

W. P. BETTENDORF, DEC'D.
J. W. BETTENDORF, ADMINISTRATOR.
SHIFTING DEVICE FOR PRESS FEEDING MECHANISM.

1,016,062.

APPLICATION FILED DEC. 18, 1909.

Patented Jan. 30, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

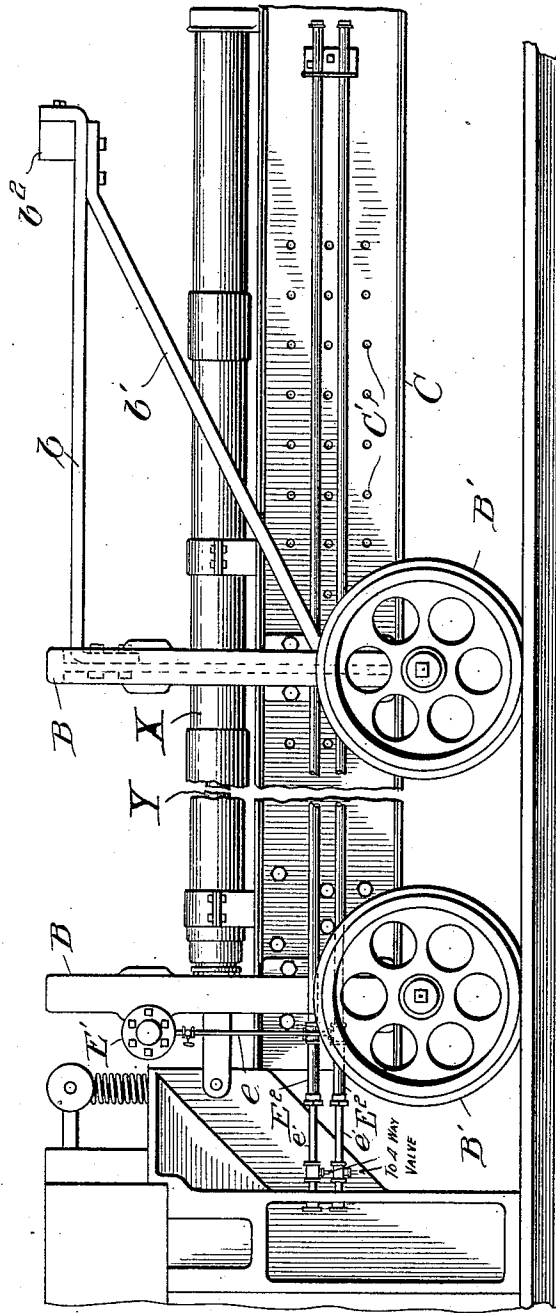


Fig. 4.

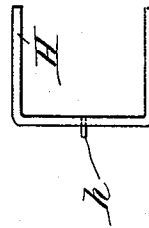
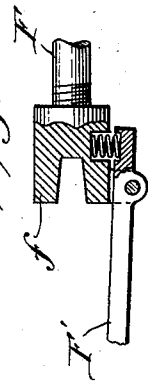


Fig. 5.



Witnesses:
Harry S. Grithur
E. Lundy.

