

(No Model.)

3 Sheets—Sheet 1.

A. B. SHIPPEE.

BLANK FEEDING MECHANISM FOR DRILL ROLLING MACHINES.

No. 496,623.

Patented May 2, 1893.

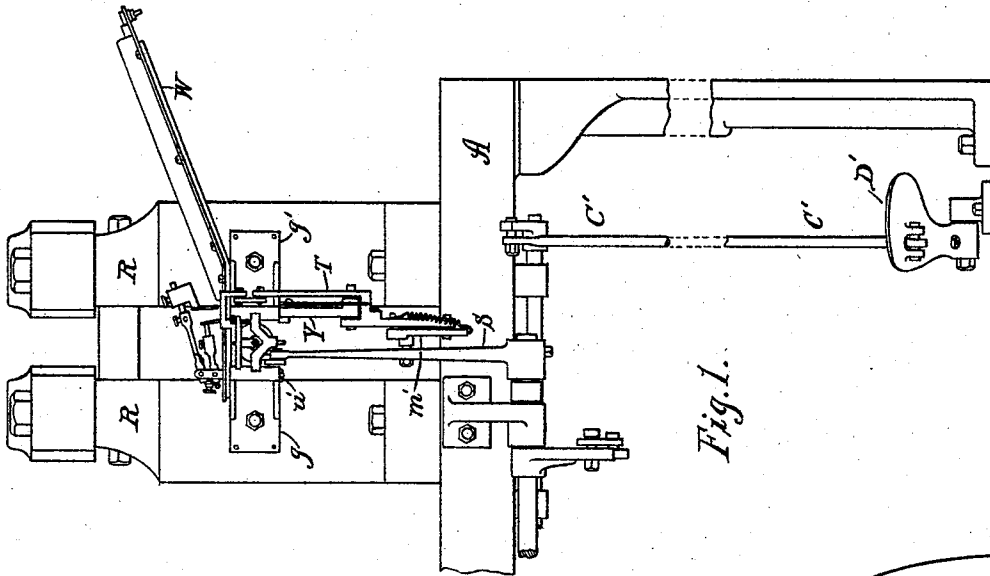


Fig. 1.

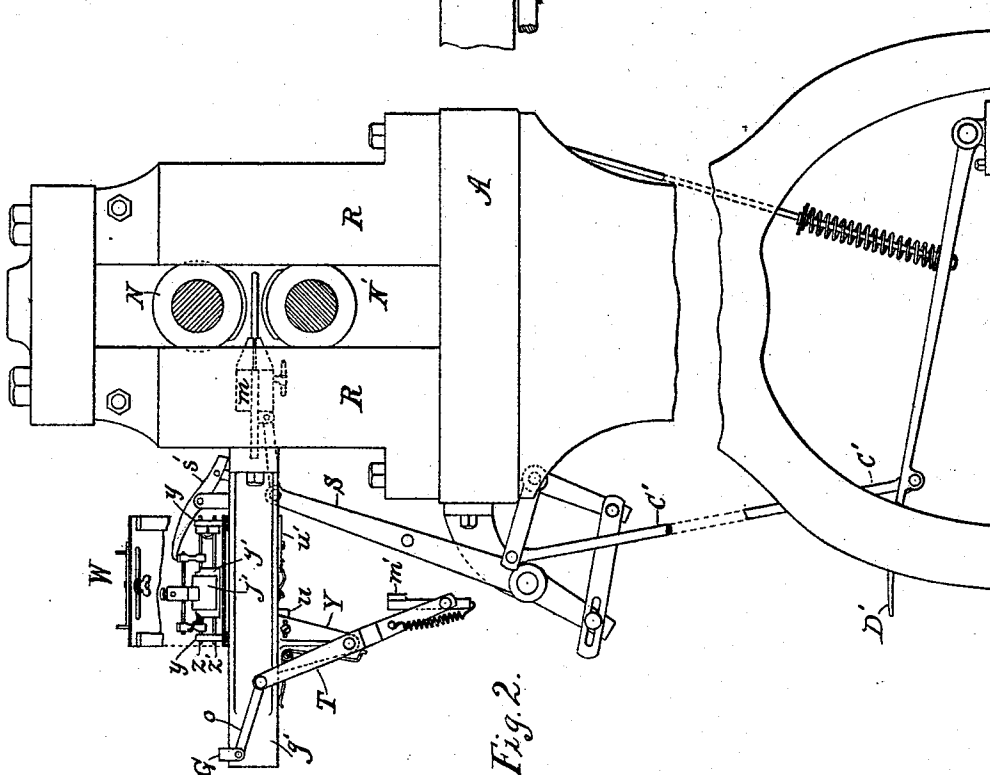


Fig. 2.

