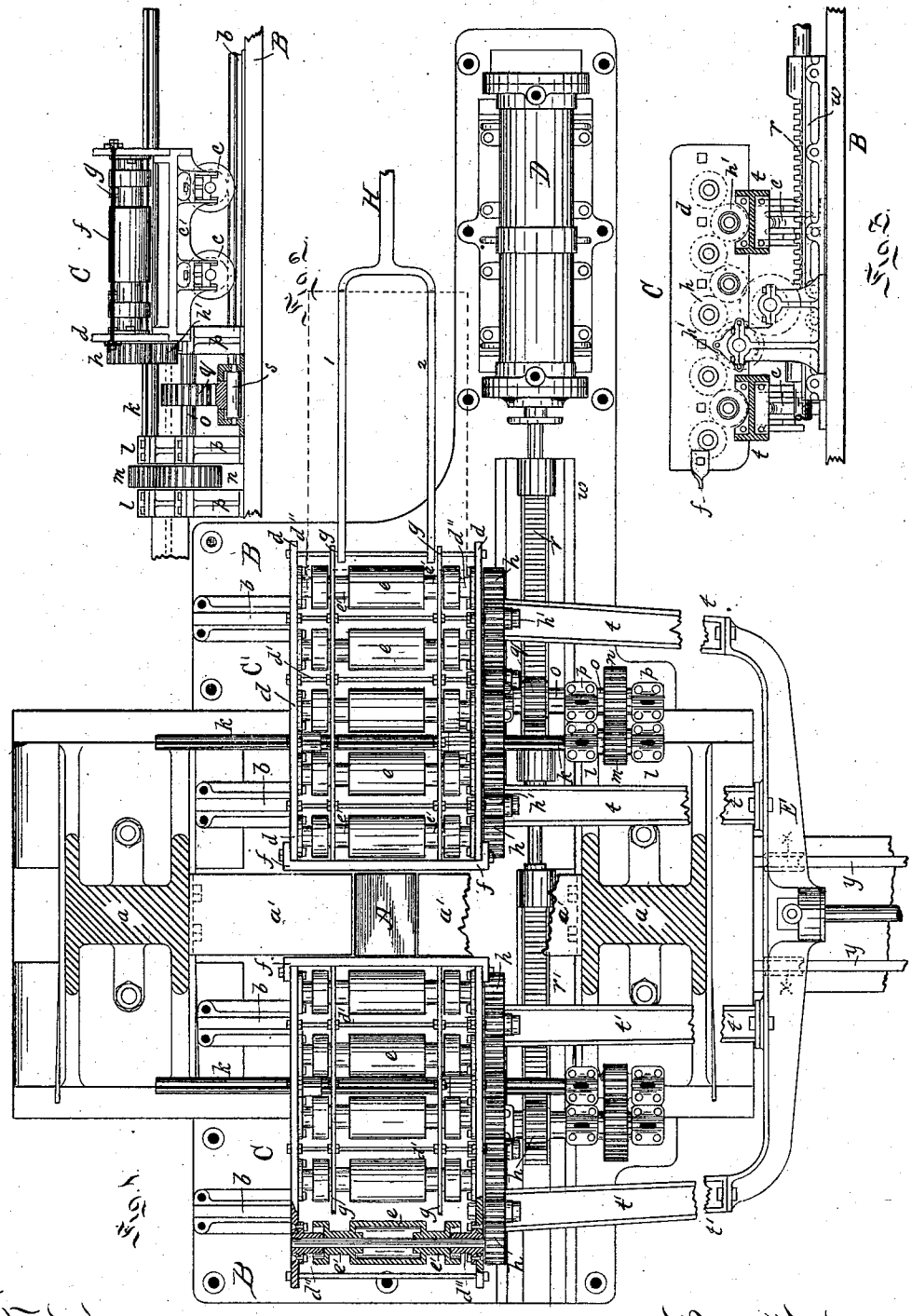
(No Model.)

W. D. WOOD.

FEED TABLE FOR HAMMERING MACHINES.

No. 293,611. Patented Feb. 12, 1884.



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UNITED STATES PATENT OFFICE.

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FEED-TABLE FOR HAMMERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 293,611, dated February 12, 1884.

Application filed September 26, 1883. (No model.)

To all whom it may concern:

Be known that I, W. DEWEES WOOD, a citizen of the United States, residing at Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Feed-Tables for Hammering-Machines; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a plan view of my improved feed-table, the upper part of the hammer being removed and the hammer-frame being shown in section. Fig. 2 is an end view of one-half of the table. Fig. 3 is a side view of one-half of the table, the gear-wheels and idlers being indicated by dotted lines to show their relative arrangement.

It is necessary, as the final step in the manufacture of Russia or planished sheet-iron, that the sheets should be subjected in packs to an equal and uniform hammering one or more times over the whole surface, in order to produce the bright polished surface characteristic of this kind of sheet-iron. It has been found necessary, in order to produce good and uniform results in this hammering operation, to use a hammer the face area of which is considerably less than the area of the sheets to be hammered, that is less in length and width; consequently, in the use of such a hammer, it is necessary to move the packs of sheet-iron longitudinally and transversely across the anvil of the hammer in order to bring every part of the sheet under the action of the hammer.

My invention relates to feed-tables to be used in connection with a suitable hammer, for the purpose of moving the packs horizontally and transversely across the hammer and at any desired speed, and as far at each movement as may be desired; and to this end my invention consists, in general terms, of a series of suitably-driven feed-rolls mounted on carriages located one on each side of the hammer or anvil, and constructed to move back and forth along the sides of the hammer on suitably-arranged ways.