Inventor:
William P. Bettendorf
by Frank D. Thomson
att'y

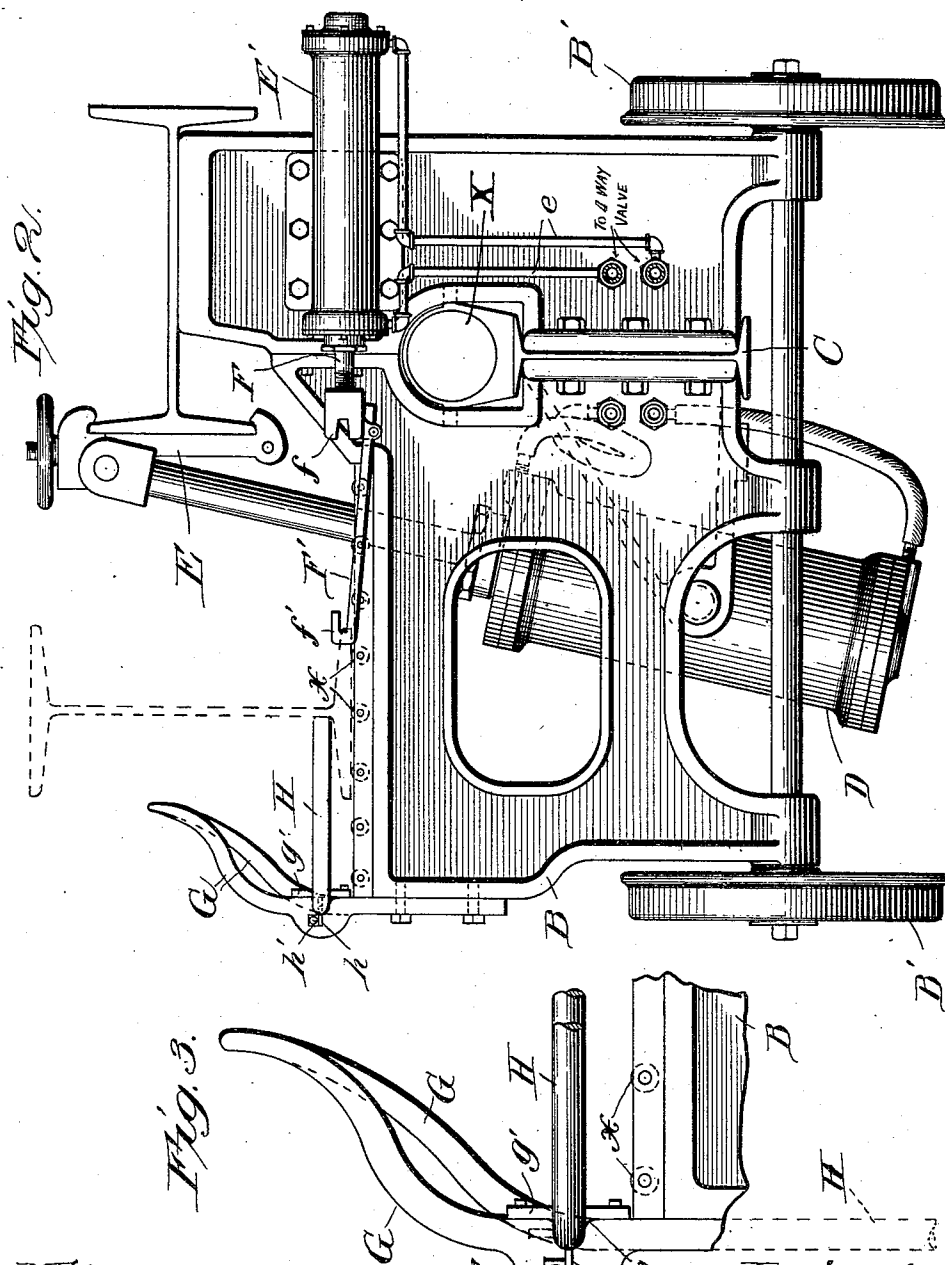
W. P. BETTENDORF, DEC'D.
J. W. BETTENDORF, ADMINISTRATOR.
SHIFTING DEVICE FOR PRESS FEEDING MECHANISM.

1,016,062.

APPLICATION FILED DEC. 18, 1909.

Patented Jan. 30, 1912.

2 SHEETS—SHEET 2.



Witnesses:
Harry S. Gaither
E. A. Lundy

Inventor:
William P. Bettendorf
by Frank D. Thomson
att'y

UNITED STATES PATENT OFFICE

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA; J. W. BETTENDORF ADMINISTRATOR
OF SAID WILLIAM P. BETTENDORF, DECEASED.

SHIFTING DEVICE FOR PRESS-FEEDING MECHANISM.

1,016,062.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed December 18, 1909. Serial No. 533,817.

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented new and useful Improvements in Shifting Devices for Press-Feeding Mechanism, of which the following is a full, clear, and exact description.

My invention relates to feed trucks or similar mechanism employed to support preferably one end of the work while it is being fed to a metal-working machine, and pertains more particularly to trucks for the handling and feeding mechanism, shown and described in a pending application for Letters Patent of the United States, filed by me October 25th, 1909, Serial No. 524,467 (Case 164).

As in my aforesaid application, one of the chief objects of my invention is to avoid, as much as possible, the manual handling of the work, thereby materially reducing the expense of labor.

The principal object, of this invention, however, is to provide novel automatic means for shifting or moving the rolled metal beam transversely across the feed-truck after it has been placed in an upright position by the "flipper", and to so arrange this device that it is capable of being operated or controlled by the workman or attendant from his position alongside the press.

A further object is to provide suitable means whereby one of the bolsters of said truck may be adjusted longitudinally with relation to the reach thereof, to accommodate the truck to different lengths or sizes of beams by providing a suitable stop for the end opposite the press.