WITNESSES:

F. W. Phillips.
E. B. Reed.

INVENTOR

Aaron B. Shippee
BY
Benj Arnold
ATTORNEY

(No Model.)

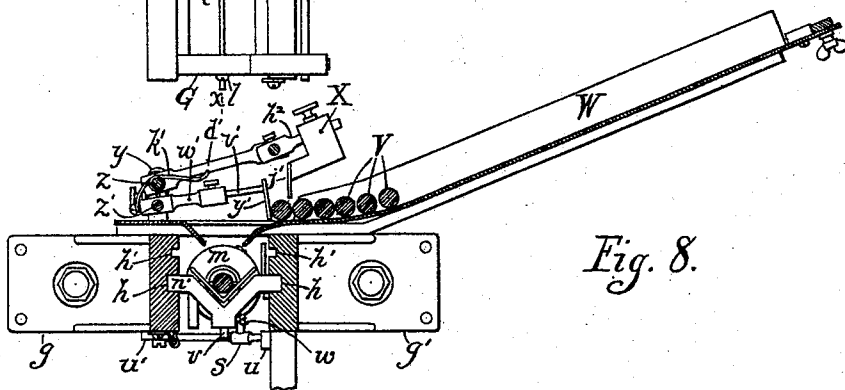
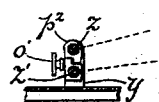
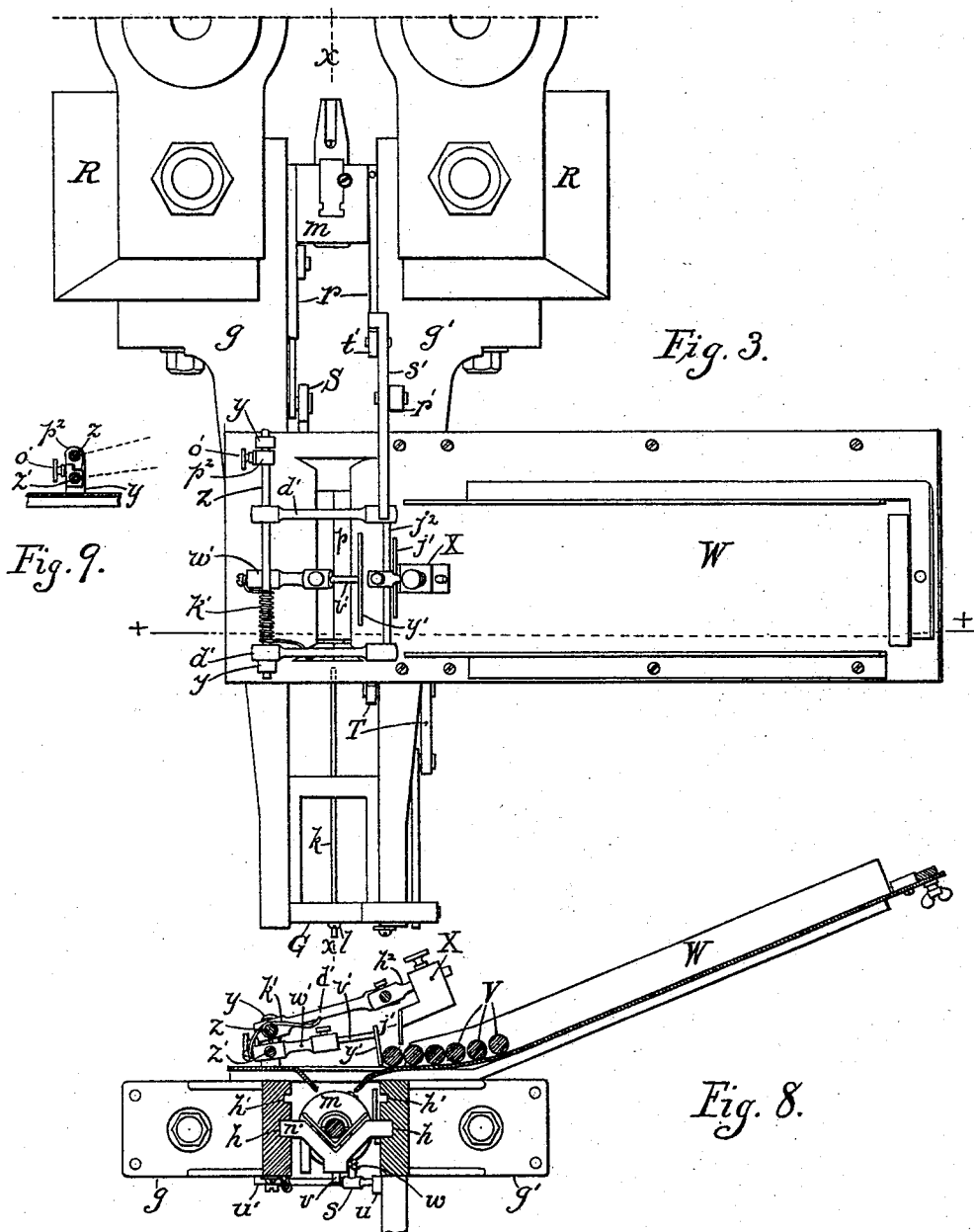
3 Sheets—Sheet 2.

