June 19, 1923. 1,459,037

E. SNYDER

MACHINE FOR PACKING MATCHES

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Fig. 1.

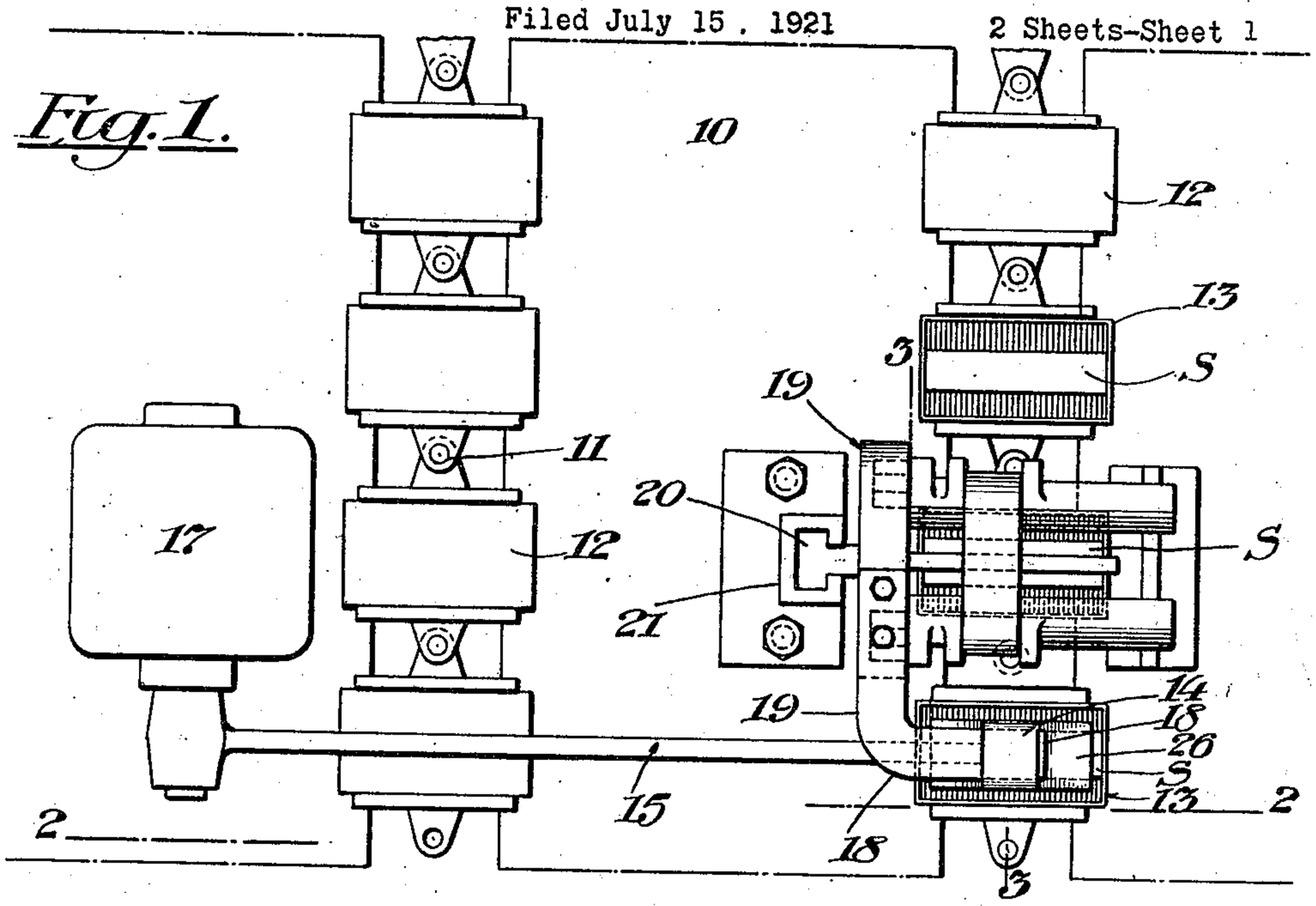


Fig. 2.

