

Aug. 12, 1924.

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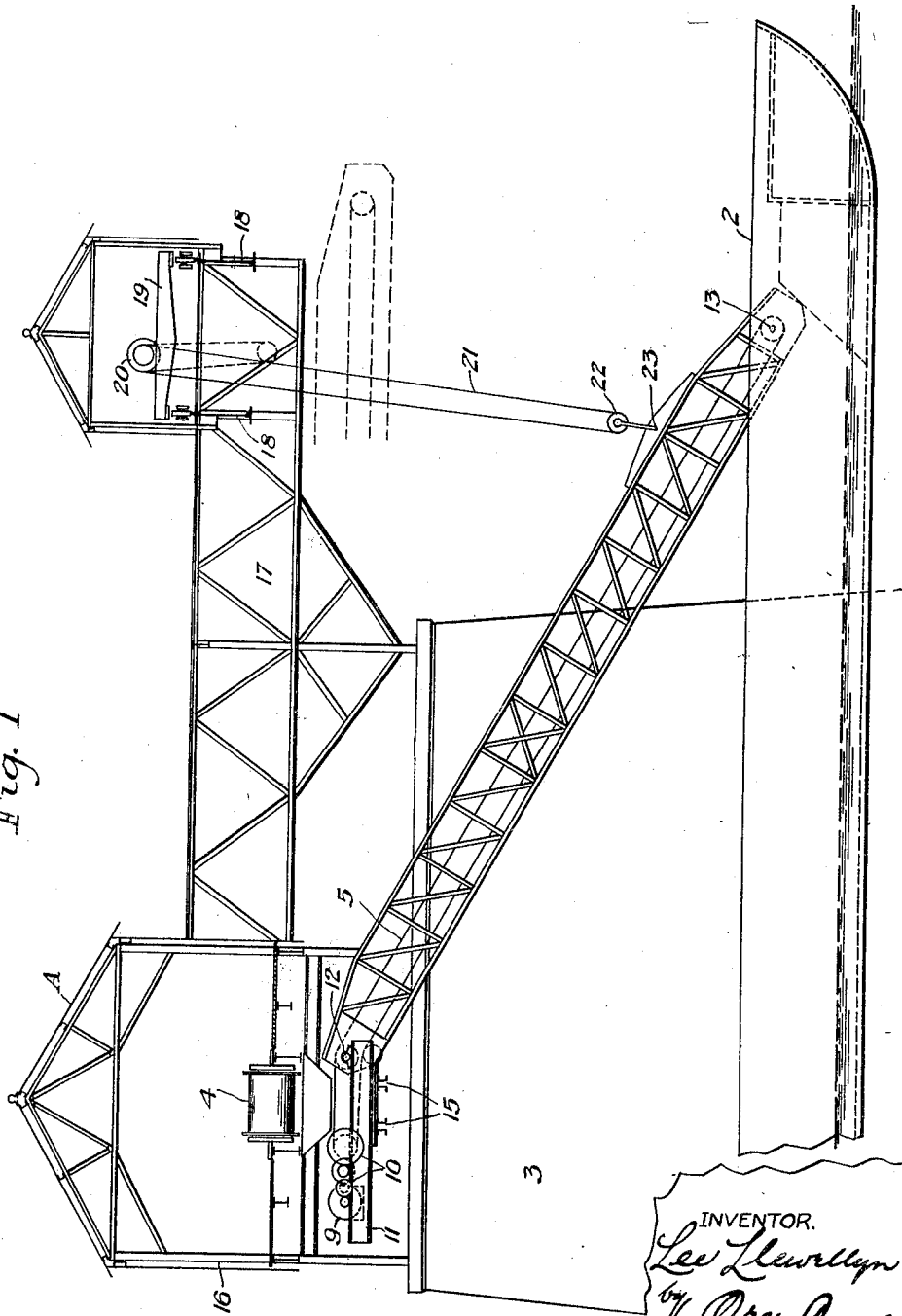
L. LLEWELLYN

