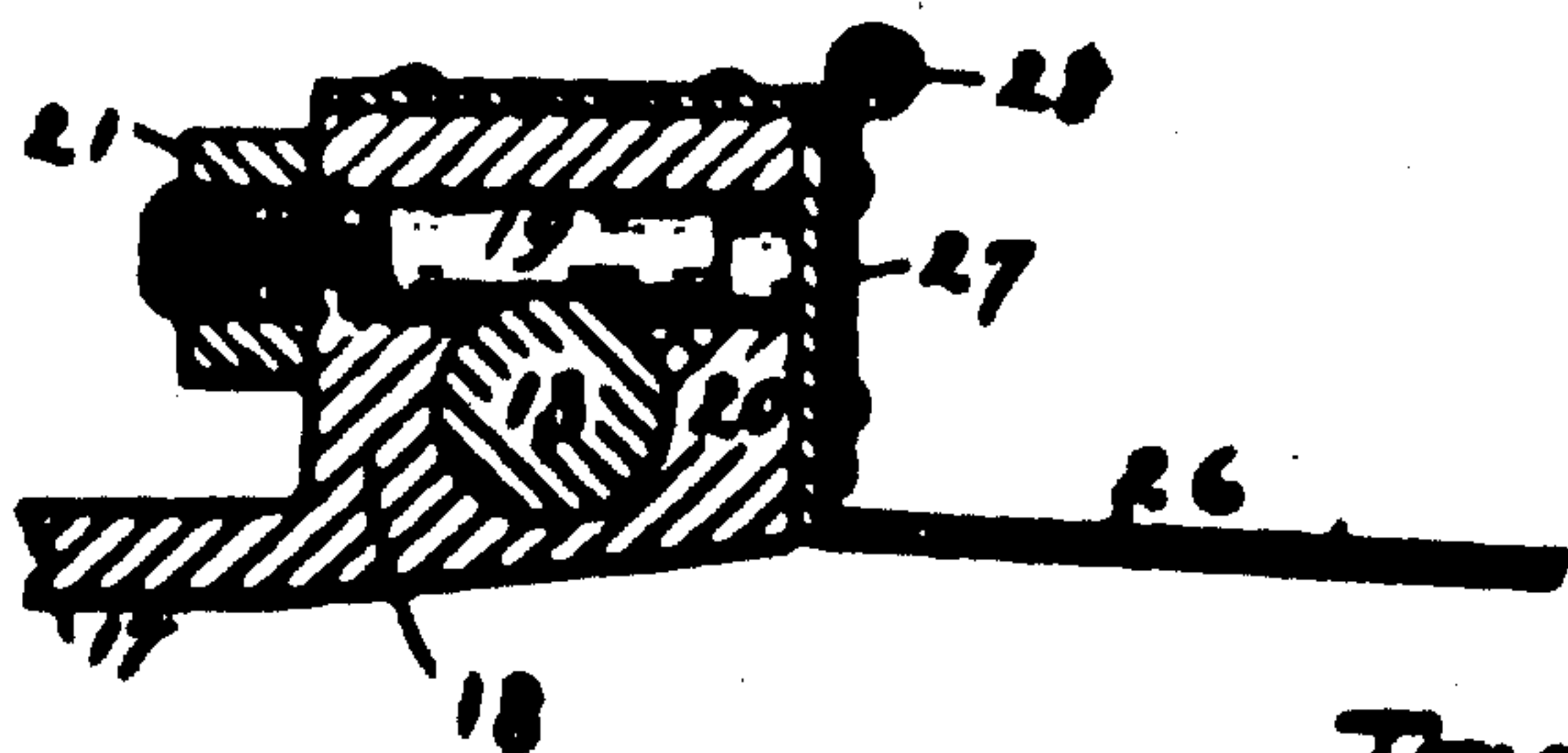


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Fig. 8.