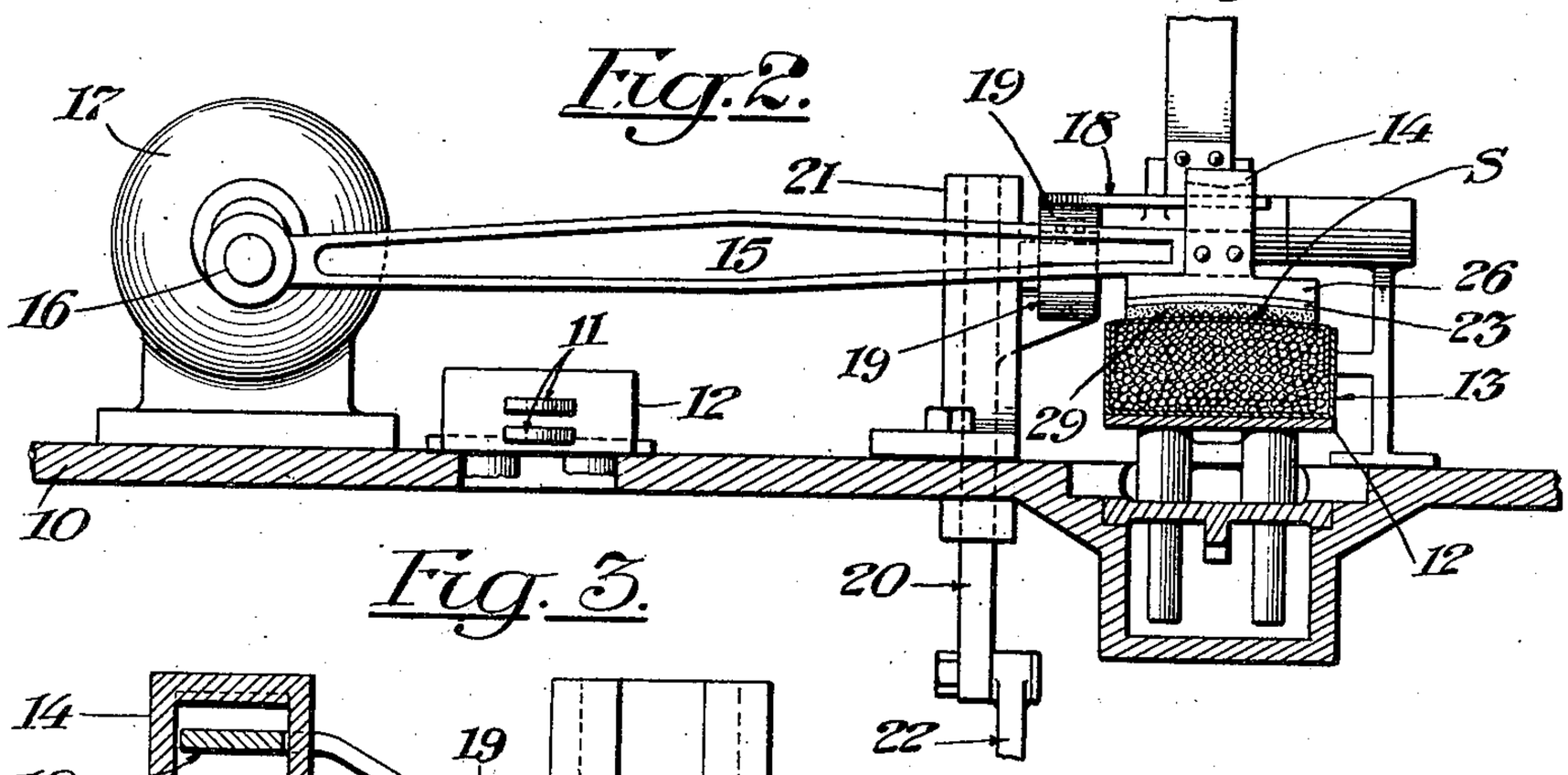
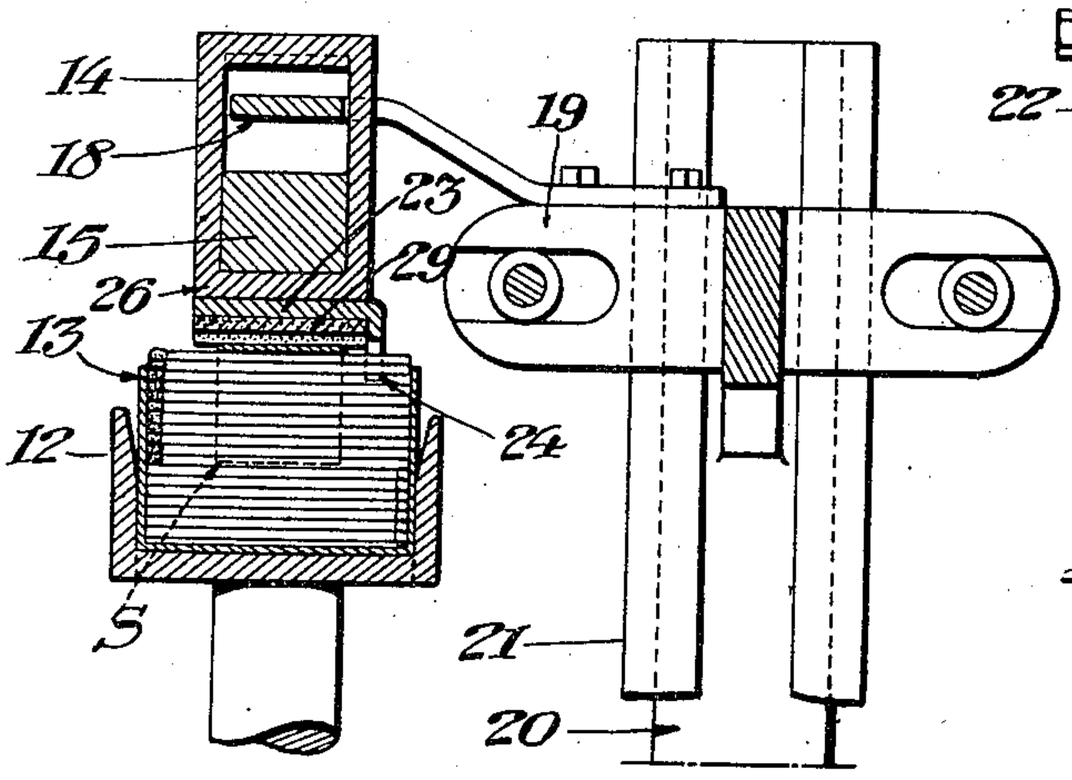


