

M. LUNDIN.
METAL WORKING MACHINE.
APPLICATION FILED JUNE 21, 1911.

1,006,962.

Patented Oct. 24, 1911.

2 SHEETS-SHEET 1.

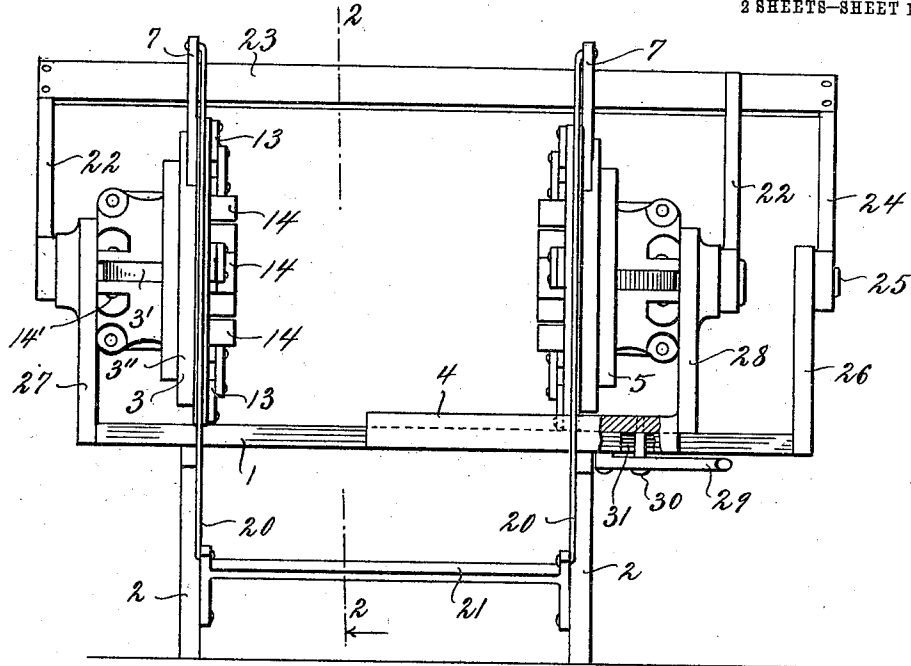


Fig. 1

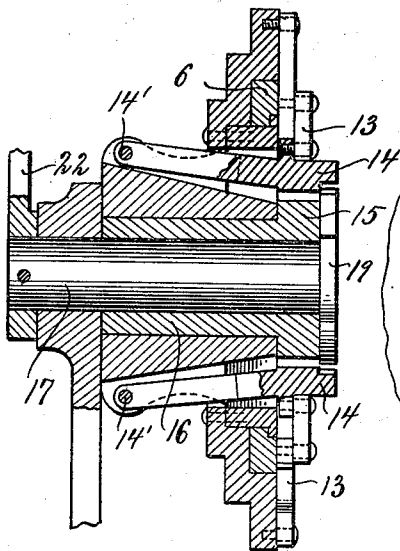


Fig. 4

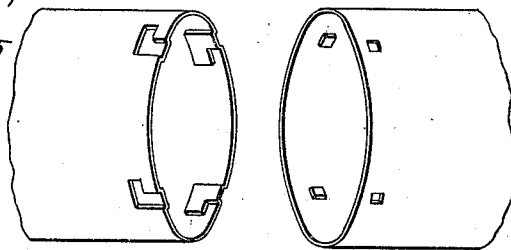


Fig. 5

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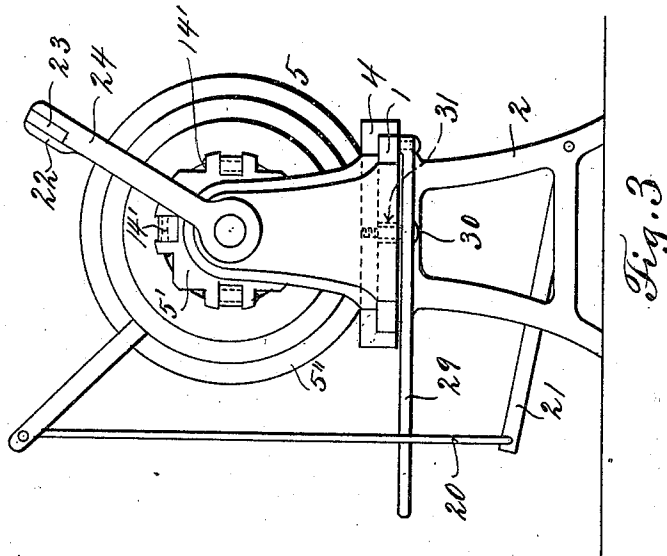


