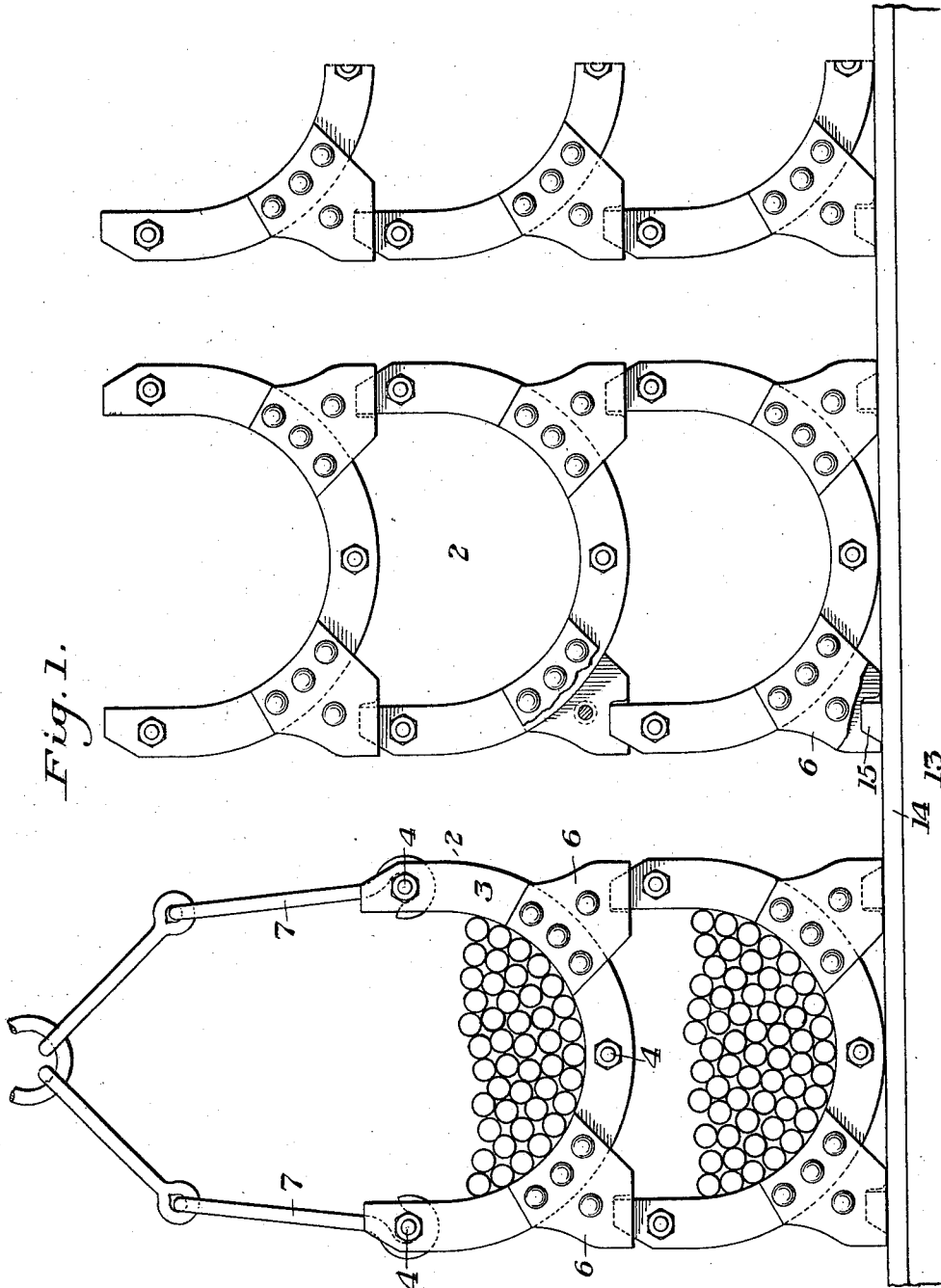


J. T. MOLTRUP.
METAL STORAGE SYSTEM.
APPLICATION FILED JUNE 14, 1911.

1,029,139.

Patented June 11, 1912.

3 SHEETS—SHEET 1.



WITNESSES

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1,029,139.

