Jan. 5, 1937. J. M. SCHMIED 2,066,488

UNWINDING MACHINE

Filed Aug. 26, 1935 2 Sheets-Sheet 1

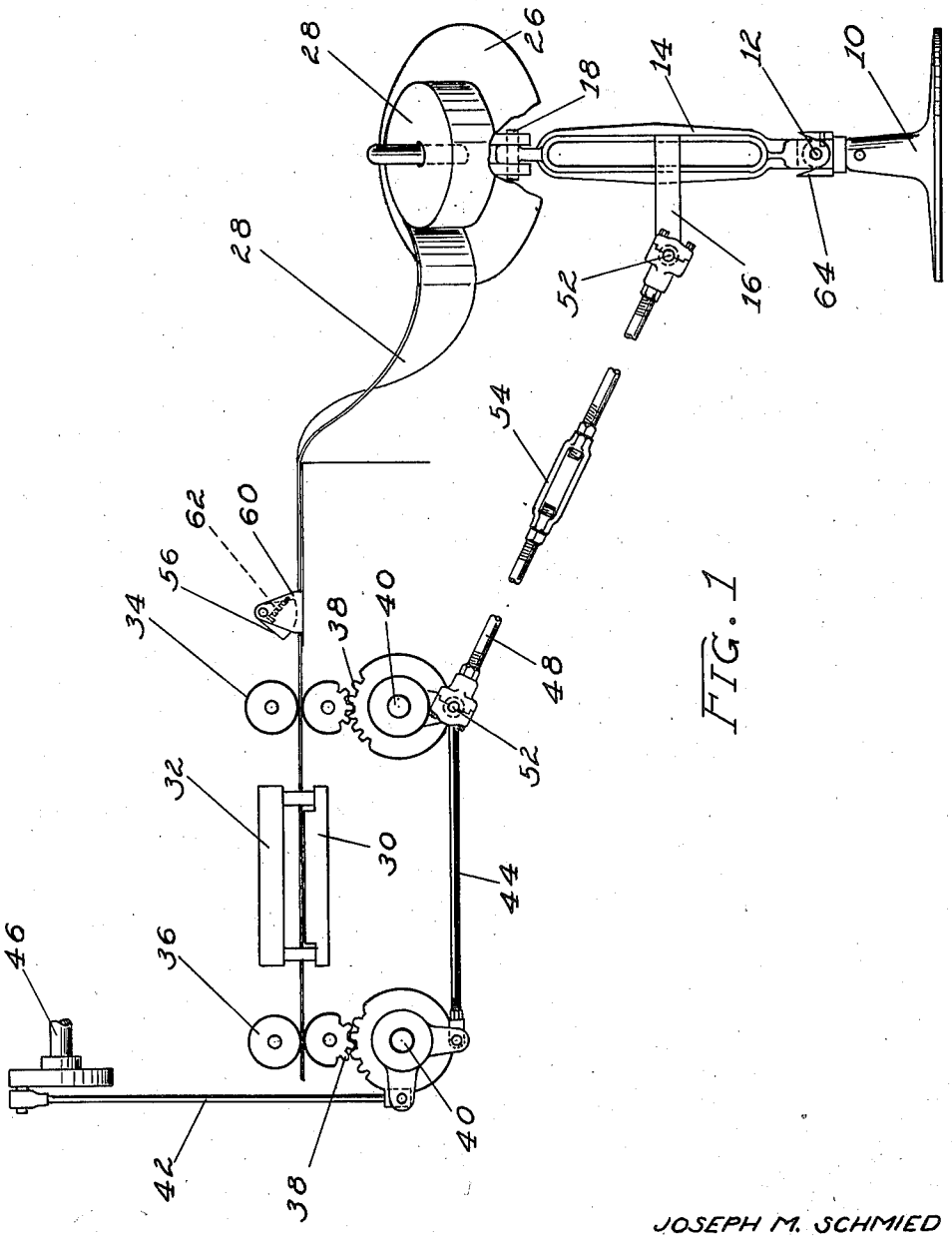


FIG. 1

JOSEPH M. SCHMIED
INVENTOR

PER Albert J. Fihe

ATTORNEY

Jan. 5, 1937. J. M. SCHMIED 2,066,488

UNWINDING MACHINE

Filed Aug. 26, 1935 2 Sheets-Sheet 2

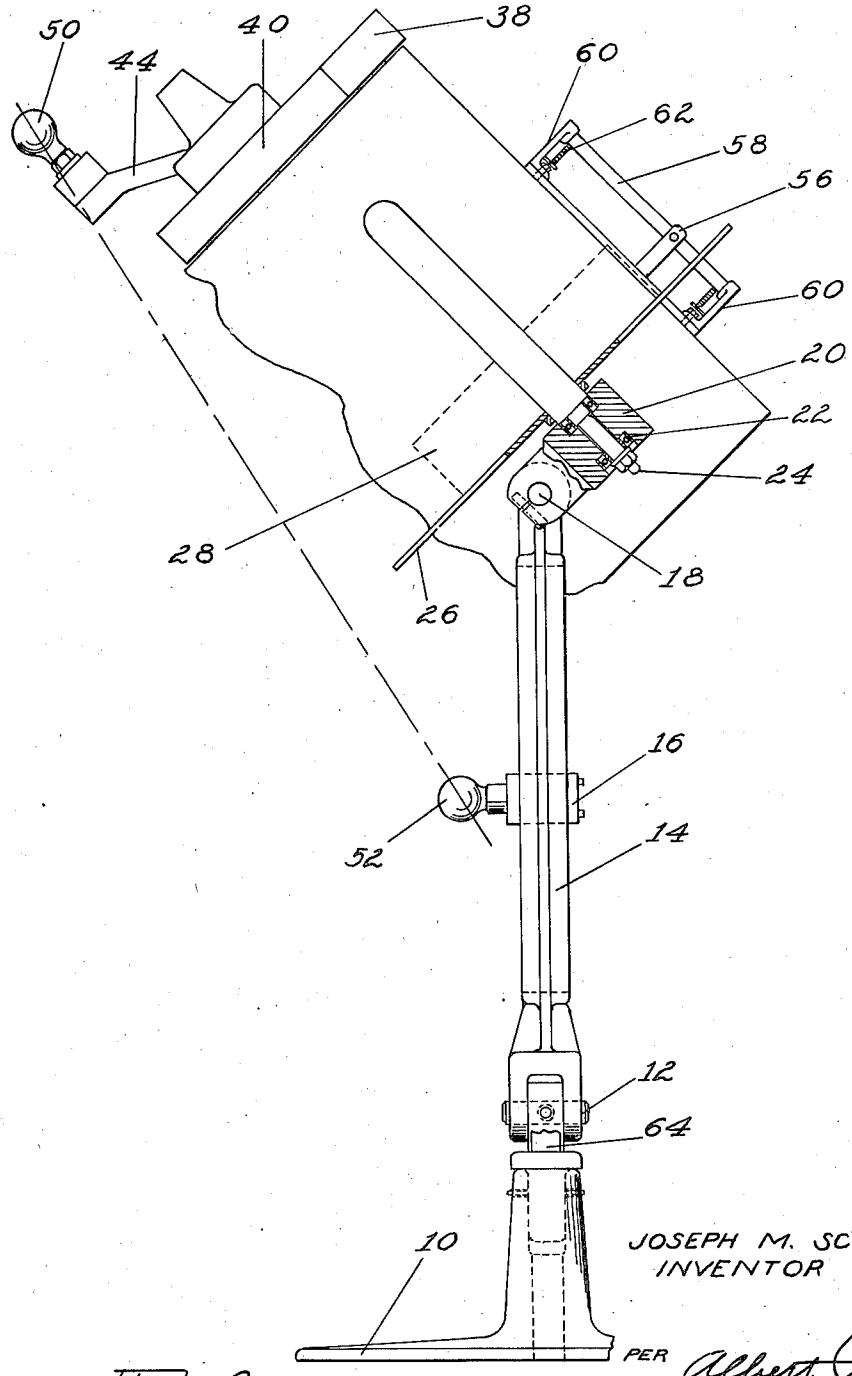


FIG. 2

JOSEPH M. SCHMIED
INVENTOR

PER Albert J. Fisher

ATTORNEY

Patented Jan. 5, 1937

2,066,488

UNITED STATES PATENT OFFICE

2,066,488

UNWINDING MACHINE

Joseph M. Schmied, Chicago, Ill., assignor to Victor Manufacturing & Gasket Company, Chicago, Ill., a corporation of Illinois

Application August 26, 1935, Serial No. 37,818

12 Claims. (Cl. 242—55)

This invention relates to an improved unwinding machine, particularly for punch presses and the like, and has for one of its principal objects the provision of a device which will automatically unwind in desired steps or stages a roll of metallic ribbon or the like which is to be fed through a punch press or similar apparatus.

One of the important objects of this invention is to provide means which will eliminate undue pull or drawing tension on the feed rolls of the ordinary automatic punch press even when working on rather heavy material which ordinarily requires some extraneous feeding means such as an additional operator or the like.

Another important object of this invention is the provision of a simple yet efficient apparatus for unwinding rolls of material to be fed into punch presses or the like which is operated synchronously with the punch press and by means of a very simple and easily constructed attachment to the press itself.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawings and following specification.

The invention, in a preferred form, is shown in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is an elevational view, parts being broken away, of the unwinding machine of this invention, showing the same as connected to an automatic punch press or the like.

Figure 2 is a side or end elevation of the unwinding and roll supporting device, showing portions of the punch press and attachments in the background.

As shown in the drawings:

The reference numeral 10 indicates generally a base or supporting stand for the improved unwinding machine and roll supporting element of this invention, and pivotally mounted on the base or stand is an upright 14 which is slotted as best shown in Figure 1 for adjustable mounting of an extension 16 thereinto.

At the upper end of the support 14 is pivotally mounted at 18 a head 20 in which is positioned, by means of ball bearings or the like 22, a spindle 24 which in turn supports a table or disk 26, the spindle and disk being provided for the reception and support of a roll 28 of metallic ribbon or the like which is adapted to be fed into the punch press.