APPARATUS FOR LOADING BARGES

Filed April 22, 1921

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Fig. 1



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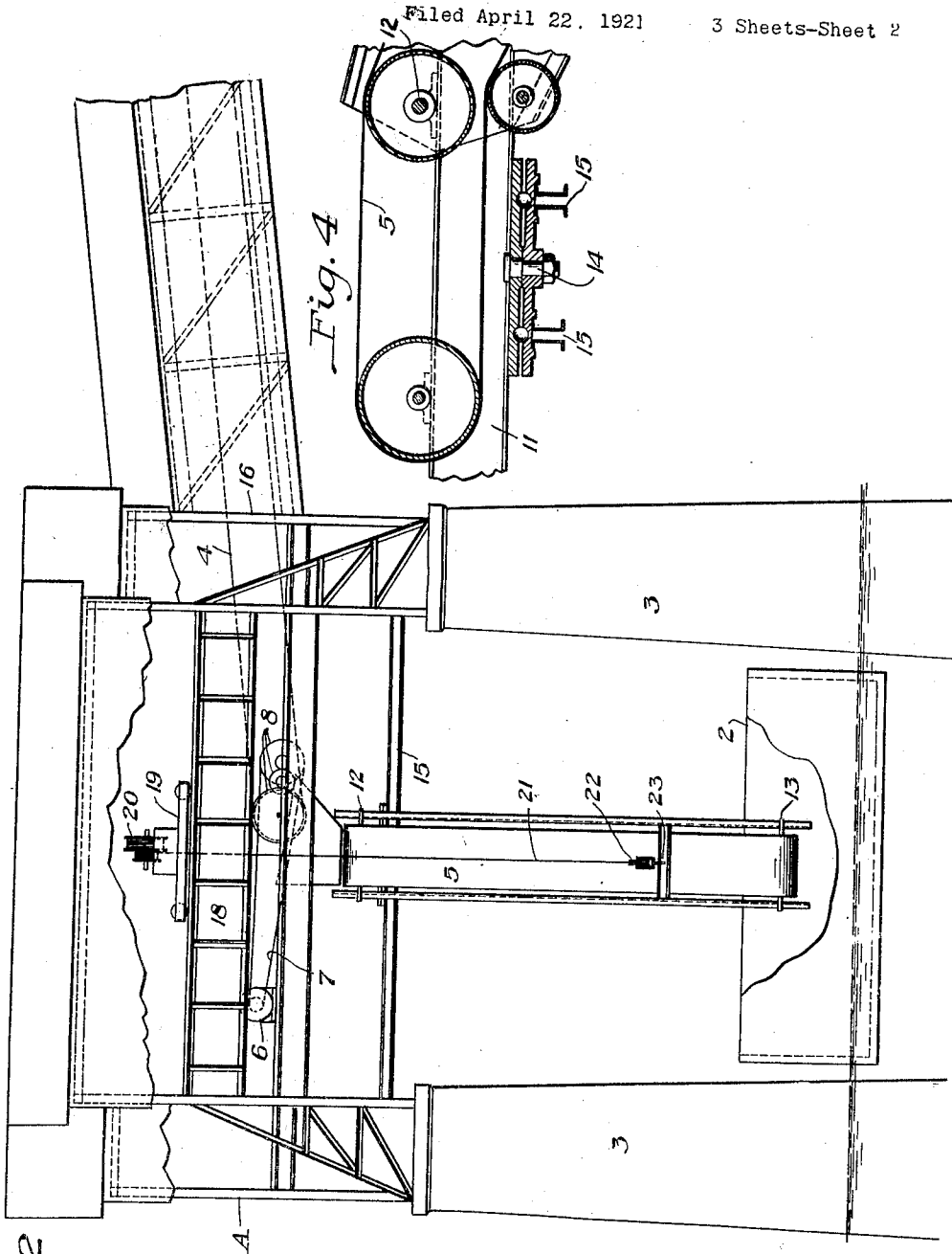


