D. PARRY & E. EVANS.

LIFTING DOG.

APPLICATION FILED SEPT. 28, 1908.

934,010. **Patented Sept. 14, 1909.**

2 SHEETS—SHEET 1.

Fig. 1.

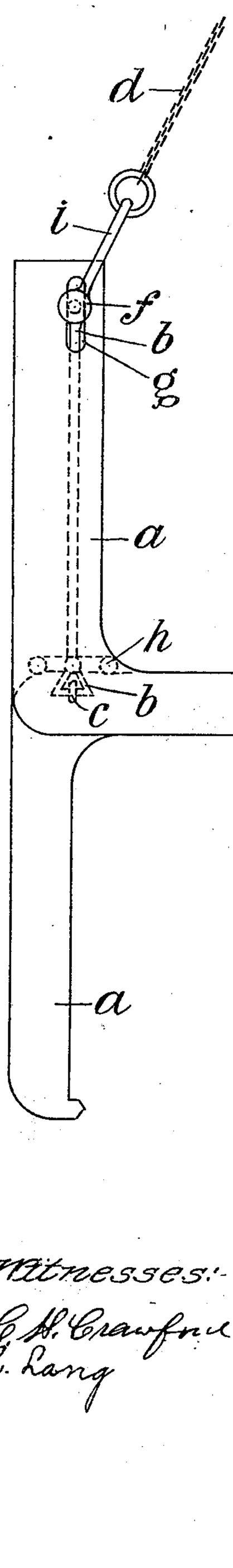
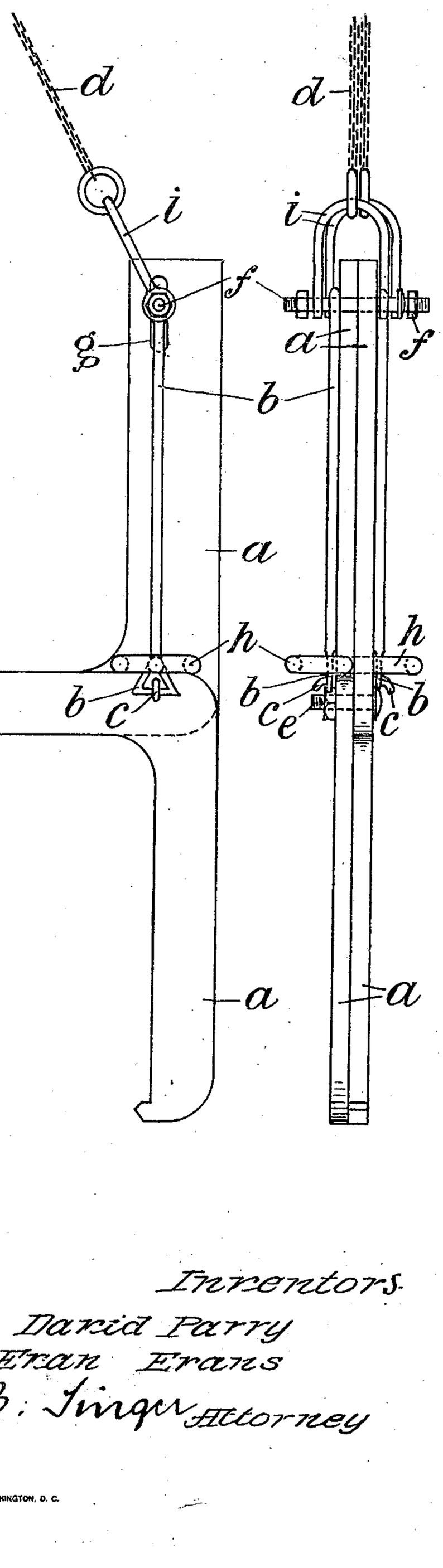


Fig. 3.