S. H. Clarke
W. L. Lockwood

Inventory

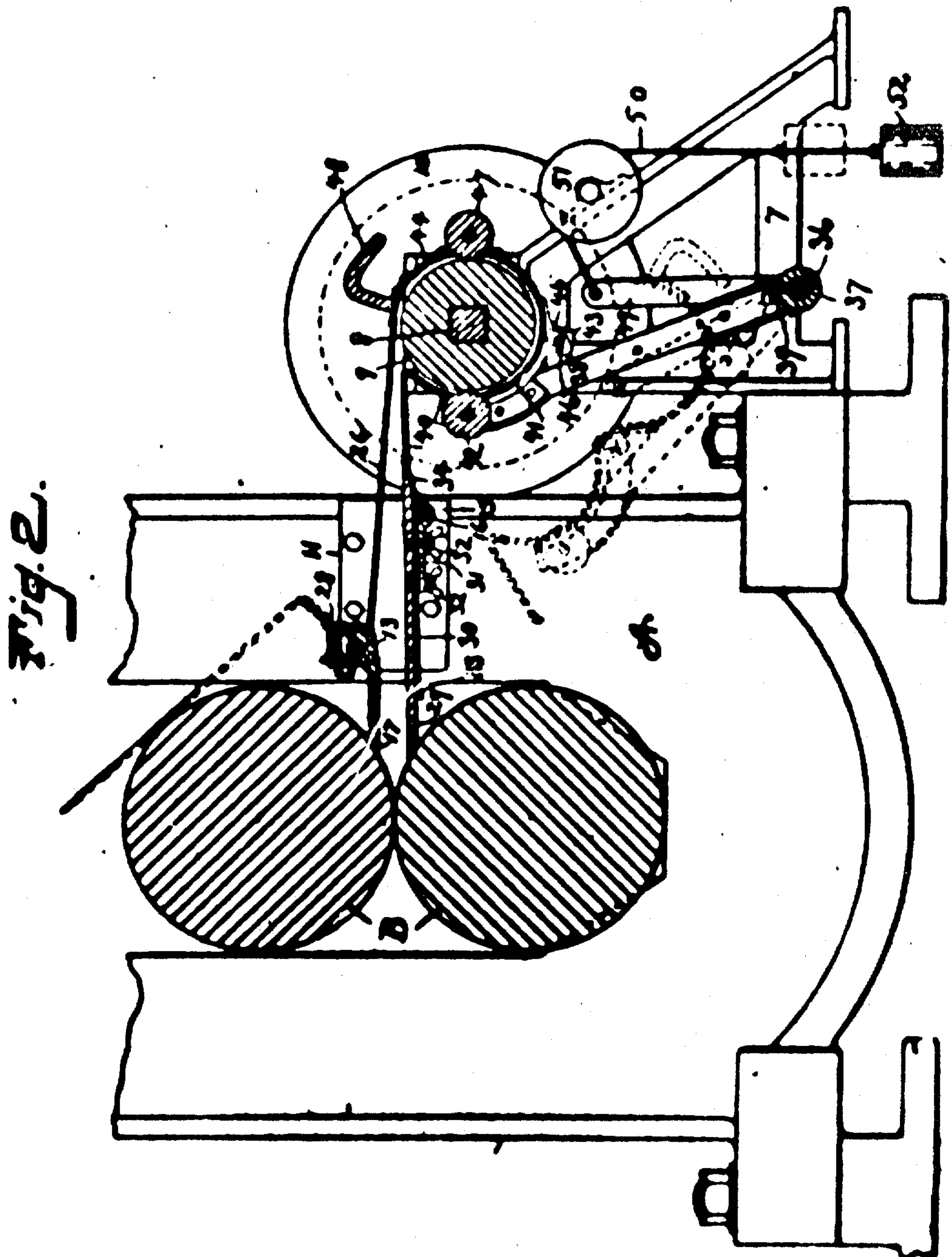
John M. Anderson
By Louis M. Schmidt
Atty.

J. M. HENDERSON.
MARKING ATTACHMENT FOR STRIP ROLLER.
 APPLICATION FILED NOV. 22, 1900.

998,990.

Patented May 30, 1911.