Fig. 3

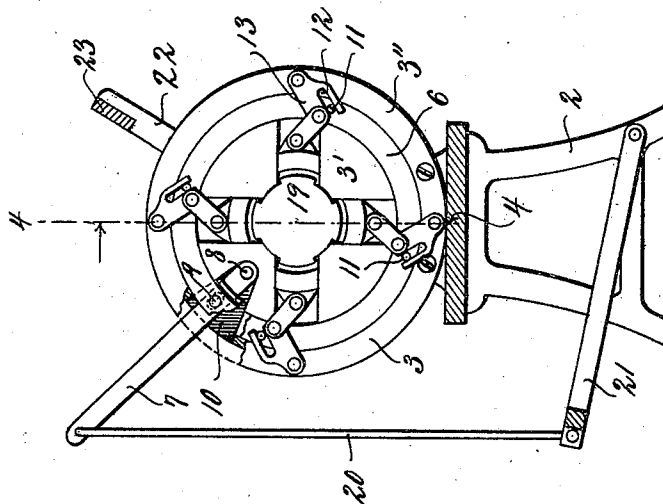


Fig. 2

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UNITED STATES PATENT OFFICE.

MARTIN LUNDIN, OF CHATTANOOGA, TENNESSEE.

METAL-WORKING MACHINE.

1,006,962.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MARTIN LUNDIN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Metal-Working Machines, of which the following is a specification.

The object of this invention is to provide a novel and extremely simple machine designed particularly for providing an interlocking connection between pipe sections.

In its preferred embodiment, the invention more specifically comprises a machine in which suitable heads are provided to support a section of metal pipe, on which heads are mounted movable dies for coöperation with a relatively stationary die, to form a bayonet recess or slot, and an interlocking projection at the opposite ends of the pipe section.

Certain peculiar mechanism is also provided forming an essential feature of the present invention, whereby to facilitate the operation of the dies and release of the pipe section after work thereon is performed.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a front elevation of a machine embodying the essential features of the present invention; Fig. 2 is a transverse section about on the line 2—2 of Fig. 1; Fig. 3 is an end view of the machine; Fig. 4 is a section taken about on the line 4—4 of Fig. 2; Fig. 5 is a combined fragmentary perspective of two pipe sections provided with the interlocking means made by the present invention.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

In the drawings, 1 denotes the base of the machine which may comprise a suitable standard including the legs 2, or any other desired structure upon which may be mounted the other parts of the invention. Adjacent to one end of the base 1 is a stationary head 3 and upon the other end portion of the base is mounted a sliding support 4 carrying a second head 5. The heads 3 and 5 are secured upon the parts 1 and 4 respectively by any substantial fastening means desired, and said heads are of prac-

tically the same general construction, the head 3 embodying the inner section 3' and the outer section 3'' while the head 5 comprises the inner section 5' and the outer section 5''. The making of the heads in two sections is intended to facilitate the placing in position on each head of an actuating ring or member 6, interposed between said sections and adapted to be turned by means of a lever 7 pivoted to the inner section, as shown at 8. The connection between the lever 7 and its adjacent member 6 is shown at 9 and consists merely of a projection. The outer section of each head is provided with a radial recess 10 to permit of pivotal movement of the adjacent lever 7 in order to partly rotate the actuating ring 6. The ring 6 is connected by projections 11 with slotted portions 12 of the outer members of a plurality of toggle joints 13 which connect the outer section of each head with radially movable dies 14 that are mounted on the inner section of the head. The dies 14 co-operate with a stationary die 15 which is provided at one end of a sleeve 16, the latter in turn being mounted upon a shaft 17. An arm is carried by the outer end of the shaft 17 so as to rotate the latter partially, and the opposite end of the shaft 17 carries a movable die 19 coacting with the die 15. The radially movable dies 14 extend through the slots in the inner section of each head and are pivotally connected at their outer ends at 14' to said section.

