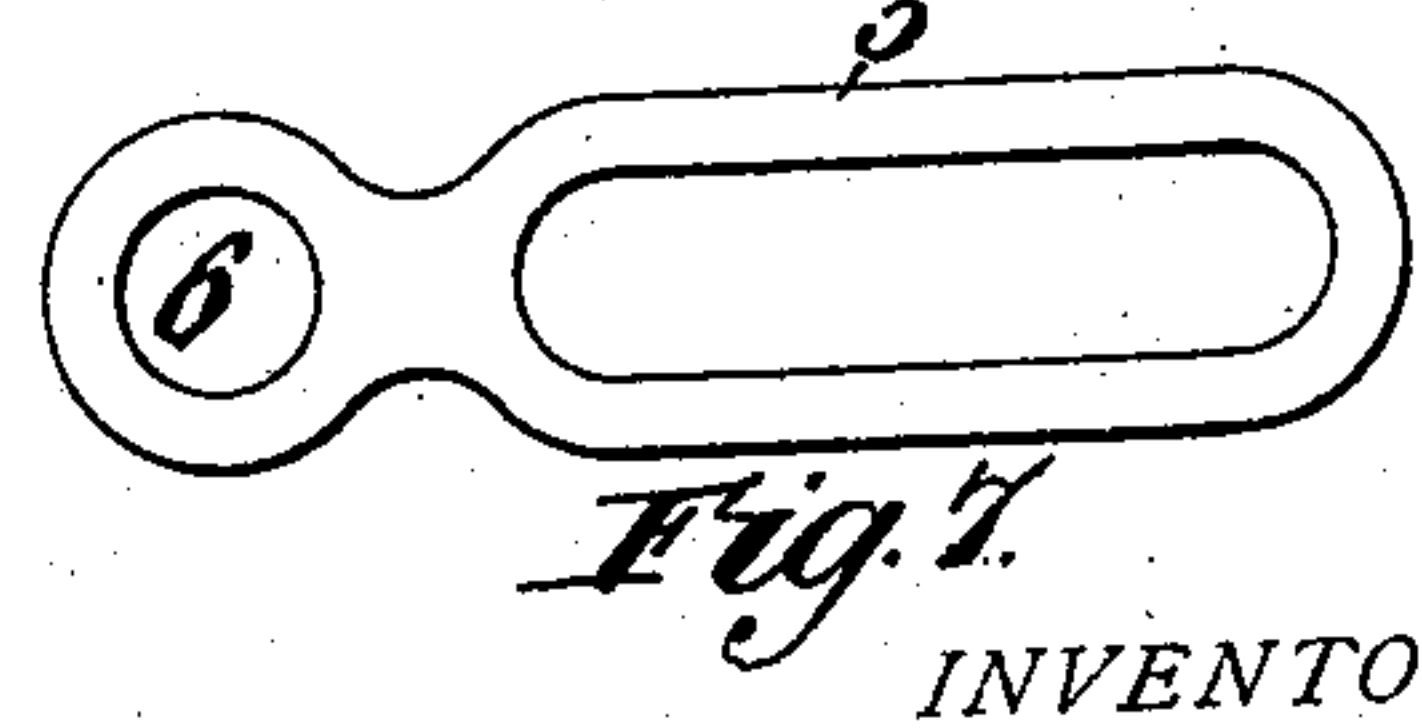
