

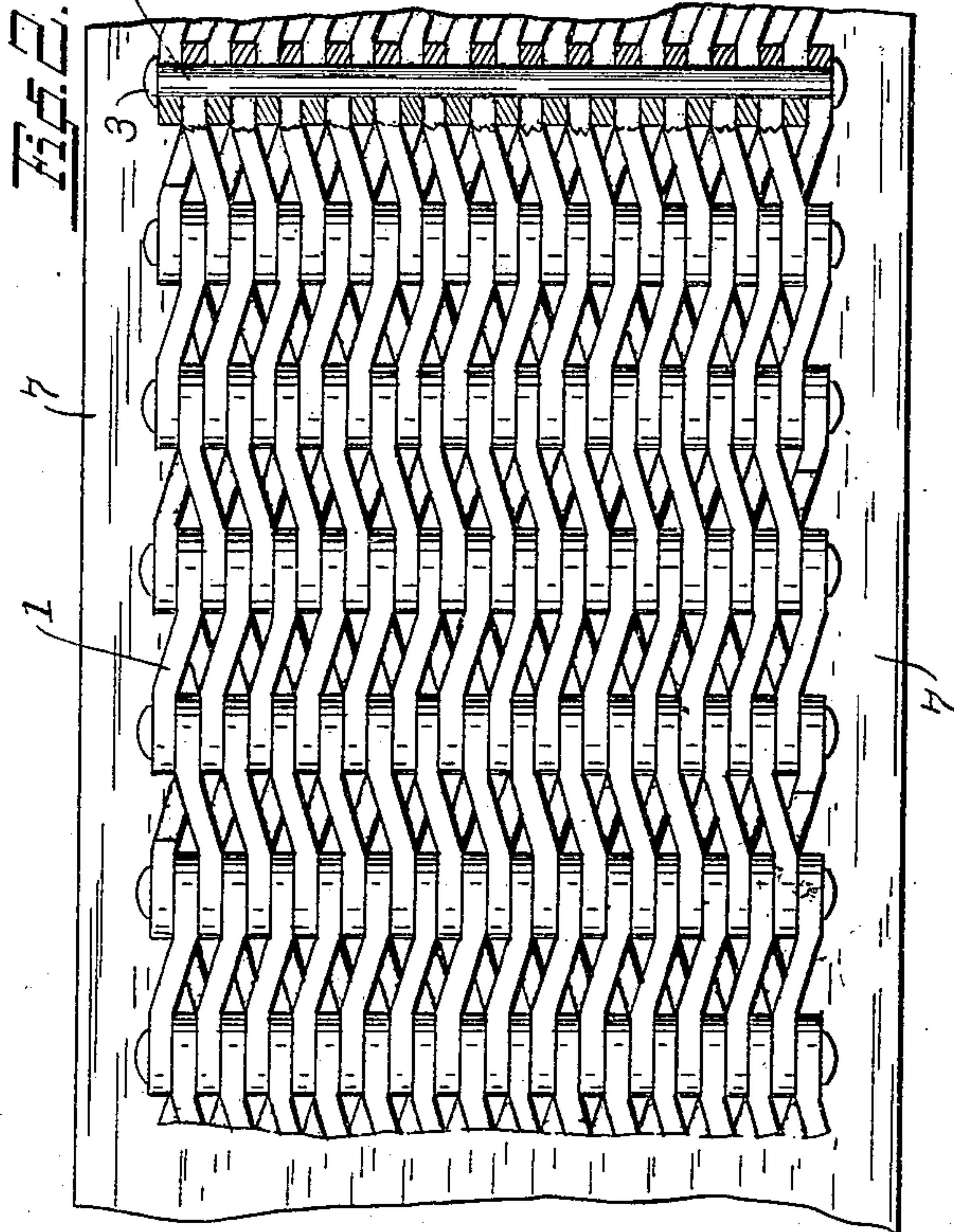
