

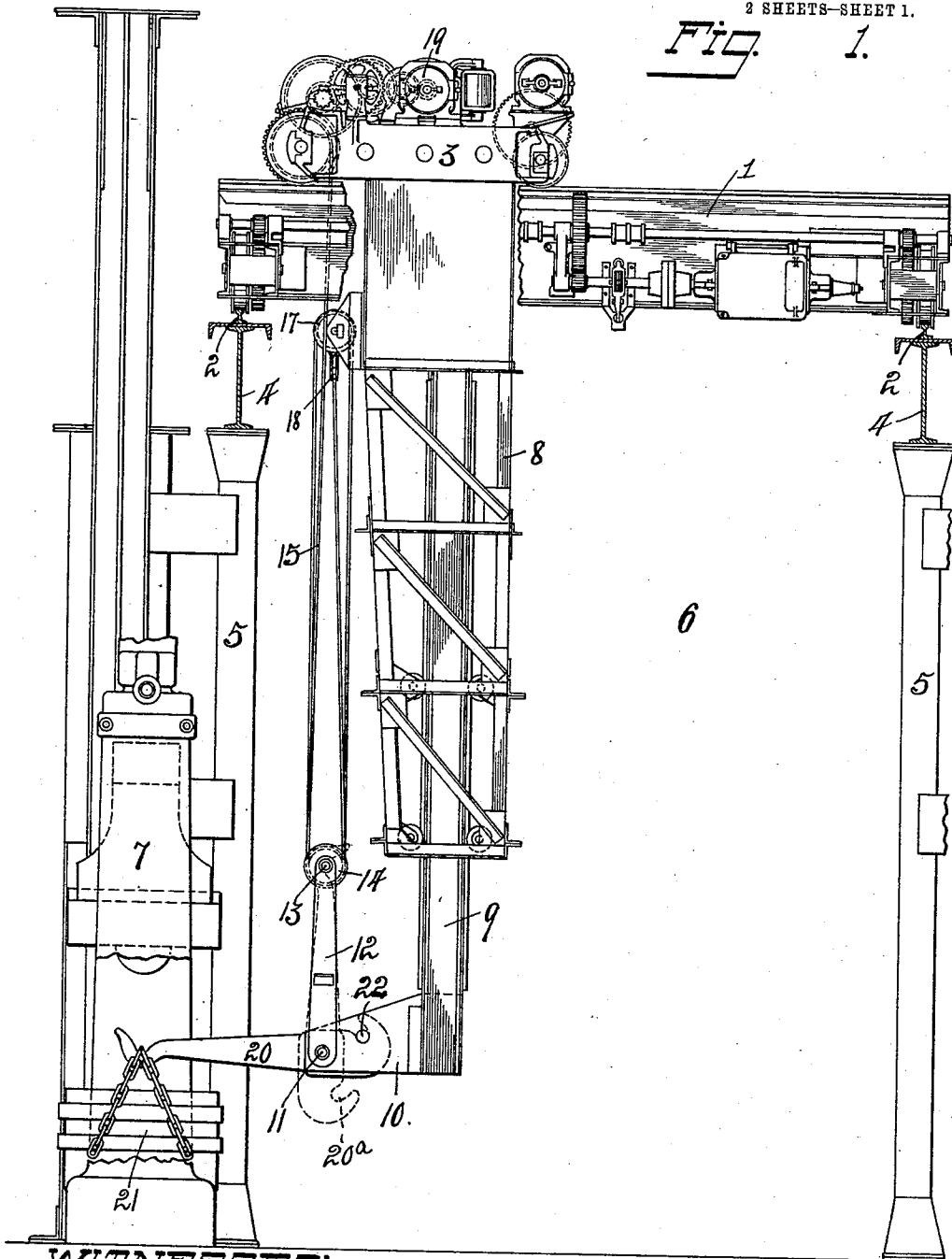
1,076,333.

