

J. TEDELL.
 WORK HOLDER.
 APPLICATION FILED DEC. 9, 1910.

1,119,376.

Patented Dec. 1, 1914.

3 SHEETS—SHEET 1.

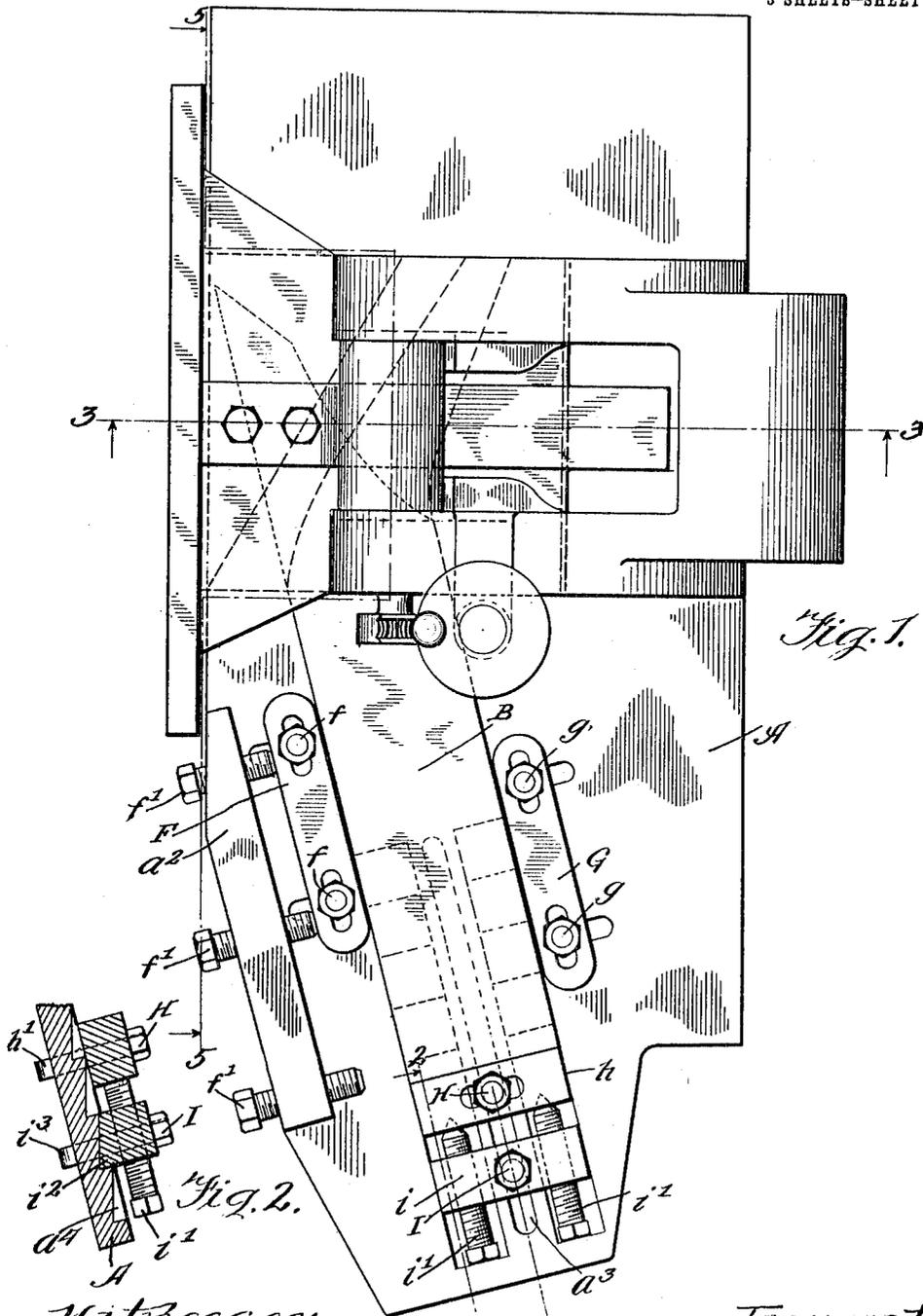


Fig. 1.

Fig. 2.

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Fig. 3.