Fig. 3.



Inventor
Eugene Snyder
by his Attorney
John R. Nolan

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Fig. 4.

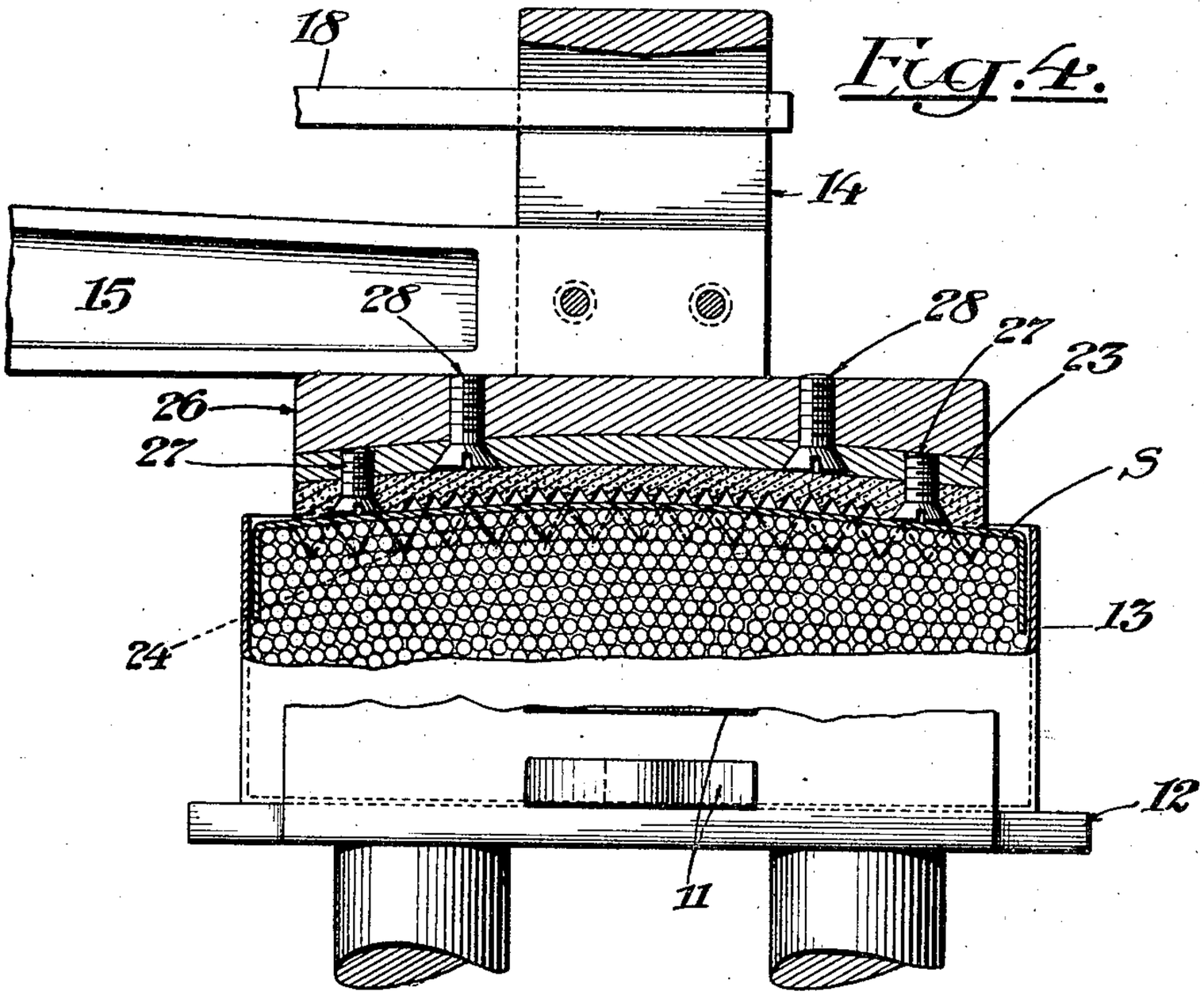


Fig. 6.

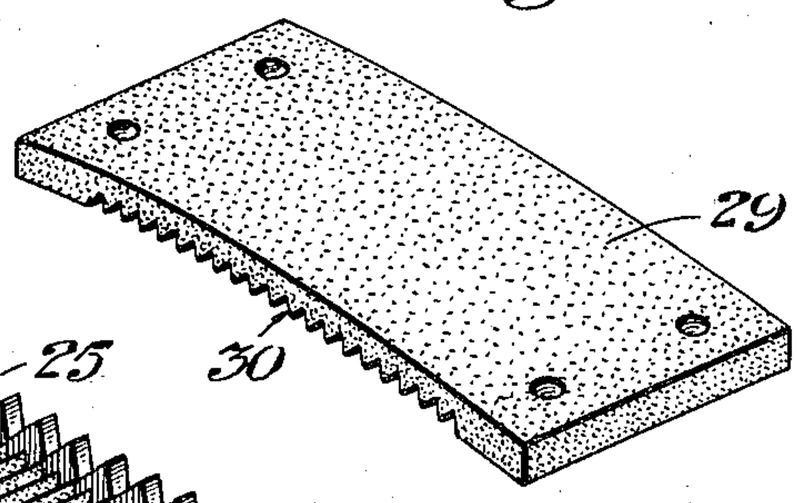
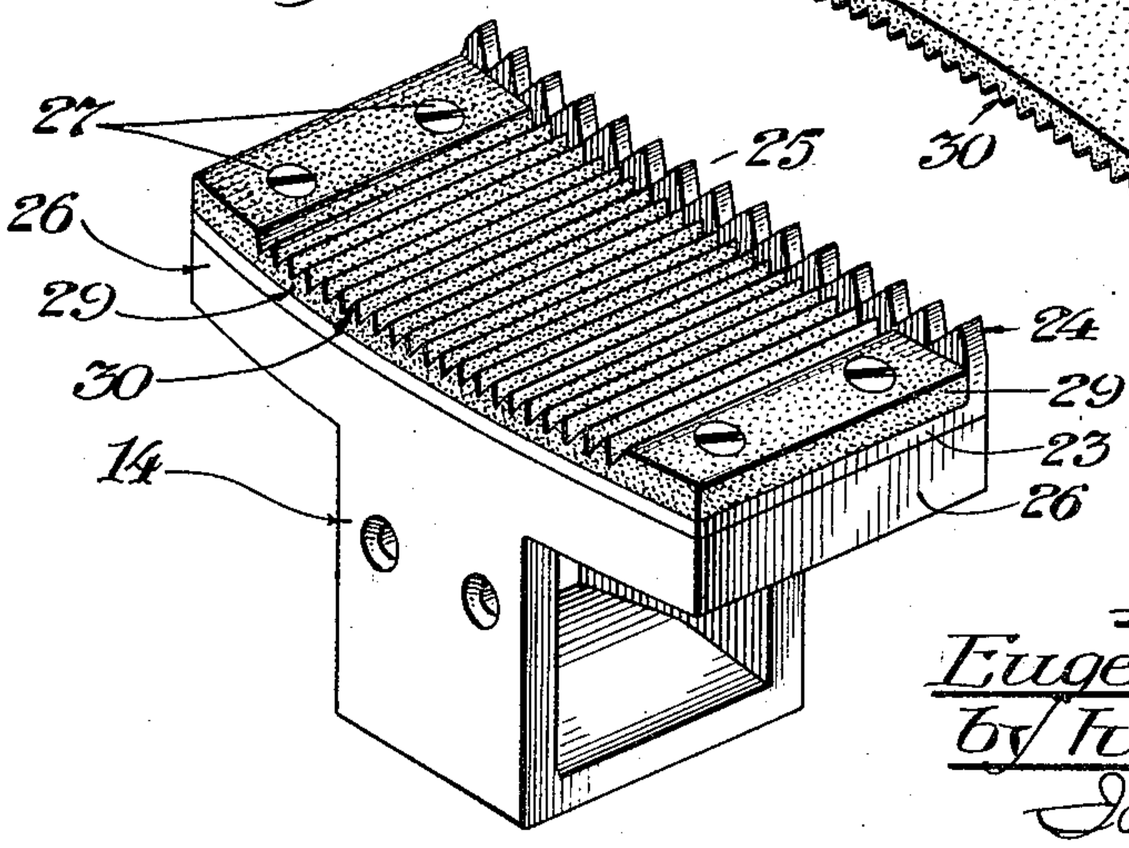


