disks, designated as L', being designed to be

held onto the exteriorly beveled edge F, of the head D, and said cup is of a greater diameter than the other lower cups L, so as to project into the space between the adjacent ends of the tube sections, and to contact with the upper beveled stop edge a, of the lower section A', to prevent the box from sliding entirely within the working barrel portion of the tube, and therefore holds the same to its place. The lowermost cups L, snugly fit the inner bore of the section A', and form an effectual packing for the upper end of said section A', to prevent the liquid from escaping between the tubing and the stuffing box, and between each of said rings L, and upon the extension tube E, is placed the flanged spacing and clamping rings M, the lower ends of which are overlapped by the annular edges of the cup disks, while the upper ends thereof form clamping shoulders for the inner bottom edges of said cups, the series of cups and rings being tightly clamped together and onto the extension tube by means of the lower interiorly threaded clamping N, engaging the lower threaded end n, of the tube E.

From the foregoing description it will be found that not only an improved stuffing guide box for oil wells is provided, but also that a liquid-tight head is provided for the upper end of the valved section of the tube.

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

1. In a deep well pump, the combination with the coupled well tube sections and the valved tube plunger; of a combined stuffing box and head smaller in diameter than the well tube and having interior packing surrounding the plunger and exterior packing meeting the sides of one of the well tube sections, and a portion of which packing projects into the space between the coupled ends of the tube sections, substantially as set forth.

2. The combination with the well tubing sections, one of which carries a valve, and the plunger moving therein; of a combined stuffing box and head having interior packing surrounding the plunger and a lower series of exterior packing rings meeting the sides of the valved tube section, one of said

rings being of greater diameter than the other rings, and adapted to take into the space between the coupled ends of the tube sections, substantially as set forth.

3. In a deep well pump, the combination with the well tube sections and the valved tube plunger; of a stuffing box cylinder arranged within the tubing, packing arranged within said cylinder around the plunger, an extension tube removably secured to the lower end of said cylinder, and closely fitting the tube plunger and a series of exterior packing rings clamped onto said tube and meeting the sides of the well tube, said stuffing box cylinder and the extension tube supported thereby, being adapted to have a play limited by the space between the coupled ends of the tube sections, substantially as set forth.

4. In a deep well pump, the combination with the coupled tubing sections, one of which carries a valve and the valved plunger tube moving therein; of a combined stuffing box and head comprising a cylinder having upper and lower threaded ends, an extension tube of smaller exterior diameter than said cylinder and terminating at one end in an exteriorly threaded and beveled head secured to the lower end of the cylinder and having an inner shoulder, interior packing resting on said shoulder, flanged clamping rings arranged above the packing within the cylinder, a cup ring between said clamping rings, a follower threaded into the upper end of the cylinder and bearing on the clamping ring, a series of cup-shaped packing disks mounted on said extension tube, the uppermost of said disks fitting the beveled edge of said head and projecting into the space between the coupled ends of the tube sections, and a series of flanged and spacing clamping rings, arranged between the several cup disks, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEO. D. BUMPUS.

Witnesses:

C. J. O. STROHECKER,  
C. E. REED.