A indicates the anvil, and *a* the standard, of a power-hammer suitable for the purpose, the hammer used being that shown in patent to T. R. Morgan, No. 231,185, dated August 17, 1880. On each side of the anvil A are arranged on a suitable foundation, B, two parallel rails, tracks, or ways, *b*. On these tracks run the trucks or carriages C C′. As the two trucks are constructed exactly alike, the description of one of them will be sufficient. On the axles of the truck-wheels *c* is mounted the frame or bed *c′*, and to this frame or bed are attached the side bars, *d*, which are rendered more rigid by rods *d′*, which extend across the carriage and through the side bars, nuts being screwed upon the rods against the side bars. In these side bars, *d*, are mounted the shafts of the feed-rolls *e*, the bearings of the shaft being lengthened by flanged collars d^2, bolted onto the inner side of the side bars, *d*, as shown by sectional view at the left hand of Fig. 1. At the end of the table toward the anvil is bolted to the side bars, *d*, the transverse bar *f*, which prevents the sheets of the pack from sagging down between the last feed-roll and the anvil. Attached to this bar *f* are the longitudinal bars *g*, which pass along the grooves *e′* in the feed-rolls *e* and prevent the sheets from sagging down into said grooves, which are formed in the rolls for the purpose of receiving the two prongs 1 2 of the lifting device H, which is used for placing the pack on the feed-rolls. These longitudinal bars *g* are further supported by the rods *d′*, which pass through them, the bars being retained in place by nuts on the rods.

On the shafts of the feed-rolls, which project beyond the side bar, *d*, on one side of the carriage, are mounted gear-wheels *h*, which mesh with idler-gears *h′*, mounted on the side bar, *d*. Through one of these idler-gears *h′* passes the shaft *k*, the gear and shaft being so splined together as to allow the gear to move longitudinally on the shaft, but to revolve with it. One end of this shaft *k* is mounted in suitable bearings, *l*, and has keyed to it between these bearings *l* a pinion, *m*, which meshes with a pinion, *n*, on a short shaft, *o*, mounted in bearings *p*. This shaft *o* is also provided with another gear, *q*. To revolve this gear *q*, and by means of it, through the shafts and gears described, the feed-rolls *e*, first in one direction and then in a reverse direction, a rack, *r*, sliding on ways *w*, which are provided

with friction-rolls *s*, is reciprocated back and forth by a hydraulic ram, D, whose piston-rod is connected with the rack. This rack is connected to a similar rack, *r'*, and gives the requisite movement to the mechanism corresponding to that above described mounted on the other carriage, C'. To give to the carriage the transverse motion, a yoke, E, secured to the piston-rod of a hydraulic ram, (not shown, but similar to that shown at D,) is attached to one side of each of the carriages C C' by beams *t t'*. To relieve the beams *t t'* of the weight of yoke E, the center of the yoke is supported by rollers *x* on rails *y*. By the above mechanism a transverse motion is given to the carriage. Secured to the standards *a*, and extending from said standards to each side of the anvil, are plates *a'*, which support the pack on each side of the anvil and between the rolls of the carriages.

It will be observed that the feed-rolls of the carriages and the carriages themselves have a simultaneous and equal motion in like directions, the feed-rolls moving the packs longitudinally of themselves across the anvil, and the carriages carrying the packs transversely across the anvil or across the line of feed, and that both motions may be reversed by a reversal of the stroke of the pistons.

The side bars, *d d*, of one of the carriages may be extended, and, passing by the anvil, be united to the bars *d d* of the other carriage, and the gearing of one carriage be connected to that of the other carriage by a train of idler-gearing, and in such a construction only one of the racks *r r'* would be necessary, and the shafts and gears now used to transmit motion to the gears on one of the carriages would also be omitted.

The operation of the apparatus is as follows: The packs are taken upon the prongs of the lifting device, and by them deposited upon the feed-rolls, the prongs of the lifting device dropping into or passing along the grooves of the feed-rolls, and on being relieved of the weight of the pack are easily withdrawn. The feed-rolls are then set in motion by the hydraulic ram D, feeding forward the packs under the hammer. Then the carriages are moved, carrying the packs transversely under the hammer, and by alternating these movements of the rolls and carriages, or reversing, if necessary, every part of the surface of the packs is successfully presented to the action of the hammer, and the operation is repeated or continued as often or as long as may be desired.

What I claim as my invention is—

1. In a machine for hammering sheet-iron, the combination of the anvil A, the reciprocating carriages C C', the rolls *e*, mounted in said carriages, means for reciprocating said carriages, and means for rotating the feed-rolls, substantially as shown and described.

2. In a machine for hammering sheet-iron, the combination of the anvil A, the reciprocating carriages C C', the feed-rolls *e e*, mounted in said carriages, the gear-wheels *h*, and idlers *h'*, the reciprocating rack *r*, means for transmitting motion from rack to the gears and idlers, and means for reciprocating the carriages, substantially as shown and described.

3. The combination of the carriage C, the feed-rolls *e*, provided with grooves *e'*, the longitudinal and transverse bars *g f*, the gears and idlers *h* and *h'*, and the means for rotating said gears and idlers, substantially as shown and described.

In testimony whereof I have hereunto set my hand.

W. DEWEES WOOD.

Witnesses:
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