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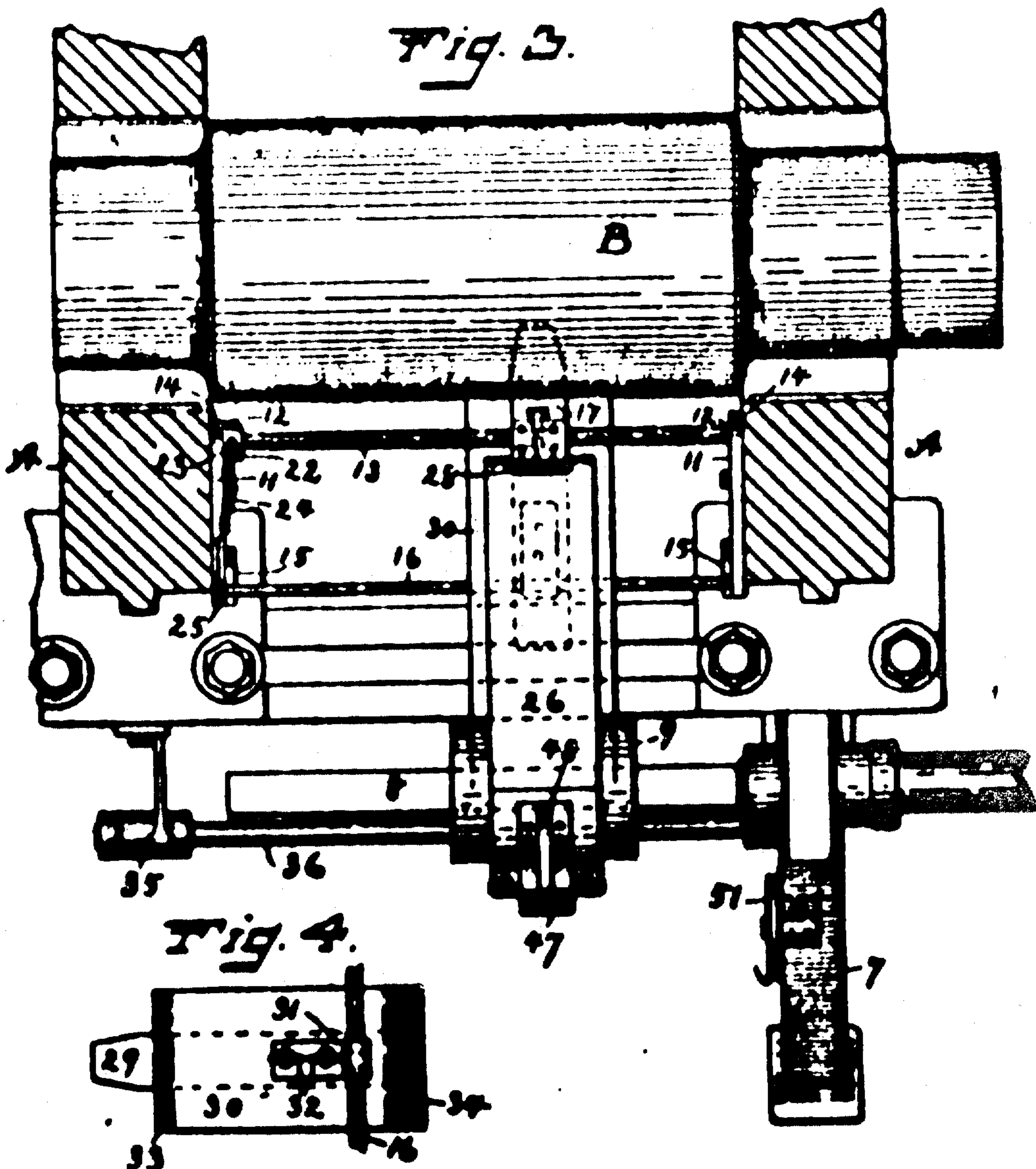
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