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HITCH FOR ENGINE LIFTERS

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Fig. 1.

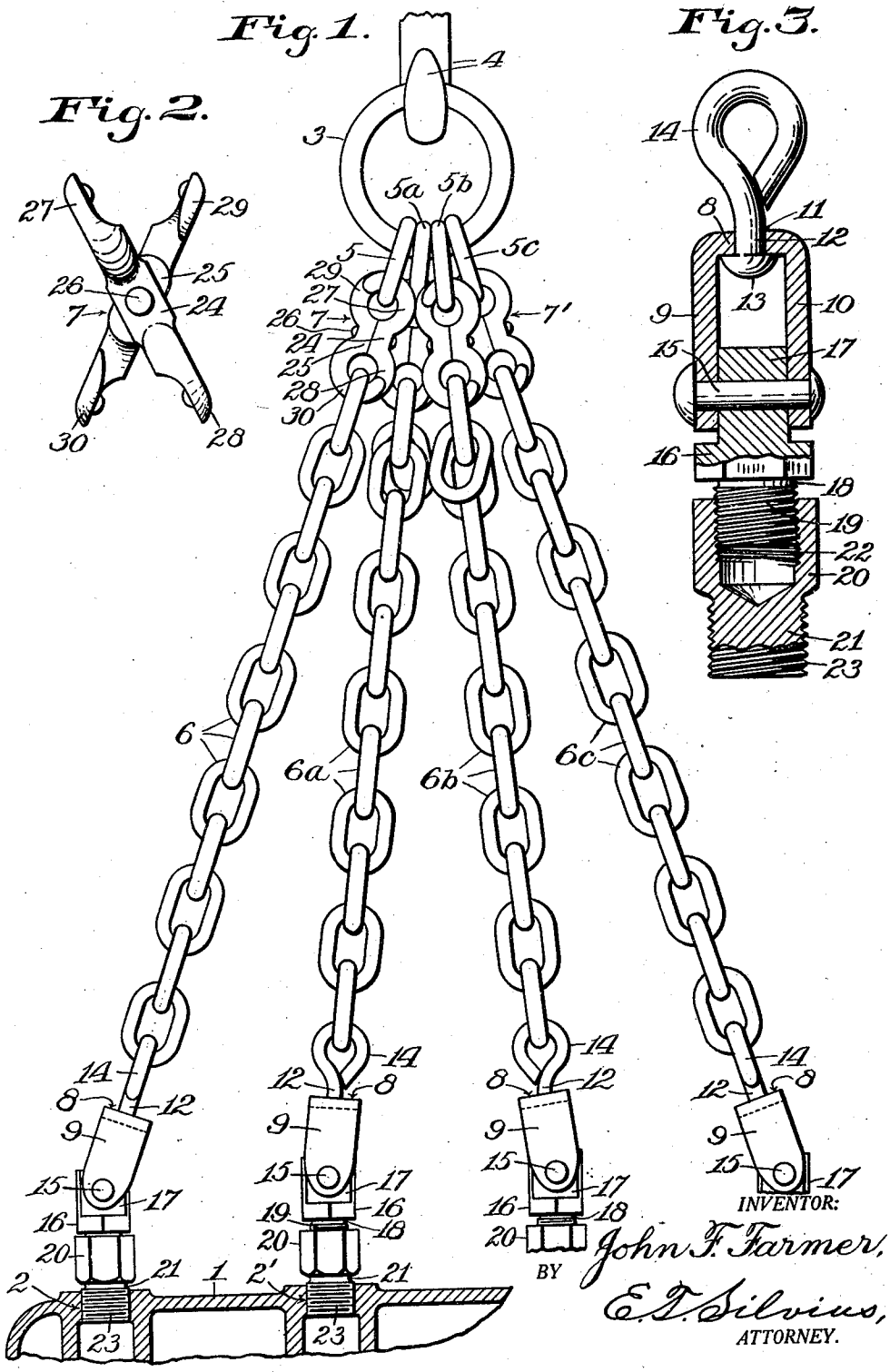


Fig. 2.

Fig. 3.

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HITCH FOR ENGINE LIFTERS.

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This invention relates to an appliance that is designed for use for lifting or for lowering the cylinders of internal combustion engines that are equipped with spark plugs for ignition purposes, the invention having reference more particularly to an appliance for hitching the engine or motor cylinders to a power hoister.

An object of the invention is to provide an improved appliance of the character commonly known as a hitch which shall be of such construction as to be adapted to be connected with the spark plug holes of a motor or engine whereby to connect the cylinders with a power hoister or crane.

Another object is to provide an improved hitch for engine lifters which shall be substantially unitary so as to be convenient and simple in operation and expedite the handling of motor vehicle engines.

A further object is to provide an improved hitch for engine lifters which shall be so constructed as to be adapted for hitching to various types of engines which may differ as to number of cylinders with a spark plug for each cylinder.

