

(No Model.)

J. INGRAM.  
CHAIN.

No. 403,591.

Patented May 21, 1889.

Fig. 1.

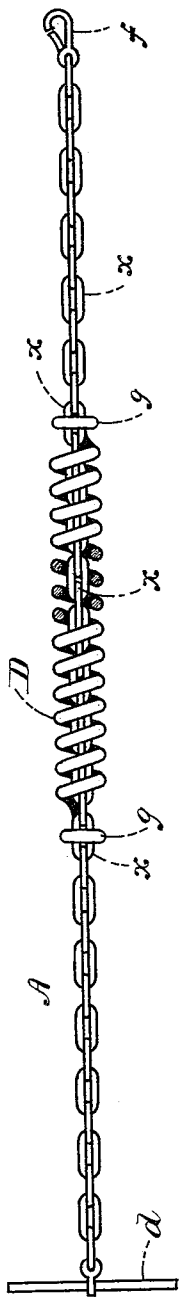


Fig. 2.

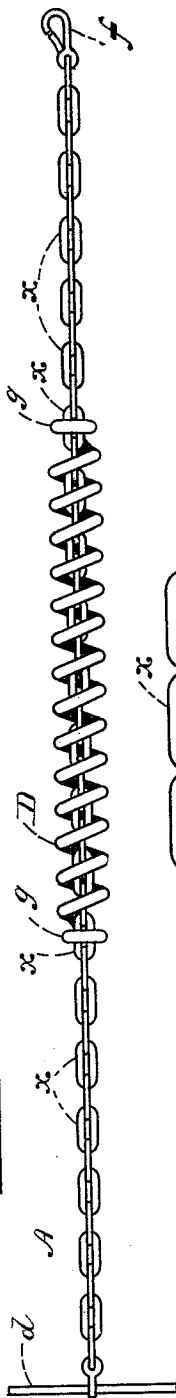


Fig. 3.

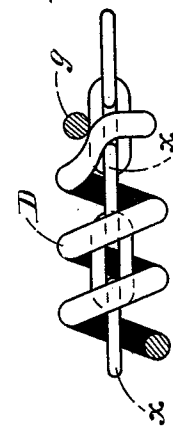
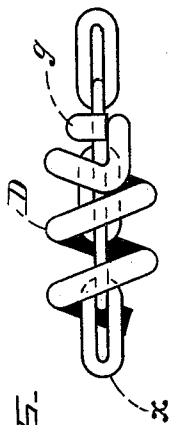


Fig. 4.

Fig. 5.

WITNESSES:  
N. Durfee,  
H. W. Ingram,

INVENTOR=  
James Ingram,  
PER C. A. Shaw & Co.,  
ATTYS.

# UNITED STATES PATENT OFFICE.

JAMES INGRAM, OF LAWRENCE, MASSACHUSETTS.

## CHAIN.

SPECIFICATION forming part of Letters Patent No. 403,591, dated May 21, 1889.

Application filed March 14, 1889. Serial No. 303,215. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES INGRAM, of Lawrence, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Chains, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of my improved chain; Fig. 2, a like view of the same, showing the spring distended; and Figs. 3, 4, and 5, enlarged sectional views illustrating details of construction.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to that class of chains which are adapted for use in securing animals; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the chain, which is constructed of links *x* in the usual manner. To one end of the chain is secured a bar, *d*, and at the opposite end a snap-hook or catch, *f*. A portion of the chain is shortened by pushing the links *x* as closely together as possible, and around said portion a stiff coiled spring, D, is disposed. The ends *g* of the spring are clinched around a link, *x*, at each end of said portion, between the companion links, as best shown in Figs. 3 and 4.

It is well known that when a chain of this class is employed in securing animals a sudden strain exerted thereon frequently causes a link to break and release the animal.

By employing the spring D, secured to the chain, as described, the chain is relieved of the strain and prevented from being extended to its entire length too suddenly. The links being grouped within the spring also serves to prevent said spring from being distended sufficiently far to overcome its contractile power.

When the chain has been extended its entire length, the spring in contracting exerts a constant pull upon the animal and tends to prevent it from endeavoring to escape.

I do not confine myself to grouping the chain links within the spring, as the chain may be constructed in sections and each section secured to an end of said spring, if preferred.

Having thus explained my invention, what I claim is—

1. A chain having a coiled spring interposed between two of its links, substantially as and for the purpose set forth.

2. A chain of the character described, provided with a bar at one end, a catch at the opposite end, and a coiled spring interposed in its body, substantially as described.

3. A chain having a portion of its links grouped, and a coiled spring disposed around said portion, with its ends secured to said chain, substantially as described.

4. A chain of the character described, provided with a bar and catch and having a portion of its links grouped, a coiled spring being disposed around said portion, with its ends secured to a link at each end of said grouped portion, substantially as described.

5. The chain A, provided with the bar *d* and catch *f*, in combination with the spring D, secured around said chain, the links *x* thereof being grouped within said spring, substantially as and for the purpose set forth.

JAMES INGRAM.

Witnesses:

JOHN C. SANBORN,  
FRANK L. PORTER.