

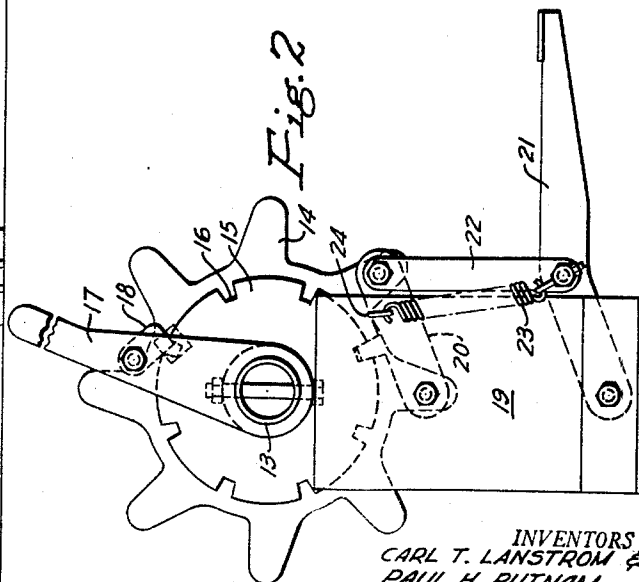
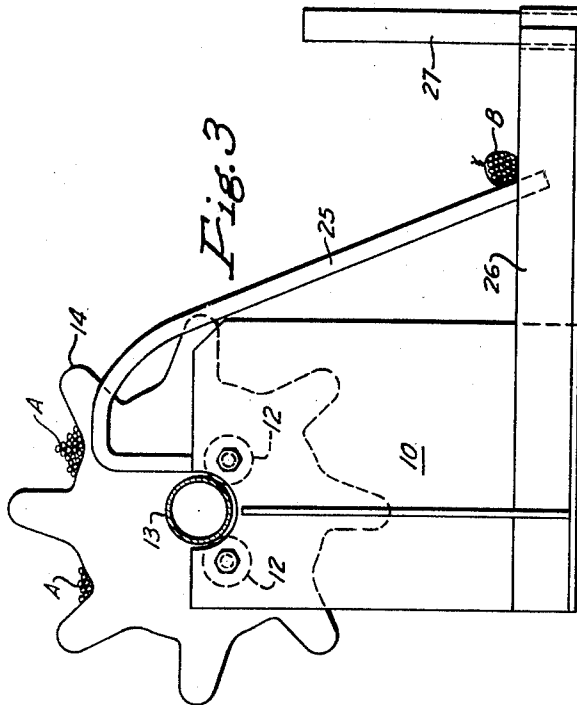
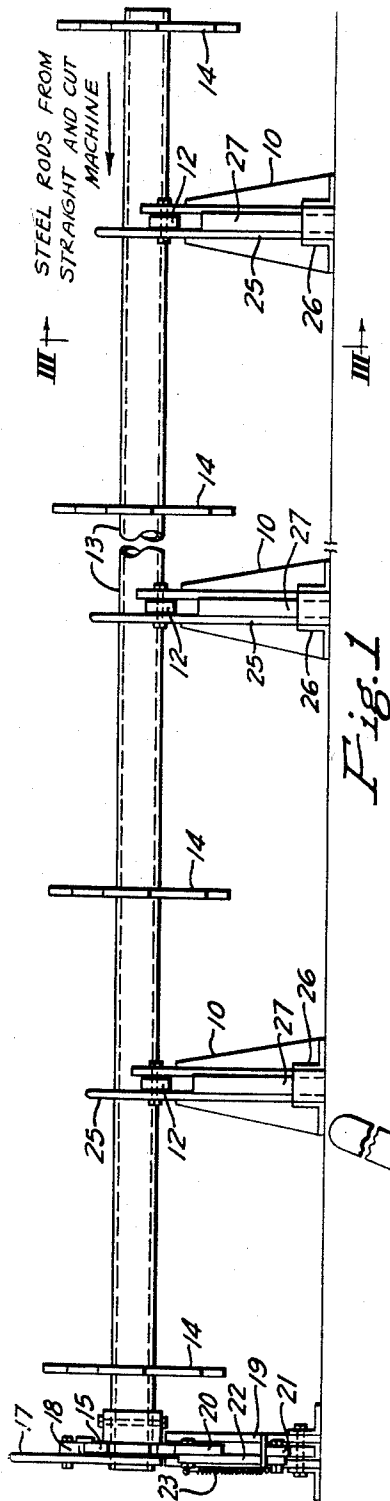
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APPARATUS FOR HANDLING BUNDLES

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2,933,202

APPARATUS FOR HANDLING BUNDLES

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3 Claims. (Cl. 214—1)

This invention relates to an apparatus for receiving and supporting elongated articles for bundling.

