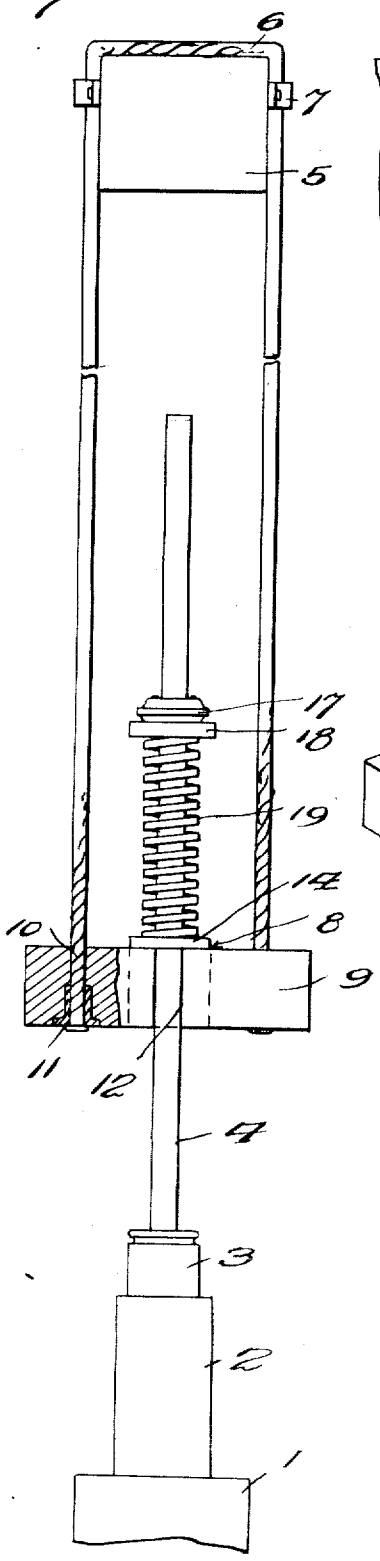
B. COUSINS.

SHOCK ABSORBER FOR THE POLISH OR SUCKER RODS OF OIL PUMPS.

APPLICATION FILED NOV. 26, 1918.

1,307,243. Patented June 17, 1919.

Fig. 1.



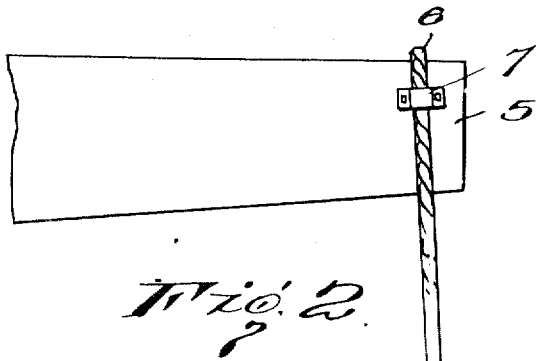


Fig. 2.

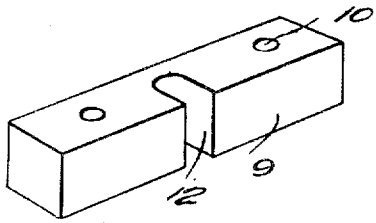
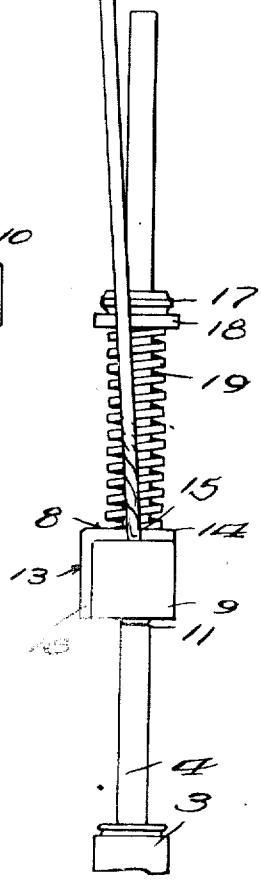


Fig. 3.



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UNITED STATES PATENT OFFICE.

BENJAMIN COUSINS, OF ELDORADO, KANSAS.

SHOCK-ABSORBER FOR THE POLISH OR SUCKER-RODS OF OIL-PUMPS.

1,307,243. Specification of Letters Patent. Patented June 17, 1919.

Application filed November 26, 1918. Serial No. 264,212.

To all whom it may concern:

Be it known that I, BENJAMIN COUSINS, a citizen of the United States, residing at Eldorado, in the county of Butler and State of Kansas, have invented certain new and useful Improvements in Shock-Absorbers for the Polish or Sucker-Rods of Oil-Pumps, of which the following is a specification.

The present invention comprehends generally improvements in pump operating mechanism and more particularly relates to a shock absorber for the polish or sucker rod of an oil pump.

