

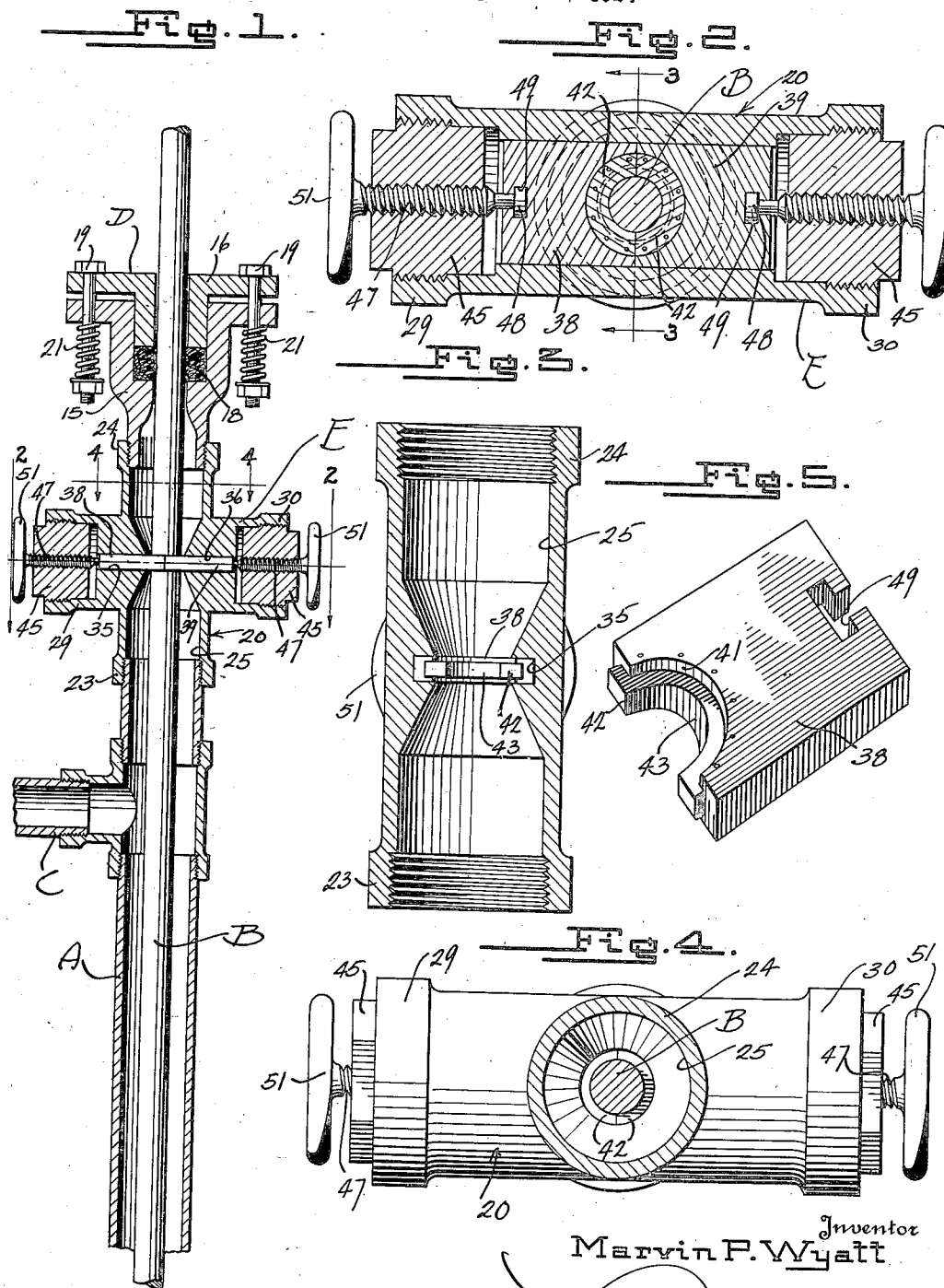
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EMERGENCY STUFFING BOX

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EMERGENCY STUFFING BOX.

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This invention relates to improvements in packing or stuffing boxes adapted for use with the packing equipment of well pumping apparatus.

5 The primary object of the invention is the provision of an emergency stuffing box which may be used to seal the connection of the polish rod with the tube during repair of the ordinary packing or stuffing box.