An object of our invention is to provide an apparatus adapted to receive articles in rapid succession, such as steel rods from a straight and cut machine, and support them for bundling without interrupting the flow of articles.

A further object is to provide an improved apparatus adapted to receive a plurality of elongated articles delivered successively thereto, support these articles in a different position for bundling while continuing to receive additional articles, and to discharge finished bundles.

A more specific object is to provide an improved apparatus which includes a plurality of axially aligned star wheels or the like adapted to form a path for receiving a plurality of elongated articles delivered successively thereto and, after indexing, to support the articles for bundling while continuing to receive additional articles and, after further indexing, to discharge finished bundles.

In accomplishing these and other objects of the invention, we have provided improved details of structure, a preferred form of which is shown in the accompanying drawing, in which:

Figure 1 is a side elevational view of our apparatus; Figure 2 is an end elevational view from the left as viewed in Figure 1; and

Figure 3 is a vertical section on line III—III of Figure 1.

Our apparatus includes a plurality of fixed longitudinally spaced pedestals 10, pairs of roller bearings 12 journaled on the upper ends of said pedestals, and an elongated horizontal shaft 13, preferably tubular, resting on said bearings for rotation thereon. A plurality of spaced apart aligned star wheels 14 are fixed to said shaft. A ratchet wheel 15 is fixed to one end of the shaft and its circumference contains notches 16 corresponding to those in the star wheels. An operating lever 17 is journaled to the shaft adjacent the ratchet wheel and carries a pivoted dog 18 engageable with notches 16 for turning the shaft in a clockwise direction, as viewed in Figure 2. A stand 19 is fixed beneath the ratchet wheel and includes a pair of horizontally spaced plates on opposite sides of the ratchet wheel. A latch 20 and a pedal 21 are pivoted to the stand between its plates and are connected by a link 22. A spring 23 extends between the pedal 21 and a lug 24 on the stand and normally holds the pedal, link and latch in a raised position where the latch engages one of the notches 16 and prevents rotation of shaft 13. Each pedestal 10 also carries a downwardly inclined skid 25. Each pedestal includes a transverse horizontal beam 26 at floor level, and each of said beams carries an upright post 27 transversely spaced from the respective pedestals.

In operation, when the latch 20 engages any one of the notches 16, the star wheels are held in a position where one projection on each is substantially upright, as shown in Figures 2 and 3. Elongated articles A, such as steel rods from a straight and cut machine, feed suc-

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cessively to the series of aligned notches in the star wheels immediately to the left of the upright projections, as viewed in Figures 2 and 3. These articles feed successively one after the other and travel lengthwise from the end of the apparatus opposite the ratchet wheel 15. After the number of articles for one bundle have been fed, the operator indexes the shaft and star wheels by depressing the pedal 21 to release latch 20 from a notch 16 and manually turning lever 17 until the latch engages the next notch. The dog 18 is then released from the notch 16 and the lever returned to its original position where it engages the next notch.

In the new position of the star wheels, the group of articles remain supported thereon, but are immediately to the right of the projections which have moved into the upright position. These articles now are accessible for the operator to tie them into a bundle B. Meanwhile additional articles can feed without interruption to the star wheel notches immediately to the left of the next succeeding projection, which has now moved into upright position. When the star wheels are indexed again, the skids 25 receive the completed bundles B of articles. The bundles slide down the skids until they rest on the beams 26, where an overhead crane readily can lift them.

From the foregoing description it is seen that our invention affords a simple apparatus which greatly facilitates bundling elongated articles. Its use enables articles to continue feeding without interruption, and positions completed bundles for easy handling.

While we have shown and described only a single embodiment of our invention, it is apparent that modifications may arise. Therefore, we do not wish to be limited to the disclosure set forth but only by the scope of the appended claims.