C. H. TUCKER.
CRANE OR THE LIKE.
APPLICATION FILED OCT. 14, 1912.

Patented Oct. 21, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

G. H. Mills.

F. E. Aub.

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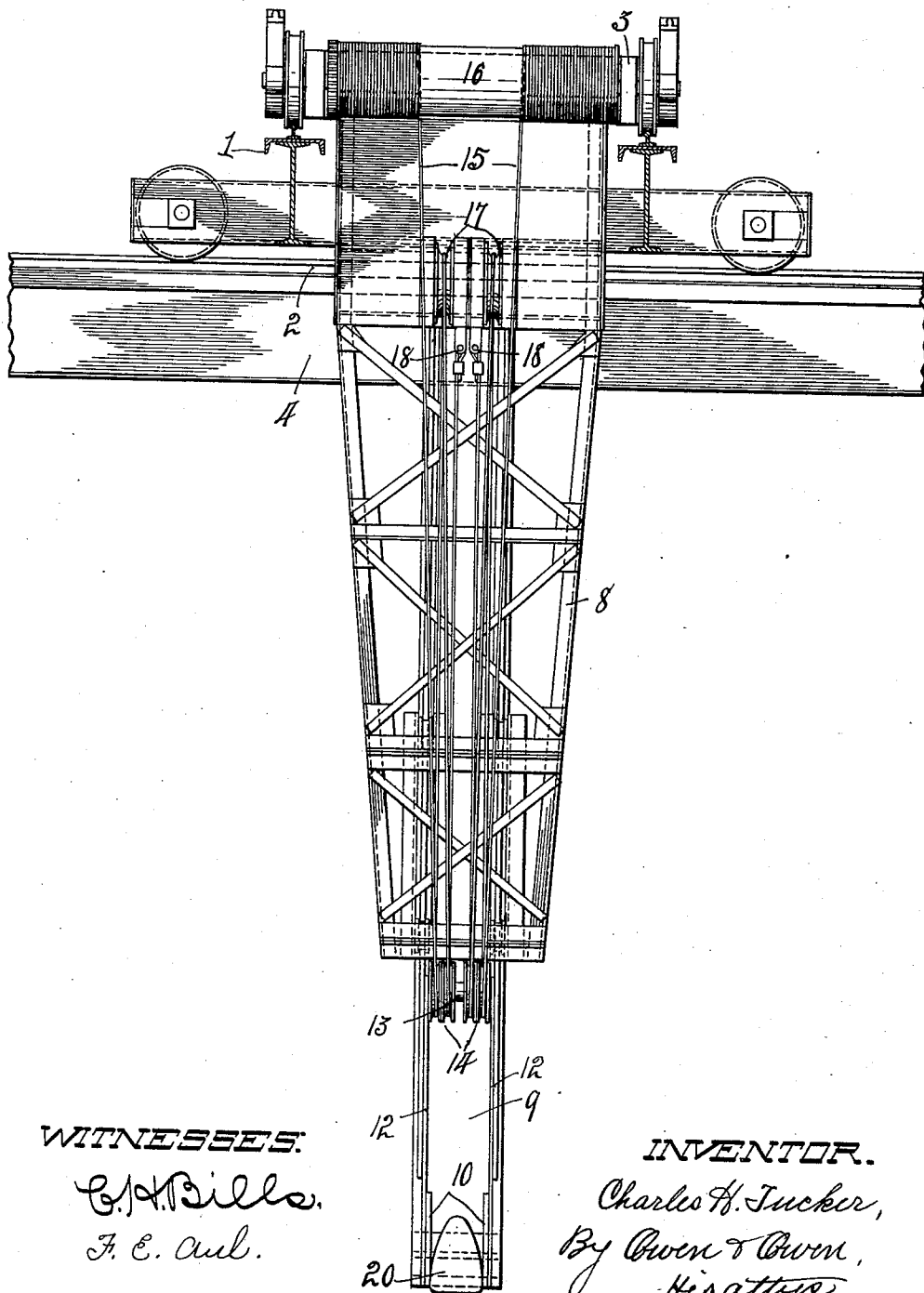
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES H. TUCKER, OF TOLEDO, OHIO.

CRANE OR THE LIKE.

1,076,333.

Specification of Letters Patent.

Patented Oct. 21, 1913.

Application filed October 14, 1912. Serial No. 725,589.

To all whom it may concern:

Be it known that I, CHARLES H. TUCKER, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Crane or the like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in hoisting or conveying mechanisms, and particularly to means for use in factories employing large drawing presses, forging hammers and the like, for placing dies in such machines or removing the same therefrom, or for moving molds in foundries, but is not restricted to such uses, as it may be used in any connection for which it may be adapted or appropriate.

It has been common in plants of the character described to employ overhead cranes having carriages or trolleys operating thereon from which beams having work or die lifting hooks or arms projecting laterally from their lower ends are suspended for vertical adjustment. In all of such apparatus, however, so far as I am aware, the work lifting hook or arm, when not engaged to a work piece or die, projects laterally from the carrying beam without the clear space or run way thereof, thus rendering it liable when moved laterally with the carrying parts to engage or strike against press frames or other obstacles standing in their paths of movement, unless extreme care is observed in the handling thereof, and not infrequently causing considerable damage to contacting objects or crane parts and injury to workmen.

The object of my invention is to provide an apparatus of this class with a work or die carrying hook or arm, which, when in use, is adapted to stand projected laterally from its carrying member, and when not in use, or relieved of the weight of an article, automatically moves to inoperative position to permit a movement of the carrying member close to presses or other obstacles without striking the same, thus enhancing the practicability and commercial value thereof.

A further object of the invention is the

provision in combination with a suspended trolley beam or mast, of an article carrying arm, which is adapted to project laterally from the beam in operative position or to be turned into inoperative vertical position, and when in such position to have a part thereof form a suspended article carrying hook.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of an overhead crane with the invention associated therewith and with parts broken away, the crane being shown in the act of placing a die in a press which is disposed at one side of the clear space or run-way of the crane mast; and Fig. 2 is a different side elevation of the crane and suspended article carrying parts.

