No. 759,557. PATENTED MAY 10, 1904.

C. SCHOLTZ.

CONVEYER OR CATCHER FOR ROLLING MILLS.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

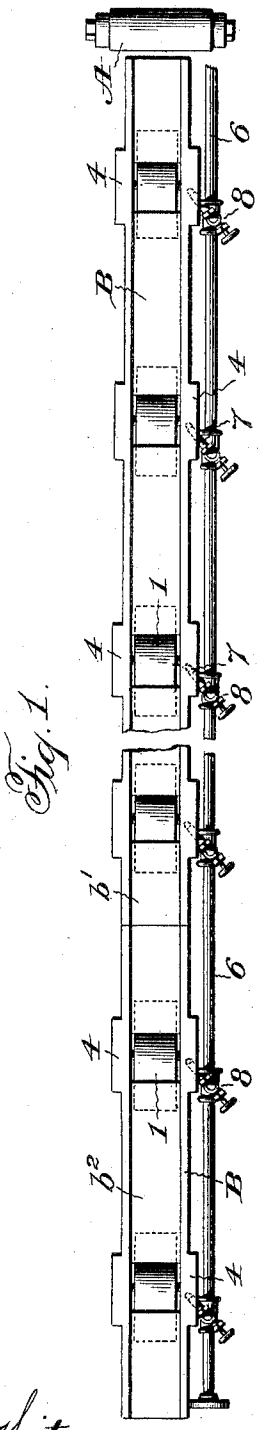

Fig. 1.

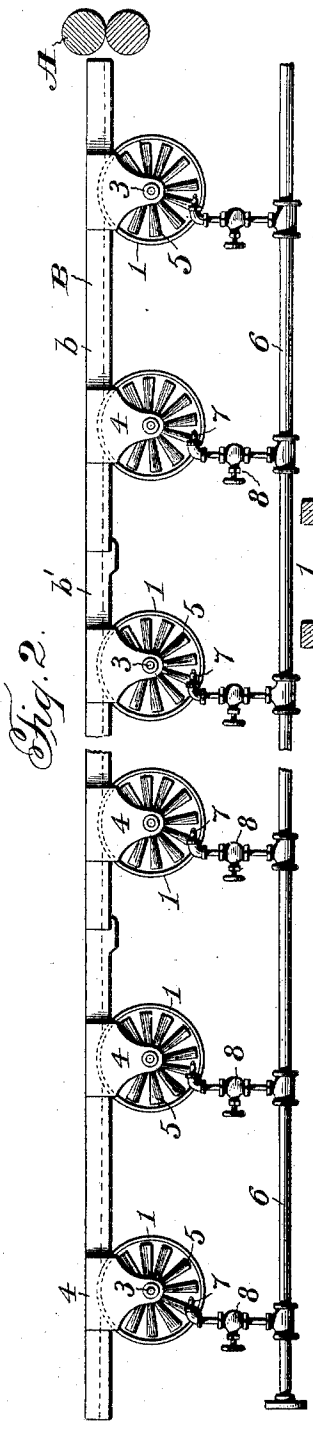

Fig. 2.

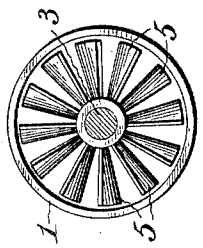

Fig. 4.

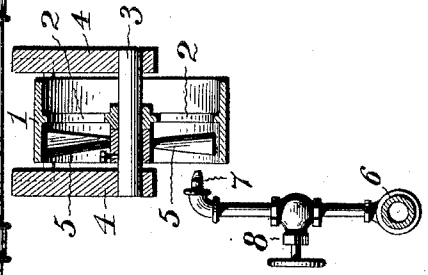

Fig. 5.

Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 759,557. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

CHARLES SCHOLTZ, OF SHARON, PENNSYLVANIA, ASSIGNOR TO THE SHARON STEEL HOOP CO., OF SHARON, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CONVEYER OR CATCHER FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 759,557, dated May 10, 1904.

Application filed February 24, 1903. Serial No. 144,734. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SCHOLTZ, a citizen of the United States, residing at Sharon, Pennsylvania, have invented certain new and useful Improvements in Conveyers or Catchers for Rolling-Mills, of which the following is a specification.

My invention relates to improvements in power-driven roller-conveyers designed more especially for use in connection with rolling-mills, being particularly well adapted for conveying away the thin sheet-metal strips produced by hoop-mills and the like.

The object of the invention is to provide a simple, effective, and easily-managed arrangement for driving the rollers whereby thin sheet-metal strips or sheets of all kinds may be moved easily, quickly, and continuously, while at the same time all danger of buckling is avoided.

The invention consists, essentially, in providing upon the shafts of the rollers impact-wheels which are operated by fluid-pressure from a suitable source of supply.

