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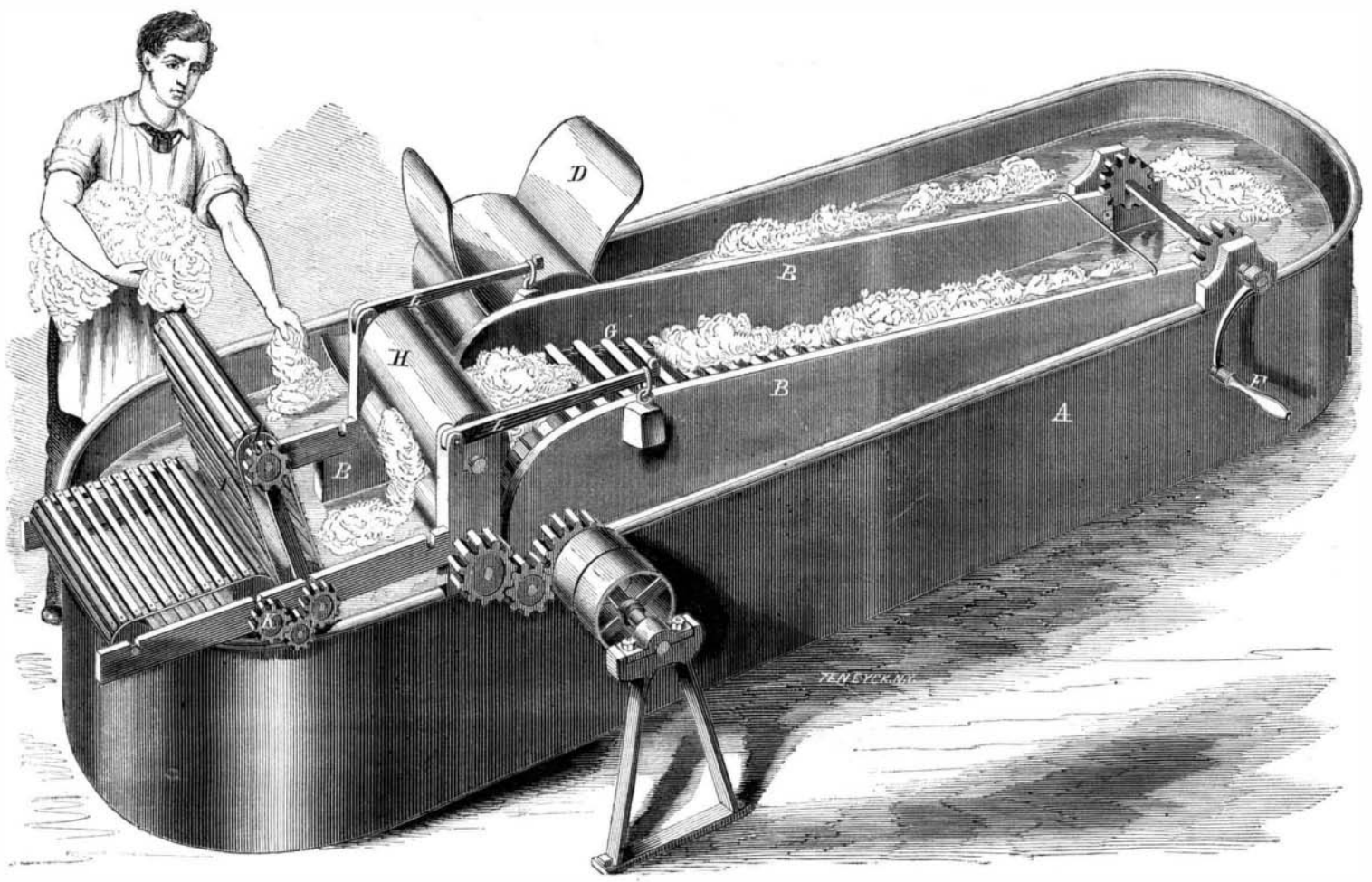

TURNER AND ROBINSON'S WOOL-WASHING APPARATUS.

Improved Wool Washing Apparatus.

After wool is sheared from the sheep it requires to be thoroughly cleansed before it is manufactured. It has been the practice heretofore to place the wool in a tub of warm water containing a small quantity of soda, and to stir it about by hand until it was cleansed, when it was lifted out by means of sticks. It was generally necessary to pass it through three waters for washing and a fourth for rinsing out the suds. But an apparatus has been invented by R. G. Turner and S. B. Robinson, of East Dedham, Mass., by which all this enormous labor can be performed by water or steam power instead of by hand; and as usual the machine work is much more perfect than that performed by hand. This apparatus is illustrated in the accompanying engraving.

An oval tub, A, say 16 feet in length and nearly three feet in hight, is partially divided longitudinally in the middle by a partition, B, leaving spaces between the ends of the partition and the ends of the tub. In the space upon one side of the partition is the wheel, D, which is made to rotate by the machiney. The tub is nearly filled with the diluted solution of alkali, and a proper quantity of wool being thrown in, the rotations of the wheel impart a current to the water; sweeping the wool and water together around the sides of the tub. As the wool passes under the wheel it receives a moderate pressure from the enlarged axle or drum portion of the wheel and is very rapidly cleansed.

When by this process the wool becomes thoroughly saturated with the alkali, one end of the frame, E, is lowered down into the tub by turning the crank, F. Now as the wool passes around the end of the tub it enters between the sides of the frame, E, and is carried by the endless apron of slats, G, up to the rollers, H, between which it passes, having the water mostly pressed out of it in the passage. After all the wool has been run a few times through the rollers, H, the apron, I, is turned down in a horizontal position, when the wool falls upon it and is carried over the end of the tub.

The floats of the wheel, D, are slightly curved as shown so that they will not pick up the wool. When the apron, I, is turned down, a pinion upon the end of the roller, I, falls into gear with the pinion, K, by which motion is imparted to the apron, I, to carry off the wool. The pressure upon the wool as it passes between the rollers, H, is increased and regulated by the weighted levers, L L, pressing upon the journal boxes of the upper rollers, H.

By this apparatus the wool is carried from one tub to another without being rehandled; it is more thoroughly washed than by hand; a smaller number of waters suffice; and the wool is delivered in a comparatively dry state.

The patent for this invention was granted, through the Scientific American Patent Agency, October 1, 1861, and further information may be obtained by addressing either of the inventors at East Dedham, Mass.

The Cause of Malaria.

An important discovery in connection with sanitary science and with physical geography has been made by the illustrious agricultural chemist, Boussingault. He lately read before the Academy of Sciences a paper in which he demonstrated, with remarkable precision, that oxide of carbon accompanies the liberated oxygen, whenever the sun shines upon a vegetable submerged in water impregnated with carbonic acid. The presence of so deleterious a gas as carbonic oxide in the atmosphere of marshy countries is manifested by this discovery, and it explains the fatal attacks which animals suffer in the health when exposed to the influence of marshy exhalations.

On the other hand, it is maintained, that in large cities where coal is consumed, as in Paris and London, carbonic oxide is much more abundant in the atmosphere than it is in the most unhealthy marshy situations, and yet marsh fevers do not prevail in those cities. This has led to the conclusion that the cause of marsh fevers is due to a solid organic body, a microscopic insect, or the *dêbris* of an insect carried through, and penetrating the air-passages of the lungs, and acting like a putrid foreign body which vitiates the whole mass of the blood in the animal by a process of putrefactive fermentation.

THE red-hot shot used in the British navy and forts is produced by pouring molten iron into shells. A small cupola furnace has been put on the *Warrior* for melting the iron to be used for such shot.