June 16, 1925. 1,542,485

W. N. STEVENSON

SUPPLY REEL FOR FEEDING COILED WIRE AND LIKE FLEXIBLE STRIP MATERIAL

Filed June 19, 1922 2 Sheets-Sheet 1

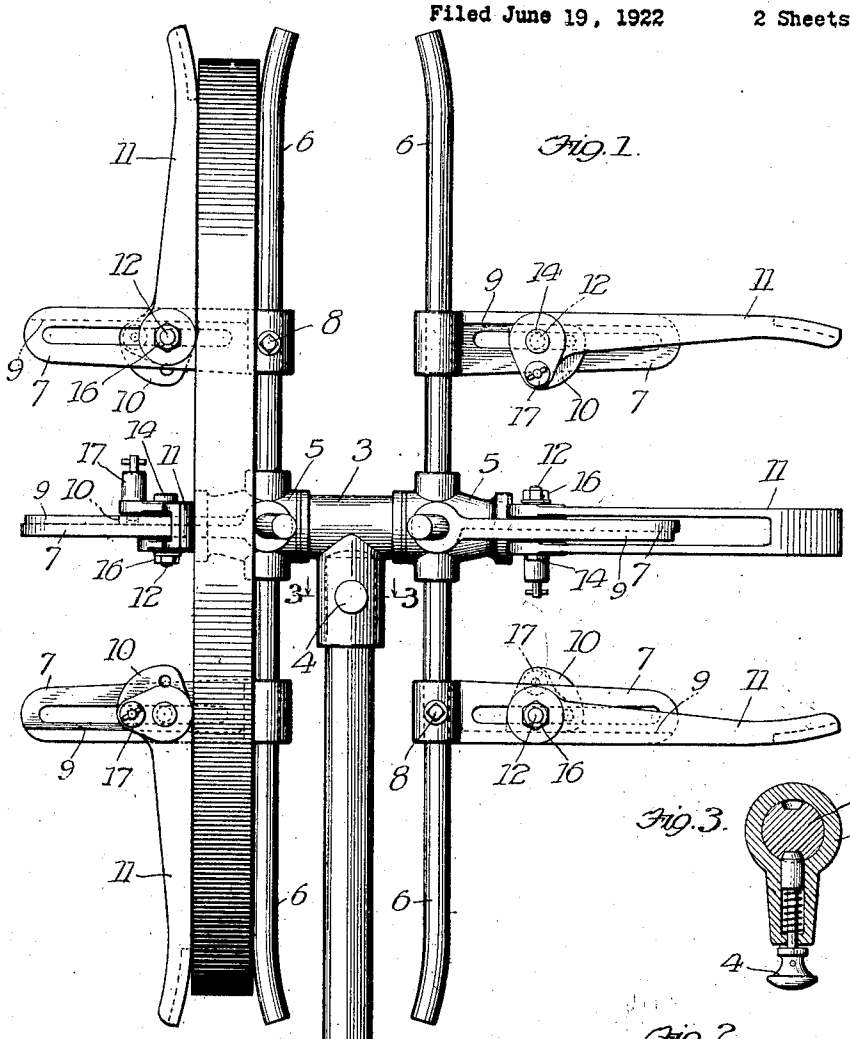

Fig. 1.

Fig. 3.

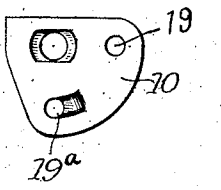

Fig. 4.

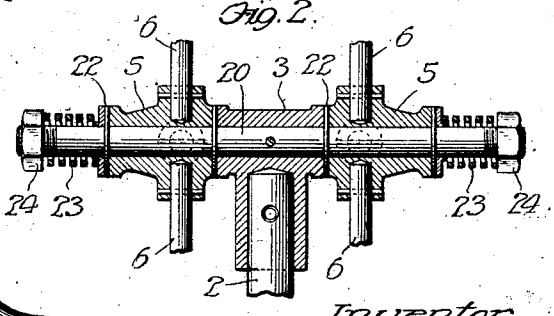

Fig. 2.

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Fig. 5.