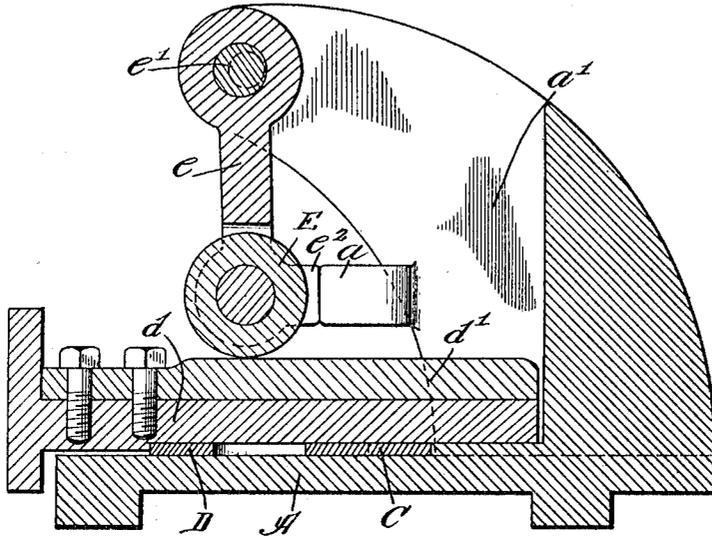
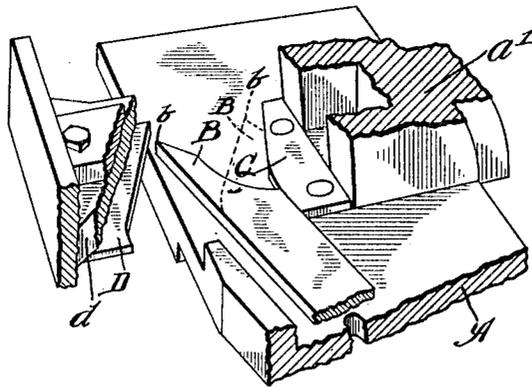


Fig. 4.



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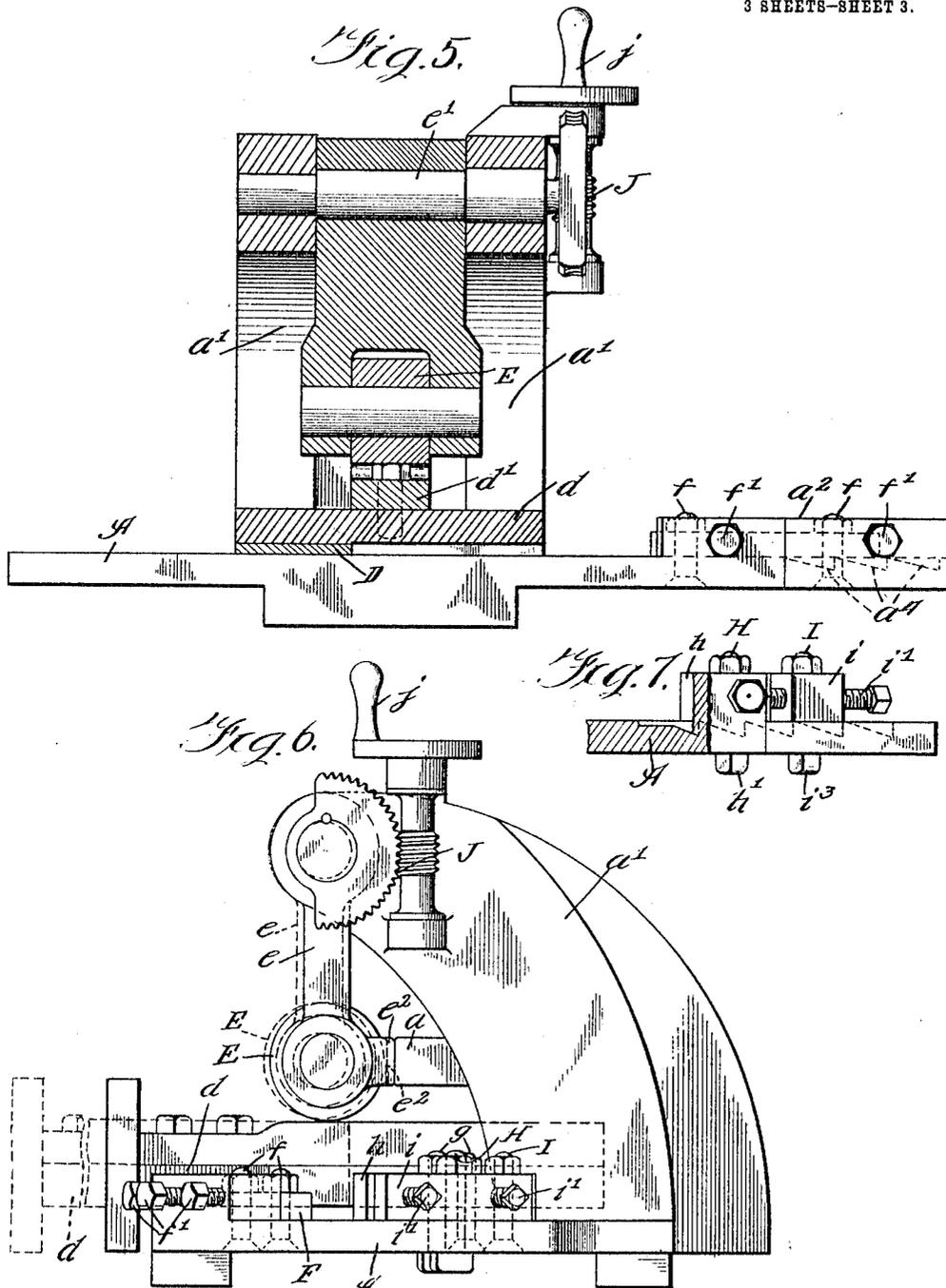
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN TEDELL, OF MOLINE, ILLINOIS, ASSIGNOR TO ROCK ISLAND PLOW COMPANY,
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WORK-HOLDER.