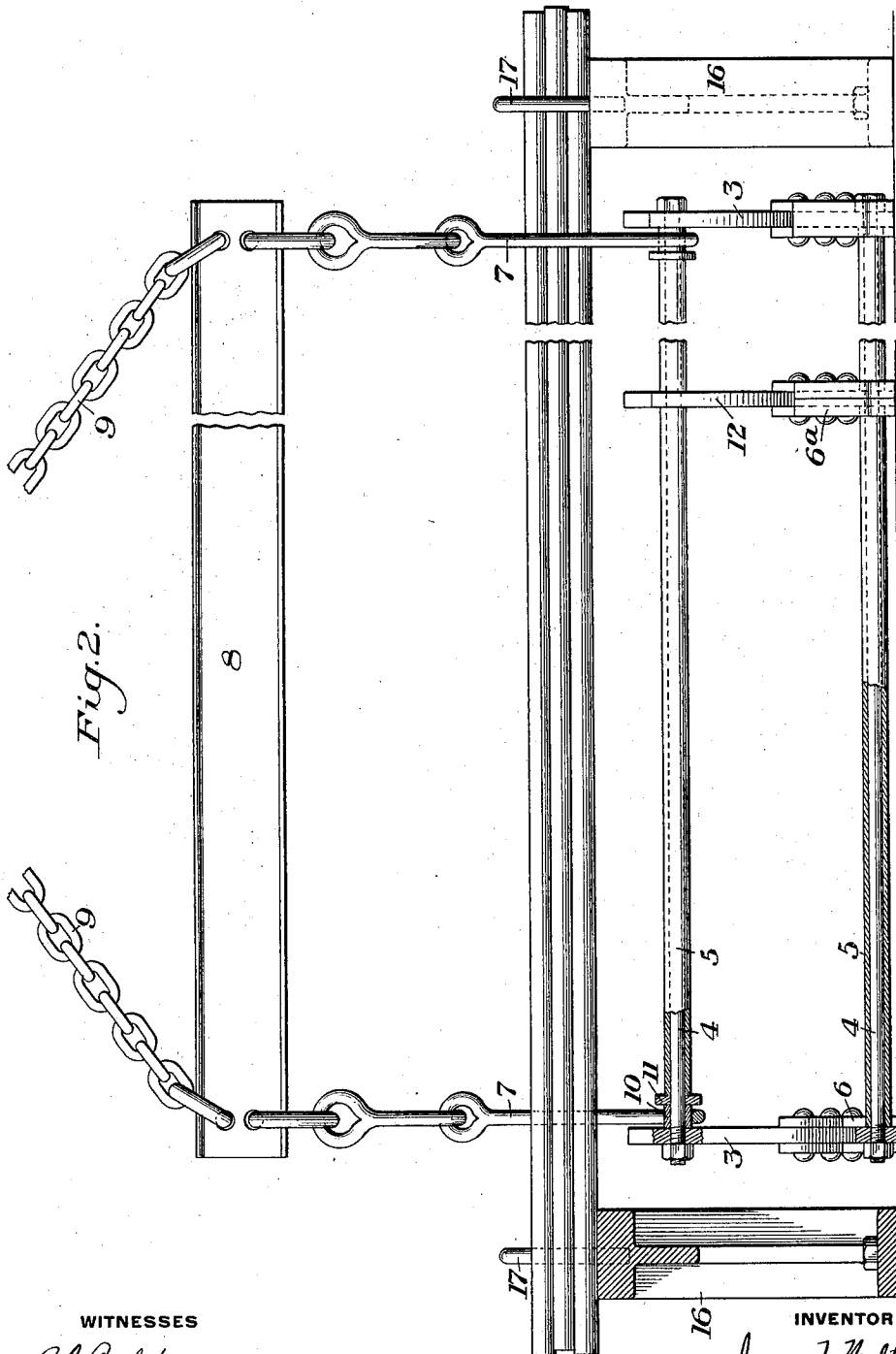


Fig. 2.