Fig. 2

Fig. 4

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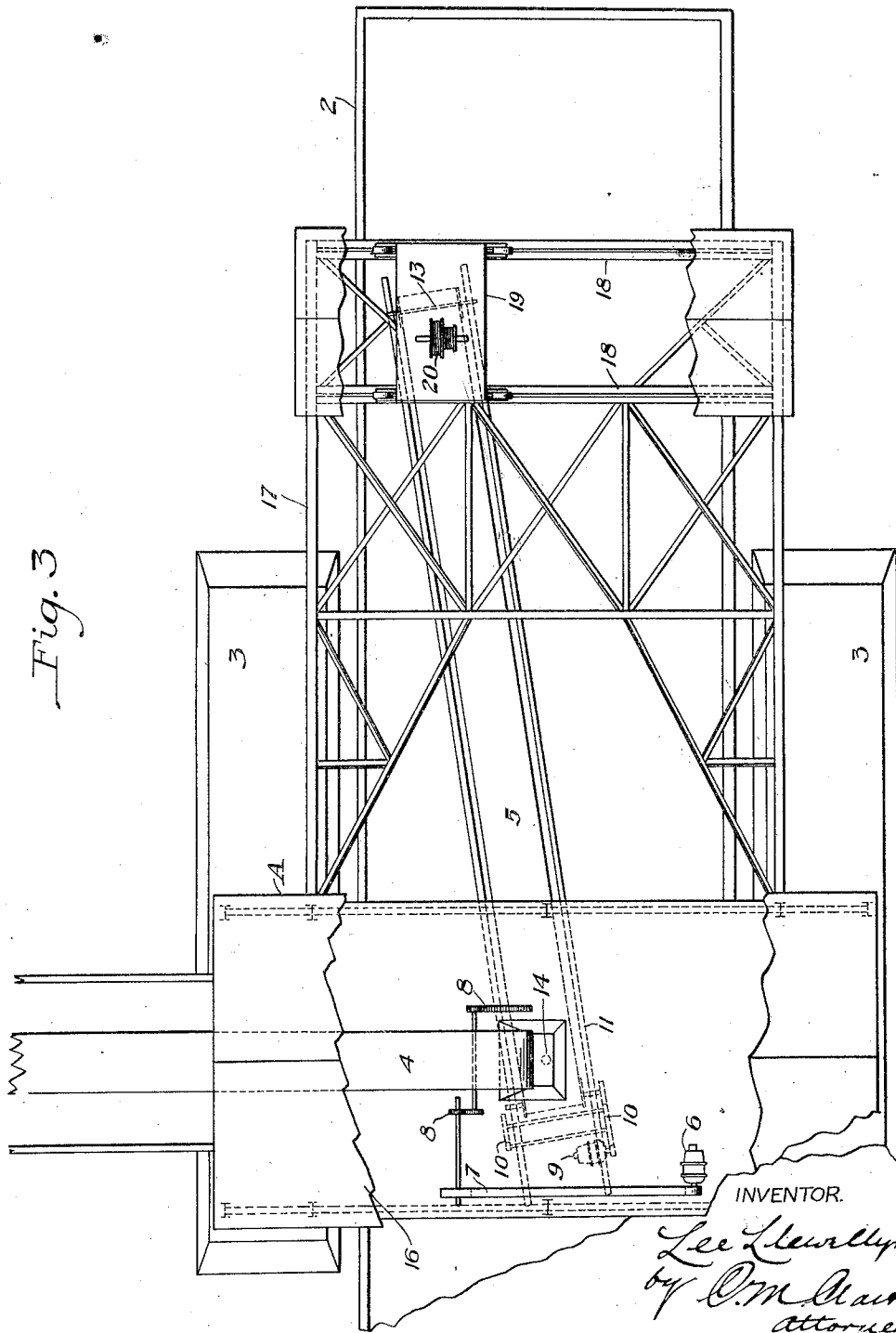
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UNITED STATES PATENT OFFICE.

LEE LLEWELLYN, OF DORMONT, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH COAL WASHER COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

APPARATUS FOR LOADING BARGES.

Application filed April 22, 1921. Serial No. 463,507.

To all whom it may concern:

Be it known that I, LEE LLEWELLYN, a citizen of the United States, residing at Dormont, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Loading Barges, of which the following is a specification.

My invention consists of an improved method and apparatus for loading barges, and has for its object to distribute loose material, as coal, across the width and successively throughout the length of an intermittently movable vessel. In the loading of coal or similar loose heavy material in bulk initially upon the bottom of barges, such as are used in river traffic, it is desirable and necessary to place the load gradually across the bottom, and to discharge it thereon through a minimum drop, to avoid unequal and sudden strains which are apt to produce leakage or rupture. Also, to avoid centralizing the load at one or more points, so as to effect a gradual and even submergence of the hull. Heretofore, such loading has been done by shovelling or by the use of raising and lowering baskets arranged to receive unitary portions at a considerable height above the barge and to lower and discharge close to the bottom, involving considerable loss of time in returning empty as well as expensive and complicated apparatus.

In my invention, I provide a vertically and laterally adjustable conveyor adapted to receive the load continuously at its upper end and to deliver it from its lower end across the width of the barge, lengthwise of the barge, in connection with intermittent longitudinal shifting of the latter, and also in successively higher levels, when necessary.

In the drawings, illustrating one preferred embodiment of the invention,

Fig. 1 is a view in sectional side elevation of an apparatus adapted to carry out the method;

Fig. 2 is a view of the same in end elevation;

Fig. 3 is a plan view;

Fig. 4 is a sectional detail view showing the pivotal mounting of the upper end of the delivery conveyor.

Referring to the drawings, 2 is an open top barge of ordinary construction, such as is used in river traffic, and adapted to float in a pool between piers or walls 3, 3, ar-

anged to allow the barge to float between them, with slight lateral clearance.