A. B. SHIPPEE.

BLANK FEEDING MECHANISM FOR DRILL ROLLING MACHINES.

No. 496,623.

Patented May 2, 1893.



WITNESSES:

F. W. Phillips
E B Reed

E B Reed

INVENTOR

Aaron B Shippe

BY

Benny Arnold
ATTORNEY

ATTORNEY

(No Model.)

3 Sheets—Sheet 3.

A. B. SHIPPEE.

BLANK FEEDING MECHANISM FOR DRILL ROLLING MACHINES.

No. 496,623.

Patented May 2, 1893.

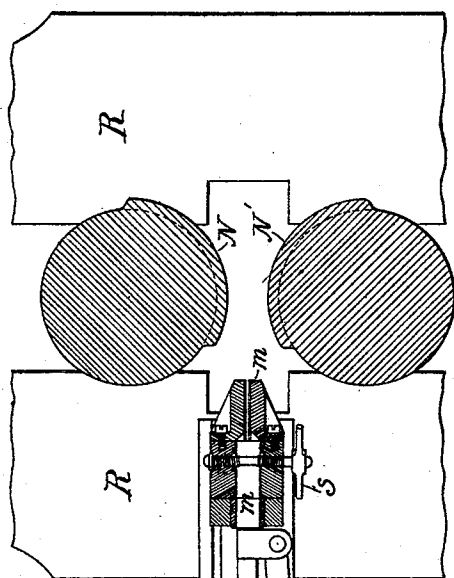


Fig. 4.

WITNESSES:

F. W. Phillips.
E. B. Read

Fig. 6.

