H. J. FISHER & H. SUTTON.
MACHINE FOR PRODUCING METALS OR METALLIC ALLOYS IN STRIP FORM.
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3 SHEETS—SHEET 1.

Witnesses
J. P. Sheeves.
J. F. Campbell.

Inventors
Henry Sutton.
Henry Sutton.

by Connolly Bros.

H. P.
To all whom it may concern:

Be it known that we, HENRY JUTSON FISHER and HENRY SUTTON, subjects of the King of Great Britain, residing at 54 Clement street, Birmingham, England, have invented certain new and useful Improvements in Machines for Producing Metals or Metallic Alloys in Strip Form, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention has for its object a machine for producing metal or metallic alloys in strip form for commercial use and has particular reference to the automatic production of strips of predetermined length although continuous strip may be produced by same.

The machine is characterized by the use of a broad traveling metal band perforated at set intervals, the distance between the perforations deciding the length of strips to be produced and the perforations themselves constituting stops or cut offs to the supply of metal. A receiver in close proximity to the traveling band and fed by a container from above has holes or outlets in its bottom corresponding in number and coincident to the perforations across the width of the traveling band. A supply of molten metal is fed into this receiver and escapes through the holes on to the traveling band where it runs off into strips or lengths automatically cut off by the perforations in the belt as aforesaid. The band is provided with tension and guiding appliances and runs over a trough containing water for cooling the metal before delivery.

In the accompanying sheets of drawings, Figure 1 is an elevation of our machine, Fig. 2 is a plan of same, Fig. 3 is a section on the dotted lines a, a, Fig. 1, Fig. 4 is a sectional view of the cooling means, and Figs. 5 and 6 are diagrammatic views of part of the perforated receiver and band showing the finish of one strip of metal and beginning of another. Figs. 7 and 8 are enlarged views showing the supply pipe from the container, perforated receiver, and traveling perforated belt with strips or lengths of metal run thereon. Fig. 9 is an enlarged sectional view of the container showing supply pipe and valve for stopping egress of molten metal and burner for heating same together with perforated receiver or basin. Fig. 10 is a separate view in perspective of the perforated receiver, and Figs. 11 and 12 are respectively top and side views of the strip of metal produced.

The same letters of reference indicate like parts in all the figures of the sheets of drawings.

The machine consists of suitable framework, supports, and standards 1 on which are mounted at one end a shaft 2 carrying fast and loose pulleys 3, 4, for driving the pulley 5. Taking over this pulley 5 and also a corresponding pulley 6 is a horizontally-disposed broad flat metal band 7 having rows of perforations 8 therein at certain distances apart according to the length of metal strips required. These perforations are preferably diagonal as shown so as not to weaken the band although they may be in a straight line. This band is run slowly with a suitable tension device 9 as shown and also guiding means 10 consisting of two upstanding guide wheels for keeping the band in a straight line. A water trough 11 carried by the supports 1 runs underneath the traveling band for a certain distance and is provided with springs 12 for forcing upward boards 13 carrying felt 14 which is kept wet by the water in the tank for cooling the traveling band and the strips or lengths of metal 29 run thereon, the weight of the band and its imposed load causing the felt to be brought in contact with the water in the tank and to be moistened thereby. A receiver or basin 15 is supported just over the traveling band by means of rods 19 adjustable vertically in slotted bearings 20 carried by supports 21 taking under its flanges 17; depending wings 16 constituting additional guides to the traveling band. The bottom of the receiver or basin is provided with a row of perforations or outlets 18 corresponding in number (seven) to the perforations across the width of the traveling band and in alinement with the perforations in the band in the direction of travel of the latter. This perforated receiver or basin which must be nicely adjusted in close proximity to the traveling band is fed by a supply pipe 22 in connection with a container 23 mounted by feet 24 on the framework 1 of the machine. This container which holds the molten metal is heated by a burner 25 and provided with a valve 26 fitted with a screwed head 27 for regulating
or cutting off the supply of metal. A receptacle 28 is provided under the perforated receiver 15 for catching any waste metal. In operation the perforated band is set slowly in motion and the valve of the container opened sufficiently to allow a supply of molten metal to pour into the perforated receiver or basin from whence it finds its way through the several holes on to the band where it forms strips of metal corresponding in number to the holes in the receiver, which strips are automatically cut off into predetermined lengths by the corresponding perforations in the band as aforesaid. After passing the water trough the strips of metal are taken off the band by hand. It will be obvious that if the traveling band is not perforated continuous strips of metal will result and these may be wound on drums or otherwise suitably dealt with.

Having now described our invention what we desire to secure by Letters Patent is:

1. In a machine for producing strip metal, a horizontally disposed broad traveling band having transverse rows of perforations at certain distances throughout its length, in combination with a correspondingly perforated receiver adapted to supply molten metal to the band, substantially as described and set forth.

2. In a machine for producing strip metal, the combination of a horizontally disposed traveling metal band with a receiver mounted in close proximity to the band and cooling means comprising a water trough located below said band, and felt covered boards mounted on springs in said trough.

3. In a machine for producing strip metal in predetermined lengths, the combination with a horizontally disposed perforated traveling metal band provided with cooling means comprising a water trough and a spring supported felt covered board, of a receiver or basin mounted adjustably in close proximity thereto and having corresponding perforations in its bottom and a container above the receiver, having an outlet leading to the receiver or basin, substantially as described and set forth.

In testimony whereof we have affixed our signatures in presence of two witnesses.

HENRY JUTSON FISHER.
HENRY SUTTON.

Witnesses:
FRANK BIDDLE,
THOMAS HENRY LYON.