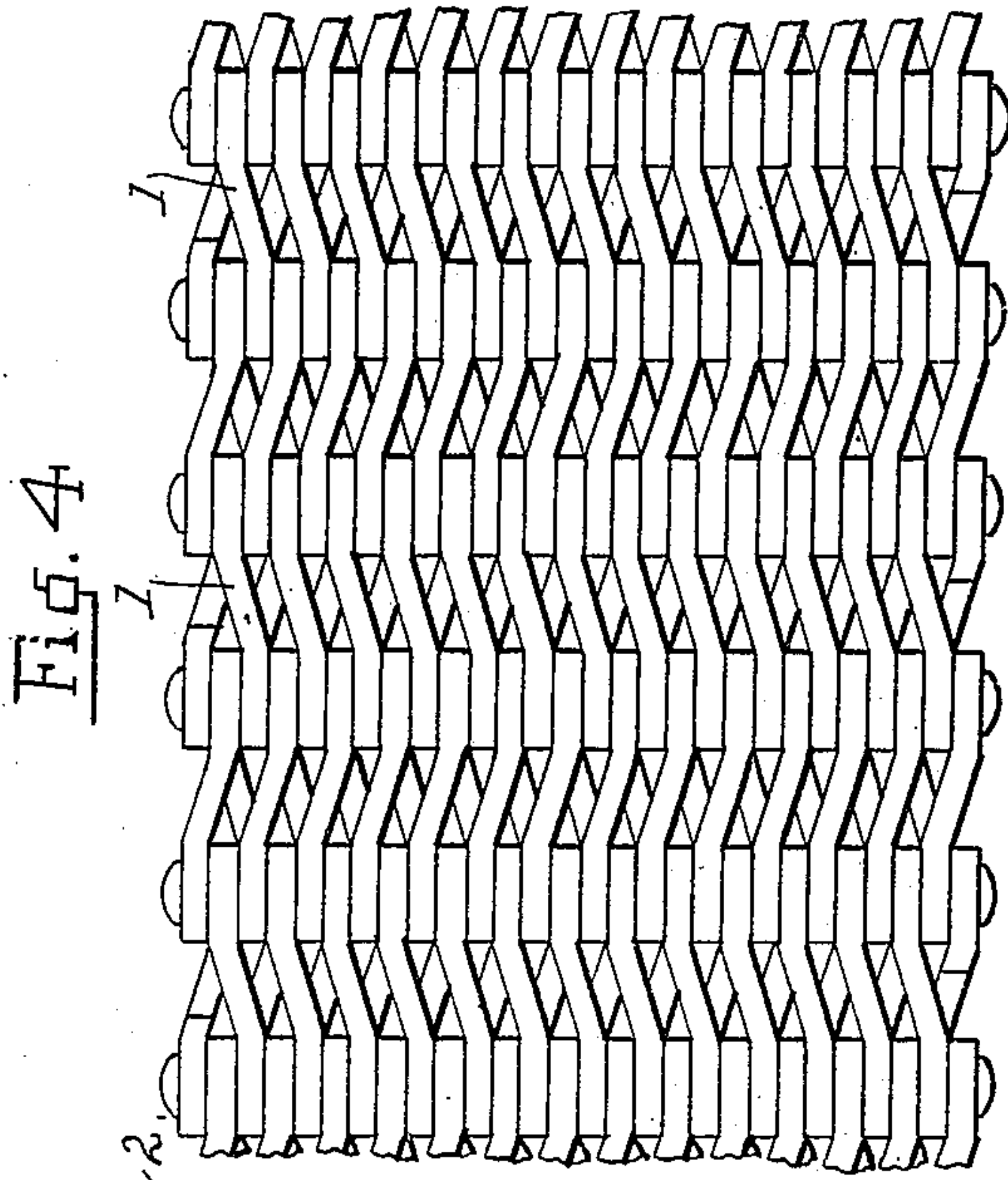
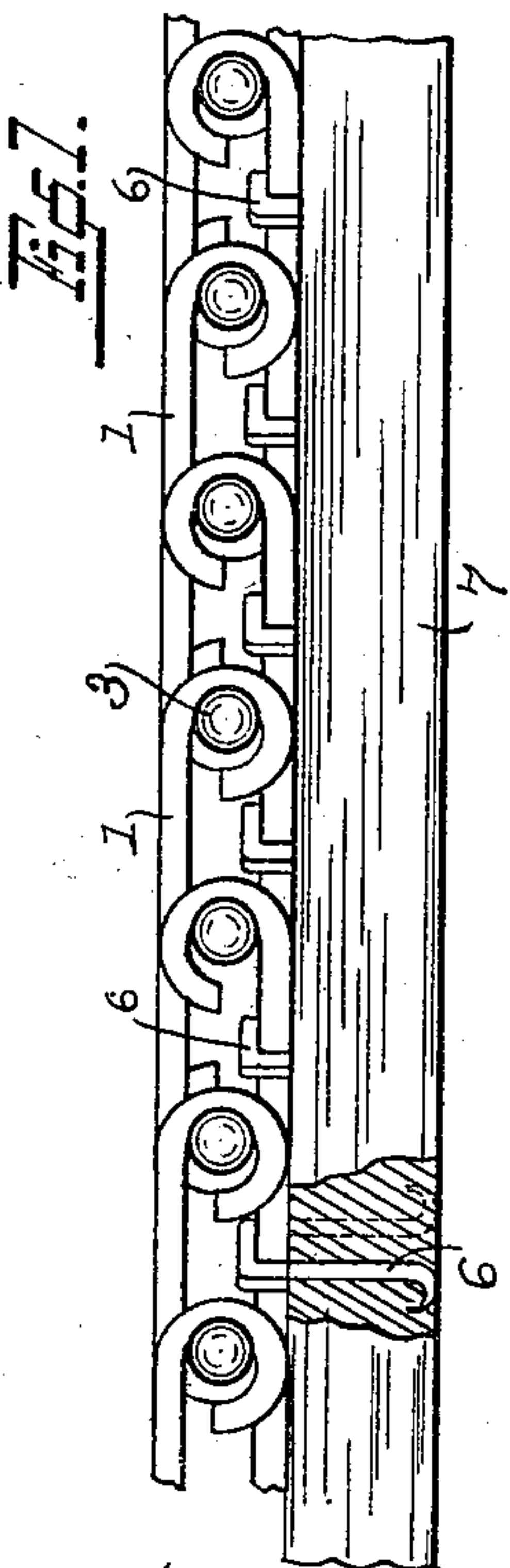