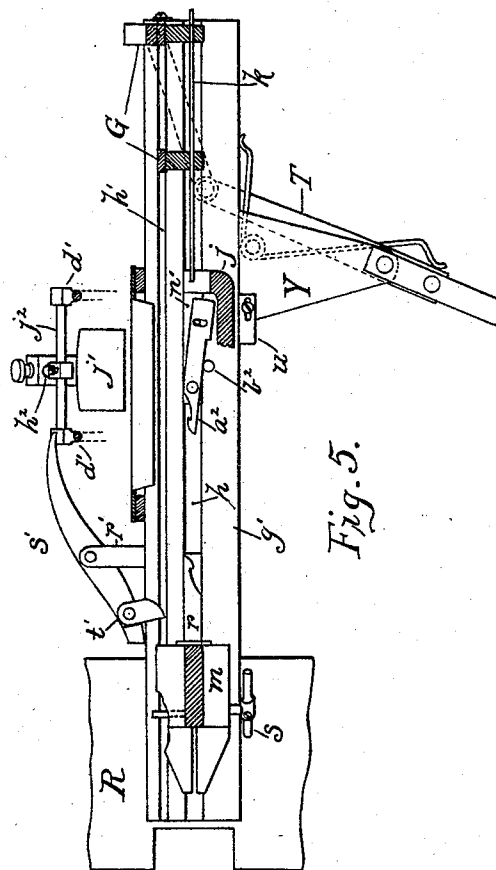
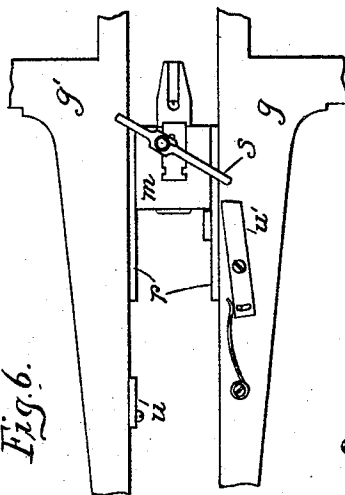


Fig. 5.

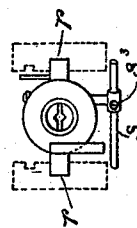


Fig. 7.

INVENTOR

Aaron B. Shippee

BY

Burg Arnold
ATTORNEY

UNITED STATES PATENT OFFICE.

AARON B. SHIPPEE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO ALBERT W. CHAPMAN, OF SAME PLACE.

BLANK-FEEDING MECHANISM FOR DRILL-ROLLING MACHINES.

SPECIFICATION forming part of Letters Patent No. 496,623, dated May 2, 1893.

Application filed April 2, 1892. Serial No. 427,495. (No model.)

To all whom it may concern:

Be it known that I, AARON B. SHIPPEE, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Feeding Mechanism for Rolling-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to mechanism for feeding blanks into a chuck or holder to be operated upon by rolls, dies or other devices, and is intended to be connected with rolling machines or die presses. It is fully illustrated in the accompanying drawings.

Figure 1, is a side elevation of a part of a rolling machine with the feed mechanism attached. Fig. 2, is an end elevation of the same, as shown in Fig. 1. Fig. 3, is a top view of the same. Fig. 4, is a vertical cross section on line *x*, in Fig. 3, looking toward the left. Fig. 5, is a section on same line as Fig. 4, looking toward the right. Fig. 6, is a view of the under side of the chuck. Fig. 7, is a view of the inner end of the chuck. Fig. 8, is a sectional view on line *x x*, Fig. 3. Fig. 9, shows one of the details of Fig. 3.

The part of a rolling machine shown to illustrate the application of the feed mechanism, consists of a part of a table *A*, having two uprights *R, R*, to hold bearings for rolls.

The mechanism for feeding the blanks consists of a pair of flat bars *g, g'*, bolted by one end, one to each of the roll standards *R, R*, to stand out horizontally in front, parallel to each other. Grooves *h, h'*, are made in the inner face of each bar, and a carriage *r*, is fitted to slide in these grooves, to carry a chuck *m*, for holding the blank while being operated upon. The chuck *m*, is a two jawed drill chuck, having a screw with a right hand thread on one half, and a left hand thread on the other part to close the jaws with; but most any of the well known forms of chucks that have a hole through their centers, may be used. The screw that operates the jaws, is extended far enough below the chuck to receive a cross-bar *s*, which is made fast at its middle to the screw clamp *S*³, Fig. 7, by means