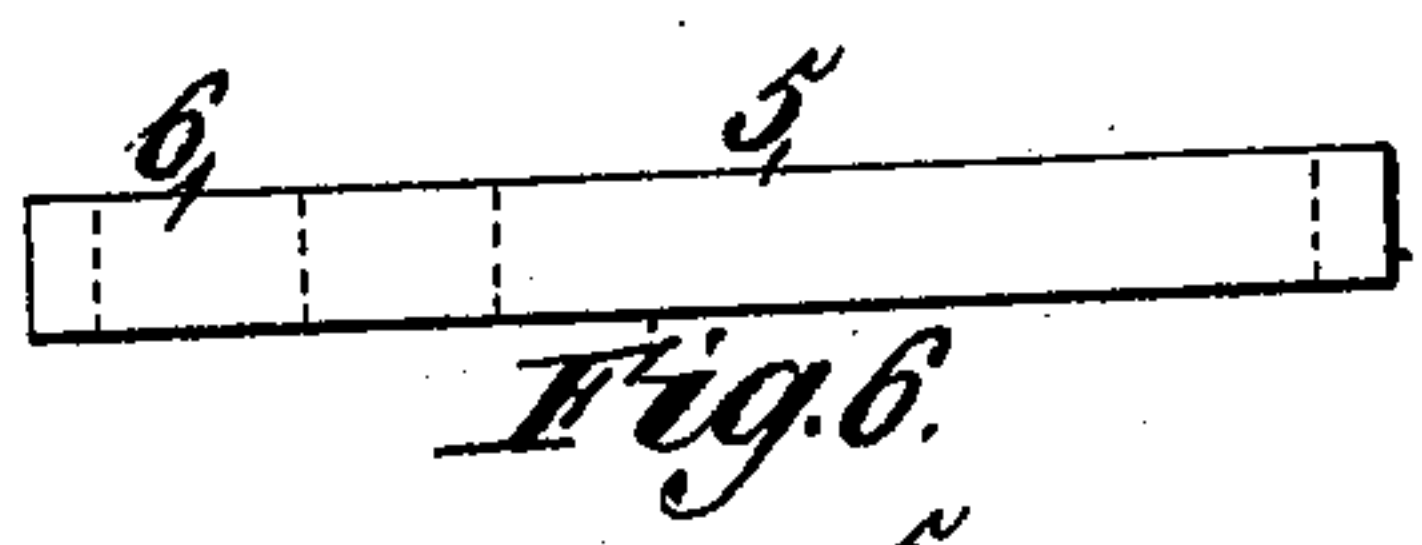
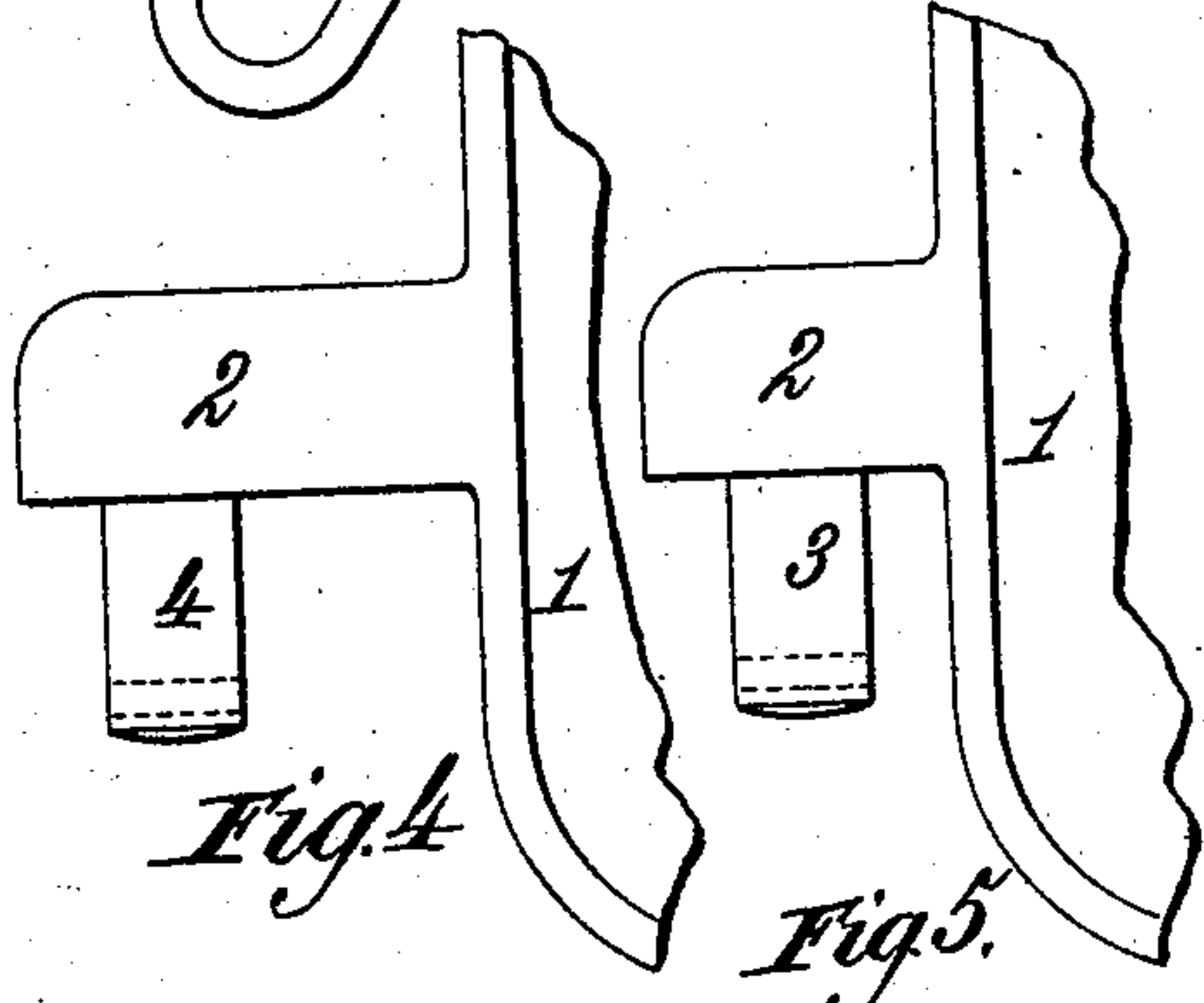