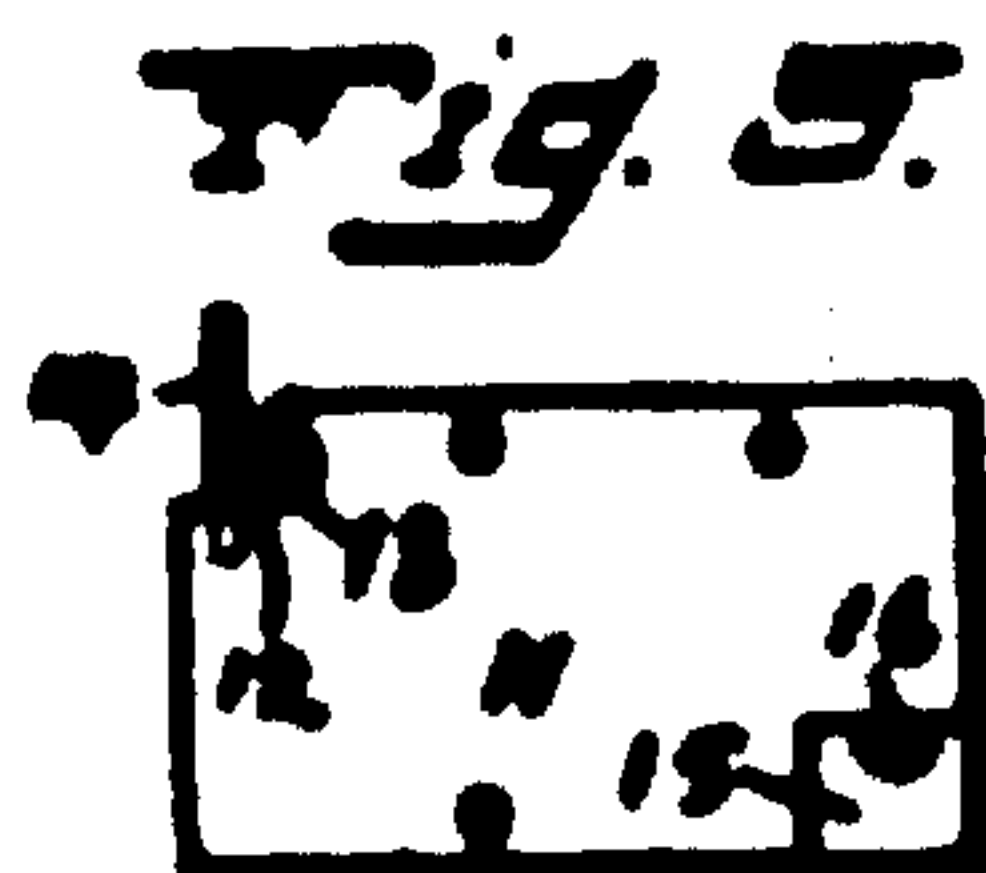
J. M. HENDERSON.
 BLOCKING ATTACHMENT FOR STRIP ROLLS.
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 1 SHEET—SHEET 1.



