

MECHANICS

Bringer of Light

Sweden's Gustaf Dalén invented the sun-valve beacon, which guides ships and planes, and incidentally devised safe method of bottling acetylene gas.

By ERIK WÄSTBERG

► EVERY ship captain feeling his way through perilous channels, every air pilot who flies commercial lanes by night, every welder wielding his blazing torch on Liberty ship or warplane owes a debt of gratitude for his safety to Gustaf Dalén, a man of whom he doubtless never heard.

Dalén was a Swedish peasant whose passion for things mechanical led him through all obstacles into the immortal company of Nobel Prize winners. He was one of the world's great inventors, and all of his major inventions were designed to save lives.

When Thomas Edison first heard of Dalén's most ingenious device, the sun-valve—which, without cogs, wheels, electricity or clockwork, automatically lights beacons when darkness falls and puts them out at sunrise—he said, "It won't work." The German Patent Office snorted that his device was "impossible."

But it does work. Dalén's automatic beacons dot the coasts and harbors of the world—the U. S. Lighthouse Service alone uses 5,000 of them. Thousands more are used on airways and airfields. As part of his work on beacons, Dalén invented the safe method of bottling the highly explosive acetylene gas, essential not only for beacons but for welding.

His Eyes Destroyed

By a bitter twist of fate, the man whose lights fringe the Seven Seas never got to see them. Just when world recognition and wealth began to reach him, an explosion during one of his experiments destroyed his eyes. He walked in darkness for the last 25 years of his life, but dauntlessly pressed forward with his research and inventions.

Gustaf Dalén was born November 30, 1869, on a tiny farm in southern Sweden—one of several children in a peasant family. Their life was rigorous, and the children had tasks for every waking hour. As a boy, Dalén detested farm chores, and his first invention was a threshing machine to shorten the hated job of shelling the winter's supply of

dried beans. The thresher was powered by an old spinning wheel, and the crowning touch was that Gustaf persuaded his little brother it was fun to pump the treadles.

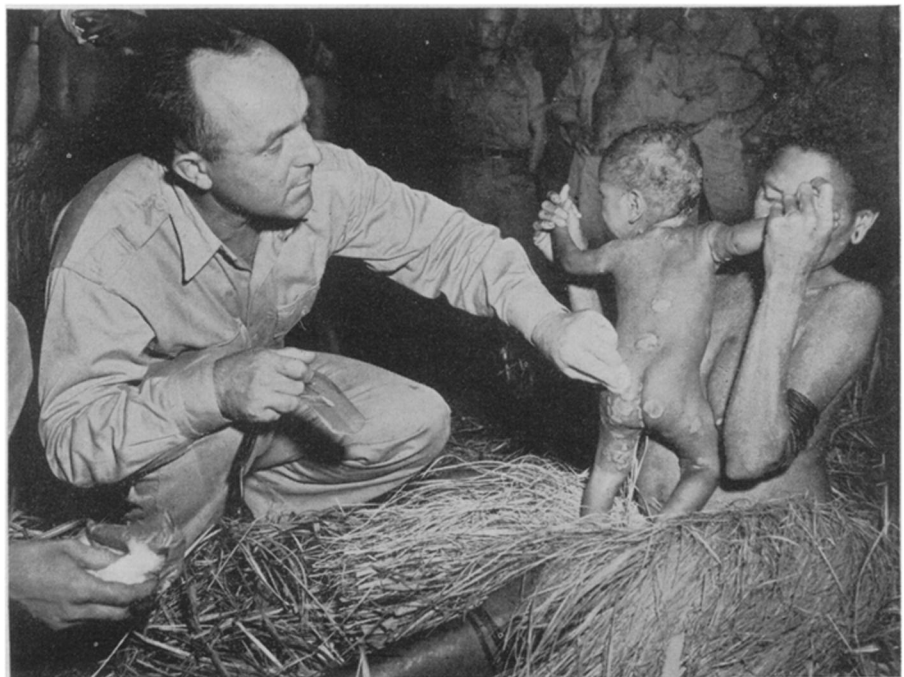
All his life, Gustaf Dalén hated to get up in the morning; to the end of his days he averaged nine hours' sleep a night. His second boyish invention was a fantastic sleep-prolonger. He got hold of an old wall clock and rigged it to rotate a spool at a set time. The spool rubbed against a match and ignited it. An elaborate arrangement of cords and levers swung the match over the wick of an oil lamp and lighted it. A coffee pot hung over the lamp flame. In 15 minutes the clock started a hammer beating against an iron plate. Thus Gustaf was awakened in a lighted room, with hot coffee ready.

While still in his 'teens, Gustaf de-

signed a milk tester. It worked so well that he took his model to Stockholm to show it to De Laval, the famous inventor of the cream separator. "What an extraordinary coincidence!" exclaimed De Laval and showed the lad blueprints of a device on which he had already applied for patent. It was an almost identical tester. Young Dalén promptly asked for a job in De Laval's laboratory. "Not yet," the older man replied. "Get sound theoretical training first."

Young Gustaf's excitement over the master's approbation was overcast by a serious problem. His older brothers had already gone out into the world. They counted on him to maintain the farm which had been the family property for hundreds of years. But more than anything in the world, Gustaf Dalén wanted to use his talent for invention. He was a gentle, conscientious person; how could he leave his family? Reluctantly, he made his decision. He returned home. Later he wrote one brother: "Nine-tenths of my thoughts are occupied with mechanics. How will it all turn out?"

Gustaf fell in love with a pretty, 15-



FRIENDLY AID—The help of the natives of the South and Southwest Pacific islands has been of tremendous assistance to the U. S. armed forces in those areas. This official U. S. Army Signal Corps photograph shows an Army Medical Corps officer treating a New Guinea baby for ringworm.