1,119,376.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN TEDELL, a citizen of the United States of America, and resident of Moline, Rock Island county, Illinois, have invented a certain new and useful Improvement in Work-Holders, of which the following is a specification.

My invention relates to means for holding in place the object to be acted upon by a machine.

The object of my invention is to provide improved means for securely and effectively holding the particular object in place to be acted upon by the machine while the desired action of the machine upon such object is being performed, and to automatically release the means for so holding the object in place when the action of the machine upon the object has been completed. This result is accomplished by means of a clamping member which, automatically and at the proper time in the action of the machine, is brought to bear upon and clamp in place the object to be acted upon by the machine, which clamping mechanism is then automatically released as and when the machine has completely acted upon the object.

I shall herein describe and illustrate my invention in conjunction with a machine known more particularly as a "bull dozer", which machine is designed for the purpose of bending flat objects; but it will hereafter become apparent that the invention is in no sense concerned with the particular construction of the machine, or with the character of the machine itself, but has to do with the means by which the work is held in place.

I have also chosen in connection with the description and illustration of my invention, as the object to be bent by this machine, what is known as a plow point, but it will become apparent that the invention claimed herein is in no sense limited to the bending of a plow point, but may be employed to hold other objects in place.

In the accompanying drawings Figure 1 is a plan of a machine for bending plow points, which machine is equipped with work-holding mechanism embodying the principles of my invention, whereby the plow point is securely held in place during the operation of bending the same. Fig. 2 is a detail section on line 2—2 in Fig. 1. Fig. 3 is a cross section on line 3—3 in Fig.

1. Fig. 4 is a fragmentary perspective view of the mechanism for bending the plow point, showing the plow point in position to be bent, and showing the bent position thereof in dotted lines. Fig. 5 is a section on line 5—5 in Fig. 1. Fig. 6 is an end elevation of the machine shown in Fig. 1. Fig. 7 is a detail side elevation of the rear end portion of the said machine.

As thus illustrated, my invention comprises a horizontal table A for supporting the plow point B. Upon the forward end of said table a stationary die C is secured, and a movable die D is mounted to move back and forth. The said movable die is secured to a reciprocating plate d , which is operated in any suitable manner, and which has a bar d^1 secured to the top thereof. In this way the die D is actuated horizontally toward and away from the stationary die C, the die D sliding back and forth on the table A, whereby the plow points B are bent into the shape indicated in dotted lines at b in Fig. 4.