A still further object is to provide a hitch for engine lifters which shall be so constructed as to be readily adjusted for use in connection with either one of several cylinders of an engine as may be required for lifting either an entire engine or for lifting the cylinders from the engine frame, which hitch shall be strong and reliable, highly efficient, and durable and economical in use.

With the above-mentioned and other objects inview, the invention consists in various improved features in a hitch of the above-mentioned character and in a novel combination of elements whereby an engine may be handled, under control, and be safeguarded against common accidents incidental to shopwork; the invention consists also further in the novel parts and in the combinations and arrangements of parts as hereinafter particularly described and claimed.

Referring to the drawings,—Figure 1 is an elevation view of the improved hitch adjusted for connection with four cylinders; Fig. 2 is a plan view on an enlarged scale of a well known type of split link which may conveniently be used as a part of the appliance; and Fig. 3 is an enlarged detail of the parts whereby the apparatus is directly connected to a motor or engine.

Similar reference characters in the different figures of the drawings indicate corresponding elements or features of construction herein referred to in detail.

In the drawings the numeral 1 indicates the top wall of an explosion chamber of an internal combustion engine, and 2, 2′ the screw-threaded holes in which the spark plugs are removably inserted. In carrying out the objects of invention a strong metallic ring 3 is provided which is adapted to be connected to a hook 4 of any suitable power hoister, and a relatively small ring or link 5 and preferably similar rings 5^a, 5^b, 5^c, are connected to the ring 3 and have flexible cables 6, 6^a, 6^b, 6^c, detachably connected thereto, permitting either one of the cables to be readily disconnected from the others if not needed for lifting the smaller engines. Preferably the cables are of the link chain type and are removably connected to their respective end rings by means of suitable split links 7, 7′. The opposite end of each cable is provided with a plug that is connected thereto by means of a pivoting and swiveling device which preferably comprises a yoke which has a flat head bar 8 and parallel side plates 9 and 10 on its end, the head bar having a hole 11 therein in which a rod 12 is rotatively arranged, the rod having a head 13 thereon to retain it in the hole, the opposite or outer end of the rod having an eye 14 thereon which is directly connected to the cable. A pivot pin 15 is connected to the side plates of the yoke and a hitch block 16 is provided on one end with a flat pivot member 17 that is arranged between the plates 9 and 10 and connected to the pivot pin, the exterior of the hitch block having a suitable contour adapting it to be engaged by a wrench for turning it, and its opposite end has a plug 18 thereon provided with screw threads 19 of suitable pitch to correspond with the threads in the spark plug hole, in some cases these being according to the metric system. An adapter is provided for each plug and comprises a socket member 20 bored in one end and a plug 21 on its opposite end, the bore having screw threads 22 therein corresponding to the screw threads 19, and the plug having screw threads 23 thereon corresponding to standard thread-

ing of some of the spark plug holes. A number of adapters are provided, some having larger or smaller plugs 21 thereon and different screw threads, so that the hitch head may be connected to any one of the different engines found in practical use. The adapter has an external contour adapting it to be engaged by a wrench for turning it.

A suitable form of split link above-referred to is well known and comprises two side bars 24 and 25 connected to a pivot 26, one of the bars having ring segments 27 and 28 on its ends, the other having ring segments 29 and 30 on its ends to co-operate with the other segments, whereby either one of the links of a cable may be detachably connected with a ring 5.

In practical use the power hoister hook 4 should be brought to a convenient position above the engine, the ring 3 being connected to the hook, after which the plugs 18 are screwed into the spark plug holes if suitable, or alternatively the adapters are econnected to the plugs 18, and the plugs 21 having a suitable diameter and the threads are screwed into the spark plug holes. The adapter may be screwed more or less onto the plugs 18 to effect slight longitudinal adjustment of the cables, and the pivots 15 permit angular adjustments of the connections. When three or more of the cables are required or desired the intermediate cable may be shortened as indicated in Fig. 1 by disconnecting the upper end links from the split links and connecting the next adjacent cable links to the split links. When engine cylinders or a complete engine is suspended by the hitch it is readily handled by a workman, and when not in use may be kept intact for quick application without loss of time involved in searching for parts, since the additional adapters may be conveniently fastened by tie wires to the cables without interference with operations, and the ring 3 may be connected to any suitable hook within sight of the workmen.

What is claimed as new is:

1. A hitch for engine lifters including a plurality of cables detachably connected together at one end thereof, the opposite ends of the cables having yokes swiveled thereto respectively, a plurality of hitch blocks pivoted to the yokes respectively and having each a screw-threaded plug thereon, and a plurality of adapters having socket members screwed onto the plugs respectively and provided respectively with screw-threaded plugs.

2. An improved hitch for engine lifters comprising a hitch block having a screw-threaded plug on one end and a flat pivot member on its opposite end, all formed integrally, a yoke having side bars pivoted to the pivot member and having also a head bar, a rod rotatively connected to said head bar and having an eye thereon, a link chain having one end link connected to said eye, and a large ring connected to the opposite end link of the chain.

In testimony whereof, I affix my signature on the 26th day of July, 1926.

JOHN F. FARMER.