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UNITED STATES PATENT OFFICE.

JOHN M. HENDERSON, OF ROME, NEW YORK.

BLOCKING ATTACHMENT FOR STRIP-ROLLS.

993,990.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed November 22, 1909. Serial No. 529,285.

To all whom it may concern:

Be it known that I, JOHN M. HENDERSON, a citizen of the United States, residing at Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Blocking Attachments for Strip-Rolls, of which the following is a specification.

My invention relates to improvements in blocking attachments for strip rolls and the main object of my improvement is simplicity in construction, whereby I attain economy, convenience and efficiency.

In the accompanying drawing:—Figure 1 is a rear elevation of a pair of strip rolls, a portion of the frame in which they are mounted and the blocking shaft together with my attachment applied thereto. Fig. 2 is a vertical section of the same on the line $x-x$ of Fig. 1. Fig. 3 is a horizontal section of the roll frame and a plan view of the other parts. Fig. 4 is a reverse plan view of the lower pick and connected parts. Fig. 5 is a side elevation of a bracket plate. Fig. 6, on Sheet 1, is an enlarged sectional view of the upper pick on the same line as in Fig. 1.

The frame A, the strip rolls B of the mill, the blocking frame 7, shaft 8, block 9, and driving pulley 10, may be of any ordinary construction, the block and its shaft being arranged in rear of the mill rolls in the usual manner.

To the uprights of the frame A on each side at the delivering side of the rolls B I secure a plate 11 which is provided near its adjacent upper corner with an open shaft bearing 12 for the reception of the upper pick shaft 13 which is held in place by a removable pin 14 so that the said shaft may be readily removed from its bearings by pulling out the pin and moving the shaft laterally out of the bearings at each of its ends. It can be replaced by merely dropping the shaft downwardly until it rests on the plate adjacent to the bearing and then moving the shaft bodily in the lateral direction into the bearings, after which the shaft may be again secured in place by replacing

the pins. Near the diagonally opposite corner of the plate is a vertically recessed lug 15, into which the shaft 16 may be received as a bearing and lifted out of place when desired. It is unnecessary to otherwise fasten it in place. The upper pick 17 has its inner end fitted to the upper roll in the ordinary manner, while its outer end is provided with an enlargement or hub 18 that is bored from front to rear to receive the clamping rod 19. After the clamping rod 19 is inserted in the hub of this upper pick, the said hub is bored laterally at a point that will run into one side of the rod and form a curved recess 20 transversely therethrough as best shown in Fig. 6. The said rod is screw threaded for a portion of its length and receives a nut 21 at its outer end. The upper pick is placed on the shaft 13 which extends through the hub 18 and curved recess 20 of the clamping rod 19, so that the said pick may be moved laterally on the shaft 13 to any desired point on the said shaft within the length of the rolls B. A collar 22 is placed on the shaft 13 near one end which collar is secured in place by a long set screw 23 that projects upwardly as shown in Fig. 1, to the upper end of which set screw a spring 24 is attached by one end while its other end is secured to a hook 25, or other fixed part of the frame so that the spring has a tendency to rock the shaft and keep the end of the upper pick pressed closely against the underside of the upper roll. By tightening up the nut 21 on the outer end of the clamping rod, the inclined or curved side of the recess 20 will be forced against the periphery of the shaft 13 and firmly hold the pick at the desired point on the said shaft. Loosening the nut permits the said pick to be moved longitudinally on the said shaft. A top plate 26 is hung on a leaf of a hinge 27 to the hub 18 of the upper pick so as to swing on the hinge pintle 28 from the position shown by full lines in Fig. 2, to the position indicated by broken lines, where it is back out of the way of the block 9. The outer end of the said top plate extends to a point immediately above

the center of the block 9 thereby forming with the upper pick a guide for the upper face of the metal strip as it passes from the rolls to the top of the block. The top plate 5 may be of any desired width, as shown it is considerably wider than the pick with which it is connected.

The lower pick 29 has one end fitted to the lower roll, while its outer end extends a little beyond the shaft 16. Underneath this pick is a lower guide plate 30 of a width greater than that of the pick and underneath the said lower guide plate is a hook shaped clamping plate 31, the three being held together by winged bolts or screws 32 that pass through the plates 30 and 31 into threaded holes in the body of the pick 29. The shaft 16 lies within and passes through the recess of the hook shaped plate which extends under the shaft, while the plate 30 and pick 29 are above the said shaft. The recess or bend of the hook shaped plate that receives the shaft 16 is of slightly less depth than the diameter of the said shaft so that by loosening the winged screws the pick and immediately connected parts can be moved bodily longitudinally of the shaft 16 to bring them at any desired point in the length of the rolls, after which the pick can be secured in place on the said shaft by tightening the said winged screws. The inner end of the lower guide is provided with a downwardly extended portion 33, for directing the metal passing therethrough upwardly while the outer end is turned upwardly as at 34 to the level of the upper face of the pick 29 for bringing the metal to the proper level at that point. This outer end is a distance from the block 9, that will accommodate the largest roll or coil of metal that the machine is intended to wind or block.