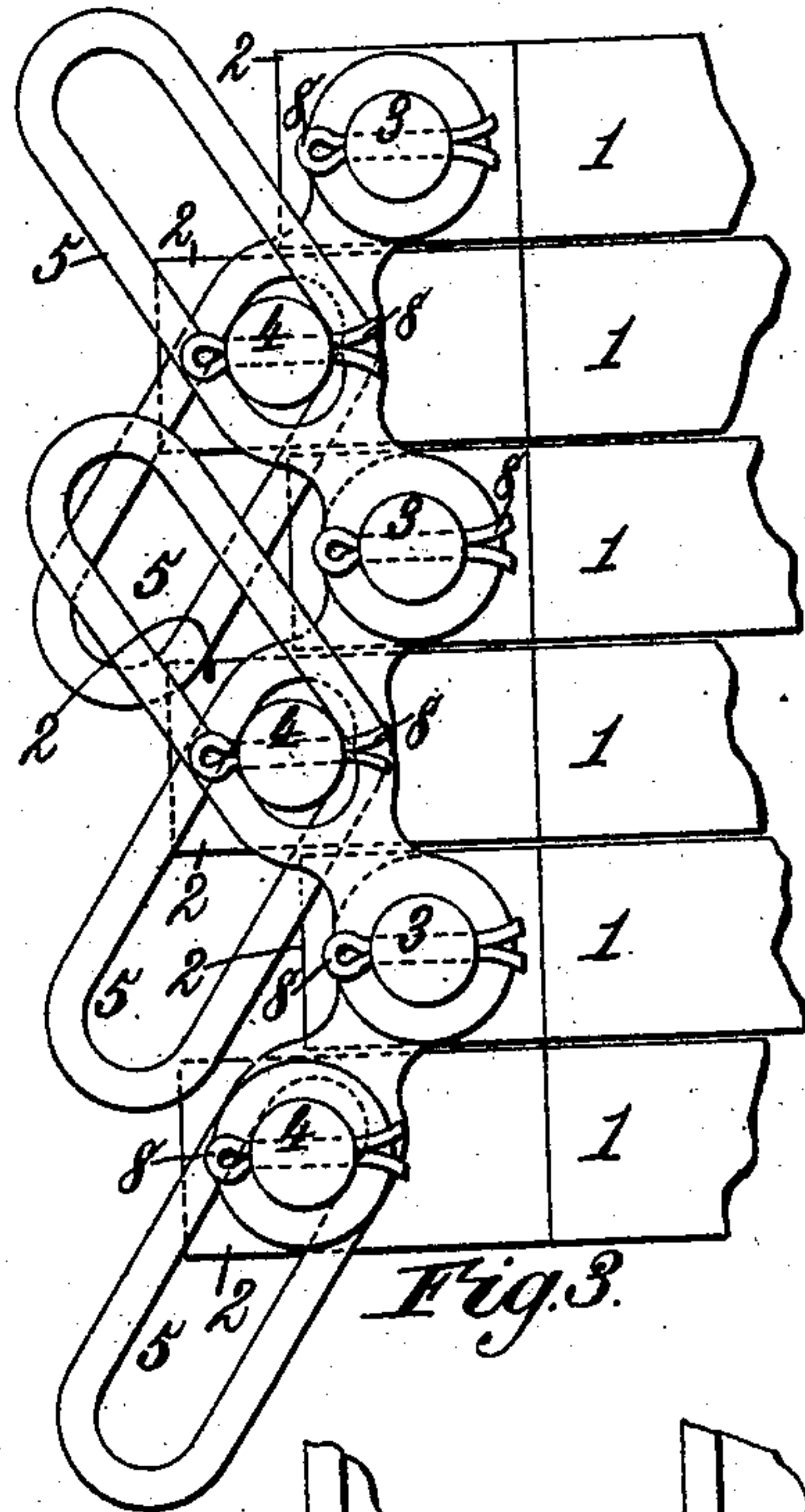