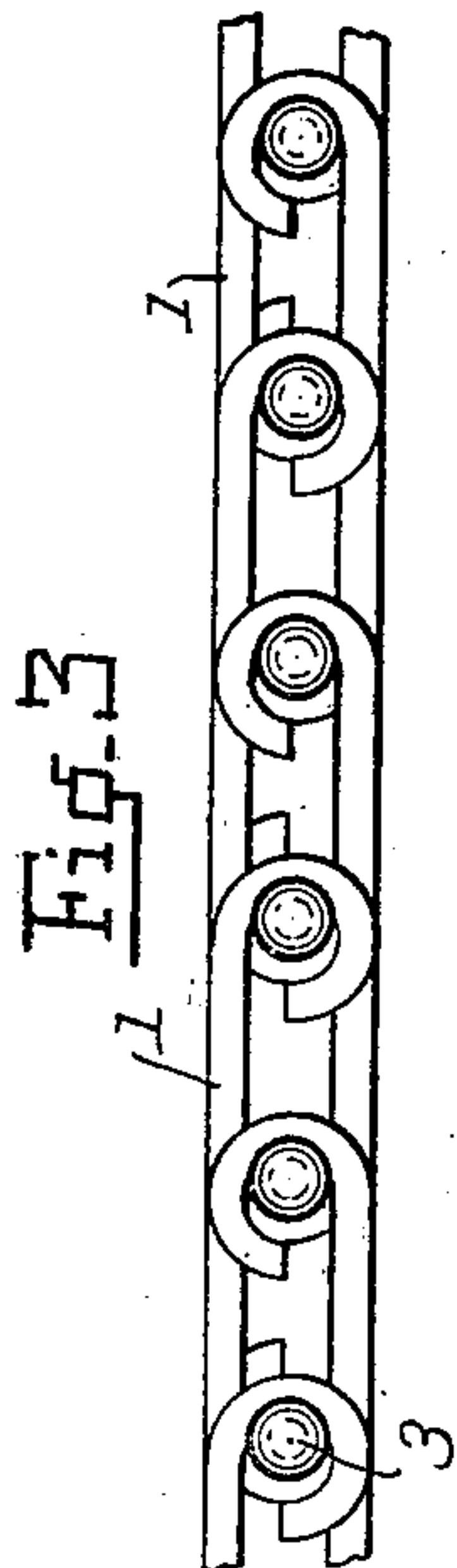
No. 725,686.