Mounted in suitable bearings in the blocking frame 7 and a bracket 35 on the main frame is a rock shaft 36, that extends parallel to the rolls B and for the whole length of the said rolls. Upon this shaft is mounted a hub 37 from which two rigid members 38 extend, the said hub being provided with an ordinary set screw 39 for tightening and loosening the said hub for adjusting the said hub and parts moving therewith to any desired point on the said shaft 36 within the length of the rolls. Rigidly mounted on the upper ends of the members 38 (which together form one arm,) is a concave shell or guide 41 for inclosing substantially one half of the circumference of the block on that side which faces the rolls B. The upper end of this shell or guide has mounted thereon a guide plate extension 40 that extends from the said upper end to the confronting end of combined pick and lower guide plate 29, 30, and laps under the said end for a short distance when in working position as shown in Fig. 2. Near the middle of the

concave shell or guide 41, a roller 42 is mounted in any suitable bearings with its periphery projecting slightly within the inner concave face of the said shell. Near its lower end the said shell is provided with hinge lugs 43 to which a companion concave shell or guide 44 is hinged by means of hinge lugs 45 and pintle 46. This companion shell is for inclosing substantially the other half of the circumference of the block 9 and like the other shell is provided with a roller 47 like the roller 42. The upper end of the companion shell 44 when in working position, overlaps the outer end of the hinged top plate 26 on its top face so as to hold the said plate down. The said companion shell is also provided with a suitable handle 48 for the convenience of the person who does the blocking. The rock shaft may if desired be provided with a lever arm 49 rigidly connected therewith, to the upper end of which arm one end of a cord or chain 50, Fig. 2, is attached, which cord passes over a suitable pulley 51 and down to a counter weight 52 at the other end of the said cord. This cord and weight are omitted from Figs. 1 and 3.

When the blocking attachment is to be used the blocker places the parts in the position shown by full lines in Fig. 2 and holds the concave shells firmly in place by hand. As the metal comes from the rolls B it is stripped therefrom in the usual manner by the upper and lower picks and passes on toward the block between the said picks under the plate 26 and over the plates 30 and 40 to the top of the block 9, (which block has been placed in position and is driven in any ordinary manner) and then between the periphery of the block and confronting concave shell 44, curving the end of the sheet down toward the roller 47, between which roller and periphery the metal is closely held. The metal then following the space between the block and concave shell passes to the other shell 41 and between the roller 42 and periphery of the block where it is again held closely to the block and passing upwardly, the end of the metal strip is so to speak tucked under the strip that is being wound on the block as the said end reaches the summit of the block. It is then wound upon the block over the first coil as it passes around in the course before described the shells and their rollers being forced outwardly a little as the second coil is wound upon the block, and also for the third coil if desired. When two or three coils have thus been wound the blocking is started sufficiently so that the metal will take care of itself as it is drawn around the revolving block by the pull of the first coils, and the operator may then release his pressure on the shells, open up the shell 44 by pulling it away from the block on its hinge, and then forcing the two shells out

of the way and the lever members 38 and parts carried thereby down into the position indicated by broken lines in Fig. 2, where they are out of the way and the roll of metal 5 on the block may be completed. Opening the shell 44 on its hinge releases the outer end of the hinged top plate so that it can rise upwardly as the metal roll under it is built up.