The invention has for its primary aim and object to provide a device of the above mentioned character designed to be associated with the operating mechanism of an oil or other pump for absorbing shocks and jars transmitted to the polish or sucker rod of the pump, thereby preventing breakage of the rod.

More particularly, this invention contemplates the provision of a device of the above mentioned character wherein improved means is employed for yieldingly connecting the suspension cable to the sucker rod of an oil pump and is designed to absorb all shocks and jars transmitted to the rod when the walking beam or other operating member from which the cable is suspended, reaches the lowermost point of its downward stroke and starts on its upward or lifting stroke.

Among the other aims and objects of this invention may be recited the provision of a device of the above mentioned character wherein the number of parts are comparatively few, the construction simple, the cost of production low and the efficiency high.

Other objects as well as the nature, characteristic features and scope of this invention will be more readily apparent from the following description taken in connection with the accompanying drawings and pointed out in the claims forming a part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is an end elevational view showing the yielding connection between the beam and the rod,

Fig. 2 is a side elevation of the same, and

Fig. 3 is a perspective detail of the block to which the ends of the cable are connected.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now, more particularly, to the accompanying drawings, there is provided a pump, of the conventional type for pumping oil et cetera including generally a casing 1 in which is arranged a tube 2 fitted at its upper end with a stuffing box 3 while arranged through the stuffing box and operating in the tube is the polish or sucker rod 4. An operating member such as a walking beam 5 is arranged above the upper end of the rod 4, only a portion of the beam being indicated while straddled about and suspended from the outer end of the beam is a wire cable 6 held against displacement by a suitable fastener 7, the lower end portions of the cable being operably connected with the rod by means of the improved shock absorber as designated by the numeral 8.

In the present instance, the improved shock absorber may be said to consist of a block 9 formed desirably of steel and of an oblong configuration being provided near its respective ends with vertical openings 10 in which are anchored as at 11 the terminals of the side portions of the suspension cable 6. The block is also provided in one side face with an inwardly extending vertically disposed recess 12 which embraces the rod 4. An angle washer generally designated by the numeral 13 is now employed being formed with a horizontal attaching portion 14 having a central opening 15 therein for disposition about the rod 4 while the vertical portion is maintained in contacting relation with the side of the block to cover the recess 12 and for retaining the rod against accidental displacement. A clamp 17 is rigidly connected to the rod near the upper end and at a point above the point of connection of the block. Disposed about the rod is a disk-like washer 18 while also disposed about the rod between the washers 8 and 18 is the resilient means proper in the present instance in the form of an expansion coiled spring 19 the respective extremities exerting tension against the washers to consequently exert tension against the block and the clamp to normally hold these parts in spaced relation.

In use, it is to be understood that the rod 4 is of such great length that it is in effect gravity operable on its downward stroke and is adapted to carry at its lower end a valved piston (not shown) to permit this downward movement while in addition the weight of the oil which rises in the tube facilitates the downward movement of the pis-

ton. Now when the walking beam or other operating member reaches the lowermost point of its downward stroke and starts on its upward stroke, the sudden reverse places a severe strain on the rod and also jars the rod under ordinary conditions but in the present instance such shock or jar will be absorbed by the spring 19 which is compressed when the block 9 moves upwardly on the rod 4 and as a result prevents accidental breaking of the rod during the continual use of the device.

It is believed in view of the foregoing description that a further detailed description of the operation of the invention is entirely unnecessary. Likewise, it is believed that the advantages of the invention will be readily apparent.

Still further embodiments of the invention than those herein especially defined may be resorted to as conditions or preference may dictate, as may be in keeping with the hereto appended claims.

Having thus fully described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. In combination with the sucker rod of a pump, an operating member arranged above the rod and a cable suspended from the operating member, of means connected with the ends of the cable and slidably mounted on the rod, and resilient shock absorbing means associated with the upper portion of the rod and tensioned against the first mentioned means to in consequence yieldingly connect the cable with the rod.

2. The combination with the sucker rod of a pump, an operating member positioned above the sucker rod and a cable suspended from the operating member, of a clamp fastened to the rod, a block having the ends of the cable connected thereto and slidably disposed on the rod, and a coiled expansion spring disposed about the rod and interposed between the clamp and the block.

3. The combination with the sucker rod of an oil pump, an operating member arranged above the rod and a cable suspended from the rod, of a clamp rigidly connected to the rod near the upper end thereof, a block formed with vertical openings near its respective ends in which the terminals of the depending portion of the cable are anchored, the block being also provided with a vertical recess in one face for slidably engaging the block on the rod, a retaining washer engaged on the rod and covering the recess in the block to prevent accidental displacement of the rod, another washer disposed about the rod and positioned directly beneath the clamp, and a coiled expansion spring disposed about the rod and exerting its tension against the washers and consequently against the clamp and the block for normally holding the clamp and block in spaced relation and designed to absorb all shocks likely to be transmitted to the rod when the operating member starts on its upward or lifting stroke.

In testimony whereof I affix my signature hereto.

BENJAMIN COUSINS.