10 Heretofore a stuffing box has been used at the top of the tube or casing, and through which the polish rod is slidably supported to permit of a liquid seal connection of the polish rod with respect to the tube. When
15 this packing is worn to the extent that it leaks, it becomes necessary to shut down operation of the well, and in many instances it becomes necessary for an operator to go a considerable distance to the power house to obtain a new packing. During this time
20 the oil is spurting out of the well, and goes to waste; it not being unusual to blow out from five to ten barrels of oil each time that the packing has to be changed. As it is ordi-
25 narily the case that the packing has to be changed from one to three times per week, this loss is considerable. However, with the use of the improved emergency stuffing box, the same may be brought into
30 play to provide a liquid seal connection between the polish rod and tube, below the ordinary stuffing box, and the operation of the well need not necessarily be discontinued during fixing of the packing, and at all
35 events the improved emergency stuffing box prevents the waste of oil which now results from a leaky stuffing box.

Other objects and advantages of this invention will be apparent during the course
40 of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corre-
45 sponding parts throughout the several views,

Figure 1 is a fragmentary cross sectional view taken through the upper portion of the conventional tube casing, showing the polish
50 rod operably disposed through the conventional packing box, and through the improved emergency stuffing box provided therefor.

Figure 2 is a cross sectional view taken substantially on line 2—2 of Figure 1.

55 Figure 3 is a longitudinal cross sectional view taken through the improved stuffing

box, substantially on the line 3—3 of Figure 2.

Figure 4 is a cross sectional view taken substantially on line 4—4 of Figure 1.

60 Figure 5 is a perspective view showing a novel member which may be adjusted into engagement with the polish rod to provide a liquid seal connection therewith.

In the drawing, wherein for the purpose
65 of illustration is shown only a preferred embodiment of this invention, the letter A may generally designate the conventional tube or well casing, within which the polish
70 rod B is reciprocably disposed. At the upper end of the tube A, and at all events above the flow line C which connects with the tube A, the conventional packing or
75 stuffing box D is provided. The improved emergency stuffing box is placed below the conventional stuffing box D, preferably between the same and the flow line C.

The details of the conventional stuffing box D are well understood, and generally
80 they comprise a casing portion 15, which in the ordinary instance is connected directly to the tubing A, but which in the improved instance is coupled to the casing or housing
85 portion 20 of the improved emergency stuffing box D, above the same. A follower 16 is supported in the casing portion 15 of the conventional stuffing box D, and the polish
90 rod B is reciprocably disposed through both the casing 15 and its follower 16; packing material 18 being provided in the casing 15, circumferentially about the polish rod B, upon which the follower 16 rests. Bolts 19
95 are provided for connection of the follower 16 with its casing 15, and springs 21 may be provided for urging the follower to compress the packing material 18 about the polish rod B, as can be well understood by any-
one skilled in the art to which this invention relates.

Referring to the improved emergency
100 stuffing box E, the casing portion 20 thereof is preferably cross-shaped and comprises tubular extensions 23 and 24, oppositely disposed, which respectively receive therein the
105 end of the tube A and the lower end of the packing box D, as is illustrated in Figure 1 of the drawing. A passageway 25 extends through the extensions 23 and 24, and this passageway is constricted at about the
110 central portion of the body of the housing 20, and at which constricted portion the packing feature of this invention is posi-

tioned for adjustment to engage the polish rod B which extends through the passageway 25.

Lateral extensions 29 and 30 are provided in oppositely disposed relation on a part of the housing 20, in right angled relation with respect to the portions 23 and 24 above mentioned. Slideways 35 and 36 are respectively provided in the portions 29 and 30, which slidably receive therein bodies 38 and 39, so that said bodies 38 and 39 may have a linear motion toward or away from the polish rod B. At their inner ends the bodies 38 and 39 are recessed, as at 41, and support rubber or fiber gasket material 42 in projecting relation outwardly from the recessed portion 41; the fiber material 42 preferably providing a concavity 43 which may engage in snug relation about one half the circumference of the polish rod B.

The improved gasket supporting blocks or bodies 38 and 39 are rectangular in formation, and may be adjusted so that the packing elements 42 thereof engage the polish rod B to seal the same in a non-leak connection at the point where the polish rod B enters the constricted portion of the passageway 25. To provide for the adjustable clamping of the bodies 38 and 39 in such relation, each of the extensions 29 and 30 support a screw plug 45 in the outer end thereof, which screw plugs 45 adjustably support screws 47 axially therethrough. The inner ends of the screws 47 are provided with heads 48 which fit within suitable T-shaped slots 49 provided in the outer ends of each of the bodies 38 and 39 to provide a swivel connection. The outer ends of the screws 47 provide hand engaging heads or wheels 51, by means of which the adjustment of the screws 47 may be effected.