10 When the coil is completed the revolution of the blocking shaft is stopped in any ordinary manner or means not shown, the roll of metal and block removed and a new block substituted therefor. The parts may 15 then be replaced in their former position and another strip of metal wound into a roll as it comes from the strip rolls of the mill. The counterbalancing weight should be only heavy enough to counter- 20 balance or partly counterbalance the weight of the parts carried on the arms 38 and light enough so that the parts will stay in their lowermost position which is indicated by broken lines in Fig. 2. It should be 25 noted that the guide plate extension 40 on the upper end of the shell 41 moves out of the way with the said shell so that the roll of metal wound upon the block may be 30 circle around the block in Fig. 2 before the outer end of the guide plate 30 on the lower pick 29 will be in its way. If desired a little larger roll of metal could be coiled on the block by making the pick and plate 29, 35 30, a little shorter and the guide plate extension a little longer. By having the top plate 26 hinged as described it may be made long enough to meet the shell at the summit of the block and will swing up out of the way 40 as the roll of metal on the block is built up so that it is not necessary to provide the shell 44 with a guide plate extension rigidly mounted on its upper end as shown for the other shell 41. By hinging the concave shell 45 41 through a rigidly connected arm or arms 38, hinging the companion shell 44 to the lower end of the shell 41 and providing the said shells with the diametrically opposed rollers 42, 47, a pressure toward the block 50 at the upper end of the shell 44 tends to force both shells and both rollers toward the block for winding the metal thereon. By this construction both shells after the shell 44 has been opened up, may be to- 55 gether swung bodily downward away from the block in the same direction instead of having to move in opposite directions as they would if the shells were separately mounted on the rock shaft by separate arms. 60 When the two shells and the arm by which they are mounted on the rock shaft are turned downwardly as indicated by broken lines, they are not only out of the way of the block and roll of metal that may be 65 coiled thereon but they are practically out

of the way for all purposes. By mounting the two picks and connected parts on the shafts 13, 16, removably mounted by means of the simple construction hereinbefore de- 70 scribed, the said shafts and connected parts may be readily and quickly removed so as to furnish access to the mill when the shells are turned down and leave the mill substan- 75 tially as free from obstruction as it is when the ordinary hand blocking attachment is employed, so that the rolls may be readily accessible for grinding or other repairs when desired.

By means of the simple construction as to mounting the shells and connected parts the 80 blocker may be operated by the most ordinary cheap labor. By holding the shells in place with the hand or hands the blocker can instantly open up the block and let the metal pass out unrolled instead of being 85 spoiled or the machine injured by the presence of the shells as would be the case if buckling of the metal occurred when the shells were fastened in place. The arrange- 90 ment of the shells and rollers feeds the strip when the rollers are pressed against the block by hand. After the end of the strip is caught by the feed rollers 47, 42, there is only a comparatively short end that is not 95 held firmly against the block so that the liability to buckling is greatly reduced.

It is apparent that some changes from the specific construction herein disclosed may be made and therefore I do not wish to be 100 understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes, in working my invention, as may fairly come within the scope of the claims.

I claim as my invention:—

1. In a mill having strip rolls from which a sheet of metal is delivered, the combina- 105 tion of a rotary block toward which the metal is delivered with a laterally extended shaft underneath the said block in a lower 110 plane than the lower one of the said rolls, a swinging arm mounted on the said shaft and a concave shell rigidly mounted on the upper end of the said arm, whereby the said shell is adapted to swing bodily toward the 115 said lower plane with the entire arm and shaft out of the way, affording convenient access to the said rolls without dismounting the said arm.

2. In a strip mill, the combination of a 120 rotary block with a laterally extended shaft underneath the said block, a swinging arm mounted on the said shaft, a concave guiding shell rigidly mounted on the upper part of the said arm, a feed roller mounted on 125 the middle portion of the said shell with its periphery projecting inwardly beyond the concave face of the said shell, and a companion concave shell connected by a hinge and provided with a like feed roller, where- 130

by suitably directed force applied to the upper end of the said companion shell forces the said two feed rollers against the block at opposite sides thereof.

5 3. In a strip mill, the combination of a rotary block with a concave guiding shell for inclosing nearly one half of the periphery of the said block, means for pivotally mounting the said shell for swinging it to-
10 ward and from the block, a guide plate extension rigid with that end of the said concave shell which is farthest from the said pivotal means and a separately mounted combined pick and guide held in position
15 for leading from the strip rolls to the adjacent end of the said extension when the said shell and extension are presented thereto.