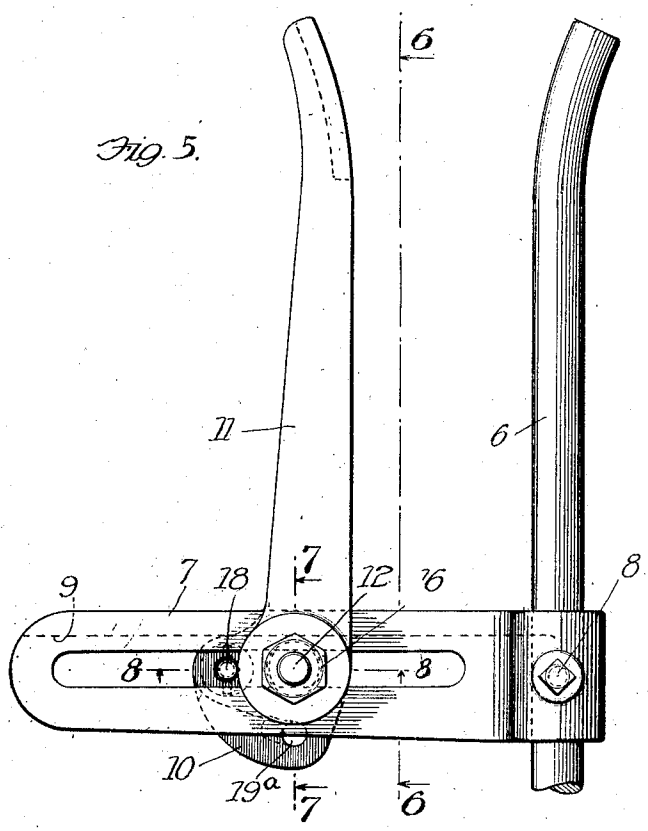


Fig. 6.

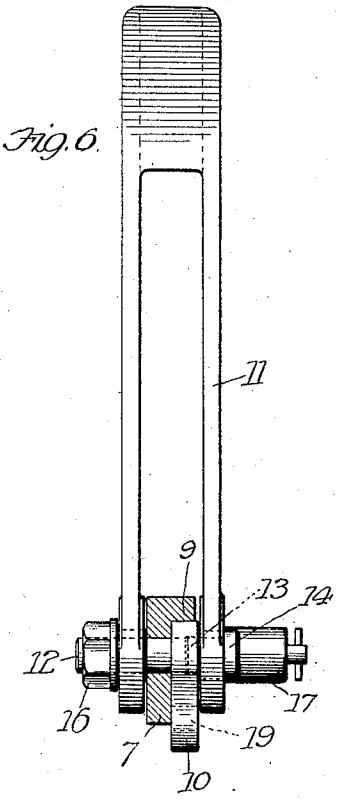


Fig. 7.

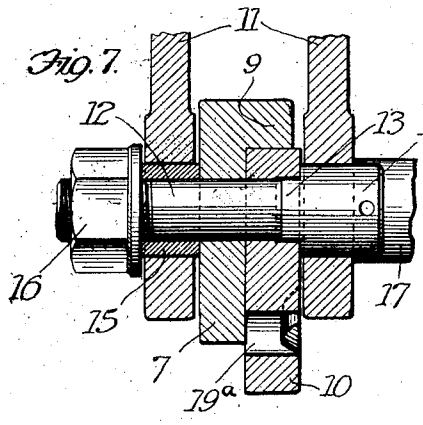
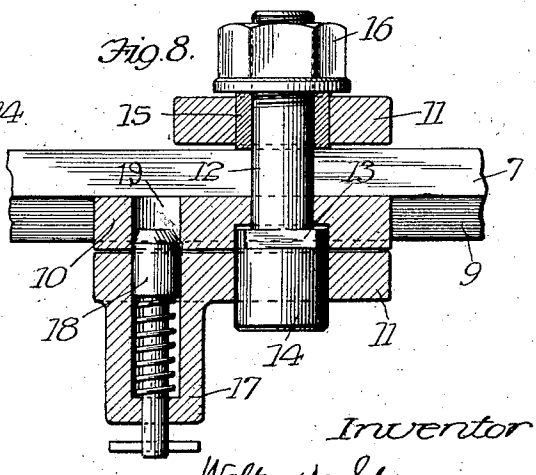


Fig. 8.



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UNITED STATES PATENT OFFICE.