Fig. 5.



Inventor:
Eugene Snyder
by his Attorney
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Patented June 19, 1923. 1,459,037

UNITED STATES PATENT OFFICE.

EUGENE SNYDER, OF BARBERTON, OHIO, ASSIGNOR TO THE DIAMOND MATCH COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MACHINE FOR PACKING MATCHES.

Application filed July 15, 1921. Serial No. 484,964.

To all whom it may concern:

Be it known that I, EUGENE SNYDER, a citizen of the United States, and resident of Barberton, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Machines for Packing Matches, of which the following is a specification.

This invention relates to machines for packing matches in boxes, having reference especially to the match compacting and leveling mechanism set out in Letters Patent of the United States No. 1,168,906, dated January 18, 1916. Such patented mechanism comprises a reciprocative ironing member which is designed to bear upon the "protection strip" in a manner to smooth the strip and to level and compact the matches within the box tray preparatory to the insertion of the filled tray into its shuck or cover. In the form shown in the said patent the acting surface of the ironing member is of convex formation, and in consequence the ironing pressure tends to crowd the matches toward each end of the box tray. Hence when the filled tray is being inserted into the cover the thus crowded end matches, and particularly the heads of the matches extending above the tray, are apt to catch in and tear the opposing end corner or corners of the shuck.

The object of my invention is to obviate the objection mentioned, and to that end the ironing member is so constructed and arranged that it tends to arch or bunch toward the middle of the box the contained matches, as will be hereinafter described and claimed.

In the drawings—

Figure 1 is a plan of a part of a match packing machine embodying my invention.

Fig. 2 is a section, as on the line 2—2 of Fig. 1.

Fig. 3 is a section, enlarged, as on the line 3—3 of Fig. 1.

Fig. 4 is a sectional elevation, enlarged, of the ironing device and adjuncts, showing the device in engagement with the contents of a box tray.

Fig. 5 is a perspective view of the ironing device inverted.

Fig. 6 is a similar view of the serrated facing of the device.

Referring to the drawings, 10 designates a part of the bed or table upon which the intermittently movable tray conveyer 11 is supported and guided. This conveyer, in the form illustrated, comprises an endless chain of links provided with holders 12 for the box trays 13. Each succeeding tray when it is filled with matches is supplied with a protection strip, as S, which extends lengthwise of the tray and rests upon the top of the contained matches.