Referring to the drawings, 1 designates an overhead crane or bridge, which operates on tracks 2, 2, and has a carriage or trolley 3 mounted thereon for movements transversely on said tracks, as is well understood in the art. The tracks 2, 2, are mounted on horizontal beams 4 which are supported by columns 5 at the respective sides of the clear space or run-way 6 in which the suspended article carrying parts of the trolley or carriage are intended to move. 7 designates a drawing-press, steam-hammer or the like, a plurality of which may be disposed at each side of the run-way or clear space 6.

A frame-work 8 is suspended from the carriage 3 between the beam members of the bridge 1 and forms a guide in which a mast 9 is mounted, for vertical reciprocatory movements. The mast 9 has a pair of spaced bracket-arms 10 projecting laterally from the lower end thereof, and these arms are connected adjacent to their outer ends by a pivot-pin 11 to the outer ends of which, without the arms 10, are pivotally attached the links 12, 12. The links 12 extend upward from the pivot-pin 11 and are connected at their upper ends by a short shaft 13 on which, in the present instance, are mounted two pairs of sheaves 14, said pairs being spaced apart, as shown in Fig. 2. A pair of cables 15, 15, for controlling the raising and lowering movements of the mast 9, extend downward from a drum 16 of the carriage 3 on which they wind, and each

passes around one of the sheaves 14 of the respective pairs, then upward over a sheave 17 carried at one side of the frame-work 8, thence downward around the other sheave 14 of the associated pair, and finally extends upward from such sheave and is fixedly attached to a part of the frame, as shown at 18. The drum 16 is geared in any suitable manner to a motor 19 mounted on the carriage 3, as is well understood in the art.

An article-carrying arm 20 is mounted on the pivot-pin 11 between the bracket-arms 10, 10, and has its inner end weighted to normally tend to maintain the arm in inoperative vertical position, as shown by the dotted lines in Fig. 1. The arm 20 has its article-carrying end projected a suitable distance from the pivot-pin to adapt it to project beyond the clear space 6 and into position to place a die 21 into a press or power-hammer 7 or to remove the same therefrom when the carriage 3 is adjacent to one side of the bridge 1, as shown in Fig. 1. The inner or weighted end of the arm 20 is provided with a hook 20^a, which, when the arm is in vertical position, serves as an article-carrying hook, and, when the drum is in horizontal position, coacts with a pin 22, which is carried by the bracket-arms 10, to limit the lowering movement of the arm, as shown in Fig. 1. When the arm 20 is in its vertical or inoperative position the outer hooked end thereof is intended to pass between the pairs of sheaves 14 carried by the pin 13 and to have its swinging movements in one direction limited by such pin. It is thus apparent that the pins 13 and 22 coact with the respective ends of the arm 20 to prevent the arm from making more than a quarter turn on the pivot-pin 11.

It is evident in the use of a crane provided with my improved article-carrying arm that such arm, when a weight or article is applied to the outer projected end thereof, stands in horizontal position, as indicated by the full lines in Fig. 1, and may then be projected beyond the clear space 6 to place a die into a press, or for any purpose, and that when such arm is relieved of the load which it was carrying it automatically assumes the inoperative vertical position indicated by dotted lines in Fig. 1, so that the crane can be run lengthwise of the clear space 6 close to the columns 5, or other objects disposed adjacent to the sides of such space, without danger of the arm striking such objects and injuring the same, as frequently occurs with the cranes employing a normally horizontally projecting article-carrying arm.

It is also evident that when the arm 20 is in its vertical position the lower hooked end thereof may then serve as an article carrying means. It will therefore be seen that either end of the arm 20 can be used as an article carrying means when the other end of such arm is in its inoperative position.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is,

1. In combination, an overhead trolley, a mast depending therefrom, an article carrying member pivoted to the lower end portion of said mast for vertical swinging movements, said member having a long arm with a hook at its outer end and a short arm which is formed with a hook at its outer end and is of greater weight than the long arm to normally maintain the latter in inoperative upright position with the hook of the short arm in article carrying position, and a stop for limiting the downward swinging movements of the long arm from upright position.

2. In an overhead crane, a suspended part having bracket members projecting laterally therefrom, a pivot-pin mounted in and connecting said members, links pivotally rising from opposite ends of said pivot-pin, a shaft mounted in and connecting the upper ends of said links, sheaves carried by said shaft, means coacting with said sheaves to control the raising and lowering movements of said part, an article carrying arm mounted on said pivot-pin for vertical swinging movements and normally influenced to stand in vertical position, and when in such position to have its upper end projecting between and against different ones of the sheaves, and adapted to act against said shaft, means carried by the said bracket members for coacting with a part of said arm to limit the downward swinging movements thereof in one direction, said arm when in horizontal position being adapted to project beyond the clear space or run-way of said crane part.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. TUCKER.

Witnesses:

C. W. OWEN,
C. H. BILLS.