The punch press is shown more or less diagrammatically in Figure 1 and comprises essentially the usual bed 30 and movable die 32 together with sets of feed rollers 34 and 36 respectively, the feed rollers being periodically operated in the usual manner by means of gears and one-way drive connections 38 and 40 respectively. These one-way drive connections are operated by means of the usual links 42 and 44 connected to the driving means 46 of the press, all of which is more or less standard construction.

It often happened in the operation of these devices that the feed rolls 34 and 36 were subject to slippage and did not exert a sufficient pull on the roll of metallic ribbon or the like 28 so as to feed a sufficient amount of stock under the die 32, thereby resulting in loss of material and faulty operation. This has heretofore been eliminated by stationing an extra operator adjacent the table 26 which supports the roll of material 28, and it was the duty of this operator to give the table a spin whenever the slack in the metallic ribbon or tape seemed about to be taken up. This sometimes resulted in too much of an unwinding operation with the result that the metallic ribbon became twisted or tangled and also contacted the floor with consequent marring or damage.

In the operation of the present invention, an adjustable link 48 is connected to the end of the link 44 by means of a ball and socket or other suitable attachment as shown at 50, and the other end of this link 48 is mounted by means of a similar ball and socket attachment 52 to the end of the connection 16 on the stand 14. This stand 14, being pivoted at 12, will accordingly rock with the intermittent longitudinal movements of the links 44 and 48, and this rocking motion can be controlled in extent by means of a suitable adjustment in the operating length of the link 48. This is effected through the turnbuckle 54, and another adjustment is also possible by moving the arm 16 up and down in the slot in the element 14.

This rocking motion of the stand 14 with the supporting table 26 causes a certain amount of tension to be placed on the ribbon 28 at each down stroke of the die 32 and concurrently with each feeding movement of the rollers 34 and 36, thereby unwinding a sufficient amount of the metallic ribbon or other material 28 to produce a desired condition of slack for the next feeding operation.

In order to prevent any of the stock from being pulled out from under the die 32 or from between the rollers 34 during the rocking oper-

ation of the stand **14**, a gripping element is provided in the form of a cam **56** positioned on the bed plate of the punch press and just in front of the feed rollers **34**. This cam **56** is so shaped as to prevent any retrograde movement of the metallic ribbon **28**, this being best shown in Figure 1, and the same is adjustable for various widths of ribbon by slidably positioning the same on a supporting rod **58** mounted in suitable brackets **60**. Coil springs **62** assure of a proper operation of the cam element **56** at all times.

The guards **64**, best shown in Figure 1, are for the purpose of preventing a possible overturning of the support **14** in the event that the ribbon breaks or is removed at such time when the link **48** is also disconnected.

It will be seen that herein is provided an automatic unwinding means for any material adapted to be intermittently fed into some operating machine, as, for example, a punch press, which will immediately assure of a proper feed at all times and under all conditions, and at the same time shall be synchronized with the operation of the machine itself by means of a simple and economical connection.

I am aware that many changes may be made and numerous details of construction varied throughout a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than as necessitated by the prior art.

I claim as my invention:

1. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, means for angularly adjusting the support with respect to the upright, and means for rocking the upright.

2. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, means for angularly adjusting the support with respect to the upright, means for continuously rocking the upright and further means for twisting the fed material through a partial revolution while feeding the same.

3. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed.

4. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising a connecting link.

5. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising an adjustable link.

6. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising a connecting link, and means associated with the intermittent feed for preventing reverse movement of the stock during the rocking operation.

7. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comrpising a connecting link, and means associated with the intermittent feed for preventing reverse movement of the stock during the rocking operation, said means comprising a gripping cam.

8. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising a connecting link, and means associated with the intermittent feed for preventing reverse movement of the stock during the rocking operation, said means comprising a gripping cam adapted to allow the material to move thereunder in one direction only.

9. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising a connecting link, and means associated with the intermittent feed for preventing reverse movement of the stock during the rocking operation, said means comprising a gripping cam, and springs associated with the cam for normally impelling the same into one-way gripping engagement with the material passing thereunder into the intermittent feed.

10. An unwinding machine for intermittent feeds, including a base, an upright rockingly mounted on the base, a support rotatably mounted on the upright, and means for continuously rocking the upright, and means synchronizing the said rocking operation with the intermittent feed, said means comprising a connecting link, and means associated with intermittent feed for preventing reverse movement of the stock during the rocking operation, said means comprising a gripping cam, and an adjustable mounting for said cam adapting the same for use with various widths of material.

11. An unwinding machine for automatic punch presses, comprising a rockable support for the material to be fed into the press, and means for rocking said support for imparting intermittent pulls to the material on the support, said means comprising a link connecting the support to the intermittent feed mechanism of the press.

12. An unwinding machine for automatic punch presses, comprising a rockable support for the material to be fed into the press, and means for rocking said support for imparting intermittent pulls to the material on the support, said means comprising a link connecting the support to the intermittent feed mechanism of the press, and adjustable connections between the link and the support.

JOSEPH M. SCHMIED.