

## CATALOGUES, CIRCULARS AND TRADE NOTICES.

## SILVER-PLATED AMALGAMATING PLATES FOR SAVING GOLD.

THE greatly increasing demand for these plates by gold miners has demonstrated their superiority over all other methods for saving gold in quartz or placer mining, particularly fine or float gold. These plates are in great demand in all the Pacific Coast mining regions from Alaska to South America, the Rocky Mountain mining States and Australia. Denniston's San Francisco Plating Works, 743 Mission street, San Francisco, of which Mr. E. G. Denniston is proprietor, is constantly filling orders for them, sending out a great many thousands of square feet every year to gold miners all over the world. The plates for all the large stamp mills in Alaska were made at this establishment. Mr. E. G. Denniston is the pioneer in this line of business, having established his works 35 years ago and has received every first class premium awarded for silver-plated plates at the fairs held on the Pacific Coast, having received 26 silver medals. The reputation of his plates is world-wide, he having been successful in competition with all others. Only the best Lake Superior copper and refined silver are used in their manufacture. They are made of any size, plain or corrugated. The great success of Mr. Denniston's plates is due to his thorough knowledge of the business and possession of the best facilities, also to adhering strictly to agreement in depositing full weight of silver on every order. The work done at Denniston's San Francisco Plating Works consists of gold, silver, platinum, nickel, brass, copper and bronze plating on every description of metal work. The work done is first class, and done at lowest possible prices. Parties wishing to purchase silver-plated mining plates will find it greatly to their advantage to get Mr. Denniston's prices before purchasing elsewhere. Meanwhile they should send for the firm's circulars.

## HENDRIE &amp; BOLTHOFF MACHINERY.

The Hendrie & Bolthoff Mfg. and Supply Co. issue a very comprehensive machinery catalogue (No. 8) of over 200 pages, in which they endeavour to present the most complete line of up-to-date machinery ever placed in a catalogue of this kind. They have certainly succeeded in doing so. The company, which, by the way, was established over forty years ago, have earned a very enviable reputation for their machinery, and "Hendrie & Bolthoff" hoists in particular are held in very high esteem by mining engineers the world over. We shall be glad to supply our readers with copies of this catalogue.

## NORTHERN MULTIPOLAR MOTORS.

Bulletin No. 20, issued by the Northern Electrical Mfg. Co., describes this type of motor very clearly, and also shows the various types and forms of the machine as designed by the company to meet the requirements of service in American manufacturing establishments.

## THE SHATTUCK PATENT SOLAR ATTACHMENT.

Messrs. Wm. Ainsworth & Sons, of Delver, Colo., have placed upon the market a new and improved solar attachment, designed and patented by Orville F. Shattuck, a prominent mining engineer of that city. The attachment is arranged

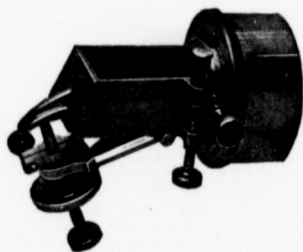


Fig. 1.

ed to fit over the objective end of the telescope in place of the cap, which renders it easily detachable and makes it unnecessary to send a transit to the factory to have it fitted, provisions being made whereby an engineer can give the accurate dimensions required and place his order when in

the field, thus effecting a saving in transportation charges and time.

This solar attachment overcomes by its optical construction, the Polar adjustments so difficult to maintain in others, being dependent only on the accuracy of the vertical arc and limb, the two most carefully constructed parts of the transit, hence giving results commensurate with the accuracy of the instrument to which it is attached.

It equals direct observation for accuracy and can be operated in one-tenth the time.

Fig. 1 shows the attachment three-quarters actual size.

For instruments having no vertical arc a latitude level is provided at small expense and is even more accurate than the arc.

The difficulties attendant upon the use of former solar attachments, their inaccuracies when not in perfect adjustment, the difficulty of maintaining their adjustments and their unprotected position on the transit, have rightly prejudiced engineers against them.

The reliability of the solar attachment shown herewith depends upon principles similar to those of the sextant; i.e., that a ray of light which suffers reflection twice in the same plane is bent at an angle with its original direction equal to twice the angle between the two reflecting surfaces.

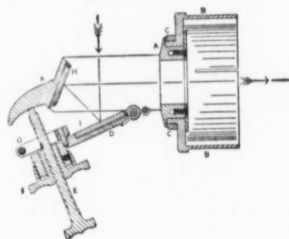


Fig. 2.

Referring to Fig. 2, which is a sectional view in the plane of the attachment about three-quarters actual size: The main frame AA carries the stationary mirror H and revolves axially by means of a bearing in the cap B, which fits over the objective end of the transit. C is a clamp ring used in connection with the clamp and tangent screw, (not shown) for rotating the frame AA about its axis. The movable mirror I is adjustable to any required angle, being mounted on a swinging arm D, which is provided with an adjusting screw E, a graduated differential nut F, and a clamp G.

The ray of light enters from above as indicated by the arrow and is incident upon the movable mirror I; it is thence reflected to the stationary mirror H, thence in through the object glass to the cross-wires of the instrument. Thus the maintenance of the angle between the incident and emergent ray depends upon the angle between the mirrors rather than upon the polar bearing.

The declination angle corrected for refraction is set off by means of the movable mirror actuated by the screw, E, and the differential nut, F, the method being to sight at some object on the horizon, (B Fig. 3) with the solar attachment off, the telescope level and the vernier set at zero. Then with the lower plate clamped and the vernier set at the South polar distance, corrected for refraction, which has



Fig. 3.

been previously computed, sight at the same object, (B Fig. 3) with the solar attachment in place, bringing the object onto the cross-wires by means of the adjusting screw, E, and the differential nut, F.

Then referring to Fig. 3, angle CDB equals angle CAB,