of which the bar can be set rotatively on the screw, for the reason that as this bar *s*, is moved to open and close the chuck jaws by catches attached to the bars *g*, it is necessary to set the cross bar on the screw for the different sizes of blanks, that the jaws may always become tight on the blank, with the bar in the same position nearly square to the line of the chuck's motion in and out. A stop-plate *u*, is attached to the lower edge of one of the bars *g'*, against which the end of the cross bar *s*, on that side, strikes, when the chuck is at the end of its outward motion with the blank in it, and tightens the jaws on the blank. A trip lever *u'*, is pivoted to the under side of the other bar *g*, nearer the rolls, so that its inner end will catch against the other end of the cross bar *s*, and turn it so as to open the chuck jaws and release a rolled blank, as it comes out from the rolls, and before it gets to the stop-plate *u*. The lever *u'*, swings out and allows the end of the cross bar to pass it going in, without operating it. A carriage *n'*, sliding in grooves *h*, has a horizontal arm *j*, with a hole made in it to receive a vertical rod *v*, to the upper end of which a horizontal V-shaped trough *p*, is attached to receive the blanks from the trough above, and center them properly to enter the rear end of the chuck *m*. A set screw *w*, in one side of the arm *j*, bearing on the rod *v*, where it passes through it, serves to adjust and hold the trough *p*, the proper height for different sizes of blanks, and make their centers agree with the center of the chuck. A carriage *G*, is fitted to slide in the grooves *h'*, from the ends of the bars *g, g'*, to carry a horizontal rod *k*, the center line of which agrees with that of the chuck *m*.

The rod *k*, is made adjustable in position lengthwise, for different lengths of blanks, by a set screw *l*, in the back of the carriage where the rod *k*, passes through it. This rod *k*, serves to push the blank out of the trough *p*, into the rear end of the chuck *m*, and to locate it there properly, when the carriage *G*, is moved in toward the rolls by the lever *S*, striking against the lower end of the lever *T*, which is pivoted to a standard *Y*, attached to the under side of the bar *g'*, and has its upper end connected by a rod *o*, to the carriage

G. An inclined trough W, having one of the sides made adjustable to make the trough wider or narrower, to hold blanks of different lengths, is attached to a plate on the top of the bars *g*, to receive the blanks V, which are placed in it side by side, in position to roll down the trough into the lower trough *p*, when allowed to do so by the following arrangement of mechanism:

Two standards Y, are secured to the plate that holds the trough W, having bearings made in them to receive two shafts *z*, *z'*, placed one above the other. The lower shaft *z'*, has an arm *w'*, fast on it, the end of which is made hollow to receive a rod *v'*, Fig. 8, to the outer end of which a vertical plate *y'*, is attached. The rod *v'*, is made adjustable to the arm *w'*, by a set screw in the side of the arm bearing against the rod. The upper shaft *z*, has two arms *d'*, attached to it, which extend over the trough W, and are connected together by a bar *j'*, which has a short rod *h'*, carrying a hub X, to which a vertical plate *j'*, is attached. A set screw is put in the hub on arm *h'*, bearing on the rod, for the purpose of adjusting the plate *j'*. These two plates *y'*, *j'*, are held normally, the first down, and the latter up, by a torsion spring *k'*, wound around the upper shaft *z*, which has one end attached to one of the arms *d'*, inside of its shaft, and the other end attached to a set screw in the arm *w'*, outside its shaft, to throw the former up and the latter arm down. These plates *y'*, *j'*, are for the purpose of separating one blank at a time, from those in the trough W, and allowing that one to drop into the trough *p*. When not moving, the plate *y'*, rests on the bottom of the trough, and the plate *j'*, is held up by the spring *k'*, free from the drill blanks V, which rest in a column against the plate *y'*, Fig. 1.

When it is required to feed a blank into the trough *p*, which occurs when the chuck is carrying one taken from that trough, into the machine, the chuck strikes against a trip catch *t'*, pivoted to the lower end of the lever *s'*, held by a stand *r'*, fast on the top of bar *g'*. The upper end of the lever *s'*, rests on one of the arms *d'*, so that when the chuck in passing the lower end of the lever, pushes it up, the upper end presses the arm *d'*, and the plate *j'*, down, and separates the lowest blank from the column. At the same time an arm *p'*, Fig. 9, on the shaft *z*, presses against an adjusting screw *o'*, in an arm on shaft *z'*, turns that shaft, and throws up the plate *y'*, high enough to release the blank just separated by the plate *j'*, from the column, and allows it to fall into the trough *p*. When the chuck has passed by the trip lever *t'*, the spring *k'*, will return the plates *y'*, *j'*, to their former positions with the column of blanks resting against the plate *y'*, as before, minus what was the lowest blank. The arrangement for adjusting the vertical plates *y'*, *j'*, on their rods, as described, is for the purpose of making the

space between them, just wide enough to hold one blank at a time, of any particular size.