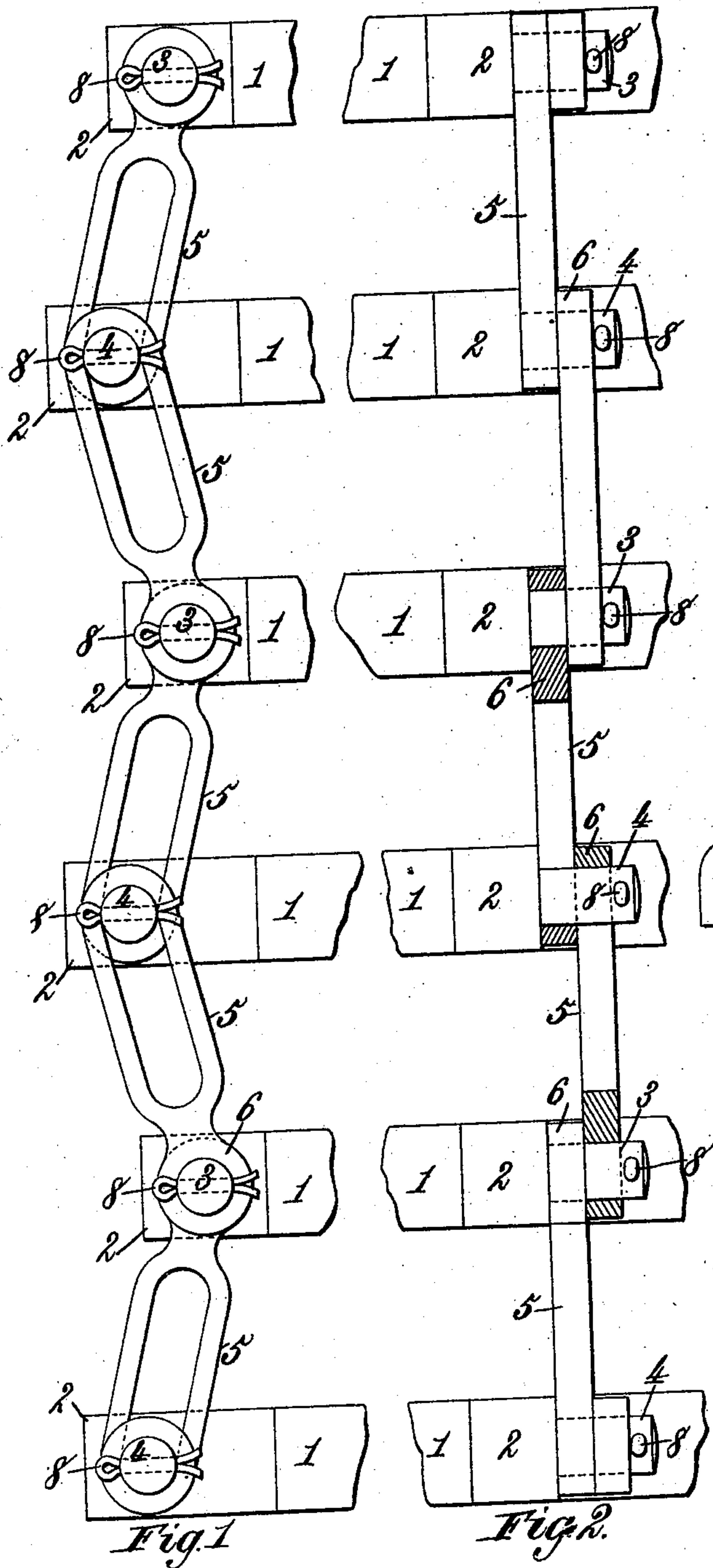