These objects I accomplish by the means and in the manner hereinafter fully described, and as more particularly pointed out in the claims, reference being had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a side elevation of a shifting or feeding mechanism (having the central portion broken away) showing my improvement applied thereto. Fig. 2 is an end elevation thereof, drawn to an enlarged scale. Fig. 3 is an elongated detail view of one of the guards or stops used in connection therewith. Fig. 4 is a detail plan view of one of

the gages. Fig. 5 is a detail view, partly in section, of the head of the shifter plunger.

In the drawings, A represents a portion of a suitable hydraulic press of any suitable or well-known type, which it is unnecessary to describe in detail. Suffice it to say, that the press comprises the usual upper and lower dies (not shown) and I have, as shown in dotted lines, selected a comparatively high I-beam, such as those employed in the construction of rolled metal underframings for railway cars and the like to exemplify the operation of my improvements.

The truck upon which my invention is adapted to be mounted comprises two or more transverse bolsters B, B, having bearings in their lower portions for the journals of suitable wheels B', B', that support the truck on a narrow gage track laid longitudinally from one end of the press. These bolsters are usually two in number and are preferably made in two sections bolted together in a vertical plane, the front and rear bolsters are adjustably connected together by means of a reach C, (preferably an I-beam) that is secured in place in a suitable seat formed in the abutting edges of said bolster-sections by transverse bolts or otherwise. The bolster-sections are irregular in shape; that is, the section on one side of the reach C is narrower than the section on the opposite side thereof, while the latter is wider and has its upper horizontal edge in a plane below the upper horizontal edge of the former, substantially as shown in the drawings. In order to accommodate these bolsters to the various lengths of beams to be operated upon, the bolster that is placed farthest from said press can be adjusted longitudinally upon said reach C, by punching several series of equi-distant holes in the vertical web of the same, through which the bolts fastening the bolster-sections thereto are passed according to the length of the reach between the bolsters. The means X and Y employed to move the truck toward or from the press, and also the means for conveying the steam or compressed air to the cylinder D of the flipper mechanism are the same as that described in the pending application hereinbefore referred to, and so also is the said cylinder, and the gripping

devices E on the upper end of the piston thereof. Suffice it to say, that when the web of the I-beam being operated upon, lies flat upon the horizontal upper edge of the narrower bolster-section, the flange thereof overhanging the wider bolster-section, is clamped by said gripping devices, and drawn downward by the piston and turned laterally until said flange is made to rest upon the upper horizontal edge of said wider bolster-section, and the I-beam assume an upright position.

Secured, preferably, to the adjustable bolster near its upper end is a horizontal arm *b*, that projects rearwardly therefrom in a plane parallel to the vertical plane of the reach, and has its rear end bent upward at right angles to itself. The rear end of this arm is reinforced by an inclined brace-rod *b'* placed and secured between it and said rear bolster. This structure forms a suitable stop-frame for the adjacent outer end of the work and the laterally bent end of the horizontal arm forms a seat in which a suitable abutting block *b*² is secured.

The metal beam to be operated upon is placed flat upon the upper horizontal upper edge of the higher bolster, as shown in full lines in Fig. 2 of the accompanying drawings, in which position the web of the beam is adapted to be punched or displaced. After this is done, it is often necessary to compress the ends or some other portion of this beam, and to do this, said beam must be moved and turned laterally down onto the lower wider section of the bolsters by means of the "flipper," as hereinbefore stated. After this has been accomplished it is often necessary, in order to properly direct the beam to the press, to shift it laterally, in order to bring it into its proper position, and this I do by means of shifting mechanism, which is preferably, operated from a point near the press. This shifter, comprises a suitable horizontally disposed transverse cylinder *E'*, which is secured to the narrower bolster-section, of the forwardmost bolster and has inlet and outlet pipes *e*, *e*, tapped into its opposite heads, that lead to suitable horizontal tubes *E*², *E*², that are, preferably, arranged parallel to each other along one side of the reach C of the truck to which they are secured. The forward ends of tubes *E*² are provided with heads having packed guide-openings for the passage therethrough of telescoping pipes *e'*, *e'*, which latter extend toward the press, and at a convenient point, are connected to a suitable fourway valve (not shown) whereby compressed air may be admitted into one pipe and exhausted from the other, and vice versa. The plunger or piston F of this cylinder is reciprocated by the admission of compressed air first on one side of its piston-head, and then on the opposite side thereof. The outer

end of the piston has a bifurcated head *f* suitably secured thereto and said head is adapted to carry a pivoted arm *F'* having a hook-shaped outer end *f'*. This pivoted arm normally extends upward so that its hooked end terminates in a horizontal plane slightly above that of the upper edge of the shorter bolster section, and is kept in this position by a small expansion spring placed between its rear end and said head *f*.