The levers 7 of the heads 3 and 5 are connected with rods 20 and said rods are attached at their lower ends to a foot frame or lever 21 pivoted to the legs 2 of the base 1. The upwardly extending arms 22 are secured to the outer ends of the shafts 17, one of said arms being secured permanently at its upper extremity to a hand bar 23 while the other arm which coöperates with the movable head 5 is slotted at its upper end to receive and interlock with the bar 23. The bar 23 is also secured at the extremity adjacent to the head 5 to an arm 24 pivotally supported on a trunnion 25 carried by a standard 26 secured to the base 1. The shafts 17 are mounted not only in the inner sections of the heads 3 and 5 but also in suitable bearings in standards 27 and 28 respectively, the standard 27 being attached to the base 1 permanently while the standard 28 is secured to the slidable support 4.

On the under side of the base 1 is pivoted

a lever 29, said lever being connected to the support 4 by a bolt or fastening 30 which passes through a slot 31 in the base 1. By operating the lever 29, the support 4 may be moved bodily with the head and other parts carried thereon, longitudinally of the base 1, by which arrangement and operation of parts, the head 5 may be moved toward and from the head 3 in order to permit of readily placing a pipe section between the heads so that the ends of said section receive the members 15 and 19 of each head. In the sliding movement of the support 4, the arm 22 maintains connection between the bar 23 and the shaft 17.

The machine above described may be provided with dies 14 of any desired shape according to the shape which is to be given to the projections formed on the ends of the pipe section. Should it be desired, the dies 14 of one of the heads may be cutting dies so as to cut bayonet shaped slots in one end of the pipe section, while the dies 14 of the other head may be pressing dies to form a projection on the other end of the pipe section. However, both sets of dies 14 are preferably pressing dies.

It will be apparent that in the operation of the machine, the head 5 is moved away from the head 3 by the lever 29 so as to place the pipe section in position such that its ends receive the dies 15 and 19 of each head. This is done readily and then the operator depresses the foot device 21 pulling downwardly on the levers 7. Such operation of the levers 7 imparts rotation to the rings 6 and thereby tends to force the members of the toggle joints 13 into aligned position carrying the dies 14 in a radial manner toward the dies 15 and 19 and causing said dies 14 to operate upon the pipe section in an obvious manner forming the desired shaped projections. After the levers 7 are returned to their normal positions, the pipe section must be released from the dies 15 and 19 and to do this, the hand bar 23 is operated to turn the shafts 17 until notches in the peripheral portion of the dies are in register with the recently formed projections on the ends of the pipe section. The lever 29 may then be operated to force the head 5 away from the head 3 until the pipe section is disengaged from the parts 15 and 19.

Having thus described the invention, what is claimed as new is:

1. In a metal working machine, the combination of a base, a head mounted thereon, a support slidable on the base, a second head

carried by said support, dies carried by the heads, means for moving the sliding support for the purpose of placing and releasing work between the heads, means on the base for operating certain of the dies on the heads, and a connection between the last mentioned means and the dies of the movable head.

2. In a metal working machine, the combination of a base, a head mounted thereon, a support slidable on the base, a second head carried by said support, dies carried by the heads, means for moving the sliding support for the purpose of placing and releasing work between the heads, arms pivoted to the base, a hand bar connecting said arms, one of said arms being connected to a certain die of the stationary head, and the arm having slidable connection with said hand bar and connected to the die of the head on the sliding support.

3. In a metal working machine, the combination of a head, a plurality of radially movable dies carried by said head, toggle joints connecting said dies to the head, and a rotatable member on the head for actuating said toggle joints to move said dies.

4. In a metal working machine, the combination of a head, a plurality of radially movable dies carried by said head, toggle joints connecting said dies to the head, and a rotatable member on the head for actuating said toggle joints to move said dies, a ring rotatably mounted on the head, means for turning said ring, and pin and slot connections between the ring and the toggle joints for the purpose set forth.

5. In a metal working machine, the combination of a head, a rotatable actuating member thereon, a lever for operating said actuating member, dies pivoted at one end to the head, toggle joints connecting the other ends of the dies with the head, and connections between said toggle joints and the actuating member.

6. In a metal working machine, the combination of a head, a stationary die thereon, a movable die adjacent to the stationary die and having notches therein, radially movable dies cooperating with both the stationary and movable dies aforesaid, and means for turning the movable die first mentioned for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN LUNDIN.

Witnesses:

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J. H. DAVIDSON.