Mounted upon piers 3 at sufficient elevation above high water level is a tippable construction A, bridging across the barge receiving space and providing suitable supporting structure for a supply conveyor 4 of usual construction, of the endless conveyor type. Conveyor 4 leads from any suitable receiving point, as the distribution terminal of a mine, and terminates immediately above the receiving end of the adjustable distributing conveyor 5. The delivering end of conveyor 4 and the upper receiving terminal of conveyor 5 are so located as to coincide with the longitudinal central line of the barge 2 in its position midway between the piers 3.

The head shaft of conveyor 4 is driven from any suitable prime mover, as a motor 6, to belt 7 and gear 8, of well known construction, whereby to actuate the conveyor at the desired speed and under the control of the operator. The conveyor 5 is actuated in a similar way by motor 9 and gearing 10 connecting the motor with the head shaft of the conveyor, all of which gearing and the motor is mounted upon a suitable upper supporting framework 11 forming an extension of the conveyor framework itself. The conveyor proper 5 is pivoted at 12 to said framework so that its lower end carrying the other terminal shaft 13 may be raised and lowered independently of the upper portion, but is capable of operation by the motor and gearing at any height. The framework 11 is swiveled at the point 14 in any suitable manner, as by a central stud or king bolt, and with turn table rollers, if desired, upon a lower stationary supporting framework 15 extending across underneath and supported upon piers 3 or from the superstructure, as desired.

The conveyor 4 extends underneath a suitable covering structure 16 which may bridge across the entire space from one pier to the other, and from such structure extends across, longitudinally with the piers, and at each side of the barge space, a supporting structure 17 of any suitable design. Said structure 17 is of sufficient length to terminate outwardly beyond the receiving end of conveyor 5 and approximately at a position directly above the lower or delivery end of the conveyor, so as to provide for the

location of raising, lowering and laterally shifting mechanism therefor.

At such point extends across, from one side portion 17 to the other, the supporting framework 18 of a crane 19. Said crane is mounted on laterally extending trackways of well known construction, and is capable of movement, under the power of its motor from one side to the other, and also of raising and lowering the delivery end of conveyor 5. For such purpose, it is provided with reversible drum mechanism 20 and suitable gearing, and a cable 21 connected by sheave 22 and its terminal bail with the upper portion of the conveyor frame, as at 23.

By this means, the conveyor 5 may be accurately lowered to the desired position with its delivering terminal at a proper height above the bottom of the barge, so as to gently deliver the load upon the bottom of the barge with a minimum drop. The conveyor 5 may also be shifted laterally toward one side or the other by lateral movement of the supporting crane, and these operations are continued, in connection with intermittent longitudinal shifting of the barge 2 throughout the loading operation, as will be readily understood.

The range of lateral movement of the conveyor 5 is co-extensive with the interior width of the barge, as indicated in Fig. 3, and the construction provides for the easy discharge across the full width and forwardly or backwardly throughout the entire length of the barge so that it may be gradually loaded without any sudden strains or unequal distribution of the load, or breakage of coal, and without any loss of time or unnecessary movement of the loading mechanism.

The apparatus thus provides for great economy of time and with the resulting advantages noted. It avoids the various objections present in the old practice, and ensures against objectionable strains and resulting leakage, with accompanying avoidance of the expense of pumping.

It will be understood that the operation may be carried out by various specifically different installations, and that changes or variations may be made in the particular apparatus above described, but all such are to be considered as within the scope of the following claims.

What I claim is:

1. In combination, a pool providing for flotation and movement of a receiving vessel, a superimposed structure and means supporting it thereover, a conveyor leading onto said structure and having a delivery terminal over the middle portion of the pool, a receiving and delivery conveyor having an upper turntable portion located below the first named conveyor and a lower vertically and laterally adjustable portion, an extension of the superimposed structure, and means thereon for raising, lowering and laterally moving the last named conveyor.

2. In combination, a pool providing for flotation and movement of a receiving vessel, supporting members at each side thereof providing limiting guiding elements for a vessel, a superimposed structure extending across the supporting members, a conveyor thereon terminating above the pool, a receiving conveyor having its upper portion pivotally arranged below the delivery end of said conveyor, an extended superimposed structure on the supporting members, and actuating mechanism thereon connected with the lower portion of the last named conveyor for imparting lateral and vertical movement thereto.

3. In combination, supporting piers providing a guiding pool for a vessel located between said piers, a superimposed structure extending across the piers, a conveyor thereon, a receiving conveyor pivoted below the delivery end of said conveyor, and a laterally movable crane having hoisting and lowering mechanism connected with the delivery end of said conveyor.

In testimony whereof I hereunto affix my signature.

LEE LLEWELLYN.