PATENTED APR. 21, 1903.

W. J. EGAN.
METALLIC BELT.

APPLICATION FILED JULY 7, 1902.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM J. EGAN, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO EDMUND BURKE, OF MILWAUKEE, WISCONSIN.

METALLIC BELT.

SPECIFICATION forming part of Letters Patent No. 725,686, dated April 21, 1903.

Application filed July 7, 1902. Serial No. 114,553. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM J. EGAN, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Metallic Belts, of which the following is a specification.

My invention relates to improvements in metallic belts. Heretofore attempts have been made to use belts of wire (woven or connected in the form of links) in connection with rubber or leather coverings; but so far as I am aware no metallic belt has yet been constructed with a view to securing a frictional contacting surface of the metal of the belt upon the pulleys sufficient to permit of its practical use independently of an auxiliary covering, such as rubber or leather.

Metallic belts, even when used in connection with non-metallic coverings, have also failed to go into general use, owing to their tendency to creep, twist or warp, and crystallize, a slight flexion of the metal in passing around a pulley being sufficient to crystallize and break the strands with a short period of use, especially where the pulleys are small and the draft heavy.

The object of this invention is to provide a form of metallic belt which will have sufficient frictional contact to enable it to be used independently and which will not creep, warp, or crystallize in use.

In the following description reference is had to the accompanying drawings, in which—
Figure 1 is an edge view of a portion of a belt embodying my invention, showing the same as used in combination with a rubber or leather belt of ordinary form. Fig. 2 is a plan view of the same. Fig. 3 is an edge view of my metallic belt as used independently, and Fig. 4 is a plan view of the same.

Like parts are identified by the same reference characters throughout the several views.

The metallic portion of my improved belt consists of a series of flattened coils, each formed of a wire or bar. Each coil forms a transverse series of links 1. The links of one coil project between those of the adjacent coil on each side, and the coils are secured together by means of pins 2, which are provided with end heads 3 to prevent them from

slipping out. Each link has a substantially flat exterior bearing-surface, whereby the pulley-contacting surface is made substantially equal in dimensions to the length of the link and also to its width—i. e., the diameter of the bar. The link preferably has also a flat surface for contact with the pin, the bars of which the coils are formed being preferably square or rectangular in cross-section, as shown. Each link (except those at the end of the coil) is in side contact with two links of each of the adjacent coils. The successive coils are oppositely wound—that is, the links forming one of the coils have a pitch or trend to the right, while those forming the adjacent coils have a pitch to the left. That portion of the link which loops around the pin extends substantially in a longitudinal line of the belt, the pitch or diagonal trend of the link being intermediate of the pins 2, as clearly shown in Figs. 2 and 4. By having the coils oppositely wound, as above stated, the belt is caused to draw in a true longitudinal direction. Hence it will not creep or warp.

It will be observed, Figs. 1 and 3, that the loop formed by the links is of sufficient size to permit the heads 3 of the pins to pass through when the coils are shoved together; but as soon as they are drawn out longitudinally the links of one of the coils will draw inwardly against one side of the pin 2, while those of the other coil will draw inwardly against the other side of the pin, thus narrowing the space through which the pin is passed and preventing the heads from slipping through the links. The belt is preferably used on pulleys having non-metallic contact-surfaces.

Where it is desired to use the metallic belt in combination with leather or rubber belting, it may be secured thereto by means of staples 6, straddling the coils of some of the links and extending through the leather or rubber auxiliary belt 7, the ends of the staples being clenched, as illustrated. Where the belt does not require to be shifted, it is not necessary to secure the metallic and non-metallic portions together.

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

1. A series of integrally-connected belt-links, comprising a flattened metallic coil, and having each link flattened transversely on the side of pulley contact.
- 5 2. A belt comprising a series of connected flattened metallic coils, each coil constituting a series of links, and each link having a transversely-flattened pulley-contacting surface substantially equal in area to the length
10 and thickness of the link.
3. The combination of a series of metallic coils, each formed of a coiled metallic bar, rectangular in cross-section, and constituting
15 a series of integrally-connected links; said coils being arranged with links of each, interacting in side contact with two links of each adjacent coil, and a series of connecting-pins extending through the interacting portions of the links.
- 20 4. The combination of a series of flattened metallic coils, each constituting a series of links projecting between links of adjacent coils; and connecting-pin extending through the interacting portions of the links, each coil
25 being wound in a direction opposite that of the coils to which it is directly connected in lineal sequence by said pins, and having a lateral pitch in a direction opposite that of the coils to which it is so connected.
- 30 5. In a belt, the combination of a series of flattened metallic coils, each constituting a series of links projecting between the links of the adjacent coils; and connecting-pins extending through the interacting portions
35 of the links, the progressive pitch of each link being between the pins, and the end portions of the links extending parallel with the line of the belt, in side contact with the links with which they interact.
6. In a belt, the combination of a series of
40 metallic coils, constituting a series of links projecting between the links of the adjacent coils; and connecting-pins extending through the interacting portions of the links, the progressive pitch of each link being between the
45 pins, and the end portions of the links extending parallel with the line of the belt, in side contact with the links with which they interact, each link being formed with a pulley-contacting surface of dimensions corresponding
50 substantially with the length and thickness of the link.
7. The combination of a series of metallic coils, each coil comprising a series of flattened
55 links projecting between the links of the adjacent coils; pins extending through the interacting portions of the links, and headed at each end to prevent them from slipping out, the heads of said pins being adapted to pass through any single link, but prevented
60 from slipping through such link by the opposing engagement of the interacting links on opposite sides of the pin.
8. The combination of a series of metallic
65 coils, each constituting a series of links, said coils being arranged with links of each, interacting with the links of each adjacent coil, and a series of connecting-pins extending through the interacting portions of the links,
70 each link being formed with a pulley-contacting surface substantially equal to its length and thickness.

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

WILLIAM J. EGAN.

Witnesses:

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LEVERETT C. WHEELER.