Witnesses:-

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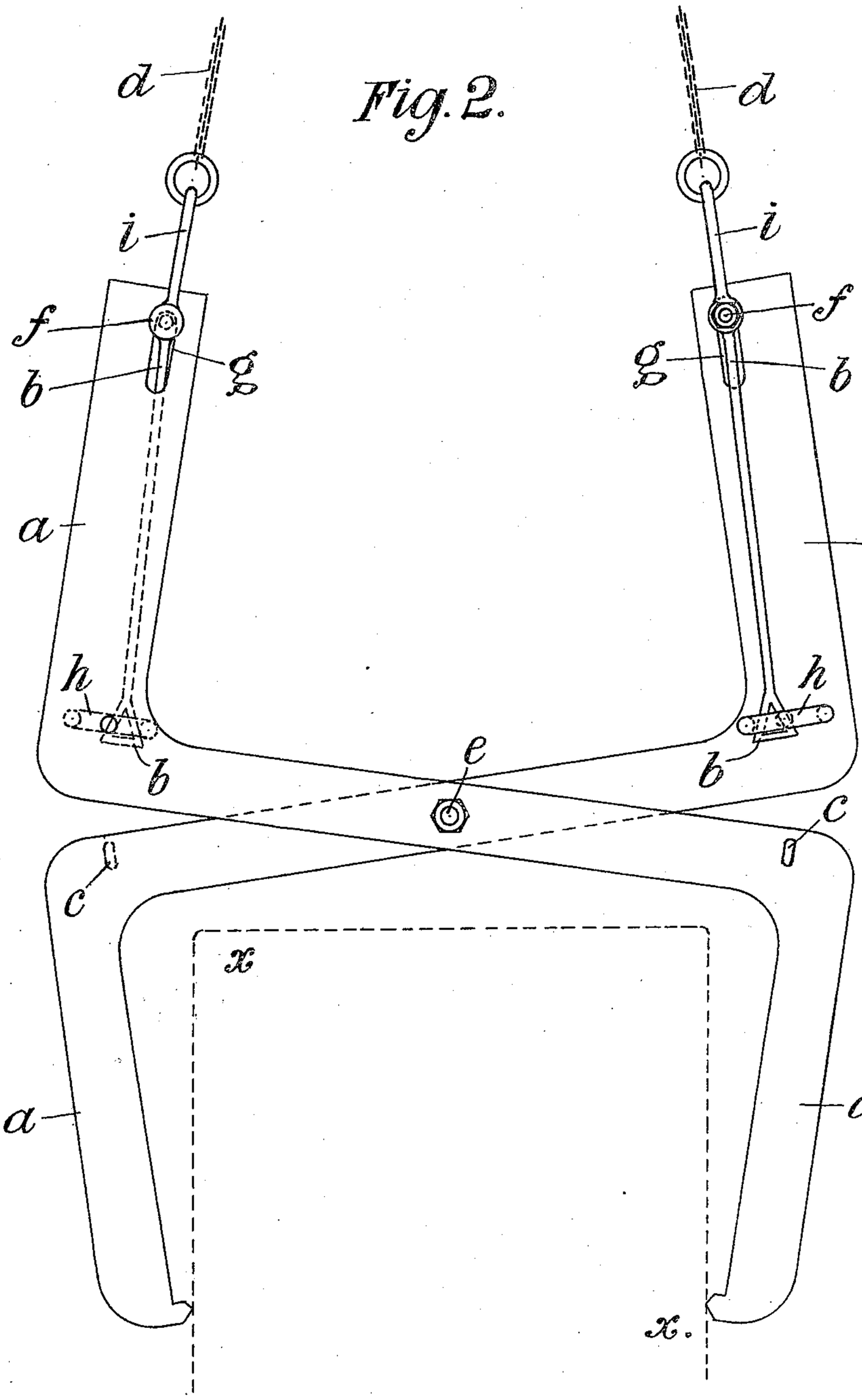
Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID PARRY, OF DOWLAIS, AND EVAN EVANS, OF PENYDAREN, MERTHYR, ENGLAND;
SAID EVANS ASSIGNOR TO SAID PARRY.

LIFTING-DOG.

934,010. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed September 28, 1908. Serial No. 455,168.

To all whom it may concern:

Be it known that we, DAVID PARRY and EVAN EVANS, subjects of the King of England, residing at Dowlais, Glamorganshire, South Wales, England, and Penydaren, Merthyr, Glamorganshire, South Wales, England, respectively, have invented new and useful Improvements in Lifting-Dogs, of which the following is a specification.

This invention has reference to lifting-dogs for lifting such articles as metal ingots, castings, blocks of stone, and all other kinds of goods or packages for which dogs are or may be usefully employed as a means of lifting and handling goods.

This invention relates more particularly to lifting dogs, wherein means are provided by which they are rendered capable of acting automatically, that is, will not only when lowered or moved by a crane or other gear, close and grip the articles, but will of themselves open when suspended from the crane or other gear, and be in a position ready to engage with the ingot, block, or other article.

The invention is illustrated in the annexed drawings, in which—

Figure 1 shows a dog in its open position; Fig. 2 shows it in the closed position; and Fig. 3 is an edge view of it.