WITNESSES

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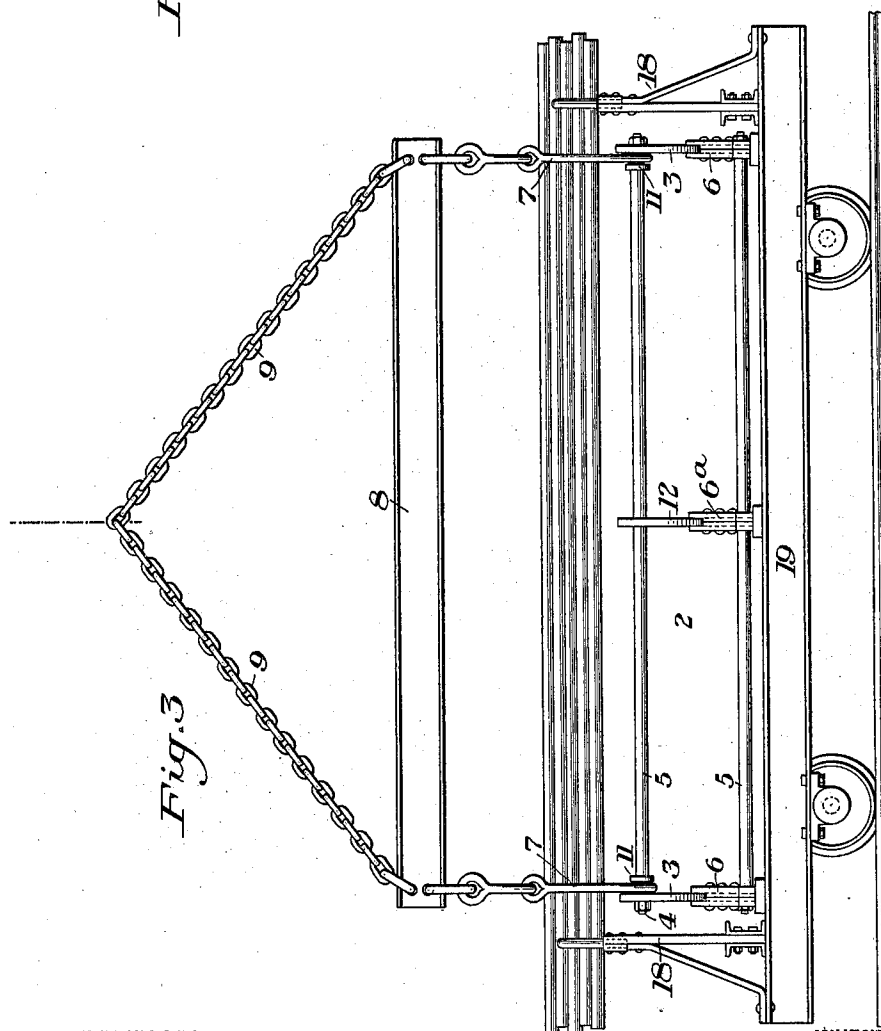
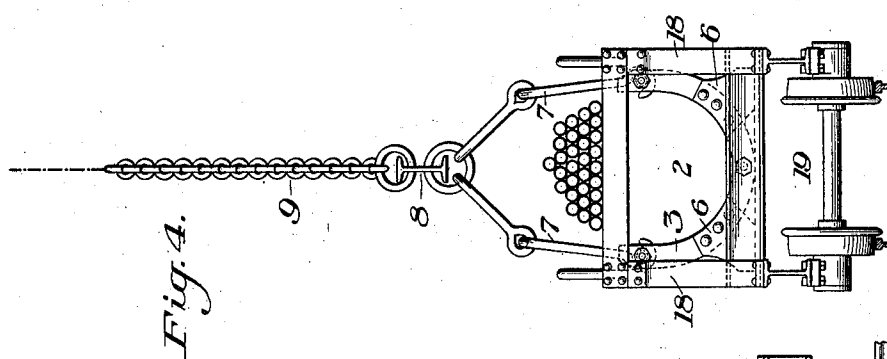
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3 SHEETS-SHEET 3.

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UNITED STATES PATENT OFFICE.

JAMES T. MOLTRUP, OF BEAVER FALLS, PENNSYLVANIA.

METAL-STORAGE SYSTEM.

1,029,139.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed June 14, 1911. Serial No. 633,214.

To all whom it may concern:

Be it known that I, JAMES T. MOLTRUP, of Beaver Falls, Beaver county, Pennsylvania, have invented a new and useful Improvement in Metal-Storage Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation showing a portion of my improved storage system; Fig. 2 is a side elevation partly broken away showing the depositing of metal at or near a machine; Fig. 3 is a side elevation showing the manner of depositing on the truck; and Fig. 4 is an end view of Fig. 3.

My invention relates to the storage and handling of bars, rods, or similar lengths of metal, particularly in shops for machining, forging and other operations performed on such metal. Heretofore, these lengths have been stored in bins, or suitable storage receptacles, and considerable labor and loss of time results from the ordinary practice, especially where the bars or rods are of different lengths, different sizes, &c. A large storage space is also necessary under the system now used.

My invention is designed to economize space in the storage of such articles, to enable different sizes to be segregated and easy access given to the different sizes and lengths, and also to provide for easy handling of the bars or rods in groups by overhead cranes or similar devices.

In carrying out my invention, I employ a series of cradles at the storage station, these cradles being adapted to receive a number of bars or rods and preferably to be stacked up one above the other, with interlocking or interengaging connections to prevent displacement between them. A series of vertical rows of these cradles may be stacked up on the storage platform, or support, which, if desired, contain bars of different sizes or different lengths, these cradles being adapted to be engaged by an overhead traveling support or carrier. The cradles are preferably shorter than the lengths of the bars, and in carrying the rods or bars about and depositing them, supports are preferably provided on which the group may be deposited by dropping the cradle in between the supports. A convenient way is thus afforded for carrying the bars in groups

from one machine or one operation to the next.