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SUPPLY REEL FOR FEEDING COILED WIRE AND LIKE FLEXIBLE STRIP MATERIAL.

Application filed June 19, 1922. Serial No. 569,308.

To all whom it may concern:

Be it known that I, WALTER N. STEVENSON, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Supply Reels for Feeding Coiled Wire and like Flexible Strip Material, of which the following is a specification.

My invention relates to supply reels of a type used to support coils of wire or thin flat coils of metal while such material is being fed in manufacturing operations to punch presses, stamping presses or various other kinds of automatic wire working and metal working machines. In the operation of such machines, it is important to avoid to the greatest extent possible interruptions arising from changing to a new coil of material after the previous coil has been worked up, and it is desirable that the reel shall be readily adjustable to receive coils of stock of different thickness and different internal diameter, and also that provision be made for loading the stock on the reel in the quickest and most convenient manner. The object of my invention is the production of a reel which having novel and original features of construction and arrangement through which the advantages mentioned shall be attained, and which is highly efficient and desirable, and well adapted to serve the purpose for which it was designed. In the appended claims, I have particularly pointed out the essential elements of my invention, it being understood, however, that changes and modifications of various parts and members are possible within the intended scope of the claims and without departure from the spirit of my invention.

In the drawing, Fig. 1 is a side elevation of the machine, viewed in a direction perpendicular to the axis of rotation of the reels; Fig. 2 is a fragmentary vertical section taken centrally of the rotatable reel head and hubs; Fig. 3 a detail horizontal cross-section through the reel head on the line 3—3 of Fig. 1; Fig. 4 an elevation of one of the adjustable blocks through which the keeper arms of the reel are adjusted; Fig. 5 a side view of one of the reel arms and the cross arm and keeper arm carried by it; Fig. 6 a vertical section on the line 6—6 of Fig. 5 looking in the direction of the arrow; Fig. 7 a vertical section on the line 7—7 of Fig. 5; and Fig. 8 a horizontal section on the line 8—8 of Fig. 5.

The same reference characters indicate the same parts in all the figures of the drawings.

As shown, and as usual in devices of this character, the reel proper is supported upon a suitable base 1 adapted to be bolted to the floor in suitable relation to the machine (not shown) in connection with which it is to be used. Secured to a post 2 fixed in the base is a rotatable head 3 which may be secured in either one of two diametrically opposite positions by means of a spring plunger or latch pin 4 arranged to cooperate with one or the other of two orifices formed in the post. Two reels mounted on this head are employed, in order that while the material from one reel is being fed to the machine, the other may be loaded. The reels are identical in construction, and in the construction shown the two hubs 5—5 of the reels are rotatably mounted upon a cross bearing pin 20 centrally secured to the rotatable head 3 and providing diametrically opposite axles for such hubs. As shown, the reel hubs rotate between fibre washers 22, and are made subject to a moderate degree of frictional retardation by means of springs 23 interposed between the hubs and nuts 24 arranged at the opposite ends of the pin 20.

To each hub 5 is fixed a set of radial reel arms 6, in the present instance four in number, upon each of which is mounted a coil-supporting cross arm 7 which is radially adjustable by means of a set screw 8 upon the reel arm, the cross arms extending at right angles to the plane of such reel arms. The cross arms 7 are longitudinally slotted and are each formed with a flange or lip 9 extending from the outer edge along one side. Slidingly seated in the angle formed by such flange is a block 10 held against rotation by the flange and pivotally supporting a forked keeper arm 11 which straddles both the cross arm 7 and block 10 and is rotatably mounted on a pivot bolt 12 having a flat-sided portion 13 adjacent its head 14, this flat-sided por-

tion being arranged to engage a correspondingly shaped seat in the block and thereby prevent the bolt from turning. The head 14 of the bolt serves as a journal upon which one fork of the keeper arm bears, and a spacing collar 15 surrounding the bolt adjacent its opposite end provides a journal for the opposite fork. The collar and shoulders on the bolt head 14 between such head and the flat-sided portion 13 sustain the strain of the bolt when its nut 16 is tightened and clamp the block 10 firmly to the cross arm 7 while leaving the keeper arm 11 free to oscillate.

