This invention relates to a pipe retainer for oil wells which is adapted to hold the pipe, Kelly or the like after it has been severed. This device is particularly useful when used in conjunction with a hydraulic pipe cutter and gate such as is illustrated in my co-pending application, Serial Number 366,661. If a well should accidentally blow in before the drills are ready, a serious problem is presented, because the drill pipe, Kelly or other tools are usually still in the hole. In order to completely shut off the well, it is then necessary to cut the casing, the cutting knives also form the gate. If the severed pipe should fall into the hole, serious damage to the well would result, and therefore I have devised a pipe retainer which will effectively hold the pipe against dropping into the well after the upper portion thereof has been severed by the knives.

Another object of my invention is to provide a pipe retainer which is simple in operation, which can be quickly and effectively applied and which is operated by any available fluid under pressure.

The figure in the drawing is a longitudinal sectional view of my pipe retainer positioned on a pipe cutter.

Referring more particularly to the drawing, the numeral 1 indicates a pipe cutter preferably of the hydraulic type which includes a pair of cylinders 2–3 in which are positioned pistons 4–5 respectively, and horizontally extending knives 6–7 are secured to the pistons 4–5 respectively. The knives 6–7 are adapted to extend across the central bore 8 of the pipe severing appliance for the purpose of cutting the drill pipe, Kelly, a cable, etc. The cylinders 4–5 are preferably hydraulically operated so that ample force is available to sever the pipe.

A flange 9 is formed on the bottom of the pipe cutter 1 and my pipe retainer 10 is provided with a flange 11 on the top thereof which fits against the flange 9 and both of these flanges are then bolted or otherwise suitably secured together. The pipe retainer 10 comprises a body 12 which may be provided with a threaded section 13 on the bottom thereof for the purpose of securing the pipe retainer and the pipe cutter to the casing. It is evident that a flanged joint or any other suitably secured means may be used instead of the threads 13. The central bore 14 of the pipe retainer coincides with the bore 8 of the pipe cutter so that a clear and straight passage is provided through which the pipe, tools or the like can readily pass.

The body 12 is provided with a pair of opposed recesses 15–16 in which I position slips 17–18 respectively. The slips 17–18 are provided with toothed or serrated surfaces for the purpose of engaging the pipe or the like. The recesses 15–16 are each provided with a downwardly inclined wall 19 against which the slips rest. This wall is so inclined that the slips are directed inwardly against the pipe as they are lowered by means to be further described.

A cylinder 20–21 is secured to the body 12 over the recesses 15–16 respectively and these cylinders are provided with a piston 22–23 respectively. A rod 24–25 depends from the piston 22–23 respectively and are pivotally secured to the slips 17–18 respectively. A coil spring 26–27 is positioned in the cylinder 20–21 respectively, will bear against the pistons 22–23 for the purpose of holding the slips 17 or 18 in their raised position so that they are out of the way of the drill pipe or tools. A nipple 28–29 extends into the cylinder 20–21 respectively for the purpose of admitting a fluid under pressure, which fluid forces the pistons 22 or 23 downwardly, and thus will cause the slips 17–18 to engage the pipe, tools or the like and prevent them from falling into the well.

When the pressure is relieved from the cylinder 20 or 21, the springs 26 or 27 will return the slips 17–18 to their normal raised position, and the central bore will be clear for the passage of the pipe or tools. Relief ports 30–31 are provided in the cylinders 20–21 respectively adjacent the lower end thereof, for the purpose of relieving the pressure in said cylinder after the piston has moved below the ports, and by this means the inward movement of the slips 17–18 is limited.
A by-pass 32 is provided below the slips 17—18 for the purpose of conducting the fluid away from the well after the knives 6—7 have been closed and the well has been shut off. It is understood that a suitable gate valve (not shown) is provided in the by-pass 32 so that the fluid can be controlled there-through.

Having described my invention, I claim:

1. A pipe retainer for oil wells comprising a body having a central bore therein, a plurality of slips adjacent said bore, and hydraulically actuated means secured to said slips, said means being adapted and arranged to force the slips inwardly into said bore.

2. A pipe retainer for oil wells comprising a body having a central bore therein, a plurality of slips adjacent said bore, hydraulic cylinders secured to said body, pistons in said cylinders, rods extending from the pistons to the slips whereby said slips are moved inwardly into the bore to engage the pipe.

3. In combination with a pipe cutter, a pipe retainer means to secure said pipe retainer to the pipe cutter; said pipe retainer having a central bore therein and a pair of recesses adjacent said bore, slips positioned in said recesses, a hydraulic cylinder secured to the pipe cutter over said recesses, a piston in the cylinder, a rod extending from the piston and pivotally secured to the slip whereby the slip is moved inwardly into the central bore.

4. In combination with a pipe cutter, a pipe retainer means to secure said pipe retainer to the pipe cutter; said pipe retainer having a central bore therein and a pair of recesses adjacent said bore, slips positioned in said recesses, a hydraulic cylinder secured to the pipe cutter over said recesses, a piston in the cylinder, a rod extending from the piston and pivotally secured to the slip whereby the slip is moved inwardly into the central bore, and a spring in the cylinder engaging said piston whereby the slips are held in retracted position.

In testimony whereof I affix my signature.

JOSEPH S. LACEY.