In the drawings, 2 represents a series of cradles, which, in the form shown, consist of U-shaped ends 3 connected by three bolts 4 extending through them and surrounded by spacer tubes or pipes 5 between the U-shaped ends. To each end piece of the cradle 2 legs 6 are secured, these legs being formed in any desirable manner and having bottom recesses shaped to engage the tapering upper ends of the U-shaped end pieces 3. In the form shown these legs are each formed of plates riveted to the end pieces 3 and provided with the bottom recess.

To provide for lifting and carrying the cradles about, I preferably employ hooked links 7, which are linked to a longitudinal bar 8, which may be formed with an I-beam, this beam having chains 9 leading up to a common loop, which may be engaged by an overhead crane or other suitable lifting and supporting device.

In order to provide for repair after use, I may employ separate sleeves 10 between the ends of the upper spacer tube 5 and the end pieces 3, these sleeves being engaged by the hook links 7, which are held in place by suitable collars 11. When the sleeves 10 become worn they can be replaced.

In the form shown I also provide a central U-shaped support 12, midway of the length of the cradle, this being similar to end members 3, the bolts extending through it while the spacer sleeves or tubes extend into recesses on each side of its supporting legs 6^a.

In the use of the cradles I preferably employ a supporting platform or storage base 13, which may be formed of concrete and provided with a top plate 14 having lugs 15 suitably spaced to fit into the recesses of the legs of the bottom cradles. On this support the cradles are stacked up in the form shown in Fig. 1 in any desired number of vertical rows, each cradle containing a group of bars or rods to any desired number up to the capacity of the cradle. In the form in which these cradles are now used, the carriages are about eight feet long, while the bars are about twenty feet long.

When a group of bars of a particular length or size is required, an overhead crane is brought to the point where such bars are stored, and the corresponding cradle lifted

and transferred to the machine where an operation is to be performed. The cradle is then lowered between the supports 16, as shown in Fig. 2, and the bars then rest between stakes 17 on the top of the supports. The hook links 7 may then be disengaged and the cradle either left in place or removed sidewise, as desired. When the operation is completed, the bars may be replaced on a support 16, the cradle lifted and the group of bars thus taken to the next station or machine where the operation of dropping is repeated on another support.

Instead of lowering the groups of bars on stationary supports I may deposit them on a truck. Thus, in Figs. 3 and 4 I show the cradle lowered between supports 18 mounted on a wheeled truck 19 traveling on suitable tracks. In this case again the supports 18 are spaced farther apart than the length of the cradle, so that as the cradle is lowered the bars will be deposited on the tops of the truck supports. The hook links may then be disengaged and the truck moved about from point to point, either with or without the cradle in place thereon.

The advantages of my invention will be obvious to those skilled in the art, since the amount of storage space required is considerably reduced, easy access is given to different sizes and lengths of bars, and the bars may be cheaply and rapidly taken from point to point through the mill or factory. Different sizes of bars can be stacked in different cradles, and one or more bars may be taken from each cradle, as desired, since one group of bars is supported independently of another. The groups of bars may be easily taken from point to point in their storage cradles and deposited where they are desired.

Many changes may be made in the form and arrangement of the storage cradles or receptacles; the means for transporting and depositing them may be varied; and other changes may be made without departing from my invention.

I claim:—

1. In a storage system for metal lengths, a series of superimposed cradles having open

ends, and arranged each to support a series of metal lengths independently of an adjacent cradle; substantially as described.

2. In a storage system for metal lengths, a set of superimposed cradles of U-shape and having open ends, said cradles also having interfitting connection with each other; substantially as described.

3. In a storage system for metal lengths, a set of superimposed U-shaped cradles, said cradles consisting of spaced U-shaped members and tie connections between the same; substantially as described.

4. In a storage system for metal lengths, a set of superimposed U-shaped cradles, said cradles consisting of spaced U-shaped members and tie connections between the same, each cradle having means for supporting it upon another cradle; substantially as described.

5. In a storage system for metal lengths, a cradle comprising spaced U-shaped members, and tie connections between said members, said members having supporting leg portions; substantially as described.

6. In a storage system for metal lengths, a cradle comprising spaced U-shaped members, and tie connections between said members, said members having supporting leg portions, and also having means for engagement with an overhead carrier; substantially as described.

7. In a storage system for metal lengths, a series of U-shaped open end cradles, said cradles being each adapted to support a plurality of metal lengths, and being shorter than the lengths to be supported, together with a receiving device having supports arranged to be placed adjacent to and beyond the ends of the cradle to receive the projecting end portions of the lengths when the cradle is lowered and thereby receive and support the entire series of lengths; substantially as described.

In testimony whereof, I have hereunto set my hand.

JAMES T. MOLTRUP.

Witnesses:

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EARL R. LEYDA.