The clamping roll E is mounted at the lower end of the swinging link e , and is adapted to bear upon the bar d^1 , whereby the plate d is held down during the bending operation. The said link is mounted upon the eccentric cam e^1 , which latter can be rotated to raise and lower the said link, so as to vary the pressure of the roll on the plate. The link e is provided with lugs e^2 adapted to engage the stop a^1 on the frame a that rises from the table A, whereby the swinging movement of the roll E is limited in one direction. It will be seen that when the plate d moves inward the roll E passes under the center of its swing and produces a powerful downward thrust, whereby the plow point is firmly and securely held in place during the bending or swaging operation. Then when the plate d moves outward, the roll E automatically swings outward and upward, thus discontinuing its pressure upon the plate d , and permitting a fresh plow point to be adjusted in place of the one that has been operated upon.

It is evident that if means are provided for holding or clamping the work thus securely in place when acted upon by the dies, the action of such clamp must be withdrawn as or before the moving die retracts in the opposite direction, because the continued application of such clamp upon the work in

the retraction of the die would tend to draw the bent object back again into its former shape. But with the clamping means, as is evident, which constitutes my invention, the pressure is brought to bear upon the object to be bent only while the dies are acting to bend the object, this pressure being automatically withdrawn as and when the moving die retracts or moves in the opposite direction.

At a point farther toward the rear of the machine, and upon the table thereof, the plow point is held between two adjustable blocks F and G, the latter being secured in place by bolts g that extend through slots in the table and also through slots in the block, whereby the position of the latter may be varied at will. The block F is secured in place by bolts f that extend through slots in the table and block, whereby the position of the latter can be varied at will. The table is provided with a flange or rib a^2 through which the set screws f^1 extend to engage the outer side of the clamping block F, whereby the position of the latter can be nicely and accurately adjusted in a direction transverse of the plow point. The table is also provided with a slot a^3 , and in this slot the clamping bolts H and I of the blocks h and i are adapted to slide. The block h engages the rear end of the plow point, and the block i is provided with set screws i^1 that engage the block h , whereby the position of the latter may be accurately adjusted. The block i has teeth i^2 adapted to engage the ratchet teeth a^4 on the table. Thus the block i can be adjusted along the said teeth, and then the set screws i^1 can be employed for adjusting the block h into position. The bolts H and I have flattened heads h^1 and i^3 , on the under side of the table, which can be twisted around to pass through the slot a^3 when it is desired to remove the blocks. Thus, with this arrangement the plow points can be accurately adjusted into position and the mechanism for holding the same can be adjusted to hold plow points of different sizes or shapes. A worm gearing J, of any suitable character, and operated by a handle j , is provided for adjusting the eccentric e^1 , whereby the pressure of the roll E upon the work is varied at will.

I have thus particularly described the bulldozing machine as it is called, although the particular details of construction are not a part of my invention, the same being the means whereby the work is bent in position

against buckling while acted upon by the dies, such means acting automatically to engage and hold the object in place while being acted upon and then released to prevent the object from being restored to the shape before having been acted upon by the machine.

What I claim as my invention is:

1. In a machine of the class described, the combination of a fixed die, a movable die, a table for supporting the said dies, means for positioning the work between the said dies, and a swinging member operating automatically to increase the pressure exerted by the movable die on the work upon the said table.

2. In a machine of the class described, the combination of a reciprocating element, a freely swinging link, and a roll on the lower end of said link, adapted to bear upon said element to hold the latter in place, the swinging movement of the link operating to alternately increase and decrease the pressure of said roll on the said element.

3. In a machine of the class described, a stationary die, a movable die, a freely swinging element, a plate carrying the movable die, a bar on said plate, and a roll on the end of said element, said roll engaging said bar, to prevent the movable die from rising, the swinging movement of said element serving automatically to vary the pressure of said roll on the bar.

4. In a machine of the class described, a reciprocating element which covers the work, a roll for holding the said element down, and a freely swinging element upon the lower end of which said roll is mounted, the back and forth swinging movement of the roll serving automatically to increase or decrease the pressure exerted by said reciprocating element on said work to thereby clamp and release the work.

5. In a machine of the class described, a table with a series of ratchet teeth thereon, a block provided with teeth for engaging said ratchet teeth, means connecting the block with the table, set screws extending through said block, and a block engaged by said set screws, said second block adapted to engage the work.

Signed by me at Rock Island, Illinois, this 2nd day of December 1910.

JOHN TEDELL.

Witnesses:

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LUCIA TULLER.