Secured to the outer vertical edges of the shorter bolster-sections are suitable guards *G*, *G*, the upper ends of which extend above the plane of the top of said bolster-section and are then curved or bent inwardly and upwardly in a compound or ogee curve, substantially as illustrated in the drawings. One of these guards (preferably that opposite the shifting mechanism above described) has an open bearing *g* just above the plane of the upper edge of said bolster-section, in which a suitable U-shaped movable gage *H* is journaled and retained in place by a removable plate *g'*. Gage *H* has a lateral lug *h* projecting from its journaled member adjacent its bearing, and, when said gage is moved into a horizontal position, with its parallel portions pointing toward the work, said lug is adapted to engage the underside of a bolt-head or lug *h'*, projecting laterally from the side edge of the guard and maintain the stop in said horizontal position. When the gage is turned so that its parallel portions will move upward and away from the position shown in Fig. 2 of the drawings, said lugs will move out of engagement, and the gage allowed to fall into the position shown in dotted lines in Fig. 3, in which it will be out of the way.

When the beam is flipped into a vertical position, it will depress the pivoted arm *F'* and the flange of the beam will rest upon the rollers *x*, *x*, seated on the top edge of the shorter bolster-section. Compressed-air is then admitted to the shifting cylinder *E'* to force said piston outwardly and cause the bifurcated end *f* thereof to engage the adjacent edge of the lower flange of the beam and push said beam laterally until its web is engaged by either the stop *H* of the guards *G*, whereupon the truck is made to carry the said beam toward and into the press to be operated upon. If desired the compressed-air may thereafter be retained in the cylinder *E'*, thus insuring the immobility of the end of the beam with which said shifter is engaged, although, ordinarily this will not be necessary as the weight of the beam will insure its remaining stationary. Whenever it is desired to move the beam inwardly toward the shifter, the air is admitted in front of the piston-head, and the piston will then be moved back into the cylinder and at the same time the hook *f'* on the end of the pivoted arm will be permitted

to catch the opposite edge of the flange of the beam and draw the same toward the cylinder.

What I claim as new is:—

5 1. In mechanism of the kind specified, the combination with a suitable support having a transversely disposed irregular supporting surface for the work and means cooperating with said irregular surface for turning the work, of a device disconnected from but adapted to engage the work and move the same laterally on its support.

15 2. In a machine of the kind specified, the combination with a movable truck having a transversely disposed irregular supporting surface for the work, and means cooperating with said irregular surface for turning the work supported thereon, of a transverse cylinder thereon, and reciprocable means actuated by said cylinder and adapted to engage and move the work laterally on said truck.

25 3. In a machine of the kind specified, the combination with a suitable support having a transversely disposed irregular supporting surface for the work and means cooperating with said irregular surface for turning the work, of a transversely arranged cylinder, a piston therefor, and means on the outer end of said piston having a jointed depressible member adapted to engage the work, and move it laterally upon its support.

30 4. In a machine of the kind specified, the

combination with a suitable support having 35 a transversely disposed irregular supporting surface for the work and means cooperating with said irregular surface for turning the work, of a transversely arranged cylinder, a piston actuated by said cylinder 40 and having a bifurcated outer end that is adapted to engage the work and move the same laterally on its support.

5. In a machine of the kind specified, the combination with a suitable support having 45 a transversely disposed irregular supporting surface for the work and means cooperating with said irregular surface for turning the work, of a transversely arranged cylinder, a piston actuated by said cylinder 50 and having its outer end bifurcated and having a pivoted member on its outer end that is adapted to engage the work and move it laterally upon its support.

6. In a machine of the kind specified, a 55 suitable support for the work, a stationary transverse horizontal cylinder, a piston actuated by said cylinder and having a hooked arm pivotally secured on its outer end that is disconnected from the work but adapted 60 to engage the same and move it laterally upon its support.

In witness whereof I have hereunto set my hand this 15th day of December 1909.

WILLIAM P. BETTENDORF.

Witnesses:

A. B. FRENIER,
F. M. GODDARD.