Referring to the operation of the emergency stuffing box E, when the stuffing box D leaks, or needs to be changed, it is merely necessary for the operator to adjust the screws 47 until the packing portions 42 of the sliding blocks 38 and 39 engage against the polish rod B with a tight clamping action. It is at once obvious that this provides a liquid seal connection of the polish rod B in the tube A, at a point between the conventional packing box D and the flow line C. This liquid seal connection permits sliding of the polish rod B, so that operation of the polish rod may still be continued, and no loss of petroleum is occasioned whatsoever.

From the foregoing description of this invention it is apparent that a novel type of emergency stuffing box has been provided, which is very compact and well adapted to function in conserving oil. The positive swivel connection of the adjusting screws with the packer supporting bodies insures that the latter will be positively out of en-

gagement with the polish rod during normal operation of the pumping equipment, so that there will not be any unnecessary wear upon the packing elements. The adjustment of these screws may provide for entire withdrawal of the packing elements from the passageway through which the packer rod passes in the emergency stuffing box housing. The bodies supporting the packer elements may be entirely withdrawn from their guide passageways at each side of the passageway of the housing, merely by detachment of the plugs 45, and this is important, since it obviates the necessity of detaching the cross shaped housing, as is necessary in most types of stuffing boxes where it is desired to replace packing or make other repairs.

Various changes in the shape, size, and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of this invention or the scope of the claims.

I claim:

1. As an article of manufacture a stuffing box structure comprising a housing having a straight passageway and being provided with right angled openings at opposite sides of said passageway, substantially rectangular shaped bodies carried in snug sliding relation in said openings having ends facing into said passageway, packing material carried at the facing ends of said bodies adapted to extend into said passageway, said housing outwardly of said bodies and openings therefor providing enlarged internally screw threaded compartments, detachable plugs for said compartments provided with internally screw threaded openings, and adjusting screws adjustably connected in said screw threaded openings of said plugs adapted for engagement with said bodies to permit their adjustment with respect to the passageway.

2. As an article of manufacture a stuffing box structure comprising a housing providing a passageway therethrough having a restricted central portion, said housing at opposite sides of the restricted central portion providing shallow substantially rectangular openings, bodies of substantially rectangular form snugly slidable in said openings including ends adapted to extend in facing relation into said restricted portion of the passageway, substantially concave packing members carried in inwardly projecting relation by the inner ends of said bodies adapted to extend into the restricted portion of said passageway, said bodies being of such nature that they may be retracted upon movement of the same in said openings away from said passageway, said housing outwardly of said body receiving openings having enlarged screw threaded compartments, detachable plugs screw

threaded in said compartments providing central screw threaded openings, screws adjustable in said screw threaded openings of said plugs, and means providing a positive swivel connection between the inner ends of said screws and said bodies.

3. A stuffing box construction comprising a housing having a passageway therethrough and being provided with a lateral opening into said passageway, a packing supporting body slidable in said opening away from and towards the passageway of said housing, said housing outwardly of the opening from the passageway providing an enlarged internally screw threaded compartment, an externally screw threaded plug for said compartment having an internally screw threaded passageway therethrough, a screw threaded member for said last mentioned screw threaded passageway, and means for connecting said screw threaded member to said packing supporting body.

4. A stuffing box construction comprising a housing having a passageway therethrough and being provided with lateral openings at

opposite sides thereof into said passageway, a packing supporting member slidable in each of said openings away from and toward the passageway of said housing, said housing outwardly of said opposite openings having enlarged internally screw threaded compartments therein, of a size considerably larger than said openings and through which the packing supporting body may be assembled or removed with respect to their respective openings, a relatively large external screw threaded plug adjustable in each of said internally screw threaded compartments and axially thereof having a screw threaded passageway therethrough, a screw threaded member for each of said last mentioned screw threaded passageways having a handle exteriorly of the respective plugs, each of said screw threaded members having a swivel connection with its respective packing supporting member whereby to adjust the latter with respect to the passageway of said housing upon adjustment of the screw threaded members in their respective plugs.

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