It further consists in the construction and arrangement of parts hereinafter described, and pointed out in the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a conveyer or catcher embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged vertical transverse section of the table or trough, a feed-roll, and its fan-motor. Fig. 4 is an enlarged detached view of the feed-roll and impact motor or turbine.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction and operation of that class of rolling-mill devices, commonly termed "catcher-rolls" or "conveyer-rolls," which are employed in connection with the rolling-mill tables for automatically catching or conveying from the work-rolls of the mill hoop, merchant-bar, skelp, rod, or like merchant iron, the length, small cross-section, and highly-heated flexible condition of which as it comes from the work-rolls renders it not only dangerous to handle manually, but also difficult to deliver, either manually or automatically, in a condition free from kinks or buckles.

In the drawings, A indicates the pass of a rolling-mill, in the present instance the last or final pass of a hoop-mill, and B a conveyer trough or table leading therefrom and provided at suitable intervals with feed-rolls 1. The table may be of any desired length and is preferably made up of a series of overlapping sections *b b'*, &c., each of which may have one, two, or more conveyer-rolls 1, according to the length of the section and the interval desired between the feed-rolls. The rolls 1 are usually the width of the feed-table or conveyer B (see Fig. 1) and are arranged with relation thereto so that the periphery of the roll projects slightly within or forms a portion or bottom of the table or trough. For the purposes of the present specification the rolls 1 are shown as simple hollow cylinders or shells provided with suitable spiders 2, by which they are keyed to shafts 3, journaled in pendent bearings 4, the table or trough sections being themselves supported in any suitable manner or location as requirements may dictate. On the shaft 3 of each roller and within the same is also keyed an impact-wheel or like fluid-pressure motor 5, the dimensions of which will of course depend on the work it has to do, whether for conveying hoop, merchant-bar, rod, or skelp. For a conveyer of the usual steel hoop-rolls I have found an eight (8) inch wheel with thirty-five (35) pounds fluid-pressure to do the work effectively.

Extending the length of the conveyer-trough or table B, at one side of and parallel therewith, is a fluid-pressure main or pipe 6, said pipe being provided at intervals opposite the impact-wheels 5 with jet-nozzles 7, provided with valves 8 and arranged so that the jets from said nozzles impinge on the vanes of the impact motor or wheel. Said pipe 6 and nozzles 7 may be adapted for the use of either

steam or compressed air or, in fact, any motive fluid under pressure; but compressed air is the motive fluid preferred by me.

The conveyer, being constructed substantially as hereinbefore pointed out and the diameter of the impact-wheel and the pressure of the motive fluid being proportioned to the character, weight, &c., of the bar, hoop-iron, or skelp to be conveyed by the feed-rollers, will operate as follows: The valves 8 being opened to permit jets of fluid from the nozzles 7 to impinge on the vanes of the wheels 5, the rolls 1 will be rotated and exerting a frictional grip on the superposed skelp, bar, or hoop-iron will cause the same to travel the length of the conveyer trough or table B under sufficient tension or pull to avoid all side displacement, kinks, or buckling, while at the same time when air-pressure is the motive fluid employed the temperature of the conveyer-rollers 1 will be kept down and the life of the conveyer-rolls conserved.

Among the advantages incident to the conveyer for rolling-mills hereinbefore described are, first, the conveyer-rolls have an increased friction hold on the bar or hoop to be fed or conveyed, the pull of the rolls is straighter and more uniform, shafting, belting, and gearing is dispensed with and the construction so simplified that repairs are comparatively easily made, and reductions or extensions of the conveyer are simplified and cheapened.

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

1. A conveyer or catcher for rolling-mills and the like, comprising a plurality of rollers, and an independent driving-motor connected directly to the axle of each roller, substantially as described.

2. A conveyer for rolling-mills and the like having a set of impact-motors each having an actuating connection with a single roller of the table and a source of fluid-supply having valved connections to the motors, substantially as described.

3. A conveyer for rolling-mills and the like having impact-motor-driven rollers, a source of fluid under pressure having a pipe extending along the motors, and valved branches leading from the supply-pipe to the motors, substantially as described.

4. A conveyer or catcher for rolling-mills and the like, having a plurality of rollers and an individual actuating impact-motor on the axle or shaft of each roller, substantially as described.

5. A conveyer for rolling-mills and the like having a set of rollers, a set of driving-motors, each connected to a single roller, and means for varying the speed of each motor, substantially as described.

6. A rolling-mill feed-table or the like having a roller, an impact wheel or motor located within said roller and connected thereto, and a source of supply of fluid under pressure having a nozzle terminating in proximity to said impact-wheel, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SCHOLTZ.

Witnesses:
A. W. WILLIAMS,
ALFRED WILLIAMS.