We claim:

1. The combination, with a machine which feeds in rapid succession elongated cylindrical articles traveling in the direction of their lengthwise axes, of an apparatus for collecting and bundling the articles comprising a plurality of pedestals spaced apart in the direction of article travel, a horizontal shaft supported on said pedestals for rotation about an axis parallel to the direction of article travel, a plurality of aligned star wheels carried by said shaft and spaced apart in the direction of article travel, latch means for holding said shaft against rotation in any one of a plurality of positions, said star wheels having a plurality of projections one of which on each star wheel is substantially upright when said shaft is thus held, means for releasing said latch means and indexing said shaft and star wheels to move the next succeeding projection on each star wheel to the substantially upright position, the spaces in the star wheels between their upright and next succeeding projections being aligned with the path of articles feeding from said machine for collecting a plurality of the articles, the spaces in the star wheels on the other side of their upright projections being adapted to hold the articles thus collected for tying into a bundle, said pedestals being located intermediate said star wheels, and downwardly inclined skids carried by said pedestals and extending into the path of a bundle carried by said star wheels, indexing of said star wheels being adapted to move a plurality of articles collected from said machine to the position for tying into a bundle, and further indexing being adapted to deposit the bundle on said skids.

2. The combination, with a machine which feeds in rapid succession elongated cylindrical articles traveling in the direction of their lengthwise axes, of an apparatus for collecting and bundling the articles comprising a plurality of pedestals spaced apart in the direction of article travel, a horizontal shaft supported on said pedestals for rotation about an axis parallel to the direction of article travel,

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a plurality of aligned star wheels carried by said shaft and spaced apart in the direction of article travel, a fixed stand adjacent the end of said shaft remote from said machine, cooperating latch means carried by said shaft and stand for holding said shaft against rotation in any one of a plurality of positions, said star wheels having a plurality of projections one of which on each star wheel is substantially upright when said shaft is thus held, means carried by said stand for releasing said latch means, means carried by said shaft adjacent said stand for indexing the shaft and star wheels to move the next succeeding projection on each star wheel to the substantially upright position, the spaces in the star wheels between their upright and next succeeding projections being aligned with the path of articles feeding from said machine for collecting a plurality of the articles, the spaces in the star wheels on the other side of their upright projections being adapted to hold the articles thus collected for tying into a bundle, said pedestals being located intermediate said star wheels, and downwardly inclined skids carried by said pedestals and extending into the path of a bundle carried by said star wheels, indexing of said star wheels being adapted to move a plurality of articles collected from said machine to the position for tying into a bundle, and further indexing being adapted to deposit the bundle on said skids.

3. The combination, with a machine which feeds in rapid succession elongated cylindrical articles traveling in the direction of their longitudinal axes, of an apparatus for collecting and bundling the articles comprising a plurality of pedestals spaced apart in the direction of article travel, a horizontal shaft supported on said pedestals for rotation about an axis parallel to the direction of article travel, a plurality of aligned star wheels carried by said shaft and spaced apart in the direction of article travel, a fixed stand adjacent the end of said shaft remote from

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said machine, a ratchet wheel carried by said shaft adjacent said stand, an operating lever journaled to said shaft and having a dog engageable with said ratchet wheel for rotating the shaft, a latch carried by said stand and engageable with said ratchet wheel for holding said shaft against rotation in any one of a plurality of positions, operating means for said latch carried by said stand, said star wheels having a plurality of projections one of which on each star wheel is substantially upright when said latch engages said ratchet wheel, release of said latch by said operating means allowing said lever to rotate the shaft and index the star wheels to move the next succeeding projection to the substantially upright position, the spaces in the star wheels between their upright and next succeeding projection being aligned with the path of articles feeding from said machine for collecting a plurality of the articles, the spaces in the star wheels on the other side of their upright projections being adapted to hold the articles thus collected for tying into a bundle, said pedestals being located intermediate said star wheels, and downwardly inclined skids carried by said pedestals and extending into the path of a bundle carried by said star wheels, indexing of said star wheels being adapted to move a plurality of articles collected from said machine to the position for tying into a bundle, and further indexing being adapted to deposit the bundle on said skids.

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