In this dog there is employed in connection with the two sets of tongs type of levers *a*, jointed by the pin *e*, two sets of engaging and disengaging devices *b*, in the form, at the lower end, of a loop with inclined sides and a horizontal transverse bar, the upper part being in the form of a rod. One of these devices is carried on each of the said tong levers, and upon the upper vertical members thereof; and they operate in connection with catches *c* on the angle of the lower members and cross members of the tong levers (or on the lower members), or at any other suitable place. The devices *b* are connected at their upper ends to the operating and lifting chains or ropes *d*, the connection of the lower shackles *i* of these chains, and the upper parts of the devices *b*, being by pins *f*, which also pass through slots *g* in the upper members of the tong levers *a*.

The devices *b* at their lower end pass through guide rings *h* on the upper halves of the tong levers, in which they are free to move in all directions within limits. One of the engaging and disengaging devices *b* will be placed on one side of the dog, and the other on the opposite side, the object of this arrangement being that if the appliance is canted from the vertical plane, one set of such devices at least is sure to come into action, and that will be sufficient.

Normally, when the dog is suspended by the chains *d*, in a position for applying it on to, say, an ingot or body to be lifted—marked *x* in dotted lines in Fig. 2—the parts will be in the position shown in Fig. 1; that is, the loops of the devices *b* will be under the hooks *c*, so that the whole weight of the dogs will be then resting on these loops *b* and the hooks *c*. Then, when it is desired to lift a body, the dog is slung over it, and lowered a little, so that the horizontal members of the tong levers *a* rest on the block, and take the weight of the dogs off the chains; and the chains *d* being still further lowered, the devices *b* will fall down, in which movement, the upper angle part of the loop of the devices *b* will slide down the back of the hooks *c*, and so will be pressed outward and off them, and become disengaged; and their upper rod portions will lie alongside the hooks. Then, when the lifting chains *d* are again pulled up, the devices *b*—the upper rod parts of which are to one side of the hooks *c*—will not reëngage, but will, owing to the inclined outer edges of these loops, slide up alongside of them without engaging. This further upward movement of the devices *b*, will bring the pins *f* into the top ends of the slots *g*, which limit their movement; and the tong levers will then be moved about the joint *e* by the further lift, causing the lower ends to engage with and grip the block *x*, and lift it.

Having lifted the ingot or body to the place required, it can be lowered; and when lowered and at rest, and the lifting chains *d* are again raised, the horizontal members of the tongs levers a come on the upper end of the body *x*, and rest there, and the lower horizontal bar of each of the loops of the devices *b* will then slide over the back of the catch *c*, until it has passed its tip, when it will fall inward under it; whereupon the lifting chains *d* are again raised, and the loop engages the hook *c*, and so the whole of the dogs are lifted up, they being then in the position shown in Fig. 1, off the ingot. With regard to the suspension chains *d*, their upper ends will be connected to the lifting

chain or rope, and their length can be anything that is desired.

By this construction of lifting dog, the lifting and handling of articles, such as referred to, can be effected by the operator of a crane or lifting machine alone, thereby doing away with hand labor for manipulating the tongs in engaging and disengaging; and the labor so saved is very material in the case of dogs used for lifting very heavy articles, such as metal ingots, billets, and the like, where the dog levers have to be of strong and heavy construction.

What is claimed is:—

1. In lifting dogs, a pair of adjacent levers operating about a centrally disposed pivot, means connected with each lever for operating the same, having at their lower ends engaging devices which are capable of engaging with the adjacent levers, and prevent the lifting dog operating when out of action.

2. In lifting dogs, a pair of adjacent levers each having integral horizontal and vertical portions, each horizontal portion having an aperture at the center of its length; a bolt which passes through the said aperture in each lever, and serves as a pivot therefor, and means connected with each lever for operating the same about the said bolt having a device at the lower end of each for engaging with the horizontal members of the adjacent levers.

3. In a lifting dog of the kind herein referred to, levers, a hook on the lower half of the levers, and an engaging loop on the upper half of same, connected with the slinging or supporting chains, the back surfaces of said hooks being inclined downward and outward, and the loops being inclined at the sides, whereby when they are disengaging from the hooks, and lie against same, and are lifted, they slide over the side of the hooks, and do not engage.

4. A dog of the kind herein referred to having hooks *c* on the lower part, engaging devices *b* with loops at the upper part, and having limited up and down motion in said upper parts of the levers, and lifting chains connected with said devices *b*, which are raised and lowered by said chains; substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

DAVID PARRY.
EVAN EVANS.

Witnesses:
RICHARD WILFRED REES,
CHARLES EDGAR KENNY.