The base of one fork of the keeper arm is provided with a laterally extending tubular boss 17 formed to receive a spring-pressed plunger 18 arranged to cooperate with one or the other of two sockets 19 and 19^a in the block 10. The socket 19 is arranged to latch the keeper arm unyieldingly in a position parallel with the reel arm, while the socket 19^a is formed with a cam face so that while the keeper arm will be yieldingly held by the latch in a position parallel with the cross arm when turned down to that position, it may by application of sufficient force be returned to a position parallel with the reel arm without the necessity of manipulating the latch.

The manner in which my novel supply reel is used will be readily understood without extended explanation. While a coil of material on one reel is being fed to the machine the keeper arms 11 of the other reel are unlatched and turned into position parallel with the coil-supporting cross arms 7. A fresh coil of material is then loaded on to such arms and the keeper arms turned into parallelism with the reel arms, in which position they become automatically locked, and the coil on such reel is then ready to be turned by rotation of the head 3 into position to be fed to the machine as soon as the first mentioned coil has been exhausted.

By adjustment of blocks 10 on the cross arms 7 the keeper arms may be spaced to accommodate coils of stock of varying width, and by adjustment of the cross arms on the reel arms 6 the reel may be arranged to receive coils of different internal diameters. The springs 23 act as a brake upon the reel to prevent overrunning due to any intermittent feeding movement which the machine being supplied may have.

I claim:

1. A supply reel for supporting and feeding out coils of flexible material including a plurality of rotatably mounted reel arms, coil-supporting cross arms mounted on said reel arms and perpendicular thereto, blocks longitudinally adjustable on said cross arms and arranged to be secured thereto, and keeper arms pivotally mounted on said blocks.

2. A supply reel for supporting and feeding out coils of flexible material including a plurality of rotatably mounted reel arms, coil-supporting cross arms mounted on said reel arms and perpendicular thereto, blocks slidably and non-rotatably mounted on said cross arms and arranged to be secured thereto, and keeper arms pivotally mounted on said blocks.

3. A supply reel for supporting and feeding out coils of flexible material including a plurality of rotatably mounted reel arms, coil-supporting cross arms mounted on said reel arms and perpendicular thereto, blocks arranged to be secured to said cross arms in different positions of longitudinal adjustment, keeper arms pivotally mounted on said blocks, and latching mechanisms arranged to latch said keeper arms yieldingly in one position parallel with said cross arms and also latch said keeper arms positively in another position at right angles to such cross arms.

4. In a supply reel for supporting and feeding out coils of flexible material and having reel arms and coil-supporting cross arms on said reel arms and keeper arms, means for adjustably and pivotally mounting said keeper arms on said cross arms comprising each a block, and a pivot bolt arranged to clamp said block to said cross arm at different positions longitudinally thereof, said keeper arm being pivoted on said bolt.

5. In a supply reel for supporting and feeding out coils of flexible material and having reel arms and coil-supporting cross arms on said reel arms and keeper arms, means for adjustably and pivotally mounting said keeper arms on said cross arms comprising each a block slidably and non-rotatably mounted on its cross arm, a pivot bolt arranged to clamp said block to such cross arm at different positions longitudinally thereof, the keeper arm being pivoted on said bolt and equipped with a spring bolt adjacent its base arranged to latch into said block.

6. In a supply reel for supporting and feeding out coils of flexible material and having reel arms and coil-supporting cross arms on said reel arms and keeper arms forked at their inner ends, means for adjustably and pivotally mounting said keeper arms on said cross arms comprising each a block slidably and non-rotatably mounted on its cross arm, a pivot bolt pivotally engaging the forks of said keeper arm and arranged to clamp said block to said cross arm at different positions longitudinally thereof within the forks of said keeper.

7. In a supply reel according to claim 6, means for mounting a keeper arm in which the cross arm is flanged and slotted and the sliding block is formed with a flat face en-

gaging the flange and with an orifice and the pivot bolt engages said orifice and the slot of said arm.

8. In a supply reel according to claim 6, means for mounting a keeper arm in which the head of its pivot bolt is shouldered to engage one side of said clamped members, and a spacing collar is interposed between such members and the clamping nut of the bolt, one fork of the keeper arm being pivoted on the bolt head and the other on the collar.

WALTER N. STEVENSON.