(No Model.)

J. H. HUBBELL.  
LINK SYSTEM FOR OIL PRESS BOXES.

No. 569,920.

Patented Oct. 20, 1896.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JOSEPH H. HUBBELL, OF DAYTON, OHIO.

## LINK SYSTEM FOR OIL-PRESS BOXES.

SPECIFICATION forming part of Letters Patent No. 569,920, dated October 20, 1896.

Application filed June 3, 1896. Serial No. 594,167. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH H. HUBBELL, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented new and useful Improvements in Link Systems for Oil-Press Boxes, of which the following is a specification.

This invention relates to presses designed for pressing material, particularly hydraulic presses for expressing the oil from cotton-seed meal and other oleaginous substances; but the invention is useful in connection with any kind of a press employing a system of press boxes or plates which are connected together and suspended in the press through the medium of links.

In hydraulic oil-presses of the class or type, for example, described and shown in Letters Patent No. 266,373, issued October 24, 1882, to William Kruttsch, the press boxes or plates are flexibly connected and suspended by slotted links, so that when the plunger of the hydraulic cylinder is retracted, or, technically, when the press is "down," the press boxes or plates are suspended separated one from another for the introduction or removal of the cotton-seed meal or other substance which is to be pressed.

The links or other devices heretofore used in oil and other presses to flexibly connect and suspend the press-boxes have proved objectionable for several reasons, chiefly because they usually obstruct the complete or perfect closing of the boxes when the hydraulic press is operated, or, technically, when the press is "up." The ordinary arrangement of links in oil-presses has in fact caused so much annoyance and dissatisfaction that many costly experiments have been made and various contrivances originated with a view to producing a perfect, reliable, and satisfactory arrangement for flexibly connecting and suspending the press-boxes in the press, but none of the link devices produced and actually used prior to my invention have, so far as I am aware, effectually and satisfactorily avoided all the annoyances and objections incident to the use of links for the purpose stated.

Of the former or prior constructions and arrangements some are objectionable in that

they prevent the boxes from being opened or separated the desired extent for the convenient and proper introduction of the meal or other substance to be pressed, and others are objectionable in that they interfere with the boxes or with one another as the boxes are closed together, while all are more less objectionable due to being complicated, expensive, and inefficient.

The chief objects of my invention are to avoid all the objections stated and to provide a new and improved construction and arrangement of links which permit the boxes to be opened to the desired extent, enable them to be completely and perfectly closed against one another, and maintain them under all circumstances in substantial parallelism horizontally, while providing a very compact and economical system of links and entirely avoiding any material interference of one link with another when the boxes are closed or opened in the operation of the press mechanism.

The objects of my invention are accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is an end elevation of one end portion of a gang of press-boxes in their open position and flexibly connected together according to my invention. Fig. 2 is an end elevation of the same, showing two of the links in section. Fig. 3 is a view similar to Fig. 1, showing the press-boxes closed together, as when the press is up. Figs. 4 and 5 are detail plan views of corner portions of two press-boxes, showing the pin-carrying arm of one greater in length than the pin-carrying arm of the other; and Figs. 6 and 7 are detail views of one of the eyed and slotted links.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numerals 1 indicate press boxes or plates of the kind ordinarily used in hydraulic or other presses designed for pressing various materials, such, for example, as cotton-seed meal and other oleaginous substances.

I have illustrated six press-boxes in the



drawings, but it will of course be understood that the number may be increased to any extent desired.

The press-boxes are each provided at each corner portion with projecting arms 2, as in Figs. 4 and 5. The arms of one box are of a length greater than the arms of the next box. For instance, if the top or uppermost box be provided with the short arms the alternating boxes thereafter will be provided with the long arms. The short arms are each provided with a single horizontally-projecting pivot-pin 3, and the long arms are each provided with similar horizontally-extended pivot-pins 4, so that all the pivot-pins 3 lie in one vertical plane or in one row, while all the pivot-pins 4 lie in another vertical plane or in another row, thereby providing at one end portion of the gang of boxes two distinct rows of pivot-pins.

The press-boxes, possessing the characteristic features above specified, are flexibly connected or coupled together through the medium of eyed and longitudinally-slotted links, which are grouped in pairs and so constructed and arranged, except as to the top and bottom boxes, that the two links of each pair pivotally engage a press-box, and the slots of this pair engage the press-box above and the press-box below the box to which said links are pivoted, in which respect my improved construction and arrangement is novel and possesses advantages over prior devices for the purpose in hand.