4. In a mill having strip rolls from which
20 a sheet of metal is delivered, the combination of a rotary block toward which the metal is delivered with a laterally extended shaft underneath the said block in a lower plane than the lower one of the said rolls, a
25 swinging arm mounted on the said shaft, a concave shell rigidly mounted on the upper end of the said arm and a weight, cord and pulley for acting in connection with the said arm and shell and tending to counter-
30 balance the same.

5. In a strip mill, the combination of a rotary block with a concave guiding shell pivotally mounted for swinging toward and from the block, on that side that is nearest
35 the mill rolls, a combined pick and guide extending from the lower one of the mill rolls toward the block and a guide plate extension rigidly mounted on the upper end of the said shell and of a length to extend
40 from the upper end of the said shell when pressed against the block to a point underneath the confronting end of the said pick and guide.

6. In a strip mill, the combination of a
45 rotary block with a pick for the upper one of the mill rolls, a guide plate pivoted to the outer end of the said pick and extending therefrom to a point near the summit of the said block, and a hinged concave guiding
50 shell for inclosing that side of the block which is farthest from the mill rolls, the said shell having its upper end constructed and arranged for lapping over to the top of the said hinged plate at the outer end
55 thereof and holding the said plate down at the beginning of the blocking operation.

7. In a strip mill, the combination of the frame for said mill with a laterally extended shaft, a pick for the lower one of the mill
60 rolls, a guide plate underneath the said pick with its outer end turned up into the plane of the upper face of the said pick, a shaft receiving plate on the under side of the said guide plate and shaft and means for clamp-
65 ing the said pick plates and shaft together

for holding them in position on the said shaft.

8. In a strip mill, the combination of a rotating block with the mill frame, bracket plates having open shaft bearings formed
70 therein, the said plates being mounted on said frame at opposite sides thereof, a pair of shafts mounted in the shaft bearings of the said plates and removable therefrom, and a pick and guide plate on each of the
75 said shafts.

9. In a strip mill, the combination of a rotating block with the mill frame, a pair of laterally extended shafts between the mill rolls and the block, picks and guides mounted
80 on the said shafts, a third laterally extended shaft mounted on the frame underneath the said block in a lower plane than either shaft of the said pair and a concave guiding shell for partly inclosing the circumference of the
85 said block, the said shell being mounted on that one of the said three shafts which is in the lower plane.

10. In a mill having strip rolls in which sheet metal is delivered, the combination of
90 a rotary block toward which the metal is delivered with a concave guiding shell inclosing a portion of the circumference of the said block and a companion concave guiding shell for inclosing another portion of the
95 said block, and a hinged joint connecting the said two shells for opening and closing around the said block, the upper end of the shell for inclosing that side of the block which faces the strip rolls provided with a
100 rigid extension extending backwardly from the block for guiding the sheet of metal thereto.

11. In a mill having strip rolls in which sheet metal is delivered, the combination of
105 a rotary block toward which the metal is delivered, with a concave guiding shell inclosing a portion of the said block, mounted to swing toward and from the same and provided with a plate-like extension, rigid
110 with the said shell and extending backwardly from the receiving end thereof, and from the said block, for guiding the sheet of metal thereto.

12. In a strip mill having strip rolls from
115 which a sheet of metal is delivered, the combination of a rotary block on that side of the rolls from which the metal is delivered for being wound on the said block, a pair of concave guiding shells, a hinge joint pivotally connecting the said pair of shells and
120 a swinging arm upon one end of which the said pair of shells is mounted, the said arm having its other free end hung upon an axis that is parallel with the axes of the said
125 strip rolls and block.

13. In a strip mill having rolls from which a sheet of metal is delivered, the combina-
130 tion of a rotary block toward which the metal is delivered with a shaft, a swinging

arm fixed by one end to the said shaft, and
a concave shell, the said shell being made up
of a multiple of parts connected in series,
one end member of the series being con-
5 nected to the free end of the said arm and
the other end member provided with a
handle whereby all of the series may be

brought to bear against the said block with
a substantially uniform pressure.

JOHN M. HENDERSON.

Witnesses:

GEO. S. THEERINGER,
JOHN S. MCCARTHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