The method of transferring the blank from the trough *p*, to the chuck, is as follows: Supposing that the chuck has a blank in it that has just been operated upon; by pressing down the lever *D'*, with the foot, the rod *C'*, Fig. 2, connecting it with the lever *S*, will throw back the chuck, striking one end of the cross bar *s*, on it, against the trip lever *w'*, and opening the chuck jaws, so that the grooved blank will lie loosely therein, the chuck continuing to move back until its outer end is against the inner end of the carriage G, and trough *p*. In the meantime the lever *S*, will move the lower end of the lever *T*, which will by means of the rod *o*, at its upper end, bring the carriage G, in toward the machine, until it strikes against the chuck, and the lever *S*, continues to move the chuck outward, as it is allowed to do by the relief lever *m'*, pivoted on the lower end of lever *T*, without moving that lever, and carries the trough *p*, with it, so that the rod *k*, will, in effect, push the new blank out of the trough into the rear end of the chuck, pushing the rolled blank in the chuck, out at its front end, to drop into a receptacle below. A catch *a'*, Fig. 5, pivoted to the carriage of the trough *p*, catches into the notch in the rear end of the chuck carriage, and when that carriage goes inward toward the machine, draws the trough carriage forward with it, until the rear end of the catch strikes the pin *b'*, and its outer end is lifted, and the front end disengaged from the trough *p*, leaving it just in position to catch the blanks from the trough W. As the chuck reaches the outer end of its outward motion from the machine, the other end of the cross bar *s*, will strike against the stop *u*, and be turned thereby, and close the jaws of the chuck fast on the blank just pushed into it by the rod *k*. The length of that part of the blank held in the chuck, is regulated by sliding the rod *k*, in or out in the carriage G, and tightening the set screw to hold it. The adjustable screw *o'*, Fig. 9, in the arm on shaft *z'*, regulates the height to which the plate *y'*, will rise to agree with the size of the blanks in the trough, and allow only one of them to pass at a time. The upper end of the relief lever *m'*, on lever *T*, Fig. 2, is held forward by a spring to receive the impact of the lever *S*, and move the lever *T*, until the carriage G, moved by it, is stopped. Then lever *m'*, yields, and allows lever *S*, to move the chuck still farther for the purpose of discharging the rolled blank, and tightening the chuck jaws on the new one, as described.

Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

1. In a feed for die operating or other machines, the combination of a chuck sliding in ways, an inclined trough for holding the blanks to be rolled, mechanism for delivering

the blanks from the inclined trough one by one into an auxiliary trough in line with the center of the chuck, and a rod concentric with said chuck, sliding in ways parallel with the
5 ways guiding the chuck, and mechanism to move said chuck and rod toward and from each other, substantially as described.

2. In a feed for die operating or other machines, the combination of a chuck sliding in
10 ways, and having a cross bar attached to its tightening device, with a catch fast to one of the guiding bars, against which one end of said cross bar will strike and open the jaws of the chuck, in sliding in one direction, and a
15 catch attached to the other guiding bar arranged to hit the other end of said cross bar, and close the jaws of the chuck, substantially as set forth.

3. In a feed for die operating machines, the combination of a chuck sliding between ways, 20 an inclined trough to hold the blanks to be rolled, an adjustable auxiliary trough in line with said chuck, a pair of plates, adjustable as to distance apart, for different sized blanks, with mechanism arranged to be oper- 25 ated by said chuck in sliding, to drop one of said plates to separate one of the blanks from those in the inclined trough, and at the same time to raise the other plate to allow the separated blank to fall into the auxiliary trough, 30 substantially as set forth.

A. B. SHIPPEE.

Witnesses:

BENJ. ARNOLD,
JAMES E. ARNOLD.