The links 5 are each constructed at one end with an eye 6 and at the other end portion with a longitudinal slot 7. The eye 6 of each link is designed to engage and swing upon one of the pivot-pins 3 on the short arms of the press-boxes, while the slots 7 of the links are designed to engage and slide upon the pins 4 on the long arms of the press-boxes. The links are retained upon and prevented from shifting off pins through the medium of any suitable devices, such, for example, as split keys 8.

As before stated, the links are grouped in pairs, and the two links of each pair pivotally engage one press-box at one end portion thereof. Commencing at the lower end of the gang of press-boxes it will be observed that the two links of the first pair have their eyes overlaid and mounted upon the pivot-pin 3 at one end of the press-box next to the bottom press-box. These two links project upward and downward and their slotted end portions 7 engage, respectively, the pins 4 at one end of the press-box above and the press-box below the box to which the eyed ends of the two links are pivotally connected. The same order applies to the other press-boxes above, the chief characteristic being that the two links of a pair of links engage one end of every press-box between the top and bottom boxes.

It will be seen from the drawings that the eyed ends 6 of the two links are mounted on

one pivot-pin 3, and that between the top press-box and the two lowermost press-boxes the slotted ends of the two links of each pair overlap and engage a single pivot-pin 4.

When the press is down and the boxes are open, they hang suspended one from another through the medium of the links, and as the press is put up, or, rather, as the boxes are closed together by the action of the press, each link in a series is in its turn relieved of the weight of the box which the link suspends. The pivot-pin working in the slot of the link will then swing the latter on the pivot-pin engaging the eyed portion of the link, so that each individual link is swung to such a position as to offer no obstruction to the boxes closing to the required extent, as will be understood by reference to Fig. 3. Obviously the guiding and swinging of the respective links by the pivot-pins which enter and engage the slots in the links effectually avoids the possibility of one link interfering with another link, either when the boxes are closed together or when they are opened.

It will be observed that in my invention a single pivot-pin is arranged at or near each one of the four corners of a press-box, and that the pivot-pins at one end of alternate boxes are in alinement with one another, thereby providing two distinct rows of pivot-pins. At the same time there is only a single pin on each box at each corner thereof. By this means two distinct sets of links can be used at each corner portion of the press-box, one set being located over another set with the slotted ends pointing upward, while the slotted ends of the other set point downward. The construction is such that the links are accurately guided, and they nicely nest together when the press-boxes are closed together, and by the arrangement described and shown I am enabled to materially reduce the number of pins necessary for a practical link system, in that by my invention I only employ a single pin at each corner of a press-box, instead of employing two separate and independent pins at each corner of a press-box, as in Letters Patent No. 266,373, hereinbefore referred to. The alternate arrangement of the pivot-pins renders it possible to engage two links with a single pin, and at the same time the pins will so stand in inclined or oblique positions that they are accurately guided and will nicely nest together when the boxes are closed without any danger whatever of any one of the links interfering with another link.

Practical use of my present invention has demonstrated that it is useful and practicable in operation in connection with any design of press-box now in use in oil-presses.

Having thus described my invention, what I claim is—

1. The combination with the press-boxes of an oil-press, having pivot-pins at their ends, of the longitudinally-slotted pairs of



links, each pair having one end mounted beside one another on a single pivot-pin of a box, the slotted other ends of each pair of links lying one beside the other on the pivot-pins of other boxes, substantially as described.

2. The combination with press-boxes having pivot-pins, of eyed and longitudinally-slotted links grouped in pairs at one end of the boxes, the two links of one pair being pivoted to one box and having slotted ends slidably engaged with the press-box above and the press-box below the box to which said links are pivoted, each pair of links being mounted at one end side by side on a single pivot of a box and at the other end side by side on the pivots of other boxes, substantially as and for the purposes described.

3. The combination with press-boxes having alternating pins arranged at one end in two vertical rows, of links grouped in pairs

and each pair pivoted at one end to one press-box and having longitudinally-slotted ends which engage other boxes, substantially as described.

4. The combination with press-boxes having at one end alternating pins, of eyed and longitudinally-slotted links forming a continuous link-chain connection from the top to the bottom box, one link extending from the pivot-pin of one box to the pivot-pin of another box on which the slotted end of another link is mounted, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH H. HUBBELL.

Witnesses:

JOHN L. H. FRANK,  
GEO. W. FRANK.