An ironing foot of novel construction is moved upon and from the protection strip while the underlying tray is at rest. This foot is secured to a slotted head 14 which is carried by the free end of a reciprocative arm 15. The opposite end of the arm is rotatably fitted to the crank-shaped or eccentric end of a power driven shaft 16, which may be the shaft of a suitably-disposed electric motor 17. Thus the arm 15 and the head 14, together with the foot are rapidly reciprocated longitudinally of the protection strip.

The slot or opening of the head 14 receives one limb of an angular arm 18, the other limb of which is secured to an arm 19 of a T-shaped vertically-reciprocative plunger 20 which is mounted in a standard 21 on the bed or table. The plunger extends below the table and is pivotally connected by means of a link 22 to a lever which is timely actuated to raise and lower the plunger. In the upward stroke of the plunger the arm 18 impinges against the opposed roof of the slot, and thus raises the head and its ironing foot, and in the descent of the plunger the arm permits the head and foot to drop by gravity upon the underlying protection strip and remain thereon while the foot is reciprocating longitudinally of the strip.

The mechanism above described, with the exception of the ironing foot, is or may be similar in construction and operation to the corresponding parts set forth in Patent No. 1,168,906 aforesaid.

The improved ironing foot, in its preferred construction, comprises a concavo-convex backing plate 23 having at one side a depending curved flange 24 the lower or concave edge of which is grooved to provide a series of V-shaped teeth or serrations 25. This plate is secured to a concave basal portion 26 of the head 14 by means such as the screws 28. To the concave under face of the plate 23 is secured, as by means of

screws 27, a facing 29 of leather, or other suitable yielding material, the lower or concave face of which is transversely grooved to provide a series of parallel V-shaped teeth or serrations 30 of less size, preferably, than those of the flange of the backing plate.

The relative positions of the parts just described are such that when the head 14 is lowered the serrations of the facing 29 bear yieldingly upon the protection strip, while the serrations of the flange 24 of the backing depend below one side of the strip in a manner to engage the ends of the matches adjacent one side of the box tray. In the horizontal reciprocation of the foot the facing thereof exerts upon and throughout the length of the protection strip a yielding ironing action which smooths the strip and compacts the matches within the tray, the concave facing operating to arch the strip and the underlying matches; such matches thus being raised toward the middle of the tray and declining therefrom towards the ends of the tray and below the top of the latter. The serrated concave flange by its direct engagement with the matches contributes to the arching of the contents of the tray. When the filled tray thus acted upon by the ironing device is being introduced to the cover, the leading end of the tray freely enters the cover, and then the cover, bearing upon the protection strip, depresses the opposing raised matches and tends to force them toward each end of the tray; thus uniformly distributing the matches throughout the tray during the operation of "nesting" the tray and shuck.

It is to be understood that I do not limit my invention to the specific details disclosed, as the device may be modified within the principle of the invention and the scope of the appended claims.

I claim—

1. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device having a concave face arranged to bear upon the protection strips of the successive trays, and means for reciprocating said device upon the strips.

2. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device having a transversely-serrated concave face arranged to bear upon the protection strips of the successive trays, and means for reciprocating said device upon the strips.

3. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device having a transversely-serrated concave facing of yielding material arranged to bear upon the protection strips of the successive trays, and means for reciprocating said device upon the strips.

4. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device having a depending serrated concave flange arranged to bear upon the matches and having also a concave face arranged to bear upon the protection strips of the successive trays, and means for reciprocating said device longitudinally of the strips.

5. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device having a depending serrated concave flange arranged to bear upon the matches and having also a transversely-serrated concave face arranged to bear upon the protection strips of the successive trays, and means for reciprocating said device longitudinally of the strips.

6. In a match packing machine having means for feeding filled box trays provided with protection strips, an ironing device comprising a backing member having at one side thereof a depending serrated concave flange, and a facing of yielding material secured to said backing, said facing having a transversely-serrated concave surface, means for moving said device to position said facing upon and from the protection strips and to engage and disengage the said flange with and from the matches of the successive trays, and means for reciprocating said device longitudinally of the protection strips.

Signed at Barberton, in the county of Summit and State of Ohio, this 8th day